

## II

(Acts whose publication is not obligatory)

## COMMISSION

## COMMISSION DECISION

of 21 November 2001

relating to a proceeding pursuant to Article 81 of the EC Treaty and Article 53 of the EEA Agreement

(Case COMP/E-1/37.512 — Vitamins)

(notified under document number C(2001) 3695)

(Only the English, French, German and Dutch texts are authentic)

(Text with EEA relevance)

(2003/2/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

## 1. FACTS

Having regard to the Treaty establishing the European Community,

## 1.1. SUMMARY OF THE INFRINGEMENT

Having regard to the Agreement on the European Economic Area,

(1) This Decision imposing fines for infringements of Article 81(1) of the Treaty and Article 53 of the EEA Agreement is addressed to the following undertakings:

Having regard to Council Regulation No 17 of 6 February 1962, first Regulation implementing Articles 85 and 86 of the Treaty <sup>(1)</sup>, as last amended by Regulation (EC) No 1216/1999 <sup>(2)</sup>, and in particular Article 3 and Article 15(2) thereof,

— F. Hoffmann-La Roche AG (hereafter 'Roche'),

— BASF AG (hereafter 'BASF'),

— Aventis SA (formerly Rhône-Poulenc) (hereafter 'Aventis'),

— Lonza AG (hereafter 'Lonza'),

— Solvay Pharmaceuticals BV (hereafter 'Solvay'),

— Merck KgaA (hereafter 'Merck'),

— Daiichi Pharmaceutical Co. Ltd (hereafter 'Daiichi'),

— Eisai Co. Ltd (hereafter 'Eisai'),

— Kongo Chemical Co. Ltd (hereafter 'Kongo'),

— Sumitomo Chemical Co. Ltd (hereafter 'Sumitomo'),

Having regard to the Commission decision of 6 July 2000 to initiate a proceeding in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission pursuant to Article 19(1) of Regulation No 17 and Commission Regulation (EC) No 2842/98 of 22 December 1998 on the hearing of parties in certain proceedings under Articles 85 and 86 of the EC Treaty <sup>(3)</sup>,

Having regard to the final report of the Hearing Officer in this case,

Having consulted the Advisory Committee on Restrictive Practices and Dominant Positions,

Whereas:

— Sumika Fine Chemicals Ltd (hereafter 'Sumika'),

- Takeda Chemical Industries Ltd (hereafter 'Takeda'),
  - Tanabe Seiyaku Co. Ltd (hereafter 'Tanabe').
- (2) For the periods and for the different vitamin products specified in this decision, the manufacturers of vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids supplying the Community and the EEA entered into and participated in a series of continuing

agreements contrary to Articles 81(1) of the Treaty and Article 53 EEA by which they fixed prices for the different products, allocated sales quotas, agreed on and implemented price increases, issued price announcements in accordance with their agreements, sold the products at the agreed prices, set up a machinery to monitor and enforce adherence to their agreements, and participated in a structure of regular meetings to implement their plans.

(a) Participants, product, duration

Vitamin	Participants	Duration <sup>(a)</sup>	
		from	to
Vitamin A	Roche, BASF, Rhône-Poulenc (Aventis)	September 1989	February 1999
Vitamin E	Roche, BASF, Rhône-Poulenc (Aventis), Eisai	September 1989	February 1999
Vitamin B1 (thiamine)	Roche, Takeda, BASF	January 1991	June 1994
Vitamin B2 (riboflavin)	Roche, BASF, Takeda	January 1991	September 1995
Vitamin B5 (calpan)	Roche, BASF, Daiichi	January 1991	February 1999
Vitamin B6	Roche, Takeda, Daiichi	January 1991	June 1994
Folic acid (B)	Roche, Takeda, Kongo, Sumika	January 1991	June 1994
Vitamin C	Roche, BASF, Takeda, Merck	January 1991	August 1995
Vitamin D3	Roche, BASF, Solvay Pharm, Rhône-Poulenc (Aventis)	January 1994	June 1998
Vitamin H (biotin)	Roche, Merck, Lonza, Sumitomo, Tanabe, BASF	October 1991	April 1994
Beta-carotene	Roche, BASF	September 1992	December 1998
Carotinoids	Roche, BASF	May 1993	December 1998

<sup>(a)</sup> The duration is not necessarily the same for all participants.

(b) Participants by product

	Vitamin A	Vitamin E	Vitamin B1	Vitamin B2	Vitamin B5	Vitamin B6	Folic acid	Vitamin C	Vitamin D3	Vitamin H	Beta-carotene	Carotinoids
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Roche	•	•	•	•	•	•	•	•	•	•	•	•
BASF	•	•	•	•	•			•	•	•	•	•
Rhône-Poulenc (Aventis)	•	•							•			
Lonza										•		
Solvay									•			
Merck								•		•		

	Vitamin A (1)	Vitamin E (2)	Vitamin B1 (3)	Vitamin B2 (4)	Vitamin B5 (5)	Vitamin B6 (6)	Folic acid (7)	Vitamin C (8)	Vitamin D3 (9)	Vitamin H (10)	Beta-carotene (11)	Carotino- ids (12)
Daiichi					•	•						
Eisai		•										
Kongo							•					
Sumika							•					
Sumitomo										•		
Takeda			•	•		•	•	•				
Tanabe										•		

## 1.2. THE INDUSTRY

### 1.2.1. VITAMINS

(3) Vitamins are a group of micronutrients of various types of organic compounds required in small amounts in human and animal diet for normal growth, development and maintenance of life. Their physiological function in the organism and mode of action are diverse. Some vitamins are essential sources of certain coenzymes necessary for metabolism; others are involved in the metabolism of other vitamins. **All known vitamins can be synthesised chemically.**

(4) With very few exceptions, the living organism cannot itself synthesise vitamins. They have to be supplied in the diet or in dietary supplements. There are some 15 major vitamins.

(5) Vitamins are often grouped according to their solubility properties: of the products relevant for this case vitamin C and the B complex vitamins are water soluble; vitamins A, E and D are fat soluble.

(6) Compound animal feeds contain the vitamins required for the health and growth of particular species. Vitamins are **added to human food products** to replace losses in processing, to fortify the product, and also to act as antioxidants or colourants. Vitamins for pharmaceutical purposes are marketed to the public as **diet supplements** in tablet or capsule form. In the cosmetics industry, vitamins are added to skin and healthcare products.

(7) **Bulk vitamins** are sold in different forms according to the product and the application: crystalline, in oil, with a protective coating or in a powder matrix.

(8) The products with which this decision is concerned are those bulk synthetic substances which belong to the following groups of vitamins and closely related products: A, E, B1, B2, B5, B6, C, D3, biotin (H), folic acid (M), beta-carotene and carotinoids.

(9) Each group of vitamins includes those interrelated substances which have the same properties in their own biological field. Each has specific metabolic functions and is therefore not interchangeable with the other groups. In addition, the various group of vitamins when combined have a complementary synergistic effect.

### 1.2.2. THE VITAMIN MARKETS AND PRODUCTS — OVERVIEW

(10) The three largest producers of vitamins in the world are **Roche, BASF and Aventis**, formerly Rhône-Poulenc <sup>(4)</sup> with overall market shares of approximately [40 to 50] %, [20 to 30] % and [5 to 15] % respectively.

(11) Roche and BASF each produce a wide range of vitamins for both animal nutrition and for human usage, pharmaceutical and food.

(12) The vitamin activity of Aventis is confined to the animal feed sector for which it produces vitamins A and E and buys in for resale certain other vitamins from other producers.

(13) The total world bulk vitamins market (1999) is estimated at some EUR 3,25 billion.

(14) In volume terms, worldwide production of vitamins for animal feed, excluding choline chloride — vitamin B4,

not the subject of the present procedure, is around 60 000 tonnes per year; pharmaceutical/food tonnage totals around 65 000 tonnes.

- (15) The EEA market for the products which are the subject of the present Decision was worth around ECU 800 million, at ex-producer prices, in 1998.
- (16) **Vitamins A and E together comprise half the total market for vitamins.** In 1998, the last full year of the cartel for these products, the vitamin E market in the Community was worth ECU 250 million; vitamin A sales aggregated some ECU 150 million.
- (17) Sales of bulk vitamin C, which in 1995 had accounted for ECU 250 million in the Community, came to ECU 120 million, the price having more than halved since the ending of cartel arrangements at the end of 1995.
- (18) The value of the vitamins market <sup>(5)</sup> in the Community/EEA from 1994 to 1998 was as follows:

(in ECU million)

Product	1994	1995	1996	1997	1998
<b>Vitamin A</b>	135	140	145	145	<b>150</b>
<b>Vitamin E</b>	190	210	220	230	<b>250</b>
Vitamin B1	18	15	12	14	15
Vitamin B2	41	44	38	33	34
Vitamin B5	31	32	32	32	35
Vitamin B6	15	11	10	10	11
Folic acid	10	N/A	N/A	N/A	N/A
<b>Vitamin C</b>	225	250	165	115	<b>120</b>
Vitamin D3	16	19	20	17	20
Vitamin H	35	36	31	25	23
Beta-carotene	55	60	66	70	76
Canthaxanthin	49	52	50	52	50
Total	820	869	789	743	784

Source: Roche market share statistics.

Table I in the Annex gives the breakdown for each vitamin product by Member State over the same period.

- (19) Some 70 % of production of vitamins A and E is animal feed grade and 30 % for food pharmaceutical grade; in vitamin C, 80 % is intended for human consumption.

(20) Besides selling individual feed grade vitamins in bulk, much of this to 'pre-mixers' which combine vitamins with other nutrients to form a package in powder or liquid form for use in the production of animal feed, the two major producers Roche and BASF are both forward-integrated and have their own operations producing pre-mixes, as does Rhône-Poulenc. A substantial proportion of their 'feed grade' vitamin production is not sold on the 'free' market but is employed internally in the manufacture of their 'pre-mixes'. These are blends containing other nutrients and medication besides vitamin concentrates which are added in small amounts to the main feed mixture. The remainder is sold to wholesalers, pre-mixers or directly to animal feed compounders.

(21) **The vitamin producers sell the food/pharmaceutical grade product in 'straight' form to intermediate customers,** such as other vitamin producers, vitamin formulators who buy in concentrated form and to distributors and resellers. Vitamin producers which do not themselves produce particular vitamins may buy in their requirements from other vitamin producers.

#### 1.2.2.1. *The individual vitamin product markets*

##### **Vitamins A and E**

(22) Vitamin A is a fat-soluble chemical substance with a variety of applications primarily in the feed industry. Smaller quantities of vitamin A are also sold to the food and pharmaceutical industries. Sales to the cosmetics industry are minimal. Vitamin A is necessary to ensure normal growth as well as healthy skin, eyes, teeth, gums and hair.

(23) Vitamin E is also a fat-soluble chemical substance with a variety of applications in animal and human nutrition as well as in the pharmaceutical and cosmetics industry. Vitamin E is necessary for the formation and functioning of red blood corpuscles, muscles and other tissue. Vitamin E can either be derived from natural sources or be generated as a synthetic product. There is only a very limited competitive overlap between synthetic and natural vitamin E which only occurs in human applications.

(24) The majority of synthetic vitamin E supplies is purchased by the feed industry, the remainder being consumed by the pharmaceutical and food industry as well as the cosmetics industry which has, however, only emerged as a sizeable purchaser of the product since 1996.

- (25) Vitamins A and E together account for some 60 % of the worldwide demand for animal feed vitamins. Both vitamins are largely bought by the same customers, especially in the animal feed industry. The world demand for vitamin E is around 22 000 tonnes annually, for vitamin A, around 15 000 tonnes.
- (26) Roche was the first producer to synthesise vitamins A and E, holding a monopoly on both vitamins until the late 1960s, at which time Rhône-Poulenc began marketing vitamin A for animal feed. BASF entered the market for both products in 1970, and shortly afterwards Rhône-Poulenc extended its activities to vitamin E, for animal feed only. The Japanese producer Eisai also began marketing vitamin E in Europe for human and animal usage in 1967; it does not produce vitamin A.
- (27) Roche and BASF thus supply vitamin A and E for use in animal feed and human food, Rhône-Poulenc supplies both vitamins, for animal feed only and Eisai supplies vitamin E for both animal and human use. The only significant other producer of vitamin A is the Russian company Bel Vitamini with about 7 to 9 % of the total market volume. As for vitamin E, small Chinese producers have slowly increased their aggregate share from less than 1 % in 1989 to 7 % by the end of the 1990s.
- (28) The bulk vitamin A market in the EEA in 1998 was worth around ECU 150 million; the vitamin E market, ECU 250 million. The average price of vitamin A in the EEA rose from around ECU 38,80/kg in 1990 to ECU 54,50 in 1998 (see Table II in the Annex). Vitamin E prices in the EEA increased from ECU 18,60/kg in 1990 to ECU 31,10 by 1998 (see Table III).

#### **Vitamin B1**

- (29) Vitamin B1 (thiamin) is essential for the metabolism of carbohydrates through its coenzyme functions. Deficiency causes reduction of growth and nervous disorders. It is a water-soluble vitamin used for animal and human nutrition and in the pharmaceutical industry. Chemical synthesis is a complex process involving some 15 to 17 different steps.
- (30) The main producers are Roche, Takeda and several Chinese manufacturers. BASF ceased its own production of vitamin B1 in 1989 and concluded a five-year supply agreement to obtain its requirements from Roche.

- (31) Vitamin B1 prices (feed grade) in Europe were in the region of ECU 32,50/kg, rising by 1993 to ECU 38,00/kg before falling sharply in 1994 and reaching a low in 1996 of ECU 16/kg (see Table IV). The European market in vitamin B1 in 1994 was worth some ECU 18 million (1998: ECU 15 million).

#### **Vitamin B2**

- (32) Vitamin B2 is found in all living cells and is involved in numerous reactions operating energy in cellular metabolism. Riboflavin coenzymes are essential for the conversion of vitamins B6 and folic acid into valid active form.
- (33) Vitamin B2 is mainly used in the animal feed industry. Only 30 % of production is employed in food manufacturing and pharmaceuticals.
- (34) The principal manufacturers of vitamin B2 are Roche and BASF, with world market shares of 55 % and 30 % respectively in 1990. The third largest supplier is Takeda with 11 % in 1990. There are other producers in Russia, China and the United States of America. So far, only Roche and Takeda produce synthetic vitamin B2; the others employ a fermentation process.
- (35) The European price of riboflavin in 1991 was about ECU 43/kg, rising to about ECU 56 in 1994, after which it fell to the present level of EUR 40 (see Table V in the Annex). The European market for vitamin B2 in 1995 was worth some ECU 44 million (1998: ECU 34 million).

#### **Vitamin B5**

- (36) Vitamin B5 (pantothenic acid, also referred to as calpan) plays a key role in the metabolism of carbohydrates, proteins and fats, and is therefore important for the maintenance and repair of all cells and tissues. Dietary deficiency of calpan in human beings results in a wide variety of clinical symptoms. In animals, a deficiency of vitamin B5 is manifested in retarded growth, impaired fertility, neuromuscular and dermatological disorders and sudden death.
- (37) Calpan is produced in two main forms: a pure form known as d-calpan, used both for human consumption and as an ingredient in animal feed and a mixed form, dl-calpan, consisting as to 45 % of d-calpan and as to 55 % of an inert filler, which is used for animal feed only. Reflecting its chemical composition, the price of d-calpan is double that of dl-calpan.

- (38) Vitamin B5 is another vitamin for which Roche and BASF were among the three leading producers worldwide; the other main manufacturer of this product is Daiichi of Japan. There are also minor producers in Japan, China, Poland and Romania.
- (39) Roche and BASF between them have about two thirds of the market in Europe and worldwide.
- (40) Roche, BASF and Daiichi produce only d-calpan, the majority of which is supplied to the animal feed industry. Alps (Japan) and companies in Romania and Poland produce dl-calpan.
- (41) In the animal-feed sector, which accounts for the vast majority of production, d-calpan and dl-calpan are sold to pre-mixers who mix calpan with other vitamins and sell the pre-mix package to manufacturers of animal feed.
- (42) Daiichi does not produce pre-mixes. Both Roche and BASF are however integrated downstream into pre-mixes; each owns and operates some seven pre-mix plants in Europe. They supply d-calpan both to their own pre-mixing operations (captive use) and to other pre-mixers.
- (43) The price of d-calpan in Europe in 1990 was around ECU 12/kg. It currently sells at around EUR 20/kg (see Table VI in the Annex). The European market for calpan in 1998 was worth some ECU 35 million.

### Vitamin B6

- (44) Vitamin B6 (pyridoxine) serves as a coenzyme for many enzymes involved in the metabolism of amino acids. It plays a significant role in the metabolism of proteins, carbohydrates and fats. Adult ruminants are usually self-sufficient in vitamin B6, but young animals require supplements while growing. Vitamin B6 has a variety of uses in animal and human nutrition and in the pharmaceuticals industry.
- (45) The main producers of vitamin B6 are Roche, Takeda, Daiichi and several Chinese producers. BASF and Merck ceased production in 1991/92 and now obtain their requirements from Roche.
- (46) In 1989, Roche had a world market share in Vitamin B6 of about 40 %; Daiichi had 12 % and Takeda 11 %. The Chinese producers had only 3 % of the world market in 1989, rising to 16 % in 1997 with, according to Roche, an exceptional interim 'high' of about 48 % in 1993.
- (47) The price for vitamin B6 in Europe in 1990 was around ECU 25/kg, rising by early 1993 to ECU 46,50/kg. It is now in the region of EUR 20/kg (see Table VII in the Annex). In 1994 the Community market for vitamin B6 was valued at some ECU 15 million. It is currently worth about EUR 11 million.

### Folic acid

- (48) Folic acid forms part of the B complex of vitamins. The name is applied to a whole group of compounds also known as folates or folacin. It plays an important role in the metabolism of DNA and RNA, the carriers of genetic information in all living organisms. Folic acid reduces the risk of neural tube birth deformities in humans if consumed in adequate quantities by the expectant mother during pregnancy. In humans folic acid deficiency can also result in anaemia. Folic acid deficiency in animals causes anaemia and, in poultry, reduced laying performance and poor feathering.
- (49) The producers of folic acid are Roche in Europe and Takeda, Sumika, a subsidiary of Sumitomo, and Kongo in Japan. Roche produces folic acid mainly for incorporation in its pre-mixes. The Japanese folic acid producers do not produce pre-mix, with the exception of a Takeda subsidiary which supplies the product locally in Japan.
- (50) Until 1989, the three Japanese producers manufactured nearly all the world supply of folic acid. Until then Roche did not produce folic acid, but obtained its requirements from Takeda. In 1988/89 Roche terminated the supply agreement and started its own production.

- (51) In 1991 folic acid demand worldwide was around 300 tonnes, worth some USD 30 million (ECU 25 million). The European market was worth around ECU 9 million to ECU 10 million. The price of folic acid (per kg) in Europe in 1991 was DEM 160 (approximately ECU 80). It is now about DEM 100 (approximately EUR 51,13).

### Vitamin C

- (52) Vitamin C (ascorbic acid) is a water-soluble vitamin which is used mainly in the human nutrition and pharmaceutical industries. It is required for the production in the living organism of collagen, the intercellular substance which gives structure to muscles, bone, vascular tissue and cartilage. Deficiency causes scurvy weakening of the tissues and intercapillary bleeding.

- (53) Vitamin C, together with vitamin E and beta-carotene, is believed to act as an antioxidant with a preventive effect on degenerative cardiovascular diseases and cancer, it prevents the conversion of nitrates into carcinogenic substances. Humans are dependent upon vitamin C supply in the diet. Most food producing animals but not fish can synthesise vitamin C themselves, but may require a supplement to natural production. Vitamin C is also used as an antioxidant to protect the colour or aroma of foodstuffs.
- (54) Roche had a monopoly in the production of vitamin C until the 1970s, when Takeda (Japan), Merck (Germany) and BASF entered the market. In 1990 Roche had 40 % of the world market, Takeda 23 % and Merck and BASF some 14 % between them. In Europe, the shares were Roche 36 %, Takeda 11,5 % and BASF/Merck 24 %.
- (55) The price of vitamin C in Europe in 1990 was ECU 11,50/kg. After reaching an interim high in 1993/94 of around ECU 15/kg, prices currently stand at EUR 7,50/kg (see Table VIII). The value of the vitamin C market worldwide in 1990 was ECU 650 million, the European market was around ECU 210 million. In the last year of the cartel (1995) the European market was worth some ECU 250 million (current annual value: EUR 120 million).

### Vitamin D3

- (56) Vitamin D3, a fat-soluble vitamin like vitamins A and E, is sold either in straight form or more often in a blend with vitamin A known as 'AD3'. Only about 10 % of the vitamin D3 market (by value) is accounted for by human food applications: the vast bulk of production is used in animal feed.
- (57) Vitamin D3 is required for healthy bone growth: it is necessary for the absorption of calcium and phosphorus from the small intestine, their reabsorption in the kidneys and the mineralisation of bones. It also plays a role in the proper functioning of muscles, nerves, blood clotting and cell growth. Deficiency leads to rickets in children and osteomalacia in adults; in animals, it leads to reduced growth and leg disorders and, in poultry, thin egg shells.
- (58) The first company to produce vitamin D3 in industrial quantities was Duphar, formerly part of Philips and now owned by Solvay. Solvay Pharmaceuticals produced about half the world requirement of vitamin D3 in the early 1990s but its share of the 'third party' market was much smaller. This was because some 40 % of Solvay's

production of vitamin D3 was supplied in concentrated form to Rhône-Poulenc which incorporated it in an AD3 combination product or blend marketed under its own name.

- (59) Roche, BASF and Rhône-Poulenc are all forward integrated in the market and have their own vitamin pre-mix operations which consume vitamin D3. Solvay does not produce blends or pre-mixes: it supplies the straight product to other vitamin producers like Rhône-Poulenc, vitamin formulators which buy in concentrated form, distributors and resellers and to pre-mixers and feed producers.
- (60) Vitamin D3 is marketed at different prices in several different product forms. The producers use the D3 500 (feed grade) form as the market grade. The price for feed grade vitamin D3 in Europe in 1993 was subject to considerable variations between the different countries. The European market for vitamin D3 in 1998 was worth some ECU 20 million.

### Vitamin H

- (61) Vitamin H (biotin), a water-soluble vitamin, assists in the utilisation of protein, folic acid and vitamin B12 (the latter is not the subject of the present procedure). Biotin is produced through chemical synthesis involving some 20 different processes Tanabe is developing a fermentation process but it is not yet in commercial use. It is sold in pure and diluted form.
- (62) The animal feed sector accounts for some 90 % of Vitamin H production, the remainder being employed in the pharmaceutical industry. Feed grade biotin is sold in a 1 % diluted form in the United States of America; in Europe and elsewhere a 2 % solution is used for feed grade. Pharmaceutical grade is marketed in pure form.
- (63) The main producers of Vitamin H are Roche, Sumitomo, Tanabe, Lonza and Merck. Lonza ceased production in 1996. The largest producer of biotin is Roche which currently has some [45 to 55] % of the world market, followed by Sumitomo and Tanabe, each with [15 to 25] %. Merck has some [5 to 15] % of the world market. Merck supplies the vast majority of its production (90 %) of biotin to BASF in the form of animal feed grade 1 % and 2 % concentrations.
- (64) In Europe the biotin market is now worth some EUR 25 million (in 1995, ECU 36 million). Food/pharmaceutical grade (100 % pure) biotin is priced per gram. In 1990 the European price was around ECU 6,8/gm (DEM 14/gm), remaining stable until about 1995 since when it has declined steadily. The current price is around EUR

3,0/gm. The feed grade biotin price in 1990 was ECU 3,5/gm for the active ingredient. It begun to decline in 1995 and biotin feed grade currently sells at about EUR 1,0/gm.

### Beta-carotene and carotinoids

- (65) Strictly speaking these products are not vitamins. Beta-carotene is a pro-vitamin of vitamin A found naturally in plants; when ingested it is converted by the living organism into vitamin A. The vast majority of beta-carotene supplies are purchased by the food and also by the pharmaceutical industry.
- (66) Carotinoids are mostly used as pigments for foods and cosmetics and to impart colour to animal flesh. Carotinoids are generally classified by the colour they produce when ingested by animals. Canthaxanthin and citranaxanthin are used to produce a red or golden colour and are referred to as the red carotinoids.
- (67) The only producers of these products worldwide are Roche and BASF. Until the early 1990s Roche was the dominant producer with a 90 % market share. In 1991 BASF expanded its production facilities for beta-carotene and by late 1992 had doubled its share of the market in this product to 21 %.
- (68) The European market for beta-carotene in 1993 was worth some ECU 45 million, increasing by 1998 to some ECU 76 million. Germany accounts for more than half of the consumption of beta-carotene in the Community/EEA. The beta-carotene price in 1993 was ECU 677/kg; it is now around EUR 748/kg. The Community market for canthaxanthin, the principal carotinoid product, is in the region of EUR 50 million annually. The price for canthaxanthin is currently around EUR 1 250/kg.

#### 1.2.3. THE RELEVANT GEOGRAPHIC MARKET FOR VITAMINS A, E, B1, B2, B5, B6, C, D3, H, FOLIC ACID, BETA-CAROTENE AND CAROTINOIDS

- (69) The Commission considers that the markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids are at least EEA-wide. However, there are several indications that point to worldwide markets for each of the vitamin products.
- (70) During the relevant period, the vitamin markets for all the products mentioned were essentially dominated by a global leader, Roche, and a very significant presence of two other producers, BASF and Takeda, the latter for vitamins B1, B6 and C. The combination of Roche with one of the other two producers resulted in market

shares in the EEA and worldwide of over 50 % for any of the relevant vitamin products.

- (71) Transportation costs and tariff barriers could lead to somewhat higher costs, but they did not prevent the producers of any of the relevant vitamin products from trading on a worldwide basis. This is demonstrated by the fact that a number of companies based in Japan traded in Europe. In addition, all the main companies sold the various products in the main regional markets America, Asia, Europe.
- (72) Finally, the worldwide character of the markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids is also confirmed by the structure, organisation and operation of each of the cartels.
- (73) The Commission therefore concludes that the markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids are worldwide.

#### 1.2.4. INTER STATE TRADE

- (74) **European bulk vitamin production is concentrated at a small number of sites.** Roche manufactures vitamins A and E at Sisseln, Switzerland, while BASF's facility is in Ludwigshafen (Germany) and Rhône-Poulenc's plant in Commentry (France). Vitamin C is now produced by Roche at Dalry, Scotland (the Grenzach plant in Germany for vitamin C closed in 1994) and by BASF in Grenaa, Denmark. The third European producer is Merck in Germany. Roche's B-complex production is at Grenzach in Germany. BASF has factories in Ludwigshafen and Grenaa.
- (75) Most Community/EEA Member States import the totality of their bulk vitamin requirements, the vast majority of this from production originating in another Member State (Denmark, France, Germany, the United Kingdom).

#### 1.2.5. THE PRODUCERS

##### 1.2.5.1. Roche

- (76) **Hoffmann-La Roche AG is one of the world's largest research-based pharmaceutical and healthcare groups.** The company's headquarters are in Basel, Switzerland. It has manufacturing facilities in a number of Member States.
- (77) Total group sales worldwide in 1998 were CHF 24,66 billion (ECU 15,3 billion) producing a net income of CHF 4,4 billion equivalent to 18 % of sales. The vitamins and fine chemicals division accounted for 15 % of group turnover (CHF 3,63 billion). Vitamin sales



worldwide totalled CHF 1,96 billion and carotinoids also the subject of this procedure, although not strictly speaking vitamins CHF 650 million. The Division's earnings before interest, tax and depreciation in 1998 were CHF 869 million (24 % of sales) or ECU 539 million. Operating profits were CHF 673 million (ECU 417 million). Roche is the largest manufacturer of vitamins both worldwide and in Europe. The company started producing vitamin C by chemical synthesis in 1935 and expanded its activities to produce the whole range of vitamins. In the vitamins industry as a whole, Roche has a market share of around 50 % worldwide. Its range of production is the widest of all the vitamin producers. Roche also supplies other vitamin products bought in from other manufacturers so that it markets the full range of vitamins for all possible uses: animal feed, food, pharmaceutical and cosmetics <sup>(6)</sup>.

- (78) The Vitamins and Fine Chemicals Division of Roche is now located at Kaiseraugst, near Basel. Vitamins and carotinoids account for 72 % of the Division's turnover. Other products of the Division include feed enzymes, emulsifiers, citric acid and fatty acids.
- (79) The head office of the division is responsible for 'strategic issues', while operational matters fall under five area centres which cover respectively Europe, North America, Latin America, Asia-Pacific and China.
- (80) Roche Vitamins Europe SA, the marketing and distribution organisation for Europe, the Middle East, Africa and India is located in Müttenz. [...] (\*) . Distribution centres for Europe are located in Venlo (the Netherlands) and Village-Neuf (France).
- (81) During the relevant period, the most senior corporate officers responsible for the vitamins business were the head of the vitamins and fine chemicals division, who is also ex officio a member of the executive committee of Hoffmann-La Roche AG and the head of vitamins marketing.

#### 1.2.5.2. BASF

- (82) BASF AG is a multinational chemical company organised under the laws of Germany and has its principal place of business in Ludwigshafen, Germany. Its operations cover oil and gas, bulk chemicals, plastics, high performance chemical products, plant-protection products and pharmaceuticals. The consolidated

turnover of the BASF group including subsidiary companies in which BASF has at least a 50 % shareholding in 1997 was some DEM 54 billion (ECU 27,45 billion).

- (83) BASF's core business is divided into five segments: chemicals; plastics and fibres; colourants and finishing products; health and nutrition; oil and gas. The health and nutrition segment of BASF includes the fine chemicals division which in turn includes vitamins for human and animal nutrition. BASF produces vitamins as bulk chemicals and in pre-mixes in Europe, North and South America and in China.
- (84) In Europe it has vitamin manufacturing facilities at its Ludwigshafen headquarters in Germany as well as at three sites in Denmark: Grenaa, Ballerup and Dianalund. The vitamin products common to the production programme of Roche and BASF are vitamins A, E, B2, B5, C, D3, beta-carotene and carotinoids. In two other vitamins (B1 and H) BASF is a major bulk supplier although it does not itself manufacture the product. BASF ceased its own production of vitamin B1 in 1989 but continued to act as a major supplier selling product bought in from other producers. It also purchases for resale the major part of the biotin (vitamin H) output of another German producer, Merck.
- (85) During the relevant period, the senior executives responsible for BASF's vitamin business were the president of the fine chemicals division and the head of marketing for vitamins.
- (86) The president of the fine chemicals division was the most senior corporate officer with operational responsibility for vitamins and reported directly to a designated member of BASF's board of executive directors (Vorstand).
- (87) The head of vitamins marketing reported to the head of the fine chemicals division and was the most senior executive with sole responsibility for vitamins.

#### 1.2.5.3. Rhône-Poulenc (now Aventis)

- (88) Rhône-Poulenc SA, whose corporate headquarters were in Courbevoie, France, was an international company involved in the research, development, production and marketing of organic and inorganic intermediate chemicals, speciality chemicals, fibres, plastics, pharmaceuticals and agricultural chemicals.
- (89) Its three core businesses were pharmaceuticals, plant and animal health and speciality chemicals. Total group sales in 1998 were FRF 86 800 million (ECU 13,15 billion).

- (90) On 1 December 1998 Rhône-Poulenc and Hoechst AG, the German chemical producer, announced their agreement on a plan to merge their life sciences activities in a new entity 'Aventis' to be owned 50:50 by the two parent companies and to divest their chemical operations over a three-year period. The next step was to be the complete merger of the two parent companies.
- (91) An accelerated programme for the merger project was announced in May 1999, subject to regulatory and other approvals. On 9 August 1999 the Commission decided under Article 6(1)(b) of Council Regulation EEC No 4064/89 of 21 December 1989 on the control of concentrations between undertakings<sup>(7)</sup>, as last amended by Regulation (EC) No 1310/97<sup>(8)</sup> not to oppose the concentration and to declare it compatible with the common market<sup>(9)</sup>.
- (92) On 15 December 1999 the completion of the merger was announced. Aventis is led by a board of management of four members and an executive committee which consists of the four board members and five other senior executives. The new group is divided into two business areas, Aventis Pharma and Aventis Agriculture. Aventis Agriculture comprises the crop science, plant biotechnology, animal nutrition and animal health businesses. The chief executive officer of Aventis Agriculture, who was formerly the president of Rhône-Poulenc's plant and animal health division, is also a member of the executive committee of Aventis. The new company is headquartered in Strasbourg.
- (93) Rhône-Poulenc Animal Nutrition (RPAN) was a wholly owned subsidiary of Rhône-Poulenc which produced and marketed nutritional additives including vitamins and amino acids for use in animal foodstuffs (poultry, pigs and ruminants). Its name has been changed to 'Aventis Animal Nutrition'. RPAN was directly attached to the plant and animal health division of Rhône-Poulenc SA and reported to it accordingly.
- (94) RPAN's worldwide corporate headquarters is in Antony, near Paris. It also has regional sales headquarters for Europe, the Middle East and Africa (based in France); North America; South America and Asia-Pacific. RPAN's main feed additive products are vitamins A and E used in poultry and pig feed and methionine, an essential amino-acid used mainly for poultry feed and not the subject of the present procedure. Vitamins A and E are produced in Commentry, France. Some 90 % of Rhône-Poulenc's vitamin production is sold in 'straight' form, the rest in pre-mixes.
- (95) RPAN produced vitamins only for the animal feed market, its predecessor company AEC having left the human vitamins' market in or about 1988.
- (96) The most senior corporate officer in Rhône-Poulenc with operational responsibility for the vitamins business was the president and chief executive officer of Rhône-Poulenc Animal Nutrition.
- (97) Prior to the merger with Hoechst, RPAN was subject to the direct supervision of the president of the AGRO division of Rhône-Poulenc, renamed plant and animal health division in 1997. Following the merger with Hoechst, the equivalent post is currently CEO of Aventis Agriculture.
- 1.2.5.4. Lonza**
- (98) Lonza AG is a Swiss chemical producer founded in 1897. In 1994 it was acquired by what was then Alusuisse AG, as an independently managed subsidiary and became part of the Alusuisse Lonza Group (Algroup).
- (99) The group, one of Switzerland's largest industrial companies, was active for 25 years in aluminium, packaging for pharmaceuticals and cosmetics, chemicals and energy. In 1998 Algroup demerged its chemicals and energy activities from the rest of the group in anticipation of the proposed merger of its aluminium and specialty packaging activities with those of Pechiney and Alcan<sup>(10)</sup>.
- (100) The demerged entity is responsible for fine chemicals, food additives and biotechnology products worldwide and energy generation in Switzerland and is named Lonza Group AG.
- (101) Despite the multiple restructuring of Lonza AG's parent groups, the company has never been merged into another operation and has remained a separately managed undertaking.
- (102) Net sales for 1998 of the entity now constituted as Lonza Group AG were CHF 2 153 million (ECU 1 340 million) and operating profit CHF 292 million (ECU 182 million). The group headquarters of Lonza Group AG are in Zurich. The fine chemicals and specialties division of Lonza Group is incorporated as Lonza AG (a 100 % subsidiary) and is located in Basel. Net sales of Lonza AG in 1998 were CHF 1 012 million (ECU 627 million).
- 1.2.5.5. Solvay**
- (103) Solvay Pharmaceuticals NV whose headquarters are in Weesp, the Netherlands, is part of the pharmaceuticals

group of Solvay SA, the Belgian chemical producer. Up to 1980 it was part of the Philips industrial group. It produces pharmaceutical drugs for human use. The only vitamin it produces and sells is vitamin D3. Its total turnover in 1998 was NLG 788 million (ECU 355 million).

#### 1.2.5.6. **Merck**

(104) Merck KgaA of Darmstadt, Germany is a pharmaceutical and health product manufacturer. It is established as the operating subsidiary of E. Merck oHG, a general partnership dating from 1827, which owns 75 % of the capital.

(105) Up to mid-1995 the business was owned by E. Merck oHG. In July of that year, Merck KgaA was set up and the commercial operations were transferred to it; E. Merck oHG now acts purely as a holding company.

(106) Total sales (all products) in 1998 were DEM 8,1 billion (ECU 4,12 billion). Merck's relevant products for the purposes of this procedure are vitamins C and H (biotin). The vast majority of Merck's output of biotin is supplied to BASF which resells in bulk.

#### 1.2.5.7. **Daiichi**

(107) Daiichi Pharmaceutical Co. Ltd of Tokyo, Japan, was founded in 1915 and produces a wide range of ethical pharmaceuticals, over-the-counter health products and veterinary products.

(108) Sales in 1998 came to JPY 280 805 million (ECU 1,92 billion). Daiichi's relevant vitamin production is in vitamins B5 (calpan) and B6.

#### 1.2.5.8. **Eisai**

(109) Eisai Co. Ltd of Tokyo is a leading Japanese pharmaceutical and drug manufacturer specializing in ethical drugs.

(110) Total sales in 1998 (year ending 31 March 1999) were JPY 284 860 million (ECU 1,95 billion), of which 3 % was in Europe. Eisai's only vitamin product is vitamin E, which accounts for some [5 to 15 ] % of total sales.

#### 1.2.5.9. **Kongo**

(111) Kongo Chemical Company Ltd of Toyama, Japan, is a privately owned producer of pharmaceutical preparations.

(112) Its total sales in 1998 were JPY 4 097 million (ECU 28 million). The only relevant product for present purposes is folic acid.

#### 1.2.5.10. **Sumitomo**

(113) Sumitomo Chemical Company Ltd of Osaka and Tokyo is one of Japan's largest chemical manufacturers, with a product range including basic chemicals, petrochemicals, fine chemicals, agricultural chemicals and pharmaceuticals.

(114) Total group sales in the financial year ending 31 March 1999 were JPY 927 700 million (ECU 6,3 billion). biotin (vitamin H) and folic acid are the relevant products for present purposes.

#### 1.2.5.11. **Sumika**

(115) Sumika Fine Chemicals Company of Osaka, Japan, is a wholly owned subsidiary of Sumitomo Chemical company.

(116) It was formed in April 1992 from the merger of Yodogawa Pharmaceutical with Daiei Chemical Industries and Okayama Chemicals on which occasion the new name was adopted.

(117) Total sales in the financial year 1998 were JPY 19 345 million (ECU 132,5 million). The relevant product for present purposes is folic acid.

#### 1.2.5.12. **Takeda**

(118) Takeda Chemical Industries Ltd, also of Osaka, and incorporated in 1925, is engaged in industrial chemicals, drugs, cosmetics and healthcare products and is a leading manufacturer of pharmaceuticals operating on a global basis; it is the principal vitamin producer in Japan and also one of the main producers of bulk vitamins worldwide. The Takeda products relevant for the present case are vitamins B1, B2, B6, C and folic acid.

(119) Takeda's total sales in 1998 amounted to JPY 841 816 million (ECU 5,7 billion). Overseas sales accounted for 16,1 % of total revenue. Food and vitamin products constituted 10 % of sales.

#### 1.2.5.13. **Tanabe**

(120) Tanabe Seiyaku Co. Ltd of Osaka is one of the leading pharmaceutical producers in Japan. Pharmaceutical products accounted for 81 % of revenue in 1998, the remainder of its business including food additives and

cosmetics. In 1998 total sales were JPY 216 billion (ECU 1,6 billion). Overseas sales comprised 13,8 % of 1998 revenues.

(121) The relevant product of Tanabe for present purposes is biotin. Tanabe buys in other bulk vitamins from other producers, including Roche (vitamins B1 and C) and either uses them in its downstream production or resells them as a trader.

(122) Tanabe's main customer for biotin in Europe is [...] (\*).

#### 1.2.6. TURNOVER AND MARKET SIZE

(123) The following tables give an overview of the relative importance of each undertaking on the worldwide and EEA market and of their respective size <sup>(1)</sup>:

(EUR million) <sup>(13)</sup>

Company	Total worldwide turnover <sup>(12)</sup> (2000)
F. Hoffmann-La Roche AG	17 678
BASF AG	35 946
Aventis SA (formerly Rhône-Poulenc)	22 304 (**)
Lonza AG	700
Solvay Pharmaceuticals BV	370
Merck KgaA	6 740
Daiichi Pharmaceutical Co. Ltd	3 187
Eisai Co. Ltd	3 635
Kongo Chemical Co. Ltd	39
Sumitomo Chemical Co. Ltd	10 462
Sumika Fine Chemicals Ltd	203
Takeda Chemical Industries Ltd	9 277
Tanabe Seiyaku Co. Ltd	1 950

(\*\*) [Rhône-Poulenc in 1999: EUR 12 598 million.]

For the following series of tables, the first column shows the name of the company concerned. The second column shows data for the worldwide turnover in the vitamin product concerned in the last complete calendar year of the infringement and, in brackets, the range of the company's market share in the worldwide market concerned during the time period of the infringement. The third column shows the same information as that of column two but in relation to the EEA-wide vitamin product market instead of the worldwide market. All of these figures are necessarily approximate.

#### Vitamin A

Turnover (1998, ECU million) and market share (1990 to 1998)

Company	Worldwide	EEA-wide
Roche	[...] ([40 to 50] %)	[...] ([35 to 45] %)
BASF	[...] ([30 to 40] %)	[...] ([25 to 35] %)
Rhône-Poulenc	[...] ([20 to 30] %)	[...] ([20 to 30] %)
Others	34 (4 %)	28 (9 %)

#### Vitamin E

Turnover (1998, ECU million) and market share (1990 to 1998)

Company	Worldwide	EEA-wide
Roche	[...] ([35 to 45] %)	[...] ([30 to 40] %)
BASF	[...] ([20 to 30] %)	[...] ([20 to 30] %)
Rhône-Poulenc	[...] ([10 to 20] %)	[...] ([15 to 25] %)
Eisai	[...] ([5 to 15] %)	[...] ([10 to 20] %)
Others	117 (4 %)	72 (8 %)

#### Vitamin B1

Turnover (1993, ECU million) and market share (1991 to 1993)

Company	Worldwide	EEA-wide
Roche	58 (53 %)	23 (52 %)
Takeda	26 (24 %)	16 (28 %)
BASF	12 (11 %)	3 (9 %)
Others	13 (12 %)	4 (11 %)

#### Vitamin B2

Turnover (1994, ECU million) and market share (1991 to 1994)

Company	Worldwide	EEA-wide
Roche	65 (47 %)	20 (46 %)
BASF	44 (29 %)	14 (29 %)
Takeda	24 (12 %)	6 (13 %)
Others	18 (12 %)	5 (12 %)

#### Vitamin B5

Turnover (1998, ECU million) and market share (1991 to 1998)

Company	Worldwide	EEA-wide
Roche	[...] ([30 to 40] %)	[...] ([40 to 50] %)
Daiichi	[...] ([25 to 35] %)	[...] ([25 to 35] %)
BASF	[...] ([20 to 30] %)	[...] ([15 to 25] %)
Others	32 (14 %)	3 (7 %)

**Vitamin B6**

Turnover (1993, ECU million) and market share  
(1991 to 1993)

Company	Worldwide	EEA-wide
Roche	40 (45 %)	15 (51 %)
Takeda	11 (10 %)	3 (11 %)
Daiichi	10 (9 %)	2 (8 %)
Others	41 (35 %)	11 (30 %)

**Vitamin C**

Turnover (1994, ECU million) and market share  
(1991 to 1994)

Company	Worldwide	EEA-wide
Roche	266 (40 %)	79 (51 %)
Takeda	169 (24 %)	13 (8 %)
BASF	48 (6 %)	18 (11 %)
Merck	57 (8 %)	13 (8 %)
Others	266 (21 %)	43 (22 %)

**Vitamin D3**

Turnover (1997, ECU million) and market share  
(1994 to 1997)

Company	Worldwide	EEA-wide
Roche	26 (40 %)	6 (28 %)
Solvay	21 (32 %)	9 (38 %)
BASF	11 (15 %)	4 (20 %)
Rhône-Poulenc	6 (9 %)	2 (10 %)
Others	3 (4 %)	1 (4 %)

**Vitamin H**

Turnover (1993, ECU million) and market share  
(1991 to 1993)

Company	Worldwide	EEA-wide
Roche	44 (45 %)	13,6 (37 %)
Sumitomo	22 (23 %)	4,4 (12 %)
Tanabe	15,7 (16 %)	9,6 (26 %)
Merck	6,3 (7 %)	4 (11 %)
Lonza	4,7 (5 %)	2,8 (8 %)
BASF	3,7 (4 %)	2 (6 %)

**Folic acid**

Turnover (1993, ECU million) and market share  
(1991 to 1993)

Company	Worldwide	EEA-wide
Roche	9,8 (65 %)	2,3 (55 %)
Takeda	4 (27 %)	1,8 (43 %)
Sumika	0,6 (4 %)	0,03 (> 1 %)
Kongo	0,8 (5 %)	0,12 (2 %)

**Beta-carotene**

Turnover (1998, ECU million) and market share  
(1992 to 1998)

Company	Worldwide	EEA-wide
Roche	[...] ([70 to 80] %)	[...] ([80 to 90] %)
BASF	[...] ([20 to 30] %)	[...] ([10 to 20] %)

**Carotinoids**

Turnover (1998, ECU million) and market share  
(1993 to 1998)

Company	Worldwide	EEA-wide
Roche	[...] ([70 to 80] %)	[...] ([60 to 70] %)
BASF	[...] ([20 to 30] %)	[...] ([10 to 20] %)

## 1.3. PROCEDURE

- (124) On 12 May 1999 Rhône-Poulenc announced to the Commission that, pursuant to the Commission notice on the non-imposition or reduction of fines in cartel cases ('the Leniency Notice')<sup>(14)</sup>, it wished to inform the Commission of its involvement and that of other producers in the European aspect of a [...] (\*) vitamins cartel, and intended to cooperate with its investigations.
- (125) On 19 May 1999 Rhône-Poulenc provided a written summary to the Commission of activities in the market for vitamins A and E which on its own admission constituted a violation of Article 81 of the Treaty.
- (126) Rhône-Poulenc provided a supplementary submission to the Commission on 25 May 1999 containing further particulars of the cartel.
- (127) Roche and BASF wrote to the Commission on 4 and 6 May 1999 respectively followed by a joint approach on 17 May 1999. They informed the Commission of their intention to cooperate with any investigations, but without at the time providing any statement or documentary evidence.

- (128) On 26 May 1999 the Commission addressed to Roche and BASF requests for information under Article 11 of Regulation No 17 concerning their involvement in suspected collusive arrangements in vitamins A, B2, B5, C, E, beta-carotene and pre-mixes, the products identified in the United States of America's proceedings, (see recitals 149 to 154).
- (129) Each company provided the Commission with a memorandum admitting infringements of Article 81: Roche on 4 June 1999, BASF on 15 June 1999. These statements only covered the vitamin products which were the subject of the prosecutions in the United States of America. As regards pre-mixes, the producers claimed that while there had been sporadic discussions on pre-mix in Europe, there had never been any effective agreements for this format, since most sales were made as 'straights' <sup>(15)</sup>.
- (130) By letter of 23 June 1999, BASF provided the Commission with an extensive bundle of documentation relating principally to the volume control and monitoring systems operated under the cartel for the above vitamin products from 1989 onward.
- (131) Roche also provided the Commission with extensive documentation on the volume control system in vitamins A, E, B5, beta-carotene and carotinoids by letter of 22 June 1999.
- (132) By letters dated 9 and 16 July 1999 in response to the Commission's request for information of 26 May 1999, Roche provided detailed information and documentation regarding the arrangements in vitamins A, E, B5, C and beta-carotene; on 30 July 1999 it provided information regarding the agreements in vitamins B1, B6, D3, H and carotinoids. Also pursuant to the information request, BASF provided information on the meetings for vitamins A, E, B5 and C on 16 July 1999.
- (133) Solvay Pharmaceuticals supplied a memorandum concerning restrictive arrangements for vitamin D3 by letter of 29 June 1999, supplemented by further information and documentary evidence on 14 September 1999.
- (134) On 19 and 20 August 1999 the Commission addressed requests for information to Takeda, Daiichi, Tanabe, Sumitomo, Lonza and Merck concerning their suspected involvement in price fixing arrangements for certain vitamins. The requests did not relate to all the products in respect of which collusion on their part was suspected <sup>(16)</sup>.
- (135) On 9 September 1999 the Commission received from Takeda a file of documents relating to vitamins B1, B2, B6, C and folic acid. Takeda claimed it had already prepared the file before receipt of the Article 11 request. It provided a reply to the request for information on 18 and 20 October 1999 concerning vitamins B1 and B6. It also provided further documents on folic acid, and on 10 January 2000 provided a response to a request for information in relation to folic acid, sent on 15 November 1999.
- (136) Daiichi had already supplied on 2 July 1999 a substantial quantity of documents to the Commission concerning vitamin B5 before it was sent the Article 11 request, which related to vitamin B6.
- (137) In relation to vitamin B6, Daiichi, in reply to the request for information of 19 August 1999, did not deny its involvement in collusion, at least up to mid-1994.
- (138) Tanabe, in its reply dated 11 October 1999, admitted its participation in collusion with the other producers of biotin from October 1991 up to 1994.
- (139) On 12 October 1999 the Commission received from Eisai a file of documents and a memorandum concerning restrictive arrangements for vitamin E.
- (140) In its reply dated 5 November 1999, Sumitomo admitted frequent contacts with other biotin producers, but claimed that these did not involve any anti-competitive behaviour on its part.
- (141) Lonza, by letter of 24 September 1999 in response to the request of the Commission, admitted participation in a number of multilateral meetings with other producers of biotin and the anti-competitive nature of these.
- (142) Merck admitted in its reply of 26 October 1999 that it had participated in discussions on pricing with competitors regarding biotin. On 22 November 1999 it provided certain relevant documents regarding the arrangements in that product.

#### 1.3.1. THE ADMINISTRATIVE PROCEDURE

- (143) On 6 July 2000 the Commission initiated proceedings in the present case and adopted a statement of objections against the addressees of the present decision.
- (144) The companies had access to the Commission's investigation file by means of a CD-ROM which contained all accessible material in the file. This CD-ROM was sent to them shortly after the statement of objections had been issued.
- (145) Sumitomo and Sumika argue that they did not have complete access to the file as the Commission did not

provide non-confidential versions in all cases nor a detailed description of the content of these documents and therefore might have violated the rights of defence of both companies.

(146) This argument must be rejected. The Commission provided a full copy of all accessible and partially accessible documents in its file of the case, including non-confidential versions of partially accessible documents, in the CD-ROM which was provided to all addressees of the statement of objections. A descriptive list of the content of the non-accessible documents was established and provided to the same addressees.

(147) Having replied in writing to the statement of objections, all the addressees of this Decision except Solvay Pharmaceuticals BV, Kongo Chemical Co. Ltd and Sumika Fine Chemicals Ltd attended the Oral Hearing on the case, which was held on 12 December 2000. At the Oral Hearing the undertakings were also given the opportunity to comment on the written replies of the other parties which had been made available to them earlier.

(148) In their written replies to the statement of objections none of the producers, except Sumitomo and Sumika, substantially contested the facts on which the Commission based its statement of objections.

### 1.3.2. PROCEEDINGS IN OTHER JURISDICTIONS

(149) On 8 May 1998 the District Court of Northern Texas issued a Grand Jury subpoena on Roche's US subsidiary company in connection with investigations by the Justice Department into the vitamins market.

(150) By information filed in the District Court of Northern Texas, on 20 May 1999, Roche and BASF were charged with participation in a combination and conspiracy contrary to Section 1 Sherman Act 1890 (15 USC § 1) to suppress and eliminate competition by fixing the price and allocating the sales volumes of certain vitamins in the United States of America and elsewhere. Certain individuals were also charged with criminal violations of the Sherman Act. The vitamins and time periods concerned were as follows:

- vitamins A and E: from January 1990 to February 1999,
- vitamin B2: from January 1991 to at least Fall 1995,
- vitamin B5: January 1991 to at least December 1998,

- vitamin C: from January 1991 to at least Fall 1995,
- beta-carotene: from January 1991 to at least December 1998, and
- vitamin pre-mixes: from January 1991 to at least December 1997.

(151) By virtue of a plea agreement with the United States of America, BASF and Roche pleaded guilty to the charge of conspiracy and were fined USD 225 million and USD 500 million respectively. Two of the most senior executives of Roche, Messrs[...] (\*) and [...] (\*), who were both members of its executive board, pleaded guilty to criminal charges and were sentenced to agreed terms in prison of four and five months respectively, as well as paying personal fines.

(152) On 9 September 1999 Takeda, Eisai and Daiichi agreed to plead guilty and pay fines totalling USD 137 million for their participation in the vitamins conspiracy.

(153) Rhône-Poulenc was granted conditional immunity from prosecution under the Department of Justice's corporate immunity programme after cooperating with the US authorities.

(154) The main corporate fines imposed for the vitamins conspiracy in the US are thus as follows:

- Roche: USD 500 million,
- BASF: USD 225 million,
- Takeda: USD 72 million,
- Eisai: USD 40 million,
- Daiichi: USD 25 million.

(155) The Canadian Commissioner for Competition has also conducted extensive enquiries into the price-fixing cartel as it affected competition in the sale and supply of bulk vitamins in Canada.

(156) On 22 September 1999 Roche, BASF, Rhône-Poulenc, Daiichi and Eisai pleaded guilty in the Federal Court of Canada (Trial Division) to indictments charging conspiracy to prevent or unduly lesser competition in violation of Section 45 of the Competition Act 1985.



(157) The following criminal law fines were imposed:

- Roche: CAD 48 million,
- BASF: CAD 18 million,
- Rhône-Poulenc: CAD 14 million,
- Daiichi: CAD 2,5 million,
- Eisai: CAD 2 million.

— statement of Solvay Pharmaceuticals BV of 14 September 1999 plus appendices ('second Solvay Statement'),

— documentation supplied by Takeda on 7 September 1999 concerning arrangements in B1, B2, B6, C and folic acid (bundle E),

— documentation supplied by Takeda on 18 October 1999 concerning arrangements in folic acid (bundle F),

— reply of Takeda of 18 and 20 October 1999 to request for information concerning vitamins B1 and B6,

### 1.3.3. THE DOCUMENTARY EVIDENCE

(158) The principal documentary evidence obtained by the Commission consists of:

— statement of Rhône-Poulenc of 19 May 1999 plus annexes ('Rhône-Poulenc statement'),

— supplemental statement of Rhône-Poulenc of 25 May 1999 plus annexes ('Rhône-Poulenc supplemental statement'),

— statement of Roche of 2 June 1999 ('Hoffmann-La Roche statement'),

— statement of BASF of 15 June 1999 ('BASF statement'),

— statement of Solvay Pharmaceuticals BV (concerning vitamin D3) of 29 June 1999 ('first Solvay statement'),

— documentation provided by Roche by letter of 22 June 1999 (bundle A),

— documentation provided by BASF by letter of 23 June 1999 (bundle B),

— reply of Roche concerning vitamin E under Article 11 dated 9 July 1999, plus annexes 1 to 14 (bundle C),

— statement of Daiichi of 9 July 1999 (Daiichi Statement) concerning vitamin B5 plus documentary evidence (bundle D),

— reply of Roche (vitamins A, E, B2, B5, C, etc) under Article 11 of 16 July 1999, plus annexes,

— reply of BASF (vitamins A, E, B5, C) under Article 11 of 16 July 1999 plus tables,

— letter of Roche of 30 July 1999 concerning vitamins B1, B6, D3, ciotin and carotinoids plus annexes,

— statement of Eisai of 12 October 1999 plus annexed documents (Eisai statement),

— reply of Tanabe dated 11 October 1999 to request for information concerning biotin plus appendices,

— reply of Merck dated 26 October 1999 to request for information concerning biotin,

— letter of Merck dated 22 November 1999 to request for information concerning vitamins B1 and B6,

— reply of Takeda dated 10 January 2000 to request for information concerning folic acid.

### 1.4. THE CARTELS

(159) This section provides a description of the facts in relation to each of the cartels in the different vitamin product markets concerned, namely the markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids.

#### 1.4.1. VITAMINS A AND E

##### 1.4.1.1. *The origin and basic scheme of the cartels*

(160) The European producers state that prices for both vitamin A and E actually fell significantly during the late 1980s as a result of competition. The 'dramatic' fall in price in vitamin E is attributed by Roche to the 'price offensive' of Eisai in 1989 (for vitamin A, Roche blames the aggressive pricing policy of Rhône-Poulenc). During the summer of 1989 at least two top level meetings were held, the first on 7 June between Roche and BASF in Basel, and the second in Zurich attended by Rhône-Poulenc as well. Senior executives of Roche,



BASF and Rhône-Poulenc met again in Zurich in or about September 1989. The meeting lasted two days. Eisai did not attend; Roche says the idea was to bring Eisai in at a second stage.

(161) According to Rhône-Poulenc, Roche was satisfied with its 50 % market share, BASF wanted an increase from its then 30 % of the market, and Rhône-Poulenc would have liked more than the 15 % it had but realised that it would not be possible.

(162) BASF has described in some detail the September 1989 meeting in Zurich which involved the setting up of the cartel in vitamins A and E.

(163) On the first day senior executives responsible for vitamin marketing in each company, together with some product managers, identified the size of the market for vitamins A and E and then agreed the allocation between the four producers of the world and regional markets on the basis of their respective achieved sales in 1988.

(164) In summary, the underlying objective was to stabilise the world market share of each producer. Market shares were frozen at 1988 levels; as the market expanded, each company could increase its sales only in accordance with its agreed quota and in line with market growth and not at the expense of a competitor.

(165) On the second day, the chairmen of the fine chemicals division or the equivalent and the heads of vitamins marketing of each company joined the meeting to approve the agreed quotas and to establish 'confidence' between the participants that the arrangements would be respected. The maxim 'price before volume' was accepted as the underlying principle of the cartel. Specific pricing levels were also discussed.

(166) According to information provided by BASF, the market shares of each of the vitamin A producers in 1988, which served as the 'base year' for fixing the quotas, were:

	Hoffmann-La Roche	BASF	Rhône-Poulenc
Western Europe	46,5 %	29,8 %	23,7 %
Worldwide	48,1 %	29,3 %	22,6 %

(167) For vitamin E, BASF also provided information on the achieved sales for 1988 which were equivalent to the following percentages:

	Hoffmann-La Roche	BASF	Rhône-Poulenc	Eisai
Western Europe	46 %	31,1 %	14,9 %	8 %
Worldwide	46,5 %	28,1 %	15,2 %	10,2 %

(168) These figures may have been slightly adjusted to give the allocated quotas. According to BASF, the global market share agreed at the Zurich meeting were as follows:

	Hoffmann-La Roche	BASF	Rhône-Poulenc	Eisai
Vitamin A	48 %	31 %	21 %	—
Vitamin E	45,5 %	28,5 %	16 %	10 %

Roche confirms the vitamin A quotas as per the above.

(169) During the autumn of 1989, the European producers held a second meeting in Basel in order to develop in greater detail the framework and procedures of the cartel. For each region, including Europe, the market share quotas were further broken down country by country, so that the total of the allocations corresponded with the regional share assigned and the regional shares added up to the world quotas.

(170) The market for 1990 was estimated and the forecast agreed; the percentage quotas for each company were then converted into sales allocations on a tonnage basis for the world, the region and each national market.

(171) For the duration of the cartel, this exercise was repeated in the late summer/autumn of each year, and came to be known as 'the budget'.

## Structure and participants

### Structure of regular meetings

(172) As the implementation of the cartel developed, a complex structure of regular meetings evolved. There were four levels.

### Top level

(173) This level was constituted by the most senior corporate officers with responsibility for the vitamins business, and included the divisional heads and sometimes the

heads of vitamins marketing. Their role was to back the agreement with high-level support, to define overall strategy and ensure each party continued to adhere to the agreement.

### Heads of marketing

- (174) The heads of vitamins marketing, who might also attend the top level meetings, took decisions on the practical operation of the agreements and finalised the budgets. Some of their meetings might also be attended by the divisional chairmen. They met two or three times per year.

### Global product marketing level

- (175) This level consisted of managers with product marketing responsibility for vitamins A and E at global level. Their meetings, held at quarterly intervals, were intended to monitor the implementation of the quota systems.

### Regional product marketing level

- (176) These meetings, which were organised by the regional management and involved the heads of marketing for each region, including Europe, were held about four times a year. Discussions included pricing to individual customers. The group was also responsible for:

- monitoring sales against budget on a regional level and making adjustments if necessary;
- identifying relevant market developments inside their region;
- implementing the price increases agreed at the more senior levels.

- (177) Often the regional meetings for Europe were combined with global operational meetings at a higher level.

- (178) BASF named the usual participants in the meetings over the relevant period.

### The interaction between the different groups

- (179) The cartel's operations centred on the preparation and implementation of the annual 'budget'. Indeed in this and other respects its mechanisms were closely modelled on the internal financial management and controls of a single undertaking.

- (180) The heads of marketing identified by BASF referred to by Rhône-Poulenc as the 'top vitamins operations managers' met, usually in August, to exchange global sales figures and estimates of market size and growth for the following year and to prepare the budget for the next year.

- (181) These meetings, referred to as 'budget meetings', were invariably organised by Roche and were held in hotels in or around Basel. According to Rhône-Poulenc, Roche first made a presentation on the current state of the market with tables prepared from the information which the others had provided in advance by telephone.

- (182) It was in this forum that price increases would normally be decided: usually the price was raised in steps of five per cent. Final decisions on pricing were usually taken in the second half of the year, a typical effective date for an increase being 1 April of the following year.

- (183) If a price increase was decided, Roche usually took the lead and announced first. Apparently however, it occasionally asked BASF to lead the increase publicly.

- (184) After the August budget meeting the three division chairmen (in the case of Rhône-Poulenc, the president of RPAN), met so that the operations managers and heads of marketing who had attended the budget meetings could present the previous year's results.

- (185) The meetings were also held in hotels in or near Basel. At the meetings, which were organised and led by Roche, Roche presented market developments and the Division Chairmen would discuss the size of the market, increases in market shares, price movements and resolve potential problems.

- (186) The most senior corporate executives from Roche, BASF and Rhône-Poulenc who supervised the vitamins business held further meetings once or twice a year in Basel, Paris and Frankfurt, the meetings apparently being organised in turn by each of the companies involved. According to Rhône-Poulenc, there was no specific agenda. These are however presumably the meetings described by Roche. Their purpose was to demonstrate top-level support for the cartel and to determine overall strategy.

- (187) The regional meetings for Europe were also usually organised by Roche and held in Basel. These meetings

were scheduled in the month following the end of each quarter. The regional marketing managers reported on market developments to the more senior level of meetings which took the necessary decisions.

- (188) The managers who attended the European regional meetings had **weekly telephone contact** in order to monitor the agreements on pricing and sales volumes and to discuss individual customers. Every month they exchanged the volumes of vitamins A and E sold in each national market. Roche provided the others with the monthly sales of Eisai in the European market as a whole rather than for each country.

### Volume control mechanism: 'budgets'

#### General

- (189) The **fundamental idea** underlying the cartel was to **freeze market shares in both products at the 1988 level**.
- (190) All three major European producers have supplied to the Commission tables and spreadsheets created and used for the purposes of calculating, reviewing and agreeing the sales quotas of vitamins A and E for each regional and national market.
- (191) Those provided by BASF are probably the most complete set of documents relating to the 'budget' and may be used to demonstrate the operation of the volume control mechanism. For the most part, the BASF documents consist of (a) worksheets or support documents used to fix the annual 'budget' for each producer on a country-by-country basis and (b) charts comparing the actual sales of each producer with their respective 'budgeted volumes', i.e. their quota for each regional and national market both on an annual basis and for interim periods (sales figures in volumes were exchanged on a monthly basis).
- (192) The documentation provided by Roche consists of (a) spreadsheet documents established from data supplied by the other producers and reflecting the volume allocation agreements and monthly and yearly results exchanged by the participants; (b) charts prepared by Roche for budget discussions and meetings.
- (193) The 'budget' documentation for the year 1998 is representative of the whole and may be taken as an example <sup>(17)</sup>.

#### Vitamin A

- (194) For the whole 'region' which also includes Eastern Europe, Africa and the Middle East, the quotas proposed are 45,3 % for Roche, 31,6 % for BASF and 23,3 % for Rhône-Poulenc.
- (195) For West Europe as a whole, the quotas are given as 44,3 % for Roche, 32,1 % for BASF and 23,6 % for Rhône-Poulenc.
- (196) The information for the whole year was maintained on a cumulative monthly basis to ensure that each party kept to its agreed market share; **if one was seen to be selling more than its allocated quota, it would have to 'slow down' sales to enable the others to catch up. If at the end of the year a producer was substantially ahead of its quota, it had to purchase vitamins from the others in order to compensate them** for the corresponding shortfall in their allocation.

#### Vitamin E

- (197) A similar computerised database was kept for vitamin E, although (1) there are separate charts for 'feed', 'pharmaceutical' and 'total' and (2) the volumes are given in metric tonnes.
- (198) Documentation provided by BASF for the year 1998 may again be taken as illustrative of the functioning of the system which operated along these lines also for the years 1989 to 1997.
- (199) In the vitamin E spreadsheets the three main producers are again designated as '1', '2' and '3'; '4' refers to Eisai and '5' to other producers.

### Minimum and target prices

- (200) In their 'top-level' meeting in Zurich in September 1989, the divisional chairmen of Roche, BASF and Rhône-Poulenc had **agreed to a policy of 'price before volume'**.
- (201) **The decisions on whether, when and by how much to increase prices were taken by the heads of vitamin marketing in their periodic meetings.** Final decisions were generally taken in the second half of each year with a typical effective date for the 'increase' being the following 1 April.
- (202) At the beginning of the cartel the parties had agreed on a price increase of about 10 % for both vitamins A and E.

- (203) The parties normally agreed that one producer should first 'announce' the increase, either in a trade journal or in direct communication with major customers. Once the price increase was announced by one cartel member, the others would generally follow suit.
- (204) In this way the concerted price increases could be passed off, if challenged, as the result of price leadership in an oligopolistic market.
- (205) The Commission has obtained internal pricing and management documentation from both Roche and BASF showing that both producers habitually worked on the basis of 'list' (or 'target/Ziel' and 'lowest' prices).
- (206) An illustration of the utilisation of the price targets is provided by Roche's 'pricing sheet' for vitamins A and E issued to the business units in March 1991.
- (207) The objective for vitamin A was to increase prices in CHF by 5 % to 10 % for 1991 while balancing out the USD/DEM price differential to discourage brokers. While Managers are instructed to hold the worldwide market at 48 %, they are ordered to put 'price target before quantity/market share target: do not overshoot quantity by not achieving price target' c.f. the 'price before tonnage' maxim. in recital 200 above.
- (208) The pricing sheet shows the 'list' and 'lowest' prices to be applied for each product form in DEM and USD for the second and third quarters of 1991.
- (209) To implement the increase the business unit is warned that in Europe 'Present DEM prices in *Feed* to be strictly applied in second quarter 1991. Price increase of + 10 % to be prepared and announced in May with immediate effect for spot business and all third quarter contracts. *Food/Pharma* prices to be strictly applied.' Similar instructions are given for vitamin E.
- (210) During the 1991 concerted initiative, new prices were initiated each quarter; from the beginning of 1993, prices were increased as a rule once a year, usually on 1 April, with 1 October being kept as a fallback date in addition.
- Operation of the cartels (1989 to 1997)**
- (211) During the first year of the cartel, executives from Roche, BASF and Rhône-Poulenc met frequently to concretise their arrangements: Rhône-Poulenc has identified some nine meetings in Basel between January 1990 and January 1991.
- (212) There were also separate meetings between Roche and Eisai on vitamin E which are documented in a Roche internal memorandum headed 'Eisai history' beginning with a top-level meeting in Japan in September 1990.
- (213) A follow-up meeting took place in Basel on 25 October 1990 in which Eisai executives confirmed the readiness of their company to enter the 'club', on condition that the members exchanged their sales data.
- (214) The three European producers agreed in a trilateral meeting held in Basel on 30 October 1990 to include Eisai in the scheme for an initial five years with an allocation of 1 600 tonnes subject to increase in line with market growth. For Eisai the advantage would be a guaranteed volume of sales and higher prices.
- (215) Since during most of 1990 Eisai was not definitively inside the scheme for vitamin E and had supplied more volume than anticipated, the arrangements apparently had not resulted in any great increase in price during that year.
- (216) In December 1990 Rhône-Poulenc's vitamin E factory was severely damaged by fire. The major producers concluded that customers would be prepared to pay higher prices in the face of a product shortage, they also concluded that vitamin A prices could be increased at the same time on the back of the shortfall in vitamin E.
- (217) Although Rhône-Poulenc presents this fortuitous incident as the catalyst for the consolidation of the cartel, it is clear from BASF's and Roche's accounts of events that the framework of the cartel and the machinery for its implementation had already been agreed by the end of 1989.
- (218) Following a 'summit' meeting in Japan on 8 and 9 January 1991 between senior officials of the three European producers and Eisai (recital 234), the latter confirmed its willingness to join the worldwide volume allocation scheme for vitamin E and its quota was raised from 10 % to 11 %. Eisai appears to have rationalised the discussions with competitors in terms of antitrust law by meeting each of the three separately for 20 minutes each; it disingenuously calls these meetings 'courtesy calls'. Whatever ambiguity Eisai may have hoped to engender by this colourable device, the effect was negated by its inviting all three competitors to a

'joint meeting' immediately afterwards in a restaurant in which on its own admission an 'orderly marketing' system was proposed and discussed.

(219) The agreement was confirmed a few weeks later when senior executives of Roche visited Japan and met Eisai (recital 236).

(220) The definitive inclusion of Eisai in the volume and pricing scheme for vitamin E, together with the shortage of product, enabled the four producers to raise prices for that product significantly during 1991. Rhône-Poulenc was supplied by Roche and BASF with 'coproducer' deliveries until its plant was back on stream. At the same time and in parallel with the increase in prices for vitamin E, the three European producers agreed and implemented significant price rises in vitamin A.

(221) Prices for both vitamins increased substantially between 1991 and 1994. The initial price increase implemented in 1991 was in the order of 10 % (see recital 202). According to Roche, the goal after 1994 was to maintain the achieved price levels.

(222) The simultaneity and uniformity of the price increases for vitamins A and E led to complaints to the authorities in France from local pre-mixing companies. An inspection was carried out by the French authorities on 28 January 1993. Roche informed Takeda of the outcome in a vitamin C meeting on 8 February 1993. Takeda duly took note of their dismissive attitude towards the investigations:

'Nothing was found in the investigation. In addition an inspection was made of RPAN but nothing was found. This type of inspection was also held in 1991, but there was no evidence. R does not consider these inspections problematic: however they are being careful as to how they handle documentation.'

(223) By the beginning of 1994, a substantial price gap (around 10 %) had developed between Europe and the United States of America for vitamins A and E. Brokers were using the opportunity to conduct 'arbitrage' operations. Roche instructed its area managers on 1 to 4 February 1994 that the 'key focus regarding 1994 pricing is therefore on Europe (...). Our objective is to bring A prices up by DEM 2 and E prices by DEM 1. Volumes need to be strictly controlled.' BASF had already drawn the attention of its European sales subsidiaries to the phenomenon in September 1993.

(224) On 14 February 1994 BASF announced via the trade press increases of 5 % for vitamins A and E. Instructions were given to the sales offices to apply with immediate

effect new 'limit' prices: the minimum amount of the increase was to be DEM 2 for vitamin A and DEM 1 for vitamin E.

(225) In 1994 the rapid increase in demand for vitamin E for human consumption necessitated a revision of the quota allocated to Rhône-Poulenc. To maintain its agreed 16 % share of the overall market, Rhône-Poulenc had to increase its sales in the animal feed sector. The producers agreed in August 1994 that the Rhône-Poulenc share of the feed segment be capped at 21 %; if the agreed increase in quota in that area did not however give Rhône-Poulenc its full 16 % overall, the other two European producers would purchase product from it to compensate for the shortfall. Compensating purchases were made by Roche in 1996 and by Roche and BASF in 1997.

(226) BASF has stated that throughout the period of the cartel the participants contemplated and explored measures to eliminate or deter marginal competitors in China and Russia from entering the European market.

#### The continuation of the cartels after the US investigations

(227) In late 1997, it was publicly reported in the United States of America that the US Department of Justice had convened a Federal Grand Jury to investigate possible criminal violations of Section 1 of the Sherman Act in the vitamins sector.

(228) The participants in the meetings had already become aware of the interest of the antitrust authorities in their secret arrangements and sought to minimize the number and frequency of their contacts. The last trilateral meeting was held in Basel in November 1997, when it was decided that in future meetings would only occur on a bilateral basis.

(229) Rhône-Poulenc says that in December 1997 the then president of its animal and plant Health sector telephoned his counterparts at Roche and BASF and arranged meetings with them supposedly to announce his company's 'withdrawal' from the agreements; on 22 December 1997 he is said to have visited first BASF in Ludwigshafen and then Roche at its Headquarters in Basel to terminate the agreements in vitamins A and E.

(230) This action was 'announced' to the line management of Rhône-Poulenc Animal Nutrition in early January 1998.



- (231) However, whatever formal or official instructions may have been given, the reality was otherwise: senior executives from all three companies decided to continue the cooperation in a modified form and on a 'more discreet basis', as BASF put it. This apparently took place at the initiative of Roche. A meeting took place on 15 January 1998 between Roche and Rhône-Poulenc and a few days later with BASF. Both encounters are described by Roche as a 'top-level and operational meeting'. It was decided that there would be no further group meetings but only one-on-one contacts as necessary. Roche has provided a list of these meetings. For a period of over a year, these senior executives also exchanged monthly sales data from their private residences, the purpose being to monitor any departure from the agreed quota allocations.
- (232) BASF's attribution of responsibility for these continuing contacts to 'a few individuals' in each company has to be seen in the light of the positions they occupied: the heads of vitamins marketing in Roche and the commercial director of RPAN.
- (233) The last known occasion when these contacts took place was in February 1999; sales data was exchanged for the month of January.
- (234) Eisai. A price increase of approximately 10 % was agreed (see recital 207). It was also agreed that all their future contacts would be bilateral only: Roche would inform BASF and Rhône-Poulenc of the outcome. In turn, Roche would agree its position with the other two European producers and act on their behalf in its dealings with Eisai.
- (235) Thereafter there were no multilateral meetings involving Eisai and the channel of communication with the cartel was always via Roche.
- (236) The usual procedure was for the three European producers to meet first, whether for top-level, budget, quarterly operational or regional meetings, and then for Roche to meet one or two weeks later with Eisai at the appropriate level.
- (237) Eisai provided Roche with its sales volumes in each of the regions; in return Roche gave Eisai the aggregate sales figures for the three European producers combined on a worldwide and regional basis. It did not supply individual data.

### Involvement of Eisai

- (238) Eisai was a producer of vitamin E only and did not take part in any meetings for vitamin A. As regards vitamin E, contacts initiated by Roche with a view to setting up a cartel had already begun in Tokyo on 22 and 23 November 1989 and were followed by the meeting in Basel on 8 December 1989 with the three European producers described by Eisai. However, Eisai claims not to have given any commitment on reducing its production. Following further meetings with Roche in Europe and Japan and continuous pressure from Roche, Eisai invited the senior executives of the three European producers to a 'summit meeting' on 8 and 9 January 1991. Eisai's claim to have been on this occasion a reluctant host 'surprised' by a crude abuse of business protocol is belied by the terms of the invitation to Roche.
- (239) Eisai's attempts to present itself in these proceedings as a reluctant participant in arrangements simply to 'exchange information' are contradicted by the documentation supplied to the Commission by Roche originating from Eisai and demonstrating the latter's active involvement in the establishment of a quota system. Eisai has itself provided to the Commission documents prepared in connection with these meetings which disprove its claim.
- (240) A chart prepared by an Eisai employee for a meeting in February or March 1995 shows Eisai's results in North America, Europe, Asia and South America for 1990, 1993 and 1994 and its plan for 1995. A 'speaking note' for the same meeting shows Eisai's declared policy towards its competitors was to convince them of its good intentions regarding the cartel arrangement:
- 'The meeting held in January 1991 has been recognized as "base" and the result in 1990 was basic quantity.
- (241) As the lowest market share holder, we have started at 11,2 % share (1990) and have been accepted by you at 11,9 % share's plan (1991).
- (242) As the invitation expressly states, the meeting was intended to confirm the intentions of top management, to establish a relationship of trust between the parties and to agree the nature of the next 'summit'.
- (243) A few weeks later, on 30 and 31 January 1991, Roche senior executives went to Japan to meet separately a number of Japanese vitamin producers, among them

Maintaining our 11 % level share, we have followed the basic plan proposed by you in every year to collaborate CLUB.

We have respected position and status of each other.

Starting from the first meeting, we have mentioned our intention to obtain [5 to 15] % market share in mid-term (five years) and also [10 to 20] % share in the long term (10 years).

As the result till 1994 per the total table, we have never deviated from the fundamental agreement and understanding.'

from the documentation supplied to the Commission by BASF.

(242) The active involvement of Eisai in the cartel for vitamin E, whatever artificial devices were adopted to 'justify' the meetings, enabled the European producers to raise the price levels in Europe without fear of undercutting by this Japanese producer. Eisai itself admits that 'it had a policy of increasing prices and would follow the price increases put in place by others.' In this context any suggestion that normal market forces applied must be assessed in the light of the cartel's peculiar view of what constituted 'price leadership': see recitals 200 to 203).

#### 1.4.2. VITAMIN B1 (THIAMIN)

##### 1.4.2.1. *The origin and basic scheme of the cartel*

(243) In 1989 Roche had a world market share of 44 %, BASF had 13 % and Takeda some 31 %, with the Chinese manufacturers taking 9 %.

(244) According to Roche, the cartel agreement in vitamin B1 was initiated on 30 and 31 January 1991 during the visit to Tokyo of the head of vitamins marketing, when he met representatives from Takeda, as well as the other Japanese vitamin manufacturers. The participants exchanged data on tonnages and market shares in 1990.

(245) The purpose of the agreement in vitamin B1 was to increase prices by stabilising market shares and allocating sales volumes on the basis of the previous year's achieved sales.

(246) Roche did not provide to the Commission details of the quota allocations for each region, but these can be seen

(247) In the 'reference year' of 1990, the achieved sales and market shares in Europe are shown as Roche 280 tonnes (38 %), BASF 142 tonnes (20 %) and Takeda 300 tonnes (42 %). Forecasts for each region for 1991 and the 'targets' for 1992 are also given.

(248) BASF did not attend this meeting, and Roche in its statement does not refer to its involvement, but it is clear that BASF was party to the volume control scheme: see recitals 260 to 269.

##### 1.4.2.2. *Volume control and monitoring system*

(249) Although, in contrast with its disclosure for vitamins A and E, the main protagonist Roche provided no 'budget' documentation to the Commission relating to vitamin B1, Takeda has supplied a considerable volume of its contemporaneous documents, including tables and meeting reports which demonstrate the operation of the volume control and monitoring system:

— a document dated 5 June 1991 is headed 'Vitamin B1 monitoring 1990' and shows for each region (Northern America, Latin America, Japan, Europe, etc.) the sales in tonnes of Roche, BASF, Takeda and the Chinese producers, the latter presumably estimated for the year 1990,

— a document bearing the same date is headed 'Market forecast 1991' and on the basis of an assumption as to market growth for each region (Europe is 1,5 %) shows the allocation of volumes to each producer for 1991,

— a further document, bearing the same date, is headed 'Market Monitoring first quarter 1991' and shows for Roche, BASF and Takeda a comparison of actual sales against forecast in each region,

— a document headed 'Market and Competition Monitor — Vitamin B1' (dated 20 May 1993) shows the achieved sales of Roche, BASF and Takeda by region for 1992 compared with their allocations,

- a document dated 5 November 1993 compares Takeda's achieved sales for 1992 with its quota allocation in each region and contains a template to be completed for a comparison of each producer's 'performance' against 'plan' for the period January to December 1993,
- a set of templates with details filled in for the comparison on a running quarterly basis of the 'allocation' and the 'result' for Roche, Takeda and BASF for 1993,
- similar documentation is available for other years.

#### 1.4.2.3. *Cartel meetings*

- (250) After the first meeting in January 1991, Roche and Takeda executives met at regular intervals in Tokyo and Basel at both 'top' and 'operational' level in order to monitor the application of the quota system and fix prices.

(251) BASF did not take part in the meetings, but it was given a quota in vitamin B1 which was discussed during the meetings.

(252) Given that there were cartel arrangements across the whole range of vitamins which Roche and Takeda produced in common (vitamins B1, B2, B6, C and folic acid), their regular meetings often covered these five products. From the Roche side, the participants at technical level would change as the discussions moved on to the next product, see for example Takeda's note of the two-day operational meeting in Tokyo in November 1992; the first day was dedicated to vitamin C, while the morning session on the second day covered vitamins B1, B2 and B6.

(253) Takeda's note of one meeting in November 1992 typifies the proceedings in the operational meetings:

'VB1

(1) Exchange of results for January through September

	Takeda	R	B
Plan	644,3	700,5	204,0
	Δ 30	Δ 65	Δ 54
Sales result	614,3	635,6	149,6

All below expectation. B's marketing strength is weak.

Taken over by Chinese products

Interested more in keeping the price than quantity

(2) Quota for 1993

Growth rates increased by around 2 %

1992

	R	T	B	Total	Chinese	Total
	934	859	272	2 065	450	2 515
T did not agree to changes	900	827	263	1 990	525	2 515
1993 quota	900	830	265	1 995	650	2 645

(3) Price

Unchanged: USD 43,00; DEM 74,00

(4) Chinese Products

Takeda would like to protect its traditional customers by using off-spec products of feed grade. It is hard to recover customers after they start using Chinese products.'



(254) There were also bilateral meetings between Roche and Takeda in Basel which covered their common range of products: vitamins B1, B2, B6, C and folic acid. On occasion, Takeda also had bilateral meetings with BASF, which included discussion on vitamin B1.

#### 1.4.2.4. *The operation of the cartel (1991 to 1994)*

(255) From 1991 until about 1993, the price of vitamin B1 was gradually increased by the cartel. In 1991, the producers raised the market price from below DEM 65 to DEM 68/kg. A table dated 29 March 1994 supplied by Takeda shows the 'list' and 'lowest' prices for the product in each geographical zone, including Europe.

(256) From 1 January 1992 the 'list' price was DEM 76/kg delivered and the 'lowest' price DEM 74/kg, BASF's pricing instructions of 11 December 1991 confirm the minimum price level of DEM 74/kg.

(257) By late 1992 the effect of competition from Chinese products was being felt, and the producers were debating whether to 'ignore' this competition as they had done in the past, or to absorb the Chinese production. By June 1993 the producers had decided to compete on price at specific customers who used Chinese products.

(258) The policy was confirmed at the end of 1993. The basic plan would be maintained for 1994. In order to maintain their customer base, the producers agreed they had to align on the Chinese prices for feed grade to important customers but the low price ought not to be made universal; higher pricing should continue for food and pharmaceutical grades.

(259) According to Roche, the two producers decided by 1994 that the agreement was no longer viable and it was ended in the first half of 1994; the last meeting for vitamin B1 was on 10 June of that year. By about the second half of 1994 the market price for feed grade had fallen to around ECU 28/kg, from a high of ECU 38/kg. The development of the price level of vitamin B1 over the period of the cartel and following its abandonment is shown in Table IV in the Annex.

#### 1.4.2.5. *Involvement of BASF*

(260) BASF ceased production of vitamin B1 in 1989 and subsequently obtained its requirements from Roche,

initially under a five year supply contract. It was still among the most important suppliers of bulk vitamins in the Community and worldwide during the duration of the cartel.

(261) Tables provided to the Commission by Takeda for vitamin B1 headed 'market and competition monitor — vitamin B1' and 'market monitoring' and prepared for the purposes of monitoring collusive arrangements show for Roche, Takeda and BASF the 'forecast' and 'assessment' of quantities supplied on a quarterly basis in each of the major geographic regions, including Europe.

(262) BASF data is also included in the tables headed 'Vitamin B1: market forecast' and in the cumulative tables showing 'result' against 'allocation' of each producer for 1993.

(263) In Takeda's memorandum recording its meeting with Roche in November 1992 for the five vitamin products they both produced (including vitamin B1) the section headed 'Exchange of results for January through September' compares 'plan' and 'sales result' for Takeda, Roche and BASF (BASF is also allocated a quota for 1993). The information must have been supplied to Roche by BASF.

(264) Takeda's more complete minute of this meeting confirms the involvement of BASF in the quota scheme. Roche reports that:

'Because of the influence of Chinese products, neither R, T nor B were able to reach their project results. B is especially behind (- 50 tons) and would desperately like adjustments to be made.'

(265) Roche had clearly been delegated by BASF to speak on its behalf. The minute continues:

'By R: We would like to ask if there is any way that you could help B, since they are so much behind. (T replied that B's products are sold by R, so that if B needed help, R should provide it).'

(266) BASF, while denying direct involvement in the vitamin B1 cartel, has itself provided to the Commission

hand-written tables which (it says) 'reflect information conveyed to BASF by a representative of Roche concerning the arrangements between Roche and Takeda with respect to vitamin B1.' It also points out it does not produce B1. BASF however omits to explain

the incorporation in the tables of a quota allocation to it (BASF) as well as to 'Roche' and 'Tak'. For Europe, there are similar calculations for each geographical region, the table reads:

Europe	1992 B	1990 reference year	%	1991 forecast
	Ziel bei Markt (illegible) [Target by market]	1990		
Roche	250	280	38	280 t
BASF	125	142	20	95
Tak(eda)	240	300	42	240
	615	722		615

The figures for the 1990 'Reference year' match those provided by Takeda.

- (267) On its own admission BASF was informed of the arrangements with Takeda by Roche, which did not want BASF to disrupt the vitamin B1 market with its resales: 'Pursuant to this arrangement with Takeda, Hoffmann La Roche instructed BASF as to the prices and volumes of vitamin B1 that BASF could resell on a region by region basis.'
- (268) During Takeda's occasional bilateral contacts with BASF, the subject of vitamin B1 pricing was visited: when BASF's head of vitamins marketing was in Tokyo on 13 July 1993 he indicated that on vitamins C, B1 and B6 BASF 'will follow the price policies of R(oche) and T(akeda) ... if the price increases, we will follow your lead.'
- (269) Despite the fact it did not attend the meetings between Roche and Takeda, BASF's involvement in the collusive scheme to fix the market in vitamin B1 is thus amply established.

#### 1.4.3. VITAMIN B2 (RIBOFLAVIN)

##### 1.4.3.1. *The origin and basic scheme of the cartel*

- (270) In the period 1988 to 1990, the price of vitamin B2 fell by about 12 %. In order to reverse the trend, the two major producers decided that concerted action was required.
- (271) On 14 and 15 July 1991, representatives of Roche and BASF met at Bottmingen in Switzerland to agree the framework of a cartel in vitamin B2. Takeda was not present at this initial meeting but the intention of BASF and Roche was to include it in a second step. Takeda was by then already involved in the cartel arrangements for vitamins B1 and C.

- (272) Working from their achieved 1990 sales, and estimating the market share of other producers for each year, they agreed on global quotas to be effective for the period 1992 to 1994 inclusive. The volume quotas were worked out as follows:

(in tonnes)

	1989	1990	1991	1992	1993	1994
Roche	1 550	1 450	1 500	1 445	1 450	1 470
BASF	770	775	800	840	870	900
Takeda	180	280	320	350	380	400
Others	90	120	130	150	170	190
Total	2 590	2 625	2 705	2 785	2 870	2 960

- (273) As between Roche and BASF, their respective sales in vitamin B2 were to move from a proportion of 65:35 in 1990 to 62:38 in 1994. 1992 was to be the first year for the operation of the quota system. For 1994, Roche and BASF calculated that they would together have 80 % of the available world market; Takeda was to have 13,5 %, against the figures for Takeda BASF has noted 'If they go higher → war?'. A document provided by BASF shows the agreement reached in this meeting.

- (274) Later in 1991, Roche and BASF senior executives went (separately) to Japan in order to persuade Takeda to agree to the proposed market allocation in vitamin B2, which it ultimately did by late 1991/early 1992. The discussions during the visit to Basel on 13 April 1992 of Takeda representatives on 'the new price policy to increase the price continuously' included vitamin B2.

#### 1.4.3.2. *Cartel meetings*

- (275) The cartel was implemented by quarterly meetings. The usual procedure was apparently for Roche to meet Takeda first and to then hold a separate bilateral meeting with BASF.
- (276) The purpose of the quarterly meetings was to monitor achieved market shares against quota and to adjust sales levels to comply with the agreed allocations. A control system along the lines of the vitamin A and E mechanism was developed (see recital 283).
- (277) Takeda's minute of a meeting with Roche in Zurich on 25 May 1993, headed 'Destroy after reading', may be taken as typical of these meetings for vitamin B2:

'1) VB2

— Prices are rising smoothly, (R) (T).

e.g. R results in Europe for April, DEM 91,4 (R),

T results in Europe for March, DEM 88.

— No likelihood of increase in demand, meaning that a quantitative increase would be difficult.  
(R)

T expects 400 t for 1993, i.e. about the same level as 1992 (T).

(...)

— Lohmann <sup>(18)</sup>

Since R and BASF are in competition, Lohmann would prefer not to purchase the whole quantity from competitors, i.e. they would prefer to purchase from T. T. should take care with pricing when making an offer. The price should under no circumstances be too low. (R)

Understood, will contact Mr [Takeda employee] (T)'

(278) Takeda also had occasional bilateral meetings with BASF covering vitamin B2, as well as other products, a memorandum of 13 July 1993 also headed 'Destroy after reading' reads:

'VB2 Feed

(B) B's price in Europe is DEM 90—92. However T is offering a lower price of DEM 85/86. Please correct this as soon as possible.

(T) T is selling at DEM 88/90. On the other hand, B's offer of the lower price of DEM 86 to DK's Loevense is causing problems.

(B) We will check tomorrow and get back to you. We would like to ask that general prices are kept no lower than DEM 90.

(T) We agree.'

#### 1.4.3.3. *The quotas*

(279) Following Takeda's entry into the cartel arrangements for vitamin B2, the annual quotas were the subject of intense negotiation, with Takeda demanding a higher allocation. A Takeda note of a meeting in or about November 1992 covering the range of vitamins, including B2, reads:

'VB2 → January — September

(1) Deciding quota

1991	1992	1993 R 395	1994	1995	1996	
384	385	420	445	472	500	Talks with R
320	340	360	380	400	420	Talks with B

Makeup of 384

Exports	In-house	Tokio Tanabe	Takeda US
144	30	200	10

Division Manager wished to bring it up to 500 tonnes within 5 years (in 1991)

R made an error in calculation at the time of the 1991 estimation (...)

Over-achievement should be acceptable if there is no damage to the pricing.'

(280) Takeda's volume aspirations were clearly a cause of irritation for Roche. Takeda's minute of its meeting with Roche in Tokyo on 17 November 1992 notes as follows in relation to vitamin B2:

'As with VB6, R was cautious of T's increase in sales quantity, and kept coming back to T's words that they wished to sell 500 tonnes within 5 years.'

(281) Roche suggested that Takeda's quota for 1993 should be 385/390 tonnes, rising to 420 for 1994. Takeda sets out its reaction as follows:

'By T: Since our production capacity is still unclear, we do not yet know our quantity. Although we are not serious, Mr [...] wishes to obtain 500 tonnes in 1993. The middle ground between this and your suggestion of 390 would be around 440/445 tonnes. (R did not ask any further).'

(See also a Takeda note of a meeting on 21 April 1993, for a reference to Takeda's reining in its volume ambitions).

(282) In fact, for 1994 Takeda agreed to keep its sales volume to about 410 tonnes. In a meeting in the Basel Hilton Hotel with Roche on 9 February 1994, the participants exchanged their sales results in vitamin B2 for 1993 and sales plans for the year 1994:

'By T: Our 1993 results are 421 t and very close to the agreed quantity, and we will plan to keep the same level of around 420—440 t in 1994. With regard to price, we will support R's policy fully and work toward obtaining the lowest price of USD 69,00 cif/DEM 115,00 for USD products and USD 61,00 CIF/DEM 92,00 for feed (US delivered price) ... In Europe, B will announce a price raise for feed (4 %) in mid-February. T would like to raise the lowest price from DEM 92,00 to DEM 97,00 on April 1. T's sales quantity continues to be low, so concentrated effort will be made toward a raise in price.'

(b) With regard to T's 1993 results and 1994 plans, these are going according to the basic agreement.

We cannot expect much increase in demand in 1994. An effort will be made to increase the price in Europe and maintain the lowest price of USD 61,00

in US. R would also like T to go along with this pricing policy. (T agreed).'

#### 1.4.3.4. *Volume control and monitoring*

(283) As with most other vitamin products, the quota scheme for vitamin B2 was the subject of a continuously updating reporting and monitoring system. Documentation was provided to the Commission by BASF relating to the operation of the control and monitoring system for vitamin B2, of which the following is representative:

- sales data for each region (Europe, North America, Latin America, the Far East and Japan) for the year 1995 and the first three months of 1996. Estimates are included for producers outside the agreements (ADM (Archer Daniels Midland); GUS (the Russian producers)),
- a BASF internal worksheet giving its own sales in each country <sup>(19)</sup>.

#### 1.4.3.5. *Target and minimum prices*

(284) During the course of the cartel, regular price increases were agreed and bottom price limits fixed. Takeda has also provided to the Commission tables giving the 'list' and 'lowest' prices by region for the different vitamins, including B2 which were in effect during the period 1 June 1991 to 1 April 1993. For vitamin B2, the prices were given as follows:

(in DEM)

	List	Lowest
1 June 1991		
— USP	110	106
— Feed	89	84
1 October 1991		
— USP	117	112
— Feed	94	89
1 October 1992		
— Feed	99	94
1 April 1993		
— USP	122	116
— Feed	102	97

(285) The development of the average price level for vitamin B2 over the duration of the cartel and after the arrangements ended is shown in Table V in the Annex.

#### 1.4.3.6. *The operation of the cartel (1991 to 1996)*

(286) The pricing and volume decisions reached in the meetings were implemented by each company issuing directives to the Regional managers. From 1991 to 1993, prices for B2 were regularly increased (see recital 284).

(287) In 1993, the parties realised that a US producer, Coors, had a larger production capacity for vitamin B2 than they had estimated in 1991. In order to prevent Coors from disrupting their arrangements by the export of its production surplus, Roche and BASF agreed that the former would contract to purchase 115 tonnes of vitamin B2 (representing half of Coors's capacity) in 1993. BASF in turn would purchase 43 tonnes from Roche; the burden was thus to be shared in the same 62:38 proportion as their quotas.

(288) Later Coors sold its vitamin B2 plant to Archer Daniels Midland (ADM). In 1995, Rhône-Poulenc and ADM contracted for Rhône-Poulenc to market in Europe the riboflavin produced by ADM in the United States of America. BASF noted Roche's 'ambivalent' attitude at times giving priority to price, at others to volume. BASF saw no point in raising price levels which would simply facilitate ADM's entry to the market. The market share of ADM in Europe rose from only 2 % to 9 %, mainly at the expense of Roche. The price level began to decline. Roche claims it had already become aware that Takeda was cheating by underdeclaring its sales by up to 20 %.

(289) A 'confidential memorandum' made by Takeda of a meeting, principally on vitamin C, held on 16 March 1995 with representatives of Roche, BASF and Merck reads as follows:

'There was a harsh comment on our oversupply of B2.

As agreed between Mr [...] (Takeda's representative) and Mr [...] (Roche's representative), Takeda's sales volume should be from 380 t to 420 t as a maximum. According to the statistics of Japan's exports (about 500 t) the statistics relating to the import of raw materials and the sales volumes in Japan (about 80 t), Takeda's sales volume is 580 t which exceed 420 t by 40 %. Takeda should clarify the reasons and its policies.

To this, we only replied, "We are not in a position to comment on quantities. We will contact you through

the appropriate conduit after discussing the matter within our company." We saw it was not the right time to have a wet blanket thrown over our cooperative stance toward raising the price of V(itamin)C by speaking up our mind.'

(290) Takeda subsequently assured Roche that it had not expanded its production facilities: 'Consequently we do not expect any extensive increase in the future but we cannot decrease our sales volumes either'.

(291) Roche apparently decided as a result of the disagreements to terminate the cartel agreement with BASF and Takeda in about the third quarter of 1995.

#### 1.4.4. VITAMIN B5 (CALCIUM-D-PANTOTHENATE, OR CALPAN)

##### 1.4.4.1. *The origin of the cartel*

(292) In 1989, Roche and Daiichi each had around 35 % of the global market in Calpan and BASF 20 %.

(293) The background against which the cartel was formed, suggests Daiichi, was a steady drop in prices for vitamins of the B complex during the 1980s and the weakness of the dollar in 1989 to 1990, leading to zero profitability for Roche in these products.

(294) In fact, by Daiichi's own account, there had been orchestrated collusion on the pricing of vitamin B5 between Roche, BASF and Daiichi from the early or mid-1980s and continuing until 1989.

(295) According to Daiichi, this collusion did not however obtain the level of sophistication of the later cartel arrangements and 'appears to have fallen apart in 1989 and 1990'.

(296) Around the beginning of 1991, says Daiichi, Roche made strenuous efforts to organise a structured cooperation involving the regular exchange of prices and sales data, the establishment of 'budgets' aimed at maintaining market shares, and concerted price increases. Daiichi states unequivocally that the collusion was 'organised, orchestrated and policed by Roche'.

(297) According to Daiichi, a representative of Roche visited Tokyo just prior to Christmas 1990 and insisted in a meeting with Daiichi, that Daiichi should restrict its output; Roche said it had to 'control' the export of

calpan from Japan to other regions (including Europe) or calpan prices would deteriorate.

(298) The proposal of Roche was for the producers to use fixed quantities 'as a base' and then reach agreement as to the national growth of demand which could be used to adjust the base. At this stage, says Daiichi, the discussion was 'conceptual', and no reference tonnages were actually discussed. Daiichi said such a scheme would not work without BASF, to which Roche replied that it would invite BASF to a meeting to agree a scheme for calpan.

(299) The first 'trilateral' meeting between Roche, BASF and Daiichi took place in Basel during the first quarter of 1991. At a later meeting in Basel in about mid-1991, the participants — Roche, BASF and Daiichi — provided the details of their calpan sales in each region for 1990 in order to agree a basis or reference year.

#### 1.4.4.2. *The basic scheme of the cartel*

(300) The three producers agreed from 1991 onwards on the allocation amongst themselves of that part of the world calpan market (90 %) which they controlled between them.

(301) Percentage quotas were allocated to each of the participants on both a worldwide and regional basis. According to Daiichi, they varied from year to year, ranging as follows over the period 1991 to 1999:

Worldwide: Roche 42 to 45 %; BASF 23 to 25 % and Daiichi 32 to 34 %  
Europe: Roche 40 to 48 %; BASF 19 to 22 % and Daiichi 30 to 39 %.

(302) Daiichi has provided documentation which would indicate that for the reference year 1990, the three producers took as the basis of their scheme the following worldwide division of sales:

(in tonnes)

Hoffmann-La Roche	BASF	Daiichi	Total
1 990 (43 %)	1 050 (23 %)	1 500 (34 %)	4 540

(303) The agreement was implemented by 'global' meetings held on a quarterly basis, either in Europe or Japan. To ensure adherence to the assigned quotas, sales information was exchanged on a quarterly, later monthly basis. The participants also agreed the details of concerted price increases, including target prices.

#### 1.4.4.3. *Target and minimum prices*

(304) The target and minimum prices fixed in the period from 1 October 1991 to 1 April 1993 for Europe were:

(in DEM)

	List	Lowest
1 October 1991	29,50	28,50
1 April 1992	32,50	31
1 April 1993	36,50	35

The price lists of Roche and BASF show that the target/list price was increased to DEM 39 in 1994 (lowest DEM 37,50); DEM 40 in 1995; DEM 43 in 1997.

#### 1.4.4.4. *Budgets*

(305) As with the other vitamin products, the core of the cartel was the fixing of the 'annual budget'. The three producers estimated annually the worldwide demand by projecting changes from the previous year on a regional basis and aggregating the forecasts. The volume of DL-calpan to be produced in Japan and Eastern Europe was also estimated. Volume targets were then set and percentage market shares allocated on a worldwide and regional basis.

(306) Each year there were discussions about the 'escalation factor', i.e. normal market growth, and the volume allocations were adjusted on a regional basis to take account of the anticipated increase in demand.

(307) Daiichi says that the budget was initially discussed three to six months before the end of the calendar year, since the European producers used a calendar year for this accounting. Later, to accommodate Daiichi, which used a fiscal year system ending later, the meetings were moved to November.

(308) Documentation relating to the budgets has been provided by both BASF and Daiichi.

(309) The following illustrate the operation of the scheme:

— a document showing the 1995 actual sale for each producer; the 1996 'budget' allocation, and 1996 actual sales ('1—12/96'). 'H' refers to Hoffmann-La Roche, 'B' to BASF and 'D' to Daiichi. 'A' designates Alps, a Japanese producer which was not a participant in the agreement,

- the 'Regional' market shares of the three cartel producers for the years 1992 and 1993 and for 1994 were set out, their 'budget' allocation and estimated actual sales ('HR'). An additional document sets out the Roche and BASF sales for the first six months of 1994 by region,
- a document supplied by Daiichi but originating from Roche shows the original and revised budget quotas by region for 1998,
- a further document prepared by Daiichi this time compares the monthly performance of the three producers against budget for 1998.

(310) Volume sales data were reported on a quarterly and later on a monthly basis. There was no formal compensation scheme but according to Daiichi, Roche would complain if it (Daiichi) exceeded its quota while in practice tolerating a variation of up to 2 %.

#### 1.4.4.5. *Cartel meetings*

- (311) From 1991 to 1998, the parties met on a regular basis. Daiichi has provided a very detailed account of these meetings.
- (312) Following the confirmation of Daiichi's adherence to the cartel mechanism in Tokyo in January 1991, and another meeting in Basel between Daiichi and Roche, the first trilateral meeting between Roche, BASF and Daiichi took place in Basel. There is some confusion about the participants and the precise date: Roche says it was in the first quarter of 1991, but Daiichi believes it was somewhat later.
- (313) It was at this meeting that a definitive agreement was reached on the allocation of market shares. The fact that a 'budget' for 1991 was prepared would indicate that the meeting was in early 1991, if not before.
- (314) There was a 'top level' meeting in Baden Baden on 2 June 1992 between Roche and BASF to 'foster mutual understanding' which included discussion on calpan.
- (315) Thereafter both 'top level' and 'operational' meetings took place regularly in Basel, Kaiseraugst (Roche's headquarters for vitamins) and Tokyo. Generally, but not always, Roche met separately with BASF and Daiichi. 'Budgets' were prepared in October or November for the following year.

(316) In addition to the meetings, price and volume information was exchanged quarterly until 1996 or 1997 when BASF proposed that henceforth it should be on a monthly basis.

#### 1.4.4.6. *The operation of the cartel (1991 to 1997)*

- (317) During the period of the cartel, the three producers contrived to raise the price of vitamin B5 at regular intervals in a series of concerted price increases.
- (318) The largest step increases in the price of calpan were made in the period 1991 to 1993, with the price in Europe going up by some 50 % in two years.
- (319) According to Daiichi, either Roche or BASF would indicate to it periodically that one or the other of them was going to make a price increase announcement, advised when it was to take place, and invited Daiichi to 'follow'. These announcements were often made via the trade press.
- (320) In the period covered by the cartel, the price of D-calpan feed grade in Europe rose from around DEM 24/kg in 1990 to DEM 42/kg at the beginning of 1998.
- (321) One of the main preoccupations of BASF and Roche was to ensure that currency fluctuations did not lead to price differentials between the regions and consequent transshipment by dealers. Thus when the US dollar became strong in relation to the Deutschmark, the two European producers were concerned to raise the European prices so as to deter dealers selling from Europe to North America; such trans-shipment was feasible as soon as the price differential rose to 10 % <sup>(20)</sup>.
- (322) According to Daiichi, BASF and Roche had another strategic incentive to raise the price of calpan and indeed of other vitamins used for animal feed. Both have a strong market position in pre-mixes by virtue of their integrated production of the vitamins used. By increasing the prices of the vitamins used in pre-mixes, they would put a price squeeze on their competitors in this downstream activity, and over time drive the smaller pre-mixers from the market.
- (323) Daiichi says that in November 1997 it opposed a planned increase to DEM 46/kg from DEM 42/kg for Spring 1998 proposed by BASF, partly because at so high a price, its pre-mixer customers in Europe would have every incentive to switch to DL-calpan suppliers in



Poland and Romania. Even if it opposed the price rise, BASF and Roche could however (it says) still increase the price because they produced pre-mix themselves and their exposure to DL competition was small. This perception is confirmed by BASF's firm declaration in its instructions to the national sales offices in June 1995: 'Mit DL-Calpan Konkurrieren wir auch in Zukunft nicht!' [We will not compete with DL-calpan in the future].

(324) BASF announced the price increase for calpan, as well as vitamins A, E and B2, via the trade journal 'Ernährungsdienst' of 25 February 1998. The limit price was fixed at DEM 44/kg.

(325) When BASF's customers resisted the increase, Roche supported the rise by also announcing an increase to DEM 46/kg, announced in 'Ernährungsdienst' of 13 June 1998. According to Daiichi, the concerted increase was unsuccessful because of customer resistance and the huge differential between D-calpan and the equivalent in DL-calpan.

(326) BASF and Roche became aware of the investigations in the United States of America into vitamins by late 1997 (see recitals 227 to 233). They had already increased their security precautions two years before when the ADM case became public knowledge. Even so, meetings for vitamin B5 continued after November 1997 and indeed on 17 November representatives of Roche visited Daiichi in Japan to introduce the new executive vice-president and head of vitamins marketing from 1 January 1998.

(327) On or about 16 December 1997 the parties met in Basel to produce the budget for the following year. It was not until 16 April 1998 on the occasion of a global operational meeting in Japan that Roche's head of vitamins marketing informed Daiichi that it should no longer exchange volume/price data by telephone with a lower level commercial manager. In future Roche's head of vitamins marketing would make the exchanges in person.

(328) Meetings continued through 1998, with details of sales volume and price information being exchanged at quarterly intervals and person to person. A budget for 1999 was prepared. The last exchange of sales volumes took place in Tokyo on 12 February 1999, in a meeting between Roche and Daiichi. The collusion only ended then because the participants had learned that prosecutions were imminent in the United States of America.

(329) For the development of the price level for calpan over the duration of the cartel, see Table VI in the Annex.

#### 1.4.5. VITAMIN B6 (PYRIDOXINE)

##### 1.4.5.1. *The origin and basic scheme of the cartel*

(330) As with several other vitamin products, the starting point of the cartel arrangements in vitamin B6 can be taken as the visit of senior Roche executives to Tokyo on 30 and 31 January 1991. A meeting between Roche, Takeda and Daiichi was held at this time for the purpose of reaching agreement on vitamin B6. Takeda had already been involved in — not entirely conclusive — discussions with Roche on vitamin C since April 1990. As a backdrop to this meeting, the price of vitamin B6 had declined by about 15 to 20 % during 1989 to 1990 <sup>(21)</sup>.

(331) The three producers of vitamin B6 agreed on the basis of their achieved 1990 sales the division of the worldwide market 'available' i.e. the total worldwide market minus the sales made by Chinese producers, with quotas for each region.

(332) During 1991 vitamin B6 was in short supply as BASF and Merck had both withdrawn from the market. Daiichi had temporarily ceased production in August 1991 as it was closing an old plant and the new factory was not coming into operation until March 1992.

##### 1.4.5.2. *Target and minimum prices*

(333) As with the other vitamin products, the price increases for B6 were achieved using 'list' and 'minimum' prices. The Commission has obtained from Takeda a table showing the development of the prices for several vitamins, including vitamin B6 (United States of America, Europe and 'overseas'):

(in DEM)

October 1991	85
1 April 1992	88
1 July 1992	90
1 April 1993	95 (85 Lowest)

(334) Takeda's note of the meeting with Roche in Basel on 13 April 1992 covering the whole of their common range of vitamins states that the DEM 90 from 1 July 1992 was in fact the lowest price: list price was DEM 95.

(335) An internal note of Daiichi of 1 September 1992 shows a price of DEM 90 for vitamin B6, with the

hand-written annotation '85—90 R' and '80—85 DPE' ('R' is Roche and 'DPE' is Daiichi Pharmaceutical Europe).

#### 1.4.5.3. *Cartel meetings*

- (336) According to Roche, the parties met bilaterally about twice a year either in Tokyo, Basel or in the vicinity of the latter, i.e. Roche met separately with Takeda and Daiichi. Daiichi and Takeda were also in regular bilateral contact, although Daiichi claims these contacts were mainly concerned with inter-company sales of calpan. The reason for the adoption of this artifice was the unwillingness of the Japanese producers to take part in meetings with more than one competitor at a time.
- (337) The dates and venues of the meetings have been identified by Roche. As with other vitamin products, the cartel meetings were held at both the 'top' and 'operational' levels. Takeda has provided the Commission with copies and notes of several meetings which it had with Roche, usually covering their common range of vitamins, and including vitamin B6.

#### 1.4.5.4. *Operation of the cartel (1991 to 1994)*

- (338) In the meeting of 13 April 1992 held in Basel the participants noted the 'dramatic' increase in the price of vitamin B6 owing to the shortage of supply and concluded: 'we can continue increasing the price'. In fact, as Daiichi points out, the price in Europe rose from DEM 51/kg in the first quarter of 1991 to almost DEM 80/kg a year later. In Europe a new list price of DEM 95 (lowest price DEM 90) for B6 was to be introduced with effect from 1 July 1992. The new price was supposed to continue to apply in 1993.
- (339) In the meeting between Takeda and Roche in Tokyo on 17 November 1992 the B6 quotas for 1993 could not be decided. Takeda noted that Roche was trying to stop it from increasing its sales in 1993 and demanded to know by how much its sales would grow; Takeda gave a non-committal reply. On pricing, Roche wanted to keep the current (DEM 90) price in Europe, this was said to have been agreed by Daiichi as well. Roche was to announce new prices in February 1993 and Takeda was expected to follow <sup>(22)</sup>.
- (340) The 'Far East' meeting held on 21 April 1993 was concerned with maintaining the price level in Europe; the allocation of quotas was to depend upon an assessment of the feasible demand. Roche suggested a three-party meeting, i.e. to include Daiichi. It appears from a Takeda note of a communication with a representative of Roche, that Daiichi had demurred.

- (341) In a 'European' meeting on 25 May 1993 between Takeda and representatives of Roche, the participants discussed Daiichi's relations with them and noted that its policy, at least for B6, was not to participate in meetings and to sell its production 'irrespective of market scale'. Roche and Takeda agreed to give priority to maintaining price levels. Roche had taken the line that sales quantities would have to be decreased in accordance with the size of the market, but Takeda believed prices could be maintained even with an increase in volume.
- (342) In 1993 all three producers (Roche, Takeda and Daiichi) lost a substantial amount of market share to the Chinese producers, who were reported as selling below production cost.
- (343) Indeed, during 1993 Takeda and Roche also identified Daiichi as selling below their prices and determined they would match its prices, but not those of the Chinese producers.
- (344) After the second quarter of 1993, the price of vitamin B6 fell sharply. Daiichi attributes the price fall and subsequent low level of price to (a) the higher volume of Chinese production and sales; (b) a substantial (28 %) price decrease by Roche in July 1994 to match Chinese prices.
- (345) On 20 July 1993 Takeda and Roche discussed the situation in vitamin B6 in a meeting in Tokyo. Takeda reported that Daiichi was now aiming for a cheaper price and an increase in quantity.
- (346) Roche said it 'would like to conduct a three party meeting including Daiichi, but this was denied by both T(akeda) and Daiichi'. Takeda's reaction was that 'We would like R to convince Daiichi' <sup>(23)</sup>.
- (347) In their meeting in Basel on 9 February 1994 Takeda and Roche agreed to observe the market situation with the Chinese in the first half of the year and decide on their policy after reviewing the January to June results. This was the last documented meeting between Takeda and Roche for vitamin B6.
- (348) Roche says that by the first half of 1994 the parties recognised that the vitamin B6 agreement was no longer viable owing to the Chinese imports and decided to end the agreement.

(349) The last known meetings between Roche and its Japanese competitors for vitamin B6 took place in Tokyo on 10 June 1994 (Takeda) and 15 June (Daiichi).

(350) After the B6 agreement ended, Roche states that it still met the Japanese producers separately in meetings covering other vitamins in the course of which 'information on price trends' for this product were exchanged.

(351) For the second quarter of 1994, Roche had amended its price lists to show a 'lowest' price of 75 DEM/kg (against the target of DEM 95); for the third quarter the prices were revised downward again (target DEM 65; lowest DEM 53).

(352) Daiichi for its part does not deny participation in cooperation amongst the producers of vitamin B6 in the period 1991 to mid-1994.

(353) The development of the average price level of vitamin B6 is shown in Table VII in the Annex.

#### 1.4.6. FOLIC ACID

##### 1.4.6.1. *The origin and basic scheme of the cartel*

(354) The cartel arrangements in folic acid began, as did those in several other products, with the visit of senior Roche executives to Tokyo in January 1991 and more

specifically the meeting between that company and Takeda (see recital 244).

(355) At that meeting, Roche put forward a plan for sales quotas and minimum selling prices in folic acid and asked Takeda to coordinate with Kongo and Yodogawa, the predecessor of Sumika. According to Takeda, the Japanese producers acceded to Roche's suggestion because of its market power.

(356) Roche claims that it was Takeda which made the first approach 'with a view to exchanging information', that this was in late 1992, that there were only two meetings and that any quota arrangements soon became 'obsolete'.

(357) As with all other vitamins, the basis of the collusive arrangements for folic acid was the establishment of a quota scheme. The fundamental principle of the quota allocation scheme was the division of the world market between Roche on the one hand and the three Japanese producers on the other; on the basis of achieved 1990 results, Roche was given 42 %, the Japanese 58 %. The Japanese producers agreed the division amongst themselves of their 58 % quota on the basis of their respective 1990 achieved sales performance. The annual quotas (by region) in volume terms had to maintain the agreed 42:58 division overall, while allowing for natural growth rate.

(358) For 1991 the agreed tonnage allocation was as follows:

(in tonnes)

	Roche	Takeda	Kongo	Sumitomo
USA	30,0	26,2	18,6	21,1
Europe	46,0	24,3	10,2	24,7
Overseas	44,0	14,5	11,1	9,8
Japan	2,2	2,5	3,5	0,5
Total	122,2	67,5	43,3	56,1

(359) Results were to be monitored on a quarterly basis against target quotas; if necessary, the producers could operate compensation arrangements. The usual system of agreed list and minimum prices was also to apply to folic acid.

##### 1.4.6.2. *Volume control and monitoring*

(360) Takeda has provided comprehensive spreadsheets and tables showing how the sales quotas were calculated for each year and how actual sales ('result') were compared with quota ('allocation').

(361) The following are typical and can be taken as illustrating the operation of the scheme:

- the monitoring on a quarterly basis of performance against allocation, on the whole the producers were on target at the end of the year,
- a table dated 20 November 1992, shows the scheme according to which the provisional allocations for 1993 were determined. For each of the four regions, the total demand for 1993 is estimated and the 1992 allocation of each producer adjusted to take account of forecast market growth in order to maintain the agreed 42:58 proportion,
- a document headed 'Market and competition monitoring' and dated 24 June 1994 compares forecast and achieved sales of each producer for the first quarter of 1994,
- a table headed '94 allocation' shows the historical development of the allocations for each year 1991 to 1993 and compares these with 1994, total available market excluding Chinese producers is 275 tonnes: in accordance with the agreed proportions, Roche is to have 115 tonnes and the Japanese producers 160,
- the breakdown by region of the 1994 plan,
- a table dated 30 January 1995 giving the annual results of each producer for 1991 to 1993 (the 1994 figures are left blank).

#### 1.4.6.3. *List and minimum prices*

- (362) In the autumn of each year, the minimum sales price was fixed in DEM for the European market and in USD for the other regions. A minimum price was set for each country using the appropriate exchange rate.
- (363) Takeda has produced a price schedule showing the 'list' and 'lowest' prices for folic acid in each region (United States of America, Canada, Europe, overseas) from 1991 to 1994. For Europe the agreed prices were:

(in DEM)

1.9.1991	1.4.1992		1.10.1992		1.4.1993		1.4.1994	
160	List	Lowest	List	Lowest	List	Lowest	List	Lowest
	200	190	Japan: 200 Roche: 215	190—195 205	200 225	195 220	200 225	195 220

The Japanese producers were permitted to sell at the old (i.e. lower) price from October 1992 onwards.

of vitamins, folic acid was the subject of a separate meeting in which representatives of Kongo and Yodogawa (later Sumika<sup>(24)</sup>) also took part at least on several occasions. At the meetings which were held in Europe, Takeda represented the other Japanese producers.

#### 1.4.6.4. *The operation of the cartel (1991 to 1994)*

- (364) Cartel meetings between Takeda and Roche were held on a quarterly basis. When Roche representatives visited Japan for meetings with Takeda on the B-complex range
- (365) The coordination between the Japanese producers prior to Takeda's quarterly meetings with Roche took place in the context of a group known as 'Yosankai' ('folic acid Group'), which had originally been a trade grouping

- organised by MITI, the Japanese Ministry of International Trade and Industry.
- (366) Takeda informed Kongo and Yogodawa (later Sumika) of Roche's wishes and proposals and sales results were collated. Takeda acted as the agent of the other two Japanese producers in the negotiations with Roche.
- (367) In the regular meetings between Takeda and Roche, the sales results of the four companies in folic acid were examined on the basis of reports submitted by them. In the event that one or other had exceeded the quota allocations, adjustments would be made to balance the excess sales.
- (368) In the first documented meeting, in Basel on 13 April 1992, Takeda reported that while there were still low price offers in the market from traders, it was limiting supply to get the price up. Roche was warned by Takeda not to offer pre-mixes at low prices; its information was that Roche was selling folic acid 'straight' at the agreed DEM 190/kg but including it in pre-mix at the equivalent of only DEM 150; the Japanese did not sell pre-mixes.
- (369) The Tokyo meeting on 17 November 1992 was attended by representatives of Sumika and Kongo. This time Roche complained that the Japanese producers were selling below list price; 'please correct this quickly'. Takeda defended the Japanese producers by reference to Roche's sales of pre-mix: Roche might well offer the straight product at list price, and so turn away business, but it was not in good faith as most of its sales of folic acid were in pre-mixes and it was covering itself by selling pre-mix including folic acid at a cheap price.
- (370) According to Takeda, it suited Roche to push the Japanese producers to keep high the folic acid price they charged to the independent pre-mixers — who were competitors of Roche in this product — as it put them in a price squeeze: Roche could undercut them by selling its own pre-mix at artificially low prices. The upshot was that Roche agreed to raise the price of pre-mix and the Japanese promised to bring their prices for folic acid up to list price as soon as possible.
- (371) The new quotas were fixed for 1993 on the basis of an estimated total market of 320 tonnes, 20 tonnes more than 1992. However, the allocations were to be reviewed the following year. Takeda considered that 'sales quota should not be fixed without sales effort'.
- Roche had kept the promise it had made when it set up its own folic acid production facility to double world demand for folic acid, but Takeda had also worked hard at creating new sales routes.
- (372) In the folic acid meeting in Japan in February 1993 attended by all the Japanese producers and Roche, there were intensive discussions over the precise division among the regions of the 1993 allocations, these had already been agreed, based on a total market of 320 tonnes, but Takeda and Kongo wanted some revisions.
- (373) Finally Roche's regional allocations were left unchanged, as were Sumika's, while for Takeda 2 tonnes were reassigned between the USA and the Community, and Kongo's volumes were totally rearranged mainly to give it more sales in Europe.
- (374) Again Roche complained about pricing by the Japanese producers: they were selling in Europe at DEM 169 to DEM 178, far below the agreed DEM 195, while its regular prices were DEM 205 and list was DEM 215.
- (375) At the time the producers were planning a price rise for all vitamins for 1 April 1993. Roche intended if conditions were right, to include folic acid and put the list price up from DEM 215/kg to DEM 225/kg.
- (376) The agreed minimum price had not been respected in any region, much to Roche's chagrin; it claimed that at each meeting the Japanese always promised 'we will try' without following up seriously. They had (said Roche) to decide on their April pricing by the end of February.
- (377) By the next meeting in Zurich on 25 May 1993 Takeda reported that prices were rising. It was expected that by the beginning of the next year the price would go up by 7 %. The Japanese were striving to achieve the list prices and would agree to another increase in January 1994, but further discussions would be needed in October/November because of the need to keep a close watch on market trends.
- (378) In their 'Yosankai' meeting of 24 September 1993 the Japanese producers reviewed the different markets and concluded that in Europe it was difficult to increase the

sales price and however much they wanted to achieve the DEM 195 minimum, actual prices were more like DEM 180 to DEM 185. They also agreed that it was necessary to modify the 320 tonnes of sales quota.

- (379) The influx of inexpensive Chinese folic acid onto the world market, including Europe, was identified as the cause for the difficulties in getting up the price and achieving quotas.
- (380) The 1993 achieved results indeed proved to be well short of expected demand and the agreed volume allocations; in Europe total sales were about 80 tonnes as against the 110,6 tonne allocation for the four producers.
- (381) For 1994, the volume quotas had to be scaled back in line with an anticipated demand of 275 tonnes (Europe, 96,3). Results for that year however showed a significant shortfall of some 50 tonnes. According to Takeda, the sales price had collapsed in late 1993 owing to the appearance of a vast quantity of Chinese material.
- (382) Takeda states that in the meeting in Tokyo with Roche on 10 June 1994, its president of the vitamins and fine chemicals division, announced to his counterparts at Roche that the agreement was 'no longer in effect'. This is the last known meeting between Roche and Takeda in relation to folic acid.
- (383) In its reply to the Statement of Objections, Sumika contests certain of the facts described by the Commission. However, Sumika simultaneously acknowledges that it is unable to either confirm or refute most of these facts, since the individuals in charge of folic acid at the relevant time can no longer be contacted by Sumika. Sumika points at some factual 'errors' which, according to it, would cast doubt on the reliability of at least some of Takeda's evidence. This concerns mainly the name of individuals reported to have attended certain meetings and the nature of the discussion at certain meetings.
- (384) Nevertheless Sumika recognises that it attended the meeting of 17 November 1992 and the meeting of February 1993 in which Roche took part. It also acknowledges that it participated in the Yosankai meetings.
- (385) As far as the period from 1991 to 1993 is concerned, Sumika recognises that 'Takeda requested Sumika and Kongo to identify their exports in the customs clearance statistics contained in the trade statistics issued periodically by the Japanese Government and obtained by Takeda'. Sumika says it is unable to provide any information regarding the year 1993 but confirms that

again from mid-1993 to 1995, the companies disclosed to each other their export sales at the request of Takeda.

- (386) Sumika contests the Commission's conclusion that Takeda acted as an 'agent' of the two other Japanese companies in negotiations with Roche. However, this is perfectly consistent with the facts as they are described by both Takeda and Roche, together with the fact that the breakdown of Japanese exports was carefully calculated during the Yosankai meetings.
- (387) The Commission concludes that the arguments put forward by Sumika to contest the facts are outweighed by those recognised by Sumika itself and by the detailed evidence provided by Roche and Takeda. These arguments must therefore be dismissed.

#### 1.4.7. VITAMIN C (ASCORBIC ACID)

##### 1.4.7.1. *The origin of the cartel*

- (388) The vitamin C cartel was instituted during 1990 to 1991, supposedly following a fall in prices of some 10 % in a year. On 7 April 1990 the head of vitamins marketing at Roche, met his counterpart from Takeda in Basel. Another top-level meeting between the two leading producers was held on 4 September 1990 in Zurich.
- (389) In January 1991 Roche, BASF and Merck met in Switzerland, at the lower 'manager' level in order to prepare for the visit to Tokyo of Roche and BASF senior executives which was scheduled for 30 and 31 January.
- (390) On 30 and 31 January 1991 Roche employees met their counterparts at Takeda in Tokyo; this meeting occurred during the visit to Japan of senior executives of Roche (and BASF) who met a series of Japanese vitamin producers in order to secure their definitive entry to cartel arrangements in various products, including vitamins E, B1, B6 and C.
- (391) There was a further 'top-level' meeting in vitamin C between Roche and Takeda on 10 April 1991 and by May the cartel was already functioning at the 'operational' level (see recital 420), so the detailed terms of the agreement must have been settled by the latest at some time in the first quarter of 1991.

#### 1.4.7.2. *The basic scheme of the cartel*

- (392) The accepted principle on which the cartel in vitamin C was based was that the existing worldwide market share of the four producers should be stabilised.
- (393) To set the quotas themselves, the participants first determined the total market on the basis of their sales and estimated sales by the Chinese and East Europeans producers of vitamin C. Expected sales by third parties were deducted, the remainder of the market being defined as the 'available market'. Volume targets for each producer for the next period were set on the basis of their estimate of the 'available market'.
- (394) The shares of the available market in 1990 (Roche 52 %, T 30 %, Merck 10 % and BASF 8 %) formed the basis for the allocations.
- (395) There was to be 'parallel development of sales and market share', i.e. quotas were adjusted in volume terms to take account of increased demand while maintaining the same percentage shares and targets set each year by region. Sales would be monitored and the necessary corrections made quarterly.
- (396) As with the other vitamin products the producers would agree target prices and concert their price increases.
- (397) The key customers were identified in each major national market, the idea being to fix a sales plan for each so that the producers could thus reinforce their efforts to raise prices in the market (see recitals 402 to 406).

#### 1.4.7.3. *Budgets*

- (398) The quota system was monitored on a running basis in a manner very similar to that employed for vitamins A and E and involving the establishment and implementation of 'budgets'. The following, from 1993 and 1994, can be taken as representative of the budget system for the whole duration of the cartels:

— a document <sup>(25)</sup> reflecting the allocation of vitamin C volumes to each company on a regional basis for 1993 and 1994,

— a note used in the meeting of 25 May 1993; the handwritten annotations were made by a BASF employee. The numbers in the box headed '2<sup>nd</sup> estimation' set out the proposed new market division,

— a document, headed 'Confidential', shows (1) the 'Ist' (meaning achieved sales) for Roche, Takeda, Merck and BASF in each geographical region for 1992 there are annotations comparing the actual sales with budget; (2) BASF's own 'budget' for 1993 which was revised on several occasions. The remark is made in the bottom right-hand corner '1993 muss Kompensation für zuviel von Takeda 1992 erfolgen (burden sharing).' (In 1993 compensation must result from Takeda's exceeding quota in 1992 (burden-sharing)),

— a further document shows the corrections to the 'budget' for 1993 resulting from a meeting held on 5 August 1993,

— the sales of each producer by country and region for 1994 were also set out. An (unsuccessful) attempt seems to have been made to disguise the real nature of the data shown: the spreadsheet has four columns marked 'VIPS'; 'Lager', 'Captive use' and lastly 'Ist'. A hand-written annotation however shows that the columns are in fact respectively 'Roche', 'Tak', 'Merck' and 'BASF' data.

#### 1.4.7.4. *Target and minimum prices*

- (399) At the outset, the prices were fixed on a quarterly basis, later this exercise was an annual one. The usual system of 'list', 'target' and 'lowest' prices was adopted; for Europe, the DEM price was used as the reference.
- (400) During the first year (1991) the objective was to bring the market price from DEM 20/kg up to the 'list' level of DEM 24/kg by increasing the 'lowest' prices each quarter. 'Lowest' prices were set in each national currency for 1 March, 1 July and 1 October 1991 (this latter increase for France and Italy only) and 1 January 1992. In DEM the 'lowest' prices were 20,50, 22 and 24.
- (401) The 'list' and 'lowest' prices for vitamin C (and other vitamins) from 1 January 1992 to 1 April 1994 were as follows.

(in DEM)

1.1.1992	1.7.1992	1.4.1993	1.4.1994
24	25	List 28	28
		Lowest 26	25,50

#### 1.4.7.5. *Customer allocation/key accounts*

- (402) To underpin their concerted efforts to raise the price for vitamin C in each market, the producers conceived a sophisticated system for handling the 'key accounts', i.e. important individual customers for which a detailed sales plan would be agreed.

(403) Takeda's note of a meeting with Roche on 15 and 16 May 1991, sets out clearly how the scheme operated at the time. For each 'key customer' which is identified, the producers estimated its total annual demand and reported the price it was currently paying, ascertained whether this was under a tonnage or fixed-term contract and agreed who would supply what tonnage in 1991.

(404) In some cases a producer asserted the right to supply exclusively a particular 'traditional' customer; in others, it demanded that the business of that customer be split according to a particular set formula.

(405) A refinement was brought to the key customer allocation system in May 1993. Takeda's note of a meeting of all four producers in Zurich on 25 May describes the new practice.

#### 'Handling of key clients

1) Allocation of key European clients has been going on since 1991 but with little success. In order to ensure that key clients are better controlled, each company should take responsibility of one company for this. (R is at present controlling.) (Decision chairman)

e.g.

B: Puratos

M: Astra

T: Kabi Pharma

R: Bayer.

2) Need for immediate implementation to gauge success. (Strong request from B) T stated that it would reply later since this was a European matter and arrangements would have to be made with Hamburg <sup>(26)</sup>. However, T essentially agreed with this approach.

3) Since R is extremely busy with its routine business, it was very enthusiastic about this proposal. However, since the proposal would mean that R would lose control over all key clients, it is difficult to say how the company really thinks in spite of its surface approval. It will be necessary to ask R directly about this matter.'

(406) During their technical level meetings the four producers reported in some considerable detail on their supplies to each key customer and the prices which had been

offered. One device applied, not always successfully, was customer 'protection' <sup>(27)</sup>:

'ASTRA(S)

R and T support M and B.

M and B divided share

	1993	1994
R	—	—
T	10	—
M	4	
B	12	
Total	26	

Allocation of share unsuccessful in the case of Puratos. T in particular saw its share decrease owing to its observance of prices. B's arrangements particularly poor. T took the 1993 share in the case of Astra, but achieved zero in 1994.'

#### 1.4.7.6. *Coca Cola*

(407) One of the largest customers worldwide was Coca Cola whose total requirements of vitamin C are in excess of 1 000 tonnes per year. For this major account, which received special treatment, Coca Cola negotiated a worldwide supply contract with its suppliers, the vitamin producers agreed between themselves how the business would be shared between them and the prices quoted. The minute of the bilateral meeting between Takeda and Roche of 10 November 1993 reads:

'(6) Regarding the pool contract toward Coca Cola for 1994

Situation of first offer

R: USD 15,80	Ex-works
USD 16,20	CIF
To each country	Japan: JPY 1 890, delivered
—	Ireland, France: DEM 25,00, delivered
	Turkey: DEM 25,50, delivered
B: USD 16,10	CIF
Europe:	DEM 25,20, delivered
M: USD 16,25	CIF
Europe:	DEM 25,20, delivered
Japan	JPY 1 900, delivered



T: USD 16,50 or Ex-Works  
 JPY 1 850  
 USD 17,00 CIF level  
 Japan: JPY 1 870, delivered

together' to coordinate their position as soon as Coca Cola started prospecting the suppliers in October. BASF and Merck agreed immediately to the Roche proposal; Takeda was non-committal on detail, it was the first multilateral meeting on vitamin C which it had attended 'in an adversary's country', but promised that 'we could extend our cooperation as usual.'

The dates for negotiations in Puerto Rico have not yet been decided.'

(408) In later meetings the producers argued over their respective shares of Coca Cola business in the different regions:

'(4) 1994 contract with Coca Cola

— R was forced to accept a lower share. The question in the United States of America was solved at the local discussions. Orders received from Kellogg.

— Europe: demand for supplementation [sic] from B and M at the meeting between the four parties.

— The 9 tons at USD 17,00 CIF intended by T for Austria would appear to be a penalty placed on R by Mr. [...]. This can't be helped if Mr. [...] is going to buy from expensive sources.'

(409) In further discussions on their joint strategy towards Coca Cola, Roche drew attention to the fact that Merck and BASF had slightly lowered their prices (below Roche's quota) and obtained a 'pool contract' for Europe. BASF defended itself on the ground that it had been 'steamrollered' by Coca Cola into lowering its price.

'— T said that they thought the preliminary discussions had been successful and supported R (the Japanese market had developed exactly as T had hoped). However, as pointed out by B and M, it would be a good idea if more time could be spent on the next occasion considering how to deal with Coca Cola. They proposed that, on the next occasion, prices should not be made uniform but should be set differently for each country so that different prices could be offered for different markets. If this were not done, Coca Cola would always attempt to conclude all its contracts at the lower market price. (The three parties all seemed to agree on this). On the next occasion the preliminary meeting will be based on price offers differing according to region.'

(410) In discussions as to Coca Cola's 1995 requirements, Roche proposed that the producers should 'sit down

(411) As late as the last documented meeting for vitamin C in August 1995 the producers were colluding on their forthcoming (separate) negotiations with Coca Cola:

'R(oché) stated that for (1996) Coca Cola would ask each company for an offer by the end of October/early November, and each company would negotiate with Coca Cola in early December in Puerto Rico. Furthermore, R stated that due to the reduction in demand in Europe and the US, the total sales volume would be less than in previous years. (...) Our company (Takeda) stated that in 1996 we should keep the position that the Japanese and the US entities are the main suppliers and that we want to keep the same level of price as in 1995 although presently it is difficult to increase the price. Each country agreed that they would offer a higher price.'

#### 1.4.7.7. *Pfizer contract*

(412) The cartel also discussed the supply contracts which Roche had with the pharmaceutical company Pfizer. This contract was renewed every two years. Takeda's report of its meeting with Roche in February 1993 read as follows:

'1. Stopping supplies to Pfizer

R supplies approx. 2,000 tons to Pfizer. However, they are unable to control the price properly, so that they will stop supplies within this FY.

R would like Takeda not to supply Pfizer if they contact Takeda. We will let Tokyo know, and T will also not supply Pfizer.'

(413) It appears that Takeda became anxious for Roche to stop supplying Pfizer, or at least cut deliveries substantially. Takeda's detailed minute of the bilateral meeting with Roche on 10 November 1993 in Japan sets out the discussions on this point:

'(4) Supply contract between Pfizer and R

R had been telling T that the present contract will be completed at the end of 1993. However, they explained at this time that the contract ended next year, at the end of 1994. When we questioned the different explanation from before, the answer was that the contract was renewed every 2 years, and that the end of 1994 was at the end of a contract period.

They mentioned that they had been cutting supplies since 1993, but did not answer how much they were supplying and how many tons had been cut.

In addition, regarding their supply regions, they could not check regional supplies because Pfizer was supplying all over Europe, and the only documentation on the distribution was on Pfizer's reports.'

- (414) Roche reported later that when the agreement expired in December 1994, it would not be renewed. Roche requested the other producers not to supply; BASF and Takeda confirmed they had not received any approaches from Pfizer.

#### 1.4.7.8. *Cartel meetings*

- (415) As with the other vitamins, quarterly meetings were held for the purpose of implementing the cartel agreements. From 1991 to May 1993, the meetings usually took place in Basel; participants during this period were Roche, BASF and Merck. Takeda refused to attend the multilateral cartel meetings with BASF and Merck but held 'one to one' meetings with Roche.

- (416) These quarterly meetings, at which Roche spoke for Takeda, were concerned with the following:

- monitoring of the agreement;
- adjustments to bring actual results in line with targets;
- agreement on prices and market shares.

- (417) The participating producers and Takeda communicated their sales to Roche which reported the overall results per company back to the group.

- (418) Roche representatives usually met separately with Takeda, either in Tokyo or in Basel. Roche's bilateral meetings with Takeda sometimes covered the range of vitamins which they produced in common (vitamin B1, B2, B6, C and folic acid); other cartel meetings were concerned with vitamin C only.

- (419) Indeed, Roche invited Takeda on 13 April 1992 to take part in the quarterly European meetings with itself,

BASF and Merck: Takeda had however declined 'due to our company policy. But if there is an important topic, like an allocation sales plan, we tentatively join the meeting. Of course we continue the meeting(s) with R as (at) present.' Takeda started attending multilateral meetings in May 1993.

#### 1.4.7.9. *The operation of the cartel (1991 to 1995)*

- (420) The first bilateral meeting between Roche and Takeda for which a detailed record is available was held on 15 and 16 May 1991. Representatives of Takeda met the Manager responsible for vitamin C at Roche, the two product managers and area managers for each European region.

- (421) The purpose of the meeting was 'to discuss (...) the price increasing results in March and April, and the lowest price for the third quarter, the fourth quarter '91 and the first quarter '92 by country with the demand and share of the big clients with (the) four area managers.' Takeda had announced a price increase effective 1 March.

- (422) In its summary of the outcome of the meeting Takeda reports that 'we confirmed the key clients with the '90 results and '91 plan with the exceptional contracts which are still (at) old prices made before 1st of March '91.'

- (423) The minimum price for the third quarter was agreed, but Takeda did not at this stage accept the Roche proposal to fix the European sales quotas for 1991 on a country-by-country basis.

- (424) The meeting had been called by Roche which explained that while it had been attempting to raise the price level for the past 4 or 5 years, the present price level of DEM 20,50 was too low. BASF did not (it said) always follow Roche's pricing locally; BASF's top management had however promised Roche that if it (Roche) found that BASF's prices disturbed the market, it could inform BASF top management which would then 'change the local organisation.'

- (425) Takeda complained that it had announced the new price level in Europe from 1 March 1991 but had lost business to Roche and BASF who had sold below the

agreed price. If it did not get evidence that the European producers were following its price in May and June, it would 'react' against them. Roche sought to defuse the situation by explaining that no new business had been accepted below the new price since 1 March; there were however still outstanding contracts at the old price.

(426) The discussions with the area management of Roche are reported in minute detail for each country. Total demand for 1991 is assessed and the results for the previous year (1990) exchanged. The key customers in each market are identified and allocated, their contractual arrangements are discussed individually and information is exchanged about their precise tonnage requirements and the prices they are being, or will be, offered. In some cases specific agreement is made about dividing their business or increasing the price. For each national market a 'sales plan' for 1991 is agreed.

(427) Takeda's report of its reaction to the Roche proposal to fix sales quotas for each national market is revealing of its ambivalent attitude to the rules of competition and antitrust law:

'His [the area manager of Roche for western Europe] idea is, it is not enough to exchange the figures of key clients, but it is necessary to fix the figures (...) country by country, in order to attain our policy.

Not only Mr. [...] but also Basel people strongly requested us to fix the figures by country.

We denied their proposal due to the legal point of views (sic), but they will propose it again in the next meeting on 23 May 91.'

(428) Takeda's report concludes with a list of the minimum prices agreed in each national currency effective on 1 March, 1 July and 1 October 1991 and 1 January 1992 (see recital 400).

(429) At the beginning of 1993 worldwide sales results for 1992 were exchanged and Takeda was shown to have exceeded its quota by 4 %. The position was as follows: Takeda 104 % of quota, Roche 95,6 %, Merck 85,6 % and BASF 88,5 %.

(430) For 1993, the producers estimated the total world market at 43 225 tonnes, to be divided on the basis of

the agreed 1992 sales plan. Takeda argued that it was unfair that the 1992 results were not reflected in the 1993 quotas: a party which failed to make adequate efforts to meet its sales quota should (it claimed) have its share reduced. Roche however insisted on the continuation of the basic agreement (see recitals 392 to 397).

(431) The Chinese manufacturers of vitamin C, which had made substantial investment in new production facilities, began at about this time to make incursions into the world vitamin C market. Their low prices and increasing volumes disrupted the cartel arrangements of the other producers. One short-term solution canvassed by the cartel was to buy up Chinese products.

(432) In early 1993, BASF held a meeting at its Ludwigshafen headquarters with Roche and Merck to consider the perceived threat from the Chinese producers. Roche proposed in this meeting that the European producers and Takeda should restrict their output and raise prices in the second, third and last quarters of 1993. Roche however claims that at this time it was planning to reduce vitamin C prices by 12 %.

(433) What would appear to be a detailed note of this meeting was supplied by BASF and shows that whatever Roche now asserts, 'target' prices for the second, third and fourth quarters were to be DEM 25, DEM 26 and DEM 27. Indeed the minutes of Roche's area managers' meeting held on 15 to 18 June 1993 describes its 'firm' pricing policy in vitamin C.

(434) The other two European producers agreed to Roche's proposal on restricting output provided Takeda agreed, which it did.

(435) Takeda's report of 19 April 1993 on Roche's pricing policy confirms that Roche had announced its price increase (list: DEM 28,00/kg) effective on 1 April through the trade press, although in practice it was expected to devote a real effort to increasing effective prices in Europe only from July.

(436) On or about 25 May 1993, the producers held a follow-up meeting at Zurich airport which was the first multilateral meeting attended by Takeda. Roche's proposal for restricting production with a 5 % cut in the 1993 allocations was put to Takeda. Takeda would not agree to a 5 % cut across the board, arguing instead that 'the more rational approach would be to adjust the allocation in accordance with rates of achievement in

- different areas'. Its counter-proposal would have given it an adjusted quota worldwide of 13 014 tonnes, compared with its original 13 310 tonne allocation.
- (437) A compromise was reached to the effect that the three European producers should have a quota reduction of 2,5 % and Takeda 2,2 %, with further consultations probably necessary to determine whether or not further adjustments were required. BASF has provided its working papers intended for this meeting showing the details of the proposal for a 5 % cut and the compromise solution.
- (438) It was also at this Zurich meeting that an agreement in principle was reached on implementing a scheme to improve the operation of the customer allocation system by having each producer take the responsibility for a particular key customer.
- (439) The four producers met again on 5 August 1993 in BASF's offices in Frankfurt. Takeda has provided a detailed contemporaneous memorandum. Following an exchange of data it was confirmed that the 2,5 % cut referred to as a 'voluntary target' had more or less been achieved during the first six months of 1993. Price increases to DEM 25,00 were being implemented in Europe.
- (440) For the year as a whole, given the unexpected increase in Chinese exports, the European producers repeated their proposal for the 5 % cut to be imposed, a suggestion opposed by Takeda: the US market for vitamin C was growing fast and it would (Takeda argued) be absurd to compensate for increased sales in America by cutting back in other regions.
- (441) Roche reiterated the basic principles of the agreement reached in 1991, BASF's representative noted them down. Each company produced its own proposals for a volume reduction scheme. Takeda's own proposal for volume cuts, awarding itself the lowest reduction provoked vociferous opposition from the other participants. Takeda's notes state that it 'proved impossible to reach agreement on this matter'.
- (442) According to BASF however, the three European producers presented Takeda with an ultimatum: unless it agreed to cut back its vitamin C sales, they would withdraw from the agreement. 'Takeda relented and new lower vitamin C volume allocations were agreed among the four companies.'
- (443) Takeda's minutes of its working level meeting with Roche covering several vitamins in Tokyo on 10 November 1993 confirms that new volume allocations had been agreed for vitamin C in the August meeting: sales results for the four companies in the period January to September were 'within the allotment of 73,6 %'.
- (444) However, Takeda returned to its favourite theme that it was 'unreasonable to ensure the continuation of 1990 shares without any conditions, and that it was necessary to consider cuts in allotment for B and M who are directly influenced by the Chinese products.' Roche replied that if allotment cuts were mentioned to BASF and Merck they would stop following the scheme and bring chaos to the market with their low prices: 'It is therefore necessary to continue this basic agreement to maintain shares. The present system should be maintained because it is now most important to keep the present prices.'
- (445) Roche proposed a new scheme for the 1994 volume allocations, with 'active' and 'passive' quotas for each region. In the next day's 'top management' meeting the quantity allotment for 1994, together with tentative plans to increase the market price in Europe on 1 January to DEM 25,00, and on 1 April to DEM 26,00, were agreed.
- (446) On 8 February 1994, all four vitamin C producers agreed in a meeting in Basel to continue in 1994 the basic agreement to freeze their shares at 1990 levels. While the three European producers stressed the importance of maintaining the 1990 market shares, Takeda had serious reservations and (by its account) only compromised in order to ensure BASF and Merck remained in the four-party discussions (they had threatened to walk out unless Takeda agreed to abide by the market shares fixed in the 1990 agreement).
- (447) After the usual exchange of information on the 1993 results, with each company explaining the reasons for any deviation from target, Takeda proposed that the four producers should purchase Chinese products in accordance with their shares so as to remove it from the market. Since there would be implications for the shares fixed in the 1990 'basic agreement', which Roche insisted were immutable, the Takeda proposal was rejected. As in previous years, the planning for 1994 therefore excluded Chinese material from the estimate of total demand. The price policy for Europe was

confirmed but it was finally decided to go for DEM 25,50 instead of DEM 26,00 on 1 April 1994.

(448) The Chinese producers continued to sell at prices which threatened the stability of the cartel. According to BASF, the price for vitamin C had as a result fallen by around one third by 1995.

(449) By this time, Takeda was regularly sending a representative to the European meetings although ostensibly remaining non-committal as to the permanence of its participation. BASF states that the quarterly European meetings were marked by increasing tensions between Roche and Takeda; Roche accused the Japanese producer of cheating by misstating its real sales.

(450) In March 1995 the regional quotas for each producer for 1995 were confirmed as 'firm and final'.

(451) Roche claims it announced in mid-1995 that it was ending the vitamin C agreements. The last meeting was apparently held in Hong Kong in August of that year. However, there is no indication in Takeda's full notes of this global meeting, held on 24 August, that the four producers had in fact decided to terminate their arrangements. Nevertheless, business was carried on as usual, including making forecasts for the period July to December 1995 and the setting sales quotas and minimum prices for each region.

(452) They did however identify one disagreeable irritant that might disturb their arrangements. As a result of a recent criminal investigation in the United States of America involving ADM, the four companies agreed in that meeting on 'complete security'.

'Also the four companies agreed that for the time-being, direct contact with the subsidiary (sic) in the US would be suspended. Any contact would be made with the headquarters (...). This is because R(oché) USA has been requested to submit documents in connection with (an investigation into) citric acid. Also, we are concerned that after the summer vacation, the EU Commission might take some action, although currently, the US situation does not have any influence on Europe.'

(453) As usual, the producers reviewed their achieved sales volumes (for the period January to June 1995) and the total available market (for July to December).

(454) In Europe total demand had gone down and the influx of Chinese material had increased rapidly. As against a

forecast 'available market' in Europe of 11 078 tonnes for the year 1995, the estimate had to be revised downward to 9 500 tonnes. Takeda notes '... a reduction in sales quotas for the companies had been set at the August 11 regional meeting, which our sales company attended, and the reduced sales amounts were already agreed upon by the four companies'.

(455) Contrary to BASF's claims that by then prices had fallen to only DEM 15/kg, the Takeda note of the 24 August meeting shows that the minimum sales price agreed by the four producers at the European Regional meeting of DEM 24/kg to DEM 23,50/kg were confirmed. Indeed, Roche volunteered the forecast that the European price would remain at DEM 24/kg.

(456) In a separate bilateral meeting between Takeda and Roche, Takeda even requested a 'review and revision' of the agreement, to which Roche responded that 'there was no problem with the current system and the two other companies would not agree to any amendments.'

(457) At what precise stage the agreement for vitamin C was abandoned is not documented, but by mid-1996 Roche's lowest price had been reduced to around DEM 20/kg (list: DEM 25/kg).

(458) The development of the price level for vitamin C over the duration of the cartel and after it ended is shown in Table VIII in the Annex.

#### 1.4.8. VITAMIN D3

##### 1.4.8.1. *The origin of the cartel*

(459) The accounts given by Solvay Pharmaceutical and Roche view the events surrounding the origin of the cartel arrangements from opposite standpoints. Roche attributes the initiative to Solvay which, it says, had already during 1992 initiated (unsuccessful) contacts with the other producers to interest them in forming a cartel. Roche claims — unlike Solvay — to have had no great desire to put up the price of straight D3; it says its interest was to keep the D3 price premium in AD3 combinations low so as to boost its sales of the far more profitable vitamin A in the AD3 compound. (In reality as early as March 1991 Roche's policy for vitamin D3 was expressed as follows: 'Price targets and increases to be coordinated with vitamin A (AD3). Agreed prices to be strictly implemented.')

Roche, Solvay persisted and finally persuaded the others to agree to meet in early 1994.

(460) Solvay initially glossed over the issue of which company initiated the cartel. In the comments it submitted following the Statement of Objections, however, Solvay states that it was the last D3 producer to be contacted for the cartel which had been initiated by the vitamin A producers (Roche, RPAN and BASF). Solvay claims to have been at risk from its two larger competitors who both produced A, D3 and other vitamins and could force it out of the market by depressing the price of D3. It had decided in 1990 not to re-enter the vitamin A market and was left with its vitamin D3 manufacturing. Roche had stopped supplying Solvay with vitamin A in 1991. At about the same time, BASF which had previously purchased D3 from Solvay, became an independent manufacturer in its own right of D3, with the result that Solvay's sales went down by 25 %.

(461) Whoever it was that took the initiative, it is common ground that the three producers began meeting in about the beginning of 1994 to agree a formal cartel scheme for vitamin D3.

(462) The first meeting, held probably on 11 January 1994 in Basel, was attended by Roche, BASF, and Solvay. They focused in this initial meeting on determining total world demand for vitamin D3 and their individual shares. A consensus was reached that their respective shares were Solvay 41 %, Roche 38 % and BASF 21 %.

(463) The three producers agreed that they should maintain the status quo with none seeking to gain market share from the others by price cutting. For 1994 they estimated the world market for vitamin D3 (feed grade) at some 1 450 TU, to be divided as follows: Solvay 600 TU; Roche 550; BASF 300. For pharmaceutical grade, which BASF did not produce, the market was to be split 50:50 between Solvay and Roche. It was also agreed to set minimum prices and target prices for each region.

#### 1.4.8.2. *Volume quotas*

(464) The parties established annual volume targets for the world, Europe and the United States of America based on their forecast of the total market and maintaining their respective shares.

(465) The operation of the system can be seen from:

— a document showing the comparison between achieved sales in the first half of 1994 against target and the performance of each producer expressed as an index,

— a further document showing the achieved volume figures for 1995 worldwide and in each region (Europe is further broken down to give separate figures for France and Germany). As compared with 1994 ('Real '94") and with the 1996 targets based on the same overall market size (1 600 tonnes) as 1995. NB: I is Roche; II is BASF; III is Solvay Pharmaceutical and IV is Rhône-Poulenc (included under Solvay's allocation).

#### 1.4.8.3. *Target and minimum prices*

(466) For the second quarter of 1994 the producers agreed for Europe on a 'list' price of DEM 25 and a 'low' of DEM 23,50. The list price was maintained for 1995 but the lowest price was raised to DEM 24 effective from April and set in each national currency (FRF 82; ITL 24 500; ESP2 000; GBP 9,80; BEF 495; NLG 27). In August 1997 the producers agreed to raise the list price by 20 % to DEM 30/kg.

#### 1.4.8.4. *Cartel meetings*

(467) The meetings between the three producers took place twice a year and were organised in turn by each member in different countries. Generally there was a meeting in February and another in September.

(468) Rhône-Poulenc did not attend the meetings but was informed about them in advance, provided relevant data beforehand to Solvay and was informed afterwards by telephone of the outcome.

(469) Each meeting followed the same structure. The organiser started by disclosing its sales figures (in volume) for the previous six or twelve months as appropriate. The others then shared their sales figures.

(470) Estimations were made and agreed of the future size of the market. On the basis of this overview of the market, the participants could monitor performance against target and allocate the volume quotas for the next period, generally in accordance with their agreed market shares. List prices and minimum prices were also set in these meetings.

#### 1.4.8.5. *The operation of the cartel (1994 to 1998)*

- (471) The documentation obtained from Solvay provides a comprehensive picture of how the cartel developed over the years.
- (472) In their first meeting in January 1994, the producers set 'list' and 'lowest' prices for each region for the second quarter of 1994 at DEM 25 and DEM 23,50 respectively. There is a hand-written comment in the corner of Solvay's note 'BASF goes first with price announcement'.
- (473) BASF's pricing guidelines to its national sales subsidiaries issued on 9 March 1994 for the second quarter instruct them not to undercut the lower limit of DEM 23,50 after 1 April. However Solvay's marketing of the product exclusively via agents was constantly identified as a hindrance to getting price increases through.
- (474) On 9 February 1995 the producers exchanged volume figures for the previous year. The feed grade market for 1995 was estimated at 1 490 TU to be divided between them as follows: Roche 565; BASF 325 and Solvay 600.
- (475) Prices were set for the different Community national markets amongst others. For Germany, the list price was confirmed as DEM 25,00 with a DEM 24,00 minimum as from 1 April 1995, confirmed by BASF's pricing instructions for the second quarter of 1995.
- (476) On 20 March 1996 the producers exchanged their figures for 1995. The estimate for the 1996 market was set at the level realised in 1995 (1 600 TU). For 1996, targets were set (World: Roche 600, BASF 350, Solvay (including Rhône-Poulenc) 650; for western Europe: 150, 100, and 240 respectively).
- (477) At the trilateral meeting in 14 February 1997 it was ascertained that realised world sales in feed grade (1 541 TU) in 1996 had fallen below the estimated demand for that year of 1 600 TU.
- (478) On 10 July 1997 in a bilateral meeting in Basel Solvay was informed by Roche that the latter would be prepared to approve a price increase of 20 %, to be 'led' by Solvay in Europe: Roche would 'see to it' that BASF and Rhône-Poulenc would follow the price increase for D3 and the AD3 combination product.
- (479) The trilateral meeting of 2 August 1997 involved discussions on this price increase, which was to be

announced by Solvay in September for implementation on 1 October. The increase was duly announced by Solvay in 'Ernährungsdienst' of 23 August 1997: the price of the reference product Duphasol D3 500 was to rise from DEM 25/kg to DEM 30/kg.

- (480) It was during this meeting that Roche informed the other participants that as a result of the antitrust investigations in the United States of America a management instruction had been given to cease the regular meetings; nevertheless contacts continued on a bilateral basis, with Solvay collecting figures from BASF on 4 February 1998 and presenting the collated results to Roche in April and to BASF on 25 June 1998.

#### 1.4.8.6. *Involvement of Rhône-Poulenc*

- (481) Although Rhône-Poulenc did not itself produce D3, as one of the principal suppliers of the compound product AD3, it had a particular interest in the outcome of the discussions.
- (482) According to Solvay, meetings with Rhône-Poulenc took place about twice a year. Solvay gathered the figures of Rhône-Poulenc before the tripartite meetings with BASF and Roche, and informed Rhône-Poulenc about the outcome.
- (483) Rhône-Poulenc was allocated a quota, included in the Solvay allocation and shown in the quota tables either as 'IV' or 'IIIa'. Rhône-Poulenc must have been aware of the allocation (it gave its figures to Solvay) and as Solvay points out 'it had an active role towards SP regarding how to deal with H-LR and BASF'.

#### 1.4.9. VITAMIN H (BIOTIN)

##### 1.4.9.1. *The origin and basic scheme of the cartel*

- (484) By the early 1990s the price of biotin was declining. Representatives of Roche had been telling Japanese companies during their regular visits to Japan that they should cooperate with Roche and avoid unnecessary competition.
- (485) During their individual visits, on technical matters, to Tanabe the Roche executives had started tentatively to explore the topic of target prices for biotin. Tanabe refers also to later meetings in March and May 1991 in which Roche 'tried to introduce target prices'.

- (486) In Europe Roche's solicitations were expressed in blunter terms: according to Merck, Roche insisted that it (Merck) should come to a 'biotin meeting', in which Merck should represent BASF since the latter took almost all Merck's production under coproduction arrangements; as a non-producer of biotin, BASF was not itself invited.
- (487) The first known multilateral meeting of the five producers was held in Lugano, Switzerland, on 14 October 1991 at the initiative of Roche who chaired the proceedings<sup>(28)</sup>. The participants were representatives from: Roche, Lonza, Merck, Sumitomo and Tanabe.
- (488) The Roche representative began by asking the participants to disclose the quantities of biotin each had sold in a reference period (probably the last year) in North America, Europe and 'rest of the world'. The figures, which were communicated orally, were expressed in terms of 'pure' biotin; each producer thus had to convert its sales of diluted product into the equivalent of 100 % product.
- (489) The exchange of sales data was made with a view to agreement to 'freeze' the worldwide shares for the five producers in the 'available' market, total world sales less supplies by Il Sung, a Korean producer.
- (490) According to Roche the 'significant degree of distrust' prevailing between the participants prevented their agreeing a mechanism for fixing target quantities for consecutive quarterly and half-yearly periods. Tanabe confirms that the participants did not agree on a mechanism for fixing target quantities on an ongoing basis. Merck however says that on the basis of Roche's forecast of the expected market for 1992, the sales volumes of each producer were in fact agreed. This is confirmed by the documentary evidence.
- (491) BASF, although it did not attend the biotin meetings, was fully informed by Merck and Roche of the agreement reached between the five producers and carefully committed the details to paper. However, not all participants were aware of BASF's indirect involvement.
- (492) A table, headed 'biotin (100 %) Market shares of competition', sets out the basis of the cartel scheme, the italicised columns are handwritten annotations in the original:

Producer	<i>Ist</i> 1990	<i>Ist</i> T	<i>Guideline</i> 1992	%
Roche	10,8	11,3	11,67	44,3
Sumitomo	4,52	4,3	4,83	17,0
Tanabe	4,05	5,0	4,80	19,6
Merck incl. BASF	2,05	2,65 effective	2,4	9,4
Lonza	1,08	1,2	1,19	4,7
Il Sung	1,23	1,3	1,35	5,0
<i>Regionale Aufteilung [Regional Allocation]</i>	23,82	25,5	26,24	100,0

- (493) The scheme is predicated on estimated market growth in the United States of America of 4 % to 5 %, Europe 2 % and Asia 7 %. At the bottom left hand corner is the handwritten annotation:

'Basisjahr (base year) 90 + 10 % = 92

Budget 92 gemacht; Wirkung auf Japan (Budget 92 done; impact on Japan)

MERCK + BASF will nicht zurückfallen, wenn andere steigen (fair burden sharing) (MERCK and BASF will not fall back if others increase).'

- (494) The notes also contain detailed calculations on the division between Merck and BASF of the 2 400 kg (or 2 500) quota nominally attributed to Merck under the

cartel: out of 2 500 kg BASF is to have 2 200, Merck 300; in Europe the split is to be BASF 1 400 and Merck 160.

#### 1.4.9.2. List and minimum prices

- (495) In the first meeting, the parties also agreed a list and minimum price which for Europe was fixed in DEM/kg for 2 % animal feed grade biotin and for 100 % pure food grade biotin. As can be seen in BASF's notes the plan was to raise the price in two steps, on 1 January and 1 April 1992. For the 2 % feed grade solution, the delivered prices were:



(in DEM/kg)

	1.1.1992	1.4.1992
List	140	150
Lowest	135	145

The prices for the 100 % pharma grade were:

(in DEM/kg)

	1.1.1992	1.4.1992
List	12,50	13,00
Lowest	10,00	11,00

(confirmed by Merck from documents giving instructions to apply these price parameters).

- (496) Both before and after this meeting, the Merck representative was in contact with the sales managers at BASF who were responsible for biotin in order to obtain the relevant market data and inform them of the results of the discussions.

#### 1.4.9.3. *Cartel meetings*

- (497) The subsequent meetings were held about twice a year to exchange sales data and discuss the pricing of biotin. There was no sophisticated market monitoring and reporting system such as was used for other vitamins.
- (498) The normal procedure was for the representative from Roche to telephone the other producers in advance to summon them to the next meeting; during these telephone calls he obtained the other producers' achieved sales in terms of 'pure' biotin during the previous three- (or six-) month period.
- (499) According to Roche, several of the subsequent multilateral meetings involved 'top level' participation; from its side, the delegation was led by its head of vitamins marketing. The holding of these meetings in locations such as the Baur au Lac Hotel in Zurich and the President Hotel in Geneva tends to confirm the high level of management participation.
- (500) The meetings as described by Tanabe generally followed the same pattern as the first 'kick-off' meeting. Complaints were sometimes voiced about the market behaviour of one or other participant; they took the form of accusations of selling at low prices or of taking away this or that customer at a low price.

- (501) In addition to the 'official' multilateral meetings, the biotin market was the subject of casual discussions on the occasion or on the margins of bilateral meetings in the normal course of business between Roche, Lonza, Sumitomo and Tanabe.

- (502) Roche has identified three top-level meetings in addition to the initial 'kick-off' meeting in Lugano (7 April 1992 in Zurich; 25 August 1992 in Nara, Japan and early (in fact 25 January) 1993 in Geneva), but it says there were several more meetings which followed the same pattern and involved the same participants.

- (503) Tanabe described these meetings and two further ones: on 26 October 1993 in Osaka, Japan, and 19 April 1994 in Tokyo, the latter being the last multilateral session which it can recollect. Merck identified a further meeting in Zurich in 1993.

- (504) Sumitomo in effect denies any conduct on the part of its employees which might constitute a violation of Article 81; it admits attending only two plenary meetings with its competitors (Nara on 25 August 1992 and Geneva on 25 January 1993) and, with regard to the Geneva meeting, states that its representative was 'caught by surprise' at the time by the presence of others besides Roche, with whom an innocuous bilateral business meeting had been scheduled. Sumitomo claims that its representative found these unexpected meetings 'unpleasant' and he insisted the topic was inappropriate.

- (505) Sumitomo is however identified by the other producers (Roche; Tanabe; Merck) as attending the meetings regularly, and indeed Tanabe says that it always shared the costs of meetings in Japan with Sumitomo.

#### 1.4.9.4. *Operation of the cartel (1991 to 1994)*

- (506) The market price of biotin rose somewhat soon after the first cartel meeting in October 1991 and thereafter remained relatively stable over the duration of the cartel.
- (507) Tanabe's internal commercial documentation supplied to the Commission makes frequent reference to the 'target price' and although for obvious reasons the connection is not made with any agreement, it is apparent that these were the target prices fixed in the cartel meetings. NB: Tanabe usually quotes the targets for the 2 % feed grade solution in DEM or FRF per kilogram.
- (508) From about the beginning of 1993 <sup>(29)</sup>, the targets were set on a country-by-country basis in local currencies instead of for Europe as a whole. The main reason for

the change was to avoid the uncertainty caused by exchange rate fluctuations when the price was set in DEM only.

(509) According to BASF's pricing instructions to the national sales offices of 25 June 1993 the price for biotin had stabilised and even risen in the second quarter of 1994: a further improvement was expected with Roche supposedly applying a policy of 'Price before tonnage'.

(510) By the middle of 1994 the market price was however starting to decline, in part owing to Korean imports<sup>(30)</sup>. According to Tanabe's account of the meetings, both it and Sumitomo were being taken to task in meetings by Roche for not complying with the targets.

(511) At the end of the first quarter of 1994 BASF was reporting that the producers were selling in Europe at the following prices:

Roche: 130—135 DEM/kg,

Lonza: 125—130 DEM/kg,

Japanese 120—125 DEM/kg,

Il Sung: 118—123 DEM/kg,

(512) It was however predicting that Roche would maintain its firm stance on pricing and that the others would attempt to improve their prices.

(513) Roche asserts that the implementation of the agreement at operational level had ceased in early 1994; the meeting in Tokyo on 19 April 1994 was the last multilateral meeting scheduled for biotin, although it does not deny that in later bilateral meetings at senior level on technical matters there was some exchange of information on market prices. Tanabe says it 'cannot exclude' that there may have been discussion on the biotin market during meetings with Roche. Merck and Lonza submit that the infringement was terminated in April 1994.

(514) Although after April 1994 the contacts may have been desultory, Tanabe admits it continued to apply target prices until January 1995; instructions from Tanabe to its European subsidiary company dated 29 December 1994, and blaming 'heavy competition' from Sumitomo and Lonza for a drop in the market price, enjoins it to keep to the target prices for 2 % biotin in the appropriate national currency. Tanabe implies it learned of the target prices in telephone calls from Roche.

(515) Merck states that at a meeting organised by Roche some time in 1995 in its (Roche's) new headquarters building, Merck's representative had announced that Merck was

no longer ready to take part in the meetings; Lonza made the same announcement.

(516) As to the meetings between Roche and Sumitomo on the 14 June 1994 and in the period between 30 November and 9 December 1995, Roche states that these only concerned the supply of thiolactone, a key intermediate for the production of biotin, from Sumitomo to Roche.

#### 1.4.9.5. *Involvement of BASF*

(517) BASF does not itself produce biotin and did not attend any multilateral meetings; it obtains its requirements (from Merck) for resale to animal feed producers. Merck is insistent that, given its exclusive coproducer arrangements with BASF, it represented the latter in the cartel meetings. Merck says it was in contact with two individuals from BASF who were also involved in cartel meetings for other vitamins.

(518) BASF makes no mention in its Statement to the Commission of any mandate given to Merck to represent it in meetings; however, it volunteered the information that on 22 October 1991 employees of Merck and BASF met in Ludwigshafen, ostensibly concerning the coproducer arrangements in biotin. This was just one week after the first known multilateral meeting in Lugano. Besides informing BASF of the market share allocations in biotin, Merck 'instructed Mr (...) (of BASF) about the prices at which BASF should resell biotin, and informed him of a price increase set for April 1<sup>st</sup> 1992.'

(519) BASF's detailed notes of this meeting and its calculations and re-working of the quota scheme are in the Commission's possession. BASF was itself in direct contact with Roche.

#### 1.4.10. BETA-CAROTENE AND CAROTINOIDS

##### 1.4.10.1. *The origins and basic scheme of the cartels*

(520) There were already contacts between Roche and BASF during 1991<sup>(31)</sup>. On 22 or 23 September 1992 representatives of the two companies met in Basel to agree their respective shares of the beta-carotene market.

(521) The parties agreed that BASF should be allowed to increase its 21 % market share by 1 % a year until 2001 when it would be capped at 30 %. Variations in share

were permitted from region to region provided the overall quota was not exceeded; any excess above quota would have to be offset by compensatory purchases from the aggrieved party. Arrangements were made to coordinate future price increases.

#### 1.4.10.2. *Beta-carotene cartel meetings from 1992*

- (522) Quarterly beta-carotene meetings were held in Basel at the same location and on the same occasion as the vitamins A and E cartel meetings. As with vitamins A and E, the parties prepared a detailed 'budget', compared actual sales against budgeted quotas, made estimates of future market growth and agreed on the timing and amount of price increases.

#### 1.4.10.3. *The inclusion of carotinoids in the cartel arrangements from 1993: canthaxanthin and astaxanthin*

- (523) Carotinoids are classified by the colour they produce when ingested by animals; canthaxanthin and cintranaxanthin produce a red or gold colour in the animal's flesh and are called 'red' carotinoids, while astaxanthin, fed to salmon and other fish, makes them turn pink and is known as a 'pink' carotinoid.
- (524) As with beta-carotene, Roche controlled the market for carotinoids until the early 1990s. BASF had by 1993 increased its share of red carotinoids to around 33 %, it did not produce the 'pink' carotinoid astaxanthin at the time.
- (525) Roche wished to restrict BASF's market share in the red carotinoids; for its part, BASF considered it needed Roche's agreement to obtain a share of the market for (pink) astaxanthin.
- (526) The two producers met in Basel in May 1993 and agreed that BASF should initially reduce its share of red carotinoids to 29 % for 1994, following which it was permitted to increase its quota by 1 % to 2 % per year until reaching a 'ceiling' in 2002.
- (527) In August 1994 the producers agreed a schedule for BASF's controlled entry into the market for (pink) astaxanthin, for which purpose it was building a new plant due to come into service in 1996.

- (528) Initially BASF was to be allowed a 4 % market share in Astaxanthin in 1996 which would rise in a series of 'steps' to 20 % by the year 2002: 7 % in 1997; 9 % in 1998; 14 % in 1999; 16 % in 2000 and 18 % in 2001. While BASF was constructing its new plant, Roche would supply Astaxanthin to BASF for pre-production marketing and trials.

- (529) In the event the BASF plant, scheduled to begin operations in 1996, did not come on stream until 1999, and the agreement for 'pink' carotinoid was not implemented.

- (530) Carotinoid meetings were held each quarter on the same occasion as the beta-carotene meetings and involved essentially the same persons. In some years meetings were held more frequently.

#### 1.4.10.4. *Budgets*

- (531) Both producers have provided to the Commission budget spreadsheets or tables evidencing the operation of the volume control monitoring system in beta-carotene and carotinoids. BASF has provided a comprehensive set of documentation running from 1992 up to late 1998.
- (532) The budget sheets mostly follow the same scheme and appear to have been frequently updated. The following are representative for beta-carotene:
- a comparison for each geographic region. Europe is broken down into British Isles, Scandinavia, Western Europe, Iberia, Southern and Central Europe, etc of the Planned and Actual ('Plan' and 'Ist') sales of BASF and Roche for the period January to June 1996,
  - the budget plan for 1997 for each producer,
  - a table (filled in by hand) showing the achieved sales for each producer in 1992, 1993 and the first half of 1994; the 'budget' for 1994 and a preliminary budget for 1995. It also includes data for red carotinoids,
  - a document headed 'Sales estimate pr 18/10-98' showing that the arrangements were still operating as late as the end of 1998.

#### 1.4.10.5. *Continuation of the cartel arrangements after 1997*

- (533) The regular operational meetings for beta-carotene and carotinoids continued until at least autumn 1997. Roche says that the last operational meeting took place in late 1997 or early 1998. By then the parties had become concerned that their frequent contacts would attract the unwelcome attention of the Competition enforcement authorities. In the United States of America, investigations had already begun into the vitamins market.
- (534) Even then, rather than put an immediate end to the cartel, they took the decision to meet less frequently and with greater circumspection. Roche says that the last meeting in which an exchange of sales data took place, but without setting targets was on 27 March 1998. Later in 1998, sales data were exchanged by post (presumably at home addresses) in the same way as the agreements in vitamins A and E were being operated. BASF says that the agreements continued to operate in this way until late 1998.

#### 1.5. THE NATURE AND RELIABILITY OF THE EVIDENCE

- (535) In the present case the vast majority of the participating undertakings have admitted their involvement in unlawful price fixing and market sharing arrangements contrary to Article 81(1) (and implicitly Article 53(1) of the EEA Agreement as well).
- (536) Detailed factual statements admitting the violation have been provided by almost all the producers either on a voluntary basis or pursuant to requests for information from the Commission.
- (537) In each case the providers of the statements have incriminated other producers and in many instances have attributed the initiative and the prime responsibility in the illegal venture to one (or more) of the other producers. The role played by the various producers is spelled out in some considerable detail.
- (538) The statements made to the Commission by undertakings involved in a serious and covert violation of the competition rules have to be treated with some caution, particularly if they seek to put a gloss on the events related which is favourable to themselves, for example by diminishing their role in the violation.
- (539) However, in the present case the Commission is not relying on the uncorroborated declarations of only one of a limited number of participants. In the first place, the different versions of the events in question provided by the different producers, including the principal actors, demonstrate a remarkable coherence and consistency with one another as regards the salient facts.
- (540) Furthermore, the relevant facts are not only detailed in the statements of the producers; they are also amply documented in the vast quantity of contemporaneous notes and accounting records which the Commission has obtained from different producers. Although the producers have not all provided the same kind of documents, those provided by Roche for example consist almost exclusively of 'budget' calculations with virtually no contemporaneous meeting records, although its representatives must have attended hundreds of meetings with competitors, the documents for each product taken together demonstrate comprehensively and completely the origin, background, rationale and operation in practice of the collusive schemes in which the producers were involved.
- (541) It is not of course necessary for the proof of a violation once (i) the existence and operation of an agreement and (ii) the adherence to it of each of the alleged participants, is demonstrated, for there to be direct proof that every participant was involved in, or assented to, each and every manifestation of a cartel throughout its duration. Reasons of both substantive law and evidence militate against such a requirement.
- (542) Given the very secrecy of a cartel, and the special characteristics of an 'agreement' in the context of antitrust law, the relevant facts in a cartel case may often have to be proved by indirect evidence or by a combination of direct and indirect evidence.
- (543) In the present case it is hardly necessary to employ this method of proof given the quantity and probative value of the documentary evidence obtained: for the most part, direct evidence of the existence and implementation of the agreement has been obtained in the form of the 'budget' documents and extensive meeting notes.
- (544) There are naturally certain gaps in the documentary evidence. In so far as it may be necessary to fill any such lacunae, it is permissible to infer the existence of facts from other proven facts.
- (545) For the most part, the contemporaneous documentation, beside itself constituting relevant evidence of the facts to which it relates, corroborates the accounts given by the

producers in their statements to the Commission and tends to confirm their reliability. In this connection, minor inconsistencies, for example, as to the exact date of or the participation in a particular meeting, which are revealed on a close comparison of the statement of one producer with the statement or documents provided by another, do not undermine the essential credibility of the statement. On the other hand, in certain cases — among the most noteworthy are those of Eisai in vitamin E (recital 240) and Sumitomo in biotin (recital 504) — the attempts of producers to exculpate themselves by claiming to have been unwilling or unwitting participants in meetings with competitors, are contradicted by the documentary evidence.

- (546) In certain other cases, i.e. BASF in Vitamin B1 and biotin (recitals 260 to 269 and 517 to 519) and Rhône-Poulenc in Vitamin D3 (recitals 481 to 483), an undertaking which did not itself manufacture a particular vitamin but was still an important seller and, in its statement, did not take a position on its participation in collusive arrangements for that product, is shown to have been fully involved in a cartel.

## 2. LEGAL ASSESSMENT

### 2.1. THE TREATY AND THE EEA AGREEMENT

#### 2.1.1. RELATIONSHIP BETWEEN THE TREATY AND THE EEA AGREEMENT

- (547) The cartel arrangements applied to all countries in the EEA, i.e. all the present Member States together with Norway and Iceland, there is no information on sales to Liechtenstein. The arrangements in question extended to Austria, Sweden and Finland prior to their accession to the Community on 1 January 1995.

- (548) The EEA Agreement, which contains provisions on competition analogous to the Treaty, came into force on 1 January 1994. This Decision therefore includes the application as from that date of those rules, primarily Article 53(1) of the EEA Agreement, to the arrangements to which objection is taken.

- (549) In so far as the arrangements affected trade between Member States, Article 81 of the Treaty is applicable; as regards the operation of a cartel in EFTA States which are part of the EEA ('EFTA/EEA States') and its effect upon trade between the Community and EFTA/EEA States or between EFTA/EEA States, this falls under Article 53 EEA.

### 2.1.2. JURISDICTION

- (550) According to Article 56(1)(c) and (3) of the EEA Agreement the Commission is competent in the present case to apply both Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement, since the Agreements had an appreciable effect on trade between Member States and competition within the Community.

### 2.2. APPLICATION OF ARTICLE 81 OF THE TREATY AND ARTICLE 53 EEA

#### 2.2.1. ARTICLE 81(1) OF THE TREATY AND ARTICLE 53(1) OF THE EEA AGREEMENT

- (551) Article 81(1) of the Treaty prohibits as incompatible with the common market all agreements between undertakings, decisions by associations of undertakings or concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market, and in particular those which directly or indirectly fix purchase or selling prices or any other trading conditions, limit or control production and markets, or share markets or sources of supply.

- (552) Article 53(1) of the EEA Agreement, which is modelled on Article 81(1) of the Treaty contains an identical prohibition on agreements etc. but substitutes the conditions of (a) affecting trade 'between Member States' with 'between contracting parties', and (b) preventing, restricting or distorting competition within the common market with 'within the territory covered by ... (the EEA) agreement'.

#### 2.2.2. AGREEMENTS AND CONCERTED PRACTICES

- (553) Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement prohibit agreements, decisions of associations and concerted practices.

- (554) An **agreement** can be said to exist when the parties adhere to a common plan which limits or is likely to limit their individual commercial conduct by determining the lines of their mutual action or abstention from action in the market. It does not have to be made in writing; no formalities are necessary, and no contractual sanctions or enforcement measures are required. The fact of agreement may be express or implicit in the behaviour of the parties.

- (555) In its judgment in Joined Cases T-305/94, T-306/94, T-307/94, T-313/94 to T-316/94, T-318/94, T-325/94, T-328/94, T-329/94 and T-335/94 *Limburgse Vinyl Maatschappij N.V. and others v Commission* (PVC II), [1999] ECR II-931, the Court of First Instance stated (at paragraph 715) that 'it is well established in the case law that for there to be an agreement within the meaning of Article (81(1) of the Treaty) it is sufficient for the undertakings to have expressed their joint intention to behave on the market in a certain way'.
- (556) Article 81(1) of the Treaty <sup>(32)</sup> distinguishes 'concerted practices' from 'agreements between undertakings' and 'decisions by association of undertakings'. The object is to bring within the prohibition of that article a form of coordination between undertakings which, without having reached the stage where an agreement properly so called has been concluded, knowingly substitutes practical cooperation between them for the risks of competition (Case 48/69, *Imperial Chemical Industries v Commission* [1972] ECR 619 at paragraph 64).
- (557) The criteria of coordination and cooperation laid down by the case-law of the Court, far from requiring the elaboration of an actual plan, must be understood in the light of the concept inherent in the provisions of the Treaty relating to competition, according to which each economic operator must determine independently the commercial policy which he intends to adopt in the common market. Although that requirement of independence does not deprive undertakings of the right to adapt themselves intelligently to the existing or anticipated conduct of their competitors, it strictly precludes any direct or indirect contact between such operators the object or effect of which is either to influence the conduct on the market of an actual or potential competitor or to disclose to such a competitor the course of conduct which they themselves have decided to adopt or contemplate adopting on the market (Joined Cases 40/73 to 48/73, 50/73, 54/73 to 56/73, 111/73, 113/73 and 114/73 *Suiker Unie and others v Commission* [1975] ECR 1663.)
- (558) An 'agreement' for the purposes of Article 81(1) of the Treaty does not require the same certainty as would be necessary for the enforcement of a commercial contract at civil law. Moreover, in the case of a complex cartel of long duration, the term 'agreement' can properly be applied not only to any overall plan or to the terms expressly agreed but also to the implementation of what has been agreed on the basis of the same mechanisms and in pursuance of the same common purpose.
- (559) As the Court of Justice, upholding the judgment of the Court of First Instance, has pointed out in Case C-49/92P *Commission v Anic Partecipazioni* [1999] ECR I-4125, at paragraph 81, it follows from the express terms of Article 81(1) of the Treaty that agreement may consist not only in an isolated act but also in a series of acts or a course of conduct.
- (560) A cartel may thus properly be viewed as a single continuing infringement for the time frame in which it existed. The agreement may well be varied from time to time, or its mechanisms adapted or strengthened to take account of new developments. The validity of this assessment is not affected by the possibility that one or more elements of a series of actions or of a continuous course of conduct could individually and in themselves constitute a violation of Article 81(1) of the Treaty.
- (561) Although a cartel is a joint enterprise, each participant in the agreement may play its own particular role. One or more may exercise a dominant role as ringleader(s). Internal conflicts and rivalries, or even cheating may occur, but will not however prevent the arrangement from constituting an agreement for the purposes of Article 81(1) of the Treaty where there is a single common and continuing objective.
- (562) The mere fact that each participant in a cartel may play the role which is appropriate to its own specific circumstances does not exclude its responsibility for the infringement as a whole, including acts committed by other participants but which share the same unlawful purpose and the same anti-competitive effect. An undertaking which takes part in the common unlawful enterprise by actions which contribute to the realisation of the shared objective is equally responsible, for the whole period of its adherence to the common scheme, for the acts of the other participants pursuant to the same infringement. This is certainly the case where it is established that the undertaking in question was aware of the unlawful behaviour of the other participants or could have reasonably foreseen or been aware of them and was prepared to take the risk (judgment of the Court of Justice in *Commission v Anic*, at paragraph 83).
- (563) It is not necessary, in order for an undertaking to be a party to an 'agreement' in the sense of Article 81(1), for it to meet regularly (or even at all) with the other producers at the same time and place. In any event, in the context of a price-fixing cartel, there may be no need to meet in order for the plan to be implemented; further, one party may act as the agent of others in the performance of the common plan and in meetings with other participants.



(564) Finally, it may be noted that an undertaking may at any time adhere to an agreement which has already been formed between other undertakings; some participants may drop out and others may join in the course of the unlawful venture but it nevertheless remains a single continuing agreement.

### 2.2.3. THE NATURE OF THE INFRINGEMENTS IN THE PRESENT CASE

(565) The present procedure involves 12 vitamins and closely related products and 13 different producers, most of which are active in only a limited number of vitamins.

(566) Roche — the world's largest vitamin producer — is the only manufacturer involved in cartel arrangements for all the vitamins which are the subject of this Decision.

(567) Notwithstanding the number of producers, the variation in the participation in the meetings and the diversity of their product ranges, the collusive arrangements share the following common features:

- the cartel arrangements covered the full range of vitamins produced by Roche,
- the *modus operandi* for different vitamin products was essentially the same if not identical ('budgets', maintenance of the status quo in market shares, compensation arrangements, 'target' and 'minimum' prices, meeting structures, etc.),
- the collusive arrangements in the various vitamins were not spontaneous or haphazard developments, but were planned, conceived and directed by the same persons at the most senior levels in Roche and the other undertakings,
- the effective starting point for the worldwide cartel arrangements was the same for vitamins B1, B2, B5, B6, C and folic acid, somewhat earlier for vitamins A and E, which in fact provided the basic model for the scheme, namely the visit of senior executives from Roche and BASF to Japan on 30 and 31 January 1991,
- the price increases for the great majority of the different vitamins were usually announced and made on the same occasion,
- Roche and BASF sold a substantial part of their production in the form of pre-mixes, incorporating several vitamins, the implications of which in competition terms have already been discussed.

(568) The prime mover and main beneficiary of the complex of collusive arrangements was Roche. It is the largest vitamin producer in the world, with some 50 % of the overall market. Vitamins were a core sector accounting for 8 % of the Group's total turnover. The involvement of some of its most senior executives tends to confirm that the arrangements were the encapsulation of a strategic plan conceived and approved at the highest levels to dominate and control the world market in vitamins by illegal means.

(569) BASF, the next largest vitamin producer worldwide, assumed a paramount role in following Roche's lead. Both major European producers effectively formed a common front in conceiving and implementing the arrangements with the Japanese. Together they secured the recruitment of Eisai to their 'club' in vitamin E: see recitals 211 to 219. Roche later acted as the common agent in its dealings with Eisai.

(570) In the other vitamin products, the cartel arrangements generally followed the same scheme as that pioneered in vitamins A and E, with some variants in the case of vitamin H, with Roche acting as the agent and representative of the European producers (BASF, Lonza, Merck) in the meetings and negotiations held in Japan and the Far East.

(571) Takeda, as one of the main world producers of bulk vitamins, was fully involved in the cartel arrangements for vitamins B1, B2, B6, C and folic acid. Indeed, Takeda's involvement in the arrangements in each of these vitamin products was instrumental to Roche's designs to secure the illegal coordination of the vitamin markets it was active in, including those in the range of vitamin products it shared with Takeda.

(572) The other vitamin producers were all active and willing members of the cartel arrangements in the respective vitamin product markets in which they were active. Even if they had not taken the initiative, the attempts of some producers, notably Sumitomo and Eisai, to present themselves as having been drawn into collusive arrangements almost by accident, stand in conflict with the documentary evidence. Sumitomo does not dispute that it attended various bilateral and multilateral meetings with other biotin producers. Nevertheless, it submits that the Commission either lacks evidence, or did not properly assess the evidence at its disposal, and that it does not provide any proof that Sumitomo actually entered into anti-competitive agreements. Sumitomo's main argument is that the submissions on which the Commission relies contain differing

descriptions of the facts, and that the Commission is 'cherry picking' the information in its possession. More generally, Sumitomo contests that the facts described by the Commission amounted to an agreement within the meaning of Article 81 of the Treaty. Sumika comes to similar conclusions as far as the folic acid cartel is concerned. The company submits that the Commission has not met its burden of proof obligations and therefore has not established with sufficient certainty Sumika's participation in an infringement of Article 81(1) of the Treaty.

(573) These arguments must be dismissed. Firstly, in its effort to establish the facts of the case from separate and inevitably partial submissions, the Commission may inherently be confronted with a number of inconsistencies and/or contradictions. Nevertheless, the fact that Sumika and Sumitomo participated in several meetings, and that the object of these meetings was to restrict competition in, respectively, the folic acid and biotin markets is confirmed by the submissions made by the other cartel participants. Sumika and Sumitomo themselves confirm that they took part in a number of meetings which in the Commission's view can be identified as cartel meetings, the unambiguous object of which was to restrict competition in the markets concerned. Since there is no evidence that either Sumika or Sumitomo openly distanced themselves from what was agreed, the Commission is well founded to conclude that Sumika and Sumitomo entered into collusive arrangements with regard to, respectively, folic acid and biotin. (Case T-334/94 *Sarrió v Commission* [1998], ECR II-1439, recital 118).

(574) In the case of both BASF and Rhône-Poulenc their participation in the cartel arrangements or certain vitamin products of which they were not themselves manufacturers (biotin (H) in the case of BASF and D3 for Rhône-Poulenc) is also demonstrated<sup>(33)</sup>.

(575) The main common denominator of the different vitamin cartels is the presence of Roche and BASF, the two leading producers of vitamins worldwide, in all vitamin cartels to eliminate all effective competition between them in the Community and EEA across almost the whole a range of important vitamins.

(576) Beginning in January 1990 with vitamins A and E, which together account for some 60 % of demand for animal feed vitamins, and extending to vitamins B1, B2, B5, C, D3, H, beta-carotene and carotinoids, which constitute their common range; BASF does not market vitamin B6 or folic acid, these two producers, together with Rhône-Poulenc, Takeda and others, set up a secret and sophisticated mechanism to control the market for the vitamins concerned, fix their market shares and so

coordinate their prices that to all intents and purposes they operated in the market place not as competitors, but as members of a close partnership.

(577) The collusive arrangements in most of the vitamins concerned employed essentially the same model and followed the same pattern and the same method of operation, namely:

— the preparation, agreement and implementation and monitoring of an annual 'budget',

— the exchange of sales, volume and pricing information on a quarterly or monthly basis,

— the adjustment of actual sales achieved so as to comply with the quotas allocated in the 'budget exercise',

— the establishment of formal structure and hierarchy of different levels of management, often with overlapping membership at the most senior levels,

— the role of Roche as the conduit for collusion with Japanese producers.

(578) There were, however, certain variations as regards the allocation of market share quotas. In vitamins A and E, for example, the basic principle was the freezing of market shares at the respective percentages achieved in 1988; in beta-carotene, BASF's share was to be increased by 1 % a year until 2001 and thereafter capped at 30 %. For biotin (vitamin H) there was a general agreement to stabilise market shares at 1992 levels but no precise quarterly monitoring mechanisms.

(579) The Commission considers that the anti-competitive behaviour affecting vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids present, in the case of each vitamin product, all the characteristics of full agreements within the meaning of Article 81.

(580) Given the continuity and similarity of method, the Commission considers it appropriate to treat in one and the same procedure the complex of agreements covering the different vitamins. The Commission therefore covers several infringements in a single Decision.

(581) In its reply to the Statement of Objections, Roche stated that whilst it was not opposed to the Commission dealing with all of the various vitamins cartels in a single procedure, it did not agree with the idea that the various cartel agreements should be treated as a single conspiracy. In Roche's view, each cartel investigation should be restricted to the respective product market,



i.e. to the individual vitamin. Roche equally pointed out that it was not aware of any evidence as to the existence of an agreement between the various vitamins producers to engage in any 'overall coordinated scheme' for the entire vitamins industry.

(582) The Commission has described in detail the various vitamin product markets and the details relating to the infringement specific to each one. The treatment of separate infringements under a single procedure does not imply in any way that the various cartels are considered a single infringement. In any case, it is apparent from the facts as described in part 1 of this Decision and recitals 567 to 577 that the collusive arrangements in the various vitamins were not spontaneous or haphazard developments, but were planned, conceived and directed by the same persons at the most senior levels in Roche and the other undertakings.

(583) The Commission has considered the arrangements in each vitamin and has identified the participants in each of the infringements affecting individual vitamin markets. Whilst some of the undertakings to which the Decision is addressed are unconnected with some of the infringements, the Decision permits each addressee to obtain a clear picture of the complaints made against it. (Joined Cases 40/73 to 48/73, etc. *Suiker Unie and others v Commission* [1975] ECR 1663, paragraph 111).

(584) The Commission considers that the cartel agreements covering the vitamin products identified constituted, in each case, distinct infringements, although the scheme of the different collusive arrangements was similar. Moreover, the Commission takes into account the particular role of Roche and BASF which participated in all of them to partition the vitamin markets<sup>(34)</sup>. However, the Commission does not hold any producer responsible for collusion in products in which it was not involved (see table at recital 2 and recitals 565 to 574).

(585) The fact that the Japanese producers generally did not participate in plenary meetings with the European producers in no way detracts from the assessment of full participation in an 'agreement' in the sense of Article 81(1). Not only were they involved in the schemes to cartelise the different product markets; they were also in full complicity through the medium of Roche and sometimes others in its continuing implementation and execution.

(586) For certain products, the participation in the arrangements were not confined to the producers themselves. As far as the conduct of BASF in vitamin B1 and biotin is concerned, although it was not itself a producer of those particular products, it was fully

involved with the producers in the common design to fix prices and operate quotas. For similar reasons, Rhône-Poulenc must also be considered a full party to the agreement in vitamin D3, of which it was not a producer.

(587) In vitamin B1, BASF had ceased its own production in 1989 but the documentary evidence (see recitals 261 to 269) show that it was a party to the quota scheme, was represented by Roche in the meetings with Takeda and was instructed by Roche as to the prices it was to apply. BASF's role in biotin also went far beyond that of assent to and encouragement of the unlawful scheme; it was a corecipient and beneficiary of the quota allocated to Merck.

#### 2.2.4. RESTRICTION OF COMPETITION

(588) The agreements affecting vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids, individually had the object and effect of restricting competition in the Community and EEA.

Article 81(1) expressly mentions as restrictive of competition agreements which:

- directly or indirectly fix selling prices or any other trading conditions,
- limit or control production, markets or technical development,
- share markets or sources of supply.

(589) These are the essential characteristics of each of the horizontal arrangements under consideration in the present case. Price being the main instrument of competition, the various collusive arrangements and mechanisms adopted by the producers were all ultimately aimed at an inflation of the price to their benefit and above the level which would be determined by conditions of free competition. Market sharing and price fixing by their very nature restrict competition within the meaning of both Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement.

(590) The principal aspects of the agreements and arrangements which can be characterised as restrictions of competition are:

- allocating markets and market share quotas,
- agreeing concerted price increases,

- agreeing target and minimum prices,
- concerting on the implementation of those price increases in the different markets,
- adapting their individual conduct and pricing in order to ensure the maintenance of the agreed quotas and in some cases arranging for 'compensation' to adjust actual sales to the quotas,
- reinforcing the implementation of price increases by concerting and managing the 'key accounts',
- dividing the business of specific customers <sup>(35)</sup>.

T-202/98, T204/98 and T-207/98 *British Sugar and others v Commission*, not yet reported, at paragraphs 72 and 73).

(595) Market sharing and price fixing by their very nature restrict competition within the meaning of Article 81(1). Quite independently of the success or otherwise of their agreements to control the vitamin A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids markets, the producers devised a continuing and highly advanced machinery to govern their commercial behaviour in the context of a perceived mutual solidarity and common commercial interest.

#### 2.2.5. EFFECT UPON TRADE BETWEEN MEMBER STATES AND BETWEEN EEA CONTRACTING PARTIES

(591) In order to ensure the implementation of their restrictive agreements, the participants devised and applied reporting and monitoring systems, except in the case of vitamin H. They also participated in regular meetings and other contacts in order to agree the restrictions and to implement and/or modify them as required.

(596) The continuing agreement between the producers had an appreciable effect upon trade between Member States and between contracting parties of the EEA Agreement.

(592) It is also relevant that as producers of pre-mixes themselves as well as suppliers of vitamins to other pre-mixers, the major producers (particularly BASF and Roche) were in a position to 'squeeze' the margins and damage, actually or potentially, the business of their customers by increasing the price of vitamins to them.

(597) Article 81(1) of the Treaty is aimed at agreements which might harm the attainment of a single market between the Member States, whether by partitioning national markets or by affecting the structure of competition within the common market. Similarly, Article 53(1) of the EEA Agreement is directed at agreements which undermine the realisation of a homogeneous European Economic Area.

(593) Merck argues that the Commission fails to assign the material facts to the categories listed in Article 81(1) of the Treaty and presents a deficient and generalised description of the objections raised. The Commission rejects this argument. The material facts relevant to each of the infringements in the individual vitamin markets concerned are presented in particular detail in part 1 above. With regard to the principal restrictions of competition identified these are common to each and every infringement affecting the individual vitamin markets. This degree of similarity between the collusive agreements and arrangements made between the various participants amply justifies a common legal assessment of the facts and does not mean that the Commission holds producers responsible for collusion in products in which they were not involved (see tables (a) and (b) in recital 2).

(598) It is settled case-law that, 'for an agreement between undertakings or a concerted practice to be capable of affecting trade between Member States, it must be possible to foresee with a sufficient degree of probability and on the basis of objective factors of law or fact that it may have an influence, direct or indirect, actual or potential, on the pattern of trade between Member States, such as might prejudice the realisation of the aim of a single market between the Member States' (judgment of the Court of First Instance of 12 July 2001 in Joined Cases T-202/98, T204/98 and T-207/98 *British Sugar and others v Commission*, at paragraph 78).

(594) Given the manifestly anti-competitive object of the agreements, it is not necessary for an adverse effect upon competition to be demonstrated (Judgment of the Court of First Instance of 12 July 2001 in Joined Cases

(599) The markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids are characterised by a substantial volume of trade between Member States (see recitals 74 and 75). There is also a considerable volume of trade between the Community and EFTA: Norway and Iceland import 100 % of their requirements, primarily from the Community, and prior to their accession to the Community Austria, Finland and Sweden imported the totality of their requirements of bulk vitamins.

- (600) The application of Articles 81(1) of the Treaty and 53(1) of the EEA Agreement to a cartel is not, however, limited to that part of the members' sales which actually involve the transfer of goods from one State to another. Nor is it necessary, in order for these provisions to apply, to show that the individual conduct of each participant, as opposed to the cartel as a whole, affected trade between Member States (see the judgment in Case T-13/98, *Imperial Chemical Industries v Commission* ([1992] ECR II-1021, at paragraph 304)).
- (601) In the present case, the cartel arrangements covered virtually all trade throughout the Community and EEA in this important industrial sector. The existence of price-fixing and quota mechanisms must have resulted, or been likely to result, in the automatic diversion of trade patterns from the course they would otherwise have followed (see the judgment of the Court of Justice in Joined Cases 209/78 to 215/78 and 218/78, *Van Landewyck and others v Commission* ([1980] ECR 3125, paragraph 170)).
- (602) Sumika states that there was no appreciable effect on trade between Member States in relation to folic acid because the European market value was only around EUR 10 million and because there would have been no effect on trade between Member States.
- (603) Firstly, Sumika's implicit contention that a restriction of competition concerning a market of EUR 10 million has no appreciable effect on trade between Member States must be dismissed. The effect of a restriction of competition has to be evaluated with regard to the potential impact the restriction has in the market concerned, irrespective of the monetary value of the product market. In the present case, the anti-competitive agreement was capable of having an effect on the totality of the EEA market for folic acid.
- (604) Secondly, the allegation that there was no effect on trade between Member States must also be rejected. The argument of Sumika that 'Hoffmann-La Roche produced folic acid mainly for incorporation in its pre-mixes and not for sale on the European or other markets(s)' must be dismissed. Indeed, Sumika's argument shows that the restrictive agreement had an impact on the price of products (the pre-mixes) traded throughout the EEA and necessarily affected trade between Member States. In addition, whilst the Japanese producers had no production facilities in Europe, they marketed folic acid throughout Europe having an effect on the intra-Community trade. Finally, the cartel agreement between Roche and the Japanese producers of folic acid served to restrict exports to the EEA, with the consequent restrictive effect on intra-Community trade.
- (605) Merck asserts that the Commission fails to demonstrate the effect of the vitamins C and H agreements on trade between Member States. The Commission has no obligation to demonstrate the effect of the agreements on trade between Member States but rather must establish that the conduct is capable of having such an effect. For its part, Merck does not present any arguments that conclusively refute the capability of the agreements in vitamins C and H of having such effect.
- 2.2.6. PROVISIONS OF COMPETITION RULES APPLICABLE TO AUSTRIA, FINLAND, ICELAND, NORWAY AND SWEDEN
- (606) The EEA Agreement entered into force on 1 January 1994. For the period prior to that date during which a cartel operated, the only provision relevant for the present proceedings is Article 81 of the Treaty; in so far as the cartel arrangements covered Austria, Finland, Iceland, Norway and Sweden (then EFTA States), they are not considered to be a violation of Article 81(1) of the Treaty.
- (607) In the period 1 January to 31 December 1994, the provisions of the EEA Agreement applied to the six EFTA States which had joined the EEA; a cartel thus constituted a violation of Article 53(1) of the EEA Agreement as well as of Article 81(1) of the Treaty, and the Commission is competent to apply both provisions. The restriction of competition in five EFTA States during this one year period falls under Article 53(1) of the EEA Agreement.
- (608) After the accession of Austria, Finland and Sweden to the Community on 1 January 1995, Article 81(1) of the Treaty became applicable to a cartel in so far as it affected those markets. The operation of a cartel in Iceland and Norway remained in violation of Article 53(1) of the EEA Agreement.
- (609) In practice, in so far as the cartel agreements applied to Austria, Finland, Iceland, Norway and Sweden, they constituted a violation of the EEA and/or Community competition rules as from 1 January 1994.
- 2.2.7. DURATION OF THE INFRINGEMENTS
- (610) Although there are certain indications that contacts between certain vitamin producers may have taken

place before 1989, the Commission limits its assessment under Article 81 and the application of any fines to the period beginning in September 1989 (the month of the meeting in Zurich when the cartel scheme for vitamins A and E was agreed).

(611) It should of course be noted that in so far as the cartel arrangements concerning each vitamin product covered Austria, Finland, Iceland, Norway and Sweden they did not constitute infringements of competition rules before 1 January 1994 when the EEA Agreement came into effect.

(612) This section sets out separately for each vitamin the factors relevant to establishing the duration of the involvement of each producer.

#### 2.2.7.1. **Vitamins A and E**

(613) The three European producers Roche, BASF and Rhône-Poulenc entered the illegal agreements in September 1989 <sup>(36)</sup>.

(614) Eisai's adherence to the cartel with regard to vitamin E can be taken to date at the very latest from the meeting in Japan on 8 and 9 January 1991 when its executives confirmed their readiness to join the existing arrangements <sup>(37)</sup>.

(615) The four producers continued their collusion until February 1999 <sup>(38)</sup>.

#### 2.2.7.2. **Vitamin B1**

(616) The vitamin B1 arrangements between Roche, BASF and Takeda were initiated in January 1991. According to the producers, the last cartel meeting was in June 1994; this will be taken to be the end date of the infringement <sup>(39)</sup>.

(617) BASF must be taken to have been a member of this cartel for as long as it was in existence, i.e. January 1991 to June 1994 <sup>(40)</sup>.

#### 2.2.7.3. **Vitamin B2**

(618) The two major producers, Roche and BASF, agreed the framework of the cartel in vitamin B2 on 14 and 15 July 1991 <sup>(41)</sup>. Takeda's involvement in the collusive arrangement began in or about January 1992 <sup>(42)</sup>.

(619) The arrangements lasted until September 1995 <sup>(43)</sup>.

#### 2.2.7.4. **Vitamin B5**

(620) The participation of Roche, BASF and Daiichi is established from January 1991 <sup>(44)</sup>.

(621) The cartel arrangements persisted until at least the Tokyo meeting of 12 February 1999 <sup>(45)</sup>.

#### 2.2.7.5. **Vitamin B6**

(622) The starting date for the vitamin B6 arrangements between Roche, Daiichi and Takeda was also January 1991 <sup>(46)</sup>.

(623) The last known meeting for this product was in June 1994, although the parties continued to exchange 'information on price trends' for an unspecified period, this will be taken to be the end date of the infringement <sup>(47)</sup>.

#### 2.2.7.6. **Folic acid**

(624) The arrangements between Roche, Takeda, Kongo and Sumika concerning folic acid started in the beginning of January 1991. The last known meeting for this product was in June 1994. This will be taken to be the end date of the infringement <sup>(48)</sup>.

#### 2.2.7.7. **Vitamin C**

(625) The starting date for present purposes can also be taken as January 1991 for all the producers. Roche, BASF and Merck met during January and shortly thereafter (30 and 31 January) Roche went to Tokyo to secure the agreement of Takeda <sup>(49)</sup>.

(626) The last documented meeting of the cartel was held in Hong Kong in August 1995. Notwithstanding the fact that the parties continued to make price forecasts for later periods of time, this will be taken to be the end date of the infringement <sup>(50)</sup>.

#### 2.2.7.8. **Vitamin D3**

(627) The Commission will for present purposes take as the starting point the date of the first admitted meeting in January 1994 between Roche, BASF and Solvay <sup>(51)</sup>.

(628) Although the last plenary meeting between Solvay, Roche and BASF was in August 1997, the parties continued their cartel arrangements until July 1998 <sup>(52)</sup>.

2.2.7.9. **Vitamin H**

(629) In biotin the collusion will be taken to have begun in October 1991 with the Lugano meeting attended by Roche, Lonza, Merck, Sumitomo and Tanabe <sup>(53)</sup>.

(630) The last known meeting for this product was held on 19 April 1994. Although further contacts between Roche and Tanabe took place after this date, this will be taken to be the end date of the infringement <sup>(54)</sup>.

2.2.7.10. **Beta-carotene and carotinoids**

(631) Although BASF admits to 'occasional contacts' with Roche between 1988 and 1991, the Commission will take 22 September 1992 as the starting point for the cartel arrangements in beta-carotene <sup>(55)</sup> and May 1993 for carotinoids <sup>(56)</sup>.

(632) The agreements for both of these products operated until December 1998 <sup>(57)</sup>.

## 2.2.8. ADDRESSEES: UNDERTAKING IDENTITY AND SUCCESSION

(633) It is established by the facts as described in part 1 that Roche, BASF, Solvay, Merck, Lonza AG, Daiichi, Eisai, Kongo, Sumitomo, Sumika, Takeda and Tanabe have directly participated in the collusive arrangements regarding different vitamin cartels. Consequently, each company will bear responsibility for their respective infringements and is therefore an addressee of the present Decision.

(634) In the present case, Rhône-Poulenc has changed its legal form since the ending or presumed ending, of its involvement in different illegal agreements.

(635) A change in legal form or corporate identity does not relieve an undertaking of liability to penalties for the anti-competitive behaviour. Liability for a fine may thus pass to a successor where the corporate entity which committed the violation has ceased to exist in law. This is because the subject of the competition rules in the Treaty and the EEA Agreement is the undertaking, a concept not necessarily identical to the notion of corporate legal personality in national commercial, company or fiscal law.

(636) The 'undertaking' is not defined in the Treaty. The Court of First Instance has found that 'Article 81(1) of the Treaty is aimed at economic units which consist of a unitary organisation of personal, tangible and intangible elements, which pursues a specific economic aim on a long-term basis and can contribute to the commission

of an infringement of the kind referred to in that provision' (Case T-352/94 *Mo Och Domsjö AB v Commission* ([1998] ECR II-1989, at paragraph 87)).

(637) Further, while the subject of the competition rules are undertakings, enforcement of the rules and the imposition and collection of any penalty require the identification of a specific legal personality responsible for the conduct of that undertaking and to which the Decision can be addressed.

(638) As the Court of First Instance observed in Case T-6/89 *Enichem Anic v Commission* [1991] ECR II-1695, where between the commission of the infringement and the time the person responsible for the operation of that undertaking has ceased to exist in law, it is necessary first to find the combination of physical and human elements which contributed to the commission of the infringement, and then to identify the person which has become responsible for their operation.

(639) The legal person on which the fine is imposed may therefore be different from that which existed at the time of the commission of the infringement.

(640) In the case of Rhône-Poulenc, as indicated in section 1.2.5.3, given that it exercised decisive influence over RPN, its wholly owned subsidiary, which was directly involved in the cartels related to vitamins A, E and D3, the Commission holds it responsible for the infringement. Rhône-Poulenc merged with Hoechst on 15 December 1999 to form a new company Aventis and this 10 months after the end of the infringements in the vitamin A and E markets and seventeen months after the end of the infringements in vitamin D3. RPN has now become AAN, a business within the new company resulting from the merger, Aventis SA, for the operation of which Aventis SA is now responsible. In this respect, Community case-law states '...', where an infringement is found to have been committed, it is necessary to identify the natural or legal person who was responsible for the operation of the undertaking at the time, so that it can be made answerable for it. Where, however, between the infringement and the time when the undertaking in question must answer for it, the person responsible for the operation of that undertaking has ceased in law to exist, it is necessary, first, to establish the combination of physical and human elements which contributed to the infringement and then to identify the person who has become responsible for their operation, so as to avoid the result that because of the disappearance of the person



responsible for its operation when the infringement was committed the undertaking may evade liability for it.' (Joined Cases PVC II, T-305/94 and others, [1999] ECR II-0931, paragraph 953).

- (641) Given the continuity between Rhône-Poulenc SA and Aventis SA, in this respect see the posts and personnel responsible for the vitamins business of the company mentioned at recitals 92 and 93 above, the fact that Rhône-Poulenc SA (before its merger with Hoechst) and later Aventis SA was the sole interlocutor with the Commission during the administrative proceedings after having itself spontaneously approached the Commission on a voluntary basis and the fact that at no point did the undertaking deny its awareness of the cartels in which RPAN was directly involved nor the imputation of the infringement to it (see Case C-286/98 P *Stora Kopparbergs Bergslags v Commission* [2000] ECR-9925, paragraph 29), the present Decision is addressed to Aventis SA <sup>(58)</sup>.
- (642) In other cases, there is no question of succession, but it is necessary to identify the appropriate legal entity within the group to which the Decision should be addressed. In the case of Solvay Pharmaceuticals BV, this undertaking directly participated in the infringement and operates as a functionally separate entity from its parent Solvay SA. The Commission therefore addresses this Decision to Solvay Pharmaceuticals BV.
- (643) With regard to Lonza AG, although it was acquired in 1994 by Alusuisse which then demerged into Lonza Group AG, it has always existed as a separately managed undertaking. Therefore the Decision is addressed to Lonza AG.
- (644) Sumitomo directly participated in the cartel related to vitamin H (biotin); the Decision is therefore addressed to it in this respect. Sumika is a 100 % subsidiary of Sumitomo which operates as a functionally separate entity from its parent Sumitomo. It was created in April 1992 as a result of the merger of three subsidiaries of Sumitomo, including Yodogawa Chemicals which up to that date had been engaged in the manufacture and sale of folic acid. Yodogawa and later its successor Sumika participated in a cartel relating to folic acid; the Decision is therefore addressed to the latter with regard to this product.

#### 2.2.9. APPLICABILITY OF LIMITATION PERIODS

- (645) Pursuant to Article 1 of Regulation (EEC) No 2988/74 of the Council of 26 November 1974 concerning limitation periods in proceedings and the enforcement of sanctions under the rules of the European Economic Community relating to transport and competition <sup>(59)</sup>, the power of the Commission to impose fines or penalties for infringements of the substantive rules relating to competition is subject to a limitation period of five years. For continuing infringements, the

limitation period only begins to run on the day the infringement ceases <sup>(60)</sup>. Any action taken by the Commission for the purpose of the preliminary investigation or proceedings in respect of an infringement shall interrupt the limitation period and each interruption shall start time running afresh <sup>(61)</sup>.

- (646) As established in the present Decision, the companies Lonza AG, Kongo Chemical Co. Ltd, Sumitomo Chemical Co. Ltd, Sumika Fine Chemicals Ltd and Tanabe Seiyaku Co. Ltd have been directly involved in the facts subject to the present proceedings and have therefore taken part in an infringement of Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement.
- (647) In all cases, the companies can be deemed to have ceased their participation in the cartel arrangements they were respectively involved in (vitamin H or folic acid) more than five years before the Commission started its investigation. The infringements affecting vitamin H and folic acid ended on 19 April 1994 and June 1994 respectively. The Commission sent its first written requests for information with regard to vitamin H and folic acid on 20 August 1999 and 15 November 1999 respectively.
- (648) The infringements affecting vitamins B1 and B6 ended, in both cases, in June 1994. The Commission sent its first written request for information with regard to vitamins B1 and B6 on 19 August 1999. Therefore, BASF AG, Daiichi Pharmaceutical Co. Ltd, F. Hoffmann-La Roche AG and Takeda Chemical Industries Ltd can be deemed to have ceased their participation in the cartel arrangements for vitamin B1 or B6 more than five years before the Commission started its investigation.
- (649) Article 1 of Regulation (EEC) No 2988/74 is therefore applicable and despite their involvement in the infringements, Lonza AG, Kongo Chemical Co. Ltd, Sumitomo Chemical Co. Ltd, Sumika Fine Chemicals Ltd and Tanabe Seiyaku Co. Ltd are not subject to fines under the present Decision. Equally, BASF AG, Daiichi Pharmaceutical Co. Ltd, F. Hoffmann-La Roche AG, Merck KGaA and Takeda Chemical Industries Ltd are not subject to fines for their involvement in the infringements affecting vitamins B1, B6, H (biotin) or folic acid.
- (650) Sumika and Sumitomo submit in their respective replies to the Statement of Objections that even if they were found to have committed an infringement, such infringement could no longer be the subject of a Commission Decision since it would be time barred.
- (651) This argument must be dismissed. The rules on limitation periods concern exclusively the imposition of

finer or penalties. They have no bearing on the entitlement of the Commission to investigate cartel cases and to adopt, as appropriate, prohibition decisions.

### 2.3. REMEDIES

#### 2.3.1. ARTICLE 3 OF REGULATION NO 17

(652) Where the Commission finds there is an infringement of Article 81 it may require the undertakings concerned to bring such infringement to an end in accordance with Article 3 of Regulation No 17.

(653) In the present case the participants in the cartels affecting each of the vitamin products concerned went to considerable lengths to conceal their unlawful conduct. The Commission stated in its Statement of Objections that it was not possible to declare with absolute certainty that the infringements had ceased.

(654) In their replies to the Statement of Objections, the undertakings claimed that they had ended their participation in the infringements. Notwithstanding these observations, and in the interest of clarity, it is necessary to require the undertakings to which the present Decision is addressed, and that remain active in any of the vitamin products concerned, to bring the infringements to an end, if they have not already done so, and henceforth to refrain from any agreement, concerted practice or decision of an association which might have the same or similar object of effect.

#### 2.3.2. ARTICLE 15(2) OF REGULATION NO 17

##### 2.3.2.1. *General considerations*

(655) Under Article 15(2) of Regulation No 17<sup>(62)</sup>, the Commission may by decision impose upon undertakings fines from EUR 1 000 to EUR 1 000 000, or a sum in excess thereof not exceeding 10 % of the turnover in the preceding business year of each of the undertakings participating in an infringement where, either intentionally or negligently, they infringe Article 81(1) of the Treaty and/or Article 53(1) of the EEA Agreement.

(656) In view of the nature of the agreements in question, as described in the factual part of the Decision, and the measures adopted for their implementation, the undertakings could not have been unaware that their conduct had as its object the restriction of competition. The Commission therefore concludes that each of the cartels constitutes a deliberate infringement of Article 81(1) of the Treaty and 53(1) of the EEA Agreement.

(657) In fixing the amount of any fine the Commission must have regard to all relevant circumstances and particularly the gravity and duration of an infringement, which are the two criteria explicitly referred to in Article 15(2) of Regulation No 17.

(658) The role played by each undertaking party to the infringements is assessed on an individual basis. In particular, the Commission reflects in the fine imposed any aggravating or attenuating circumstances and applies, as appropriate, the leniency notice.

##### 2.3.2.2. *The basic amount of the fines*

(659) **The basic amount is determined according to the gravity and duration of the infringement.**

(660) In the present case, infringements subject to fines were committed in eight separate vitamin product markets: vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids.

(661) Given the continuity and similarity of characteristics and method, the category of seriousness of the infringements committed in these markets, their actual impact on the market and the size of the relevant geographic markets is assessed under the same heading. Further elements of gravity, such as the differential treatment to take into account an undertaking's economic capacity and sufficient deterrence, are assessed separately for companies in each product market. Given the differences in duration of the infringements in each product market concerned, this element is assessed separately.

### **Gravity**

(662) In its assessment of the gravity of the infringements, the Commission takes account of their nature, their actual impact on the market, where this can be measured, and the size of the relevant geographic market.

### **Nature of the infringements**

*All products (vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids)*

(663) It follows from the foregoing that the present infringements consisted mainly of market sharing and price fixing practices, which are by their nature very serious violations of Articles 81(1) of the Treaty and 53(1) of the EEA Agreement.

(664) The arrangements affecting vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids constituted deliberate

infringements of Articles 81(1) of the Treaty and 53(1) of the EEA Agreement. With full knowledge of the illegality of their actions, the leading producers combined to set up secret and institutionalised systems designed to restrict competition in a major industrial sector.

- (665) The cartel arrangements permeated the vitamins industry and were mostly conceived, directed and encouraged at the highest levels of the undertakings concerned. By their very nature, those agreements lead automatically to an important distortion of competition, which is of exclusive benefit to the participating producers and to the detriment of their customers and ultimately the general public.
- (666) The Commission therefore considers that the infringements affecting vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids constituted by their nature very serious infringements of Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement.

#### **The impact of the infringements on the various vitamin product markets in the EEA**

- (667) The Commission considers that the infringements committed by producers for the relevant periods covered at least over 80 % of the world-wide and the EEA market for vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids and had an actual impact on these product markets in the EEA. Prices were not only agreed but also implemented in each market.
- (668) Roche argues that not all of the price increases observed in the markets during the operation of the cartels were attributable to the cartel activities nor were the price declines observed in the markets following the cartel periods attributable to a cessation of cartel activities. With respect to the observed price increases, Roche believes that for numerous economic-related reasons, such as currency fluctuations, capacity constraints and supply/demand changes, vitamin prices would have increased substantially in the early 1990s regardless of any cartel behaviour among vitamin manufacturers. Similarly, Roche believes that the vast majority of price declines observed after the cartel periods may be explained by economic factors unrelated to the cessation of cartel activity, such as aggressive expansion into the respective vitamin markets by Chinese producers.
- (669) Contrary to Roche's argument, the Commission considers that the significant increase in the price of vitamins A, E, C, B2, B5, D3, beta-carotene and carotinoids during the operation of the cartels must be

interpreted in the light of the fact that the cartel members agreed on target prices, market share allocation and reporting and monitoring systems for each vitamin product concerned<sup>(63)</sup>. In any event, even if it were correct that in the absence of the cartel prices would have remained at the same level as those reached as a result of the cartel, this would only show that the cartel was inefficient or insufficiently ambitious. It cannot validly rebut the Commission's finding that the price increases actually implemented were made because of the activities of the participants in the cartel. This finding is made on the basis of observed and agreed facts. Roche should have proven that price rises were not caused by the cartel.

- (670) In so far as the vitamin C agreements are concerned, Merck argues that for its part they proved difficult to implement, ineffective in practice and did not entail quantitative sales. Merck states that the target prices were established just above market prices and the market share (30 %) held by non-participating vitamin C producers meant that a significant proportion of the market was unaffected by the arrangements. Thus, Merck holds that the price achieved as a result of the collusive arrangements was barely above the price which would have been achieved if the arrangements had not existed.
- (671) Contrary to Merck's argument, the Commission considers that the significant increase in the price of vitamin C between 1991 and 1995 must be interpreted in the light of the fact that the cartel members agreed on target prices, market share allocation and a reporting and monitoring system<sup>(64)</sup>. As in the case of the reply to Roche's arguments, the extent to which prices would have been different without the cartel may remain a matter for conjecture but the conscious implementation of the cartel agreements created a serious risk that prices were higher than under normal conditions of competition. Merck, for its part, provides no evidence to refute this conclusion.
- (672) In conclusion, the Commission considers that the parties concerned by the present Decision have not been able to rebut the finding as to the actual impact of the infringements on the relevant vitamin products market in the EEA.
- #### **The size of the relevant geographic markets**
- (673) For the purposes of assessing gravity it is important to note that each individual infringement covered the whole of the common market and, following its creation, the whole of the EEA.



### Interim conclusion

- (674) Taking into account the nature of the infringements under scrutiny, their impact on the individual vitamin product markets concerned and the fact that each one covered the whole of the common market and, following its creation, the EEA in its entirety, the Commission considers that the undertakings concerned by the present Decision have committed very serious infringements of Article 81(1) of the Treaty and 53(1) of the EEA Agreement for each of which the likely fine would be at least EUR 20 million.
- (675) The Commission moreover, for the purposes of determining the starting amount of the fines, takes into consideration the size of each of the different vitamins market.
- (676) Merck argues that in the present case, it is not appropriate to conclude that the nature of its infringement in respect of vitamin C should be considered as 'very serious' due to the marginal involvement it had in these arrangements.
- (677) The Commission rejects this approach. It is clear that price and market sharing cartels, as defined in the Commission's guidelines on the method of setting fines<sup>(65)</sup> are considered very serious infringements of Article 81(1). The particular characteristics of the infringement affecting the vitamin C market, i.e. the impact it had on the market and the size of the relevant geographic market, only reinforce this conclusion. In any case, the fact that involvement in a cartel may be only marginal which is not the case here, does not modify the object of the cartel which in the present case amounts to a very serious infringement, but only the level of participation of an undertaking.

### Differential treatment

- (678) Within the category of very serious infringements, the proposed scale of likely fines makes it possible to apply differential treatment to undertakings in order to take account of the effective economic capacity of the offenders to cause significant damage to competition, as well as to set the fine at a level which ensures it has sufficient deterrent effect. The Commission notes that this exercise seems particularly necessary where, as in the present case, there is considerable disparity in the size of the undertakings participating in an infringement.
- (679) In the circumstances of this case, which involves several undertakings, it is necessary in setting the basic amount of the fines to take account of the specific weight and therefore the impact of each undertaking's offending conduct on competition.

- (680) For this purpose undertakings can be divided into groupings according to their relative importance in each of the relevant vitamin product markets concerned. The placement of an undertaking in a particular grouping is subject to adjustment, where appropriate, to take into account in particular the need to ensure effective deterrence.
- (681) The Commission considers it appropriate to appraise the relative importance of an undertaking in each of the vitamin product markets concerned on the basis of their respective worldwide product turnover. This is supported by the fact that each cartel was global in nature, the object of each was, inter alia, to allocate markets on a worldwide level, and thus to withhold competitive reserves from the EEA market. Moreover, the worldwide turnover of any given party to a particular cartel also gives an indication of its contribution to the effectiveness of that cartel as a whole or, conversely, of the instability which would have affected that cartel had it not participated. The comparison is made on the basis of the worldwide product turnover in the last complete calendar year of the infringement<sup>(66)</sup>.
- (682) The following section (recitals 683 to 696) sets out separately for each vitamin the relevant factors for establishing the category applicable to each producer.

#### *Vitamin A*

- (683) It is evident from the table at section 1.2.6 that Roche was the major producer of vitamin A in the worldwide market. It is therefore placed in the first category. BASF and Aventis, which had significantly lower market shares in the worldwide market, are placed in the second category.
- (684) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin A market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche: EUR 30 million,
- BASF and Aventis: EUR 18 million.

#### *Vitamin E*

- (685) The table at section 1.2.6 shows that Roche and BASF were the two major producers of vitamin E in the worldwide market. They are therefore placed in the first category. Eisai and Aventis, which had significantly lower market shares in the worldwide market, less than a third than that of Roche, are placed in the second category.

(686) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin E market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche and BASF: EUR 35 million,
- Eisai and Aventis: EUR 10,5 million.

#### *Vitamin B2*

(687) Roche was the major producer of vitamin B2 in the worldwide market (see table at section 1.2.6). It is therefore placed in the first category. BASF and Takeda, which had significantly lower market shares in the worldwide market, close to or less than half that of Roche, are placed in the second category.

(688) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin B2 market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche: EUR 20 million,
- BASF and Takeda: EUR 10 million.

#### *Vitamin B5*

(689) The table at section 1.2.6 shows that Roche and Daiichi were the two major producers of vitamin B5 in the worldwide market. They are therefore placed in the first category. BASF, which had significantly lower market shares in the worldwide market, almost half than that of Roche, is placed in the second category.

(690) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin B5 market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche and Daiichi: EUR 20 million,
- BASF: EUR 14 million.

#### *Vitamin C*

(691) It is evident from the table at section 1.2.6 that Roche and Takeda were the two major producers of vitamin C in the worldwide market with market shares of 40 % and 24 %, respectively. They are therefore placed in the first category. BASF and Merck, which had much lower market shares in the worldwide market, less than 9 % each, are placed in the second category.

(692) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin C market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche and Takeda: EUR 30 million,
- BASF and Merck: EUR 7,5 million.

#### *Vitamin D3*

(693) It is clear from the table at section 1.2.6 that Roche and Solvay Pharmaceuticals were the two major producers of vitamin D3 in the worldwide market with market shares of 40 % and 32 %, respectively. They are therefore placed in the first category. BASF and Aventis, which had much lower market shares in the worldwide market, 15 % and 9 % respectively, are placed in the second category.

(694) On the basis of the foregoing, the appropriate starting point for the fine relative to the infringement concerning the vitamin D3 market, taking account of the categories identified as a result of applying the criterion of an undertaking's relative importance in the market concerned, is as follows:

- Roche and Solvay Pharmaceuticals: EUR 10 million,
- BASF and Aventis: EUR 4 million.

#### *Beta-carotene*

(695) Given the market characteristics of the beta-carotene worldwide market, essentially two main producers present in the product market, it is not suitable in this particular case to make separate categories between the companies for the purpose of setting the appropriate starting point for the fine relative to the infringement concerning the beta-carotene market. This starting point is set at EUR 20 million for Roche and BASF.

#### *Carotinoids*

(696) Given the market characteristics of the carotinoids worldwide market, essentially two main producers present in the product market, it is not suitable in this particular case to make separate categories between the companies for the purpose of setting the appropriate starting point for the fine relative to the infringement concerning the carotinoids market. This starting point is set at EUR 20 million for Roche and BASF.

#### **Sufficient deterrence**

(697) **In order to ensure that the fine has a sufficient deterrent effect the Commission will determine whether any**

further adjustment of the starting point is needed for any undertaking.

(698) In the cases of BASF, Roche and Aventis, the Commission considers that the appropriate starting point for a fine resulting from the criterion of the relative importance in the market concerned requires further upward adjustment to take account of their size and their overall resources.

(699) On the basis of the foregoing, the Commission considers that the need for deterrence requires that the starting point of their respective fines for each relevant vitamin market, as determined under recitals 683 to 696, should be increased as follows:

#### BASF

- vitamin A: by 100 % to EUR 36 million,
- vitamin E: by 100 % to EUR 70 million,
- vitamin B2: by 100 % to EUR 20 million,
- vitamin B5: by 100 % to EUR 28 million,
- vitamin C: by 100 % to EUR 15 million,
- Vitamin D3: by 100 % to EUR 8 million,
- beta-carotene: by 100 % to EUR 40 million,
- carotinoids: by 100 % to EUR 40 million,

#### Roche

- vitamin A: by 100 % to EUR 60 million,
- vitamin E: by 100 % to EUR 70 million,
- vitamin B2: by 100 % to EUR 40 million,
- vitamin B5: by 100 % to EUR 40 million,
- vitamin C: by 100 % to EUR 60 million,
- vitamin D3: by 100 % to EUR 20 million,
- beta-carotene: by 100 % to EUR 40 million,
- carotinoids: by 100 % to EUR 40 million,

#### Aventis

- vitamin A: by 100 % to EUR 36 million,
- vitamin E: by 100 % to EUR 21 million,
- vitamin D3: by 100 % to EUR 8 million.

## Duration of the infringements

(700) This section sets out separately for each vitamin the duration of the infringement relevant to each producer.

### Vitamin A

(701) The Commission considers that Roche; BASF and Aventis infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from September 1989 until February 1999 with regard to the vitamin A market. They committed a long-term infringement of nine years and six months. The starting amount of the fines determined for gravity<sup>(67)</sup> are therefore increased by 90 % for each company.

### Vitamin E

(702) The Commission considers that Roche, BASF and Aventis infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from September 1989 until February 1999 with regard to the vitamin E market. They committed a long-term infringement of nine years and six months. The starting amount of the fines determined for gravity<sup>(68)</sup> are therefore increased by 90 % for each company.

(703) Eisai initiated its participation in January 1991 and therefore committed a long-term infringement of eight years. The starting amount of its fine determined for gravity<sup>(69)</sup> is therefore increased by 80 %.

### Vitamin B2

(704) The Commission considers that Roche and BASF infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from July 1991 until September 1995 with regard to the vitamin B2 market. They committed an infringement of four years and three months, i.e. of medium duration. The starting amount of the fines determined for gravity<sup>(70)</sup> are therefore increased by 40 % for each company.

(705) Takeda committed an infringement of medium duration of three years and nine months, since it initiated its participation in January 1992. The starting amount of the fine determined for gravity<sup>(71)</sup> is therefore increased by 35 %.

### Vitamin B5

(706) The Commission considers that Roche, BASF and Daiichi infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from January 1991 until

February 1999 with regard to the vitamin B5 market. They committed a long-term infringement of eight years. The starting amount of the fines determined for gravity<sup>(72)</sup> are therefore increased by 80 % for each company.

#### Vitamin C

- (707) The Commission considers that Roche, BASF, Merck and Takeda infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from January 1991 until August 1995 with regard to the vitamin C market. They committed an infringement of four years and eight months, i.e. of medium duration. The starting amount of the fines determined for gravity<sup>(73)</sup> are therefore increased by 45 % for each company.

#### Vitamin D3

- (708) The Commission considers that Roche, BASF, Solvay and Aventis infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from January 1994 until June 1998 with regard to the vitamin D3 market. They committed an infringement of four years and six months, i.e. of medium duration. The starting amount of the fines determined for gravity<sup>(74)</sup> are therefore increased by 40 % for each company.

#### Beta-carotene

- (709) The Commission considers that Roche and BASF infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from September 1992 until December 1998 with regard to the beta-carotene market. They committed a long-term infringement of six years and four months. The starting amount of the fines determined for gravity<sup>(75)</sup> are therefore increased by 60 % for each company.

#### Carotinoids

- (710) The Commission considers that Roche and BASF infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement from May 1993 until December 1998 with regard to the carotinoids market. They committed a long-term infringement of five years and eight months. The starting amount of the fines determined for gravity<sup>(76)</sup> are therefore increased by 55 % for each company.

### Conclusion on the basic amounts

- (711) The Commission accordingly sets the basic amounts of the fines as follows:

#### *F. Hoffmann-La Roche AG*

- vitamin A: EUR 114 million,
- vitamin E: EUR 133 million,
- vitamin B2: EUR 56 million,
- vitamin B5: EUR 72 million,
- vitamin C: EUR 87 million,
- vitamin D3: EUR 28 million,
- beta-carotene: EUR 64 million,
- carotinoids: EUR 62 million,

#### *BASF AG*

- vitamin A: EUR 68,4 million,
- vitamin E: EUR 133 million,
- vitamin B2: EUR 28 million,
- vitamin B5: EUR 50,4 million,
- vitamin C: EUR 21,75 million,
- vitamin D3: EUR 11,2 million,
- beta-carotene: EUR 64 million,
- carotinoids: EUR 62 million,

#### *Aventis*

- vitamin A: EUR 68,4 million,
- vitamin E: EUR 39,9 million,
- vitamin D3: EUR 11,2 million,

#### *Takeda Chemical Industries Ltd*

- vitamin B2: EUR 13,5 million,
- vitamin C: EUR 43,5 million,

#### *Solvay Pharmaceuticals BV*

- vitamin D3: EUR 14 million,

#### *Merck KgaA*

- vitamin C: EUR 10,875 million,

#### *Daiichi Pharmaceutical Co. Ltd*

- vitamin B5: EUR 36 million,

#### *Eisai Co. Ltd*

- vitamin E: EUR 18,9 million.

### 2.3.2.3. Aggravating circumstances

#### Role of leader in the infringements

- (712) The Commission considers that Roche and BASF were joint leaders and instigators of the collusive

arrangements affecting the common range of vitamin products they produced and therefore their role in the different cartels are considered an aggravating factor <sup>(77)</sup>.

(713) A key result of the anti-competitive agreements in each of the vitamin product markets was to combine the market power that the participants held in each of the individual markets. This was most effective for those companies which produced and sold the widest range of vitamin products, i.e. Roche and BASF.

(714) As suppliers of a wide range of vitamin products these companies enjoyed a number of advantages. In particular their position in relation to their customers was stronger than companies selling a single or limited number of products, since they were able to provide a range of products and accounted for a greater proportion of their business. In addition, they enjoyed greater flexibility to structure prices, promotions and discounts and had a much greater potential for tying. They were also able to realise greater economies of scale and scope in their sales and marketing activities. Finally, any implicit (or explicit) threat of a refusal to supply would have been much more credible.

(715) The strength of these advantages on the competitive structure of a market depends on factors which were found in all the vitamins market. Downstream agents (wholesalers, intermediaries and large final consumers) purchase, to a large extent, a range of vitamin products all of which were supplied by the participants in the collusive arrangements. The case of pre-mixers is particularly relevant in this respect. For all vitamin products the combined market share of the vitamin producers was above 70 % and in certain products close to 100 %. The relative strength of competitors in each of the vitamins market was therefore poor or non-existent.

(716) As a result of possessing a broad range of products in separate but closely related product markets, the overall ability of these companies to implement and maintain the anti-competitive agreements into which they entered increased considerably.

(717) Both major European producers effectively formed a common front in conceiving and implementing the collusive arrangements with the Japanese and other European producers. Roche set out to implement a strategic plan to dominate and control the world market for all the vitamin products it produced, which constituted a very substantial part of all commercially available vitamins. Roche, in combination with BASF,

set out to eliminate all effective competition between them in the Community and EEA across almost the whole range of important vitamins <sup>(78)</sup>. Roche's particular role as prime mover and main beneficiary of these collusive arrangements is to be noted.

(718) This aggravating circumstance justifies an increase of 50 % in the basic amount of the fines to be imposed on Roche and an increase of 35 % in the basic amount of the fines to be imposed on BASF for their infringements affecting the vitamin A, E, B2, B5, C, D3, beta-carotene and carotinoids markets.

#### 2.3.2.4. *Attenuating circumstances*

##### **An exclusively passive or 'follow my leader' role in the infringement**

(719) With regard to the vitamin C market, Merck argues that its role was limited to following the instructions issued by Roche and Takeda and that it generally played only a subsidiary role in the vitamin C talks.

(720) Merck must be regarded as an active member of the cartel in the vitamin C market. Its representatives were present at several meetings of the cartel. It was involved in discussions on prices and the monitoring of sales volumes <sup>(79)</sup>. Its active involvement in price discussions also contradicts Merck's argument that it was only a price follower. Merck's participation was part of the overall scheme of the cartel to control the worldwide market and to include the most important producers.

(721) With regard to the vitamin E market, Eisai submits that it was a peripheral player in the cartel arrangements set up by the European producers and did not receive the detailed information shared between these. Neither could it implement price increases on individual customers due to its contracts with independent distributors which took no part in the agreement.

(722) The Commission considers that Eisai was an active member of the cartel in the vitamin E market. The fact that it conducted most of its contacts with the European producers through Roche and that independent distributors handled most of its sales in the EEA did not make it less of an active player in the cartel. As is set out in recitals 240 to 242, Eisai's attempts to present itself as a passive member in this infringement is contradicted by the documentation supplied to the Commission.

(723) There are therefore no attenuating circumstances in the case of Merck or Eisai that would justify a reduction of the fine imposed.

(724) With regard to the vitamin D3 market, Aventis submits that Rhône-Poulenc's role was limited to providing, at Solvay's request, its historic volumes data to Solvay and that it never attended any of the tripartite cartel meetings and played an exclusively passive role. Its small role in this market and its lack of active participation meant that Rhône-Poulenc was not even granted an independent market quota, but rather its allocation was always included under Solvay's.

(725) The Commission takes into account that Rhône-Poulenc played only a passive role in the vitamin D3 infringement. It did not attend any of the cartel meetings and was not allocated an individual market share. This attenuating circumstance justifies a decrease of 50 % in the basic amount of the fines to be imposed on Aventis for its infringement affecting the vitamin D3 market.

#### **Non-implementation in practice of the agreements in question**

(726) With regard to the vitamin C market, Merck argues that at no point did it restrict its production or sales to comply with the arrangements and did not do so either in terms of the prices agreed or the quotas allocated and cites a number of documents in the Commission's file to this effect.

(727) With regard to the vitamin B5 market, Daiichi argues that it did not always comply with the agreements since it had economic incentives to deviate from the agreed prices and volumes. Amongst these were the competition it faced from Chinese producers and the harm it might inflict on its customers which produced pre-mixes and were direct competitors of Roche and BASF in this market. This regular failure to apply price targets and the limited implementation of market-sharing output restrictions mitigated the market impact of the agreements, claims Daiichi.

(728) The Commission notes that the implementation of agreements on target prices does not necessarily require that these exact prices be applied. The agreements can be said to be implemented when the parties fix their prices in order to move them in the direction of the target agreed upon. This was the case for the cartels affecting the vitamin C and B5 markets. The fact that an undertaking which has been proved to have participated in collusion on prices with its competitors did not behave on the market in the manner agreed with its competitors is not necessarily a matter which must be

taken into account as a mitigating circumstance when determining the amount of the fine to be imposed. An undertaking which despite colluding with its competitors follows a more or less independent policy on the market may simply be trying to exploit the cartel for its own benefit. (Case T-308/94 *Cascades v Commission*, [1998] ECR II-925, paragraph 230).

(729) With regard to the implementation of the agreements on quantities, it is clear that the members of the cartels considered the quantities allocated to them as the minimum quantities. As long as every party was able to sell at least the quantities allocated, the agreement was respected. This was the case for the cartels affecting the vitamin C and B5 markets.

#### **Termination of the infringement as soon as the Commission intervenes**

(730) Merck argues that since it ended its participation in the collusive arrangements in vitamin C more than four years before the Commission launched its own investigation Merck should be entitled to a reduction of its fine.

(731) In its guidelines on fines, the Commission has indicated that it will reduce the basic amount of the fine when offenders terminate an infringement as soon as the Commission intervenes, and in particular when it carries out inspections.

(732) The Commission considers that if the undertakings ended the infringement on their own initiative before the Commission intervened, as Merck did in the case of the cartel in vitamin C, this unilateral action by the undertaking cannot be construed as constituting an attenuating circumstance. In order to benefit from an attenuating circumstance the undertaking has to show that its voluntary action to terminate the infringement is directly linked to the Commission's action. There are therefore no grounds under the Commission's guidelines on fines to reduce Merck's fine in this respect.

#### **Other attenuating circumstances**

(733) Merck states that its motive for participating in the vitamin C arrangements was not to realise profits but rather that it manufactured the product at a loss because it was essential for the maintenance of its industrial infrastructure at its plant in Darmstadt, Germany. The fact that 'Merck had a specific interest in continuing to produce vitamin C which was unrelated to any intention to realise profits' should be regarded as a mitigating factor in the fixing of the fine.

- (734) The Commission rejects Merck's argument. The Commission does not consider that, in general, either non-benefit from a cartel or any economic disadvantage suffered due to participation in a cartel, constitutes attenuating circumstances in the fixing of the fine.
- (735) Merck argues that the adoption by its management of a 'code of conduct' for its employees regarding competition rules on 12 September 2000 should be considered as a further attenuating factor. Eisai equally submits that its own legal compliance programme, introduced in 1999, should be considered as an attenuating circumstance.
- (736) The Commission welcomes all steps taken by undertakings to raise awareness amongst their employees of existing competition rules. Nevertheless, neither Eisai's nor Merck's initiative can dispense the Commission from its duty to sanction the very serious infringement of competition rules committed.
- (737) The Commission concludes that, with the exception of Aventis, there are no mitigating circumstances applicable to the participants in the infringements affecting the vitamin A, E, B2, B5, C, D3, beta-carotene and carotinoids markets.

#### 2.3.2.5. *Application of the leniency notice*

- (738) The addressees of the present Decision have cooperated with the Commission, at different stages of the investigation and in relation to different periods covered by the investigation, into the infringements for the purpose of receiving the favourable treatment set out in the Commission's leniency notice. In order to meet the legitimate expectations of the undertakings concerned as to the non-imposition or reduction of the fines on the basis of their cooperation, the Commission examines in the following section whether the parties concerned satisfied the conditions set out in the notice.

#### **Non-imposition of a fine or a very substantial reduction of its amount and/or substantial reduction in a fine**

- (739) Aventis submits that it was the first producer to freely disclose the existence of the cartels in vitamins A and E to law enforcement officials. Only after learning that Aventis had voluntarily offered to cooperate with the United States Department of Justice Antitrust Division's Grand Jury, did Roche and BASF rush to offer cooperation with the Commission, as well as with the USA and Canada.
- (740) In addition, Aventis points out that it had put an end to its involvement in the illegal activities prior to disclosing their existence to the Commission, provided all the evidence available to it, maintained continuous and complete cooperation throughout the investigation and did not instigate the illegal conduct.
- (741) The Commission considers that Aventis was indeed the first undertaking to adduce decisive evidence on the existence of an international cartel affecting the EEA in the vitamin A and vitamin E markets. This decisive evidence was provided in the Statements made by Aventis on 19 and 25 May 1999. It also met all other conditions as set out in section B of the leniency notice.
- (742) On the basis of the foregoing, the Commission concludes that Aventis fulfils the conditions set out in section B of the leniency notice and grants Aventis a 100 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (743) The Commission considers that Roche and BASF, through the principal material submitted to the Commission between 2 June 1999 and 30 July 1999, were the first to provide the Commission with decisive evidence of the existence of cartel arrangements affecting the vitamin B2, B5, C, D3, beta-carotene and carotinoids markets. The evidence submitted by both Roche and BASF in relation to the cartels in vitamins A and E was very substantial and was provided at an early stage in the Commission's procedure.
- (744) At the same time, the Commission considers that Roche and BASF acted as instigators or played a determining role in the illegal activities affecting the vitamin A, E, B2, B5, C, D3, beta-carotene and carotinoids product markets, as described above (see recitals 567 to 569 and 584). Therefore neither of them meets condition (e) of section B of the leniency notice and they can not benefit from any reduction under section B or C of that notice even if they were to meet the other conditions set out therein.
- (745) Whilst Roche and BASF were the first to adduce decisive evidence of the cartel arrangements affecting the vitamin B2, B5, C, D3, beta-carotene and carotinoids markets, thereby excluding other companies from meeting this condition, they also were instigators or played a determining role in these illegal activities. Therefore, no undertaking has satisfied in full conditions (a) to (e) or (b) to (e) of section B of the leniency notice

with regard to the cartel arrangements affecting the vitamin B2, B5, C, D3, beta-carotene and carotinoids markets and consequently no undertaking is eligible to benefit from a reduction under section B or C of the notice.

### Significant reduction of a fine

- (746) Under Section D of the Notice an undertaking which does not comply with all the conditions set out in section B or C can still benefit from a significant reduction of 10 % to 50 % of the fine that would otherwise have been imposed where (for example):
- before a Statement of Objections is sent, it provides the Commission with information, documents or other evidence which materially contribute to establishing the existence of the infringement,
  - after receiving a Statement of Objections, it informs the Commission that it does not substantially contest the facts on which the Commission bases its objections.
- (747) Roche and BASF provided evidence and documents, including material originating from the period of time to which the infringements pertain, as well as detailed corporate statements. Prior to these submissions both Roche and BASF had contacted the Commission, on 4 and 6 May 1999 respectively, to indicate their intention to cooperate with its investigations.
- (748) The documents referred to above provided detailed evidence of the organisation structure of the cartel arrangements affecting the vitamin A, E, B2, B5, C, D3, beta-carotene and carotinoids markets and contributed decisively to establishing and/or confirming essential aspects of these infringements (see also recital 743).
- (749) Daiichi Pharmaceutical Co. Ltd, Solvay Pharmaceuticals BV and Takeda Chemical Industries Ltd provided evidence and documents, in particular detailed corporate statements, which were not the object of a specific request by the Commission on 9 July 1999, 14 September 1999 and 7 September 1999 respectively. Prior to these submissions each of these undertakings had previously contacted the Commission to indicate their intention to cooperate. Daiichi on 9 June 1999, Solvay on 21 June 1999 and Takeda on 29 June 1999.
- (750) The documents referred to above gave details of the organisation and structure of the cartels in vitamins B5 (Daiichi), D3 (Solvay), B2 and C (Takeda) and contributed substantially to establishing and/or confirming important aspects of the infringements committed in each of these vitamin product markets.
- (751) Eisai Co. Ltd contacted the Commission on 27 June 1999 and indicated its intention to cooperate. On 12 October 1999 it submitted a corporate statement and additional documentation in relation to the cartel in vitamin E which were not the object of a specific request by the Commission. This evidence provided details of the organisation and structure of the cartel in vitamin E, included statements by former employees of the undertaking and contributed to establishing and/or confirming significant aspects of the infringement. Nevertheless, at the time of the submission the Commission was in possession of decisive evidence concerning this cartel, in particular that previously submitted by Roche and BASF.
- (752) Merck KgaA indicated its intention to cooperate with the Commission on 26 October 1999, following the receipt of a request for information under Article 11 of Regulation 17 related to its activities in the vitamin H market, dated 20 August 1999. Merck submitted documentation concerning the cartel in vitamin H which was not the object of a specific request by the Commission. It did not do so for the cartel in vitamin C. In its reply to the Statement of Objections, Merck did confirm that it did not substantially contest the facts on which the Commission based its allegations in the vitamin C cartel.
- (753) Further to its submissions of 19 and 25 May 1999<sup>(80)</sup>, Aventis SA confirmed that it did not substantially contest the facts on which the Commission based its allegations in the vitamin D3 cartel.
- (754) F. Hoffmann-La Roche AG, BASF AG, Aventis SA, Solvay Pharmaceuticals BV, Merck KgaA, Daiichi Pharmaceutical Co. Ltd, Eisai Co. Ltd and Takeda Chemical Industries Ltd cooperated with the Commission before the Statement of Objections was adopted, materially contributed to establishing the existence of the infringements they were a party to and/or did not substantially contest the facts on which the Commission based its allegations.
- (755) Given that any cooperation under the leniency notice must be voluntary and in particular outside the exercise of any investigatory power, the Commission considers that a significant part of the information provided by these undertakings in fact was an integral part of their replies to the Commission's formal requests for information. The information provided by the undertakings is therefore regarded as a voluntary contribution within the meaning of the leniency notice only where it went beyond that requested under Article 11 of Regulation No 17.
- (756) Solvay argues that it was the first undertaking to adduce decisive evidence of the existence of a cartel in vitamin D3 through its Statement of 29 June 1999.



- (757) The Commission must dismiss this argument. Solvay's first statement, of 29 June 1999, did not contain decisive evidence of the cartel in vitamin D3. It simply provided an overview of the vitamin D3 market in the EEA and a number of indications that some form of market coordination had taken place. In its second statement, of 14 September 1999, Solvay provided detailed information that may have been considered to constitute decisive evidence. However, this was submitted after Roche's statement of 30 July 1999 which did contain detailed information on the collusive practices and constitutes decisive evidence of the infringement.
- (758) Merck argues that it had offered to cooperate with the Commission regarding any contact in respect of vitamin C before the Statement of Objections had been adopted. According to Merck, during the course of a meeting with Commission officials on 26 October 1999 it was made clear to the undertaking that there was no interest in contributions from Merck regarding these contacts. Merck further argues that this cannot be invoked to Merck's disadvantage.
- (759) The Commission must dismiss this argument. Firstly, Merck does not provide any evidence in support of its claim. There is no comment on the substance of the meeting referred to in the subsequent exchange of correspondence with the Commission. Secondly, Merck was at full liberty to cooperate with the Commission in regard to the vitamin C cartel at an earlier time than it did. As mentioned above<sup>(81)</sup> it submitted evidence in writing to the Commission concerning the vitamin H cartel and could have equally submitted any evidence in its possession in relation to the cartel in vitamin C. The decision to cooperate with the Commission and the actions taken by an undertaking to this effect ultimately must be a unilateral one by the undertaking.
- (760) On the basis of the foregoing, the Commission concludes that F. Hoffmann La Roche AG fulfils the conditions set out in section D(2) first indent of the Leniency Notice and grants F. Hoffmann La Roche AG a 50 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (761) On the basis of the foregoing, the Commission concludes that BASF fulfils the conditions set out in section D(2) first indent of the leniency notice and grants BASF a 50 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (762) On the basis of the foregoing, the Commission concludes that Solvay Pharmaceuticals BV fulfils the conditions set out in section D(2), first indent, of the leniency notice and grants Solvay Pharmaceuticals BV a 35 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (763) On the basis of the foregoing, the Commission concludes that Merck KgaA fulfils the conditions set out in section D(2), second indent, of the leniency notice and grants Merck KgaA a 15 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (764) On the basis of the foregoing, the Commission concludes that Daiichi Pharmaceutical Co. Ltd fulfils the conditions set out in section D(2), first indent, of the leniency notice and grants Daiichi Pharmaceutical Co. Ltd a 35 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (765) On the basis of the foregoing, the Commission concludes that Eisai Co. Ltd fulfils the conditions set out in section D(2), first indent, of the leniency notice and grants Eisai Co. Ltd a 30 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (766) On the basis of the foregoing, the Commission concludes that Takeda Chemical Industries Ltd fulfils the conditions set out in section D(2), first indent, of the leniency notice and grants Takeda Chemical Industries Ltd a 35 % reduction of the fine that would have been imposed if it had not cooperated with the Commission.
- (767) On the basis of the foregoing, the Commission concludes that Aventis SA fulfils the conditions set out in section D(2), second indent, of the leniency notice and grants Aventis SA a 10 % reduction of the fine that would have been imposed in relation to the infringement in vitamin D3 if it had not cooperated with the Commission.

#### **Conclusion on the application of the leniency notice**

- (768) In conclusion, with regard to the nature of their cooperation and in the light of the conditions as set out in the leniency notice, the Commission grants to the addressees of the present Decision the following reductions of their respective fines:
- F. Hoffmann-La Roche AG: a reduction of 50 %,
  - BASF AG: a reduction of 50 %,
  - Aventis SA: a reduction of 100 % and 10 %,

- Takeda Chemical Industries Ltd: a reduction of 35 %,
- Solvay Pharmaceuticals BV: a reduction of 35 %,
- Merck KgaA: a reduction of 15 %,
- Daiichi Pharmaceutical Co. Ltd: a reduction of 35 %,
- Eisai Co. Ltd: a reduction of 30 %.

#### 2.3.2.6. *Sanctions imposed in other jurisdictions*

- (769) Hoffmann La Roche and Merck submit that the Commission should take account of, and deduct from any fine, the sanctions imposed on them for the same conduct in the United States of America and in Canada.
- (770) Hoffmann La Roche submits that in this case the Commission should take account of penalties imposed by the US and Canadian authorities, because the acts challenged by the Commission and these authorities are the same. It argues that the fines already paid should be set against any additional fines to be imposed by the Commission. In Roche's view, any requirement to ensure the deterrent effect of a fine has already been met in its case by the fines imposed by US and Canadian authorities.
- (771) For its part, Merck argues that if the Commission were to set the fine without considering the fines and civil damages it has already paid which, it holds, have generally taken account of the foreign element of the agreement in question, Merck would suffer a disproportionate financial burden, in particular because it did not make any profit by taking part in the agreements.
- (772) The Commission rejects all of the arguments presented by Roche and Merck. It does not consider that fines imposed elsewhere, including in the United States of America, have any bearing on the fines to be imposed for infringing European competition rules. The exercise by the United States of America (or any third country) of its (criminal) jurisdiction against cartel behaviour can in no way limit or exclude the Commission's jurisdiction under Community competition law.
- (773) More importantly, it is in any case untrue that the Commission was intending to sanction it for the same facts as the US courts had. By virtue of the principle of territoriality, Article 81 of the Treaty is limited to restrictions of competition in the common market and Article 53 EEA is limited to restrictions of competition

in the EEA market. In the same way, the US antitrust authorities only exercise jurisdiction to the extent that the conduct has a direct and intended effect on US commerce.

- (774) Finally, the possibility that undertakings may have been required to pay damages in civil actions is of no relevance. Payments of damages in civil law actions which have the objective of compensating for the harm caused by cartels to individual companies or consumers cannot be compared with public law sanctions for illegal behaviour.

#### 2.3.2.7. *The final amounts of the fines imposed in the present proceedings*

- (775) In conclusion, the fines to be imposed, pursuant to Article 15(2)(a) of Regulation No 17, are to be as follows:
- F. Hoffmann-La Roche AG: EUR 462 million
  - BASF AG: EUR 296,16 million
  - Aventis SA: EUR 5,04 million
  - Takeda Chemical Industries Ltd: EUR 37,06 million
  - Solvay Pharmaceuticals BV: EUR 9,1 million
  - Merck KgaA: EUR 9,24 million
  - Daiichi Pharmaceutical Co. Ltd: EUR 23,4 million
  - Eisai Co. Ltd: EUR 13,23 million,

HAS ADOPTED THIS DECISION:

#### Article 1

1. The following undertakings have infringed Article 81(1) of the Treaty and Article 53(1) of the EEA Agreement:
  - (a) F. Hoffmann-La Roche AG by participating in agreements affecting the Community and EEA markets for vitamins A, E, B1, B2, B5, B6, C, D3, H, folic acid, beta-carotene and carotinoids;
  - (b) BASF AG by participating in agreements affecting the Community and EEA markets for vitamins A, E, B1, B2, B5, C, D3, H, beta-carotene and carotinoids;
  - (c) Aventis SA by participating in agreements affecting the Community and EEA markets for vitamins A, E, and D3;

- (d) Lonza AG by participating in agreements affecting the Community market for vitamin H;
- vitamin B5: from September 1991 to February 1999,
- vitamin B6: from January 1991 to June 1994,
- (e) Solvay Pharmaceuticals BV by participating in agreements affecting the Community and EEA markets for vitamin D3;
- vitamin C: from January 1991 to August 1995,
- vitamin D3: from January 1994 to June 1998,
- (f) Merck KgaA by participating in agreements affecting the Community and EEA markets for vitamins C and H;
- vitamin H: from October 1991 to April 1994,
- (g) Daiichi Pharmaceutical Co. Ltd by participating in agreements affecting the Community and EEA markets for vitamins B5 and B6;
- folic acid: from January 1991 to June 1994,
- beta-carotene: from September 1992 to December 1998,
- (h) Eisai Co. Ltd by participating in agreements affecting the Community and EEA market for vitamin E;
- carotinoids: from May 1993 to December 1998;
- (i) Kongo Chemical Co. Ltd by participating in agreements affecting the Community market for folic acid;
- (b) BASF AG, with respect to:
- vitamin A: from September 1989 to February 1999,
- vitamin E: from September 1989 to February 1999,
- vitamin B1: from January 1991 to June 1994,
- vitamin B2: from July 1991 to September 1995,
- (j) Sumitomo Chemical Co. Ltd by participating in agreements affecting the Community market for vitamin H;
- vitamin B5: from September 1991 to February 1999,
- vitamin C: from January 1991 to August 1995,
- (k) Sumika Fine Chemicals Ltd by participating in agreements affecting the Community market for folic acid;
- vitamin D3: from January 1994 to June 1998,
- vitamin H: from October 1991 to April 1994,
- (l) Takeda Chemical Industries Ltd by participating in agreements affecting the Community and EEA markets for vitamins B1, B2, B6, C, and folic acid; and
- beta-carotene: from September 1992 to December 1998,
- (m) Tanabe Seiyaku Co. Ltd by participating in agreements affecting the Community market for vitamin H.
- vitamin H: from October 1991 to April 1994,
2. The duration of the infringements was as follows:
- carotinoids: from May 1993 to December 1998;
- (a) F. Hoffmann-La Roche AG, with respect to:
- vitamin A: from September 1989 to February 1999,
- vitamin E: from September 1989 to February 1999,
- vitamin B1: from January 1991 to June 1994,
- vitamin B2: from July 1991 to September 1995,
- (c) Aventis SA, with respect to:
- vitamin A: from September 1989 to February 1999,
- vitamin E: from September 1989 to February 1999,
- vitamin D3: from January 1994 to July 1998;

(d) Takeda Chemical Industries Ltd, with respect to:

*Article 2*

- vitamin B1: from January 1991 to June 1994,
- vitamin B2: from January 1992 to September 1995,
- vitamin B6: from January 1991 to June 1994,
- vitamin C: from January 1991 to August 1995,
- folic acid: from January 1991 to June 1994;

The undertakings listed in Article 1 shall immediately bring to an end the infringements referred to in that Article, in so far as they have not already done so.

They shall refrain from repeating any act or conduct referred to in Article 1 and from adopting any measure having the same or equivalent object or effect.

*Article 3*

(e) Merck KgaA, with respect to:

- vitamin C: from January 1991 to August 1995,
- vitamin H: from October 1991 to April 1994;

For the infringements referred to in Article 1, the following fines are imposed on the following undertakings:

(a) F. Hoffmann-La Roche AG:

- a fine of EUR 85,5 million for its infringement in the vitamin A market,

(f) Daiichi Pharmaceutical Co. Ltd, with respect to:

- vitamin B5: from September 1991 to February 1999,
- vitamin B6: from January 1991 to June 1994;

- a fine of EUR 99,75 million for its infringement in the vitamin E market,

- a fine of EUR 42 million for its infringement in the vitamin B2 market,

(g) Lonza AG, with respect to:

- vitamin H: from October 1991 to April 1994;

- a fine of EUR 54 million for its infringement in the vitamin B5 market,

- a fine of EUR 65,25 million for its infringement in the vitamin C market,

(h) Solvay Pharmaceuticals BV, with respect to:

- vitamin D3: from January 1994 to June 1998;

- a fine of EUR 21 million for its infringement in the vitamin D3 market,

- a fine of EUR 48 million for its infringement in the beta-carotene market,

(i) Eisai Co. Ltd, with respect to:

- vitamin E: from January 1991 to February 1999;

- a fine of EUR 46,5 million for its infringement in the carotinoids market,

(j) Kongo Chemical Co. Ltd, with respect to:

- folic acid: from January 1991 to June 1994;

(b) BASF AG:

- a fine of EUR 46,17 million for its infringement in the vitamin A market,

(k) Sumitomo Chemical Co. Ltd, with respect to:

- vitamin H: from October 1991 to April 1994;

- a fine of EUR 89,78 million for its infringement in the vitamin E market,

- a fine of EUR 18,9 million for its infringement in the vitamin B2 market,

(l) Sumika Fine Chemicals Ltd, with respect to:

- folic acid: from January 1991 to June 1994;

- a fine of EUR 34,02 million for its infringement in the vitamin B5 market,

- a fine of EUR 14,68 million for its infringement in the vitamin C market,

(m) Tanabe Seiyaku Co. Ltd, with respect to:

- vitamin H: from October 1991 to April 1994;

- a fine of EUR 7,56 million for its infringement in the vitamin D3 market,

- a fine of EUR 43,2 million for its infringement in the beta-carotene market,
  - a fine of EUR 41,85 million for its infringement in the carotinoids market,
- (c) Aventis SA: a fine of EUR 5,04 million for its infringement in the vitamin D3 market;
- (d) Takeda Chemical Industries Ltd:
- a fine of EUR 8,78 million for its infringement in the vitamin B2 market,
  - a fine of EUR 28,28 million for its infringement in the vitamin C market;
- (e) Merck KgaA: a fine of EUR 9,24 million for its infringement in the vitamin C market;
- (f) Daiichi Pharmaceutical Co. Ltd: a fine of EUR 23,4 million for its infringement in the vitamin B5 market;
- (g) Solvay Pharmaceuticals BV: a fine of EUR 9,1 million for its infringement in the vitamin D3 market;
- (h) Eisai Co. Ltd: a fine of EUR 13,23 million for its infringement in the vitamin E market.

Aventis SA  
16, Avenue de l'Europe  
Espace Européen de l'Entreprise  
F-67300 Schiltigheim

Takeda Chemical Industries Ltd  
12-10, Nihonbashi 2-Chome  
Chuo-Ku  
Tokyo 103-8668 Japan

Merck KgaA  
Frankfurter Straße 250  
D-64293 Darmstadt

Daiichi Pharmaceutical Co. Ltd  
14-10, Nihonbashi, 3-Chome  
Chuo-Ku  
Tokyo 103-8234 Japan

Lonza AG  
Münchensteinerstraße 38  
CH-4002 Basel

Solvay Pharmaceuticals BV  
C.J. Van Houtenlaan 36  
1381 CP Weesp  
The Netherlands

Eisai Co. Ltd  
6-10, Koishikawa, 4-Chome  
Bunkyo-Ku  
Tokyo 112-88 Japan

Kongo Chemical Co. Ltd  
3, Himata  
Toyama-shi  
Toyama 9300912 Japan

Sumitomo Chemical Co. Ltd  
27-1, Shinkawa 2-Chome  
Chuo-Ku  
Tokyo Japan

Sumika Fine Chemicals Ltd  
3-1-21, Utajima  
Nishiyodogawa-ku  
Osaka 555-0021 Japan

Tanabe Seiyaku Co. Ltd  
2-10 Doshomachi 3-Chome  
Chuo-Ku  
Osaka 541-8505 Japan

This Decision shall be enforceable pursuant to Article 256 of the EC Treaty.

#### Article 4

The fines shall be paid, within three months of the date of the notification of this Decision to the following account:

Account No 642-0029000-95 of the European Commission with:

Banco Bilbao Vizcaya Argentaria (BBVA) SA

Avenue des Arts, Kunstlaan, 43

B-1040 Brussels

(Code SWIFT: BBVABEBB — Code IBAN BE76 6420 0290 0095).

After expiry of that period, interest shall automatically be payable at the interest rate applied by the European Central Bank to its main refinancing operations on the first working day of the month in which this Decision was adopted, plus 3,5 percentage points, namely 7,25 %.

#### Article 5

This Decision is addressed to:

F. Hoffmann-La Roche AG  
CH-4070 Basel

BASF AG  
D-67056 Ludwigshafen

Done at Brussels, 21 November 2001.

For the Commission

Mario MONTI

Member of the Commission

(\*) Business secret.

(1) OJ L 13, 21.2.1962, p. 204/62.

(2) OJ L 148, 15.6.1999, p. 5.

(3) OJ L 354, 30.12.1998, p. 18.

(4) Since the events in question occurred prior to the creation of Aventis in December 1999, the company will be identified as 'Rhône-Poulenc'.

(5) Excluding Vitamins B3, B4 and B12 which are not the subject of the present procedure.

(6) In 1976 Hoffmann-La Roche was fined 300 000 u.a. by the Commission for an abuse of its dominant position (fidelity rebates) in the vitamins sector (as L 223, 16.8.1976, p. 27). The decision was substantially upheld by the European Court of Justice but the fine was reduced to 200 000 u.a.: [1978] ECR 1139.

(7) OJ L 395, 30.12.1989, p. 1.

(8) OJ L 180, 9.7.1997, p. 1.

(9) Case IV/M.1378 — Hoechst/Rhône Poulenc (OJ C 254, 7.9.1999, p. 5).

(10) Commission decision of 14 March 2000 (Case COMP/M.1663).

(11) The market is at times referred to as 'western Europe' since participants would refer to this market which, whilst evidently close in size, is not the exact equivalent to that of the EEA.

(12) The figures provided are based on the companies' replies to Article 11 requests from the Commission.

(13) For the purpose of calculating the respective turnover figures the following average annual EUR/national currency exchange rates have been used (source: ECB): EUR 1 = USD 0,924; EUR 1 = JPY 99,5; EUR 1 = CHF 1,558.

(14) OJ C 207, 18.7.1996, p. 4.

(15) The term 'straights' refers to those vitamins sold as a mono-product, i.e. not in combination with other vitamins or nutritional substances. It is usually used in contraposition to the term 'mixes' which refers to the combination of a number of vitamins to a certain specification.

(16) In the case of Lonza, Merck, Sumitomo and Tanabe they related to vitamin H; in the case of Daiichi to vitamin B6 and in that of Takeda, vitamins B1 and B6.

(17) Similar documentation is available for most of the years from 1988.

(18) Lohmann (of Cuxhaven, Germany) is a distributor of vitamin products (for animal consumption) which purchases vitamins for resale from the manufacturers. Nutrilis is a subsidiary of Lohmann.

(19) The total for East and West Europe of 235,96 corresponds to the figure of 236.

(20) Hoffmann-La Roche tends to confirm this aspect of the price collusion, and the same concerns were apparent in vitamins A and E.

(21) Daiichi suggests that there had been collusive contacts between the producers during the 1980s but they had ended in 1989 when the price fell steeply.

(22) Hoffmann-La Roche has identified Daiichi as a participant but Takeda's note does not record it as being present: the person named denies ever having entered the Keidanren building in Tokyo where the meeting took place.

(23) It is not known whether any such attempt was made.

(24) In April 1992, Yodogawa and two other affiliates of Sumitomo Chemical Company merged to form Sumika.

(25) The author has inserted the producers' names after their respective numbers I, II, III and IV; 'Soll' refers to the 'budgeted' quota; 'Ist' is actual performance.

(26) Takeda's European office is located in Hamburg.

(27) Report of the meeting in Basel on 8 February 1994.

(28) Roche made the hotel booking and paid for the room.

(29) Tanabe believes it was suggested by Roche in the Geneva meeting on 25 January.

(30) There had even been a proposal from Roche in January 1993 for the others to compensate it for 'buying-in' Il Sung material to take it off the market.

(31) According to BASF, even earlier.

(32) The case-law of the Court of Justice and Court of First Instance in relation to the interpretation of Article 81 EC applies equally to Article 53 EEA. References in this text to Article 81 therefore apply also to Article 53.

(33) See recitals 517 to 519 and 481 to 483.

(34) See recitals 565 to 570 above.

(35) For example Coca Cola in vitamin C.

(36) See recital 160.

(37) See recital 236.

(38) See recital 233.

(39) See recitals 244 and 259.

(40) See recitals 260 to 269.

(41) See recital 271.

(42) See recital 274.

(43) See recital 291.

(44) See recitals 296 to 299.

(45) See recital 328.

(46) See recital 330.

(47) See recital 349.

(48) See recitals 354 and 382.

(49) See recitals 389 to 390.

(50) See recital 451.

(51) See recital 462.

(52) See recitals 479 to 480.

(53) See recital 487.

(54) See recital 513.

(55) See recital 520.

(56) See recital 526.

(57) See recital 534.

(58) The section below dealing with remedies therefore solely refers to Aventis SA.

(59) OJ L 319, 29.11.74, p. 1.

(60) Article 1(2) of Regulation (EEC) No 2988/74.

(61) Article 2(1) and 2(3) of Regulation (EEC) No 2988/74.

(62) Pursuant to Article 5 of Council Regulation (EC) No 2894/94 of 28 November 1994 concerning arrangements of implementing the Agreement on the European Economic Area 'the Community rules giving effect to the principles set out in Articles 85 and 86 of the EC Treaty [...] shall apply *mutatis mutandis*'. (OJ L 305, 30.11.1994, p. 6).

(63) See recitals 194 to 210; 392 to 397; 272 to 277; 300 to 308; 520 to 522.

(64) See recitals 392 to 401.

(65) OJ C 9, 14.1.1998, p. 3.

(66) I.e. 1998 for vitamin A; 1998 for vitamin E; 1994 for vitamin C; 1994 for vitamin B2; 1998 for vitamin B5; 1997 for vitamin D3 and 1998 for beta-carotene and carotinoids.

(67) See recital 699.

(68) See recital 699.

(69) See recital 699.

(70) See recital 699.

(71) See recital 699.

(72) See recital 699.

(73) See recital 699.

(74) See recital 699.

(75) See recital 699.

(76) See recital 699.

(77) See recitals 160, 181, 183, 185, 187, 234, 236, 237, 271, 274, 275, 296, 314, 315, 319, 322, 388, 410, 418, 460, 462 and 478 for Hoffmann La Roche and recitals 160, 183, 271, 274, 319, 322, 388, 432, 437 and 439 for BASF.

(78) See also recitals 160 to 161; 270 to 271; 296 to 297; 388 to 391; 459 to 461; and 566 to 578.

(79) See recitals 420 to 454.

(80) See recital 741.

(81) See recital 752.

## ANNEX

TABLE I

## AGGREGATE TOTAL OF THE COMMUNITY ANNUAL MARKET

(in ECU)

Product	1994	1995	1996	1997	1998
Beta-Carotene	55 260 725	60 170 276	66 397 171	69 433 747	76 760 030
Vitamin A	137 642 396	140 897 797	143 805 741	143 646 245	148 171 031
Vitamin E	188 071 834	208 795 930	218 550 730	231 697 704	247 809 921
Vitamin B2	41 021 061	44 150 364	38 316 522	32 845 274	34 050 701
Vitamin C	225 448 626	247 582 138	163 765 525	115 993 991	118 960 198
Pantothenates/calpan (B5)	31 047 316	32 176 545	32 089 593	32 388 564	35 229 136
Vitamin B1	17 685 500	15 110 130	12 382 832	13 727 600	14 922 699
Vitamin B6	15 187 563	11 399 478	9 531 044	10 021 122	10 816 893
Vitamin D3	16 055 355	19 311 859	19 955 992	17 260 375	20 411 064
Canthaxanthin	48 749 922	51 503 259	49 820 053	51 903 783	50 361 347
Biotin (H)	35 027 202	36 142 809	31 146 950	25 115 396	23 246 687
Total market value	811 197 497	867 240 585	785 762 154	744 033 801	780 739 706

Source: based on Hoffmann-La Roche data.

## BETA-CAROTENE

Country	1994	1995	1996	1997	1998
United Kingdom	8 296	8 331	9 013	7 244	7 838
Ireland	2 516	2 161	2 462	4 866	5 579
Denmark/Iceland	3 579	3 119	2 763	3 279	3 174
Sweden	1 717	1 717	1 780	1 766	1 494
Finland	550	620	719	763	805
Netherlands	4 574	5 557	6 192	5 647	6 281
Belgium/Luxembourg	4 052	4 391	5 170	4 869	4 770
France	6 069	6 655	8 570	9 174	8 831
Spain	1 082	1 091	1 204	1 202	1 121
Portugal	824	747	856	629	650
Italy	1 650	1 643	1 859	2 652	2 305
Greece	1 065	898	625	609	529
Germany	40 601	42 149	48 825	52 029	58 780
Austria	2 501	2 650	2 499	2 751	3 001
Total volume	79 076	81 729	92 537	97 480	105 158
Average annual price (CHF)	1 133	1 138	1 125	1 171	1 184
Annual market (ECU)	55 260 725	60 170 276	66 397 171	69 433 747	76 760 030

## VITAMIN A

Country	1994	1995	1996	1997	1998
United Kingdom	249 282	263 743	257 339	247 869	250 759
Ireland	46 492	45 288	43 794	41 969	35 041
Denmark/Iceland	87 647	87 020	88 060	89 605	80 031
Sweden	41 759	44 783	47 708	48 925	42 088
Finland	34 262	27 837	20 681	21 840	25 028
Netherlands	218 794	221 151	261 061	286 529	264 671
Belgium/Luxembourg	109 902	115 730	114 018	113 741	122 731
France	512 000	514 481	533 499	530 963	537 051
Spain	169 863	166 713	176 900	186 771	186 840
Portugal	44 473	44 410	46 351	47 154	47 630
Italy	449 999	414 100	400 650	392 900	377 001
Greece	38 550	38 786	33 910	34 109	34 336
Germany	694 000	679 950	663 700	653 500	659 500
Austria	58 000	58 400	62 000	61 006	62 521
Total volume	2 755 023	2 722 392	2 749 671	2 756 881	2 725 228
Average annual price (CHF)	81,00	80,00	82,00	85,66	88,19
Annual market (ECU)	137 642 396	140 897 797	143 805 741	143 646 245	148 171 031



## VITAMIN E

Country	1994	1995	1996	1997	1998
United Kingdom	864 635	944 129	931 524	965 835	981 699
Ireland	99 912	125 069	121 843	127 629	128 148
Denmark/Iceland	543 062	616 774	619 538	622 399	635 000
Sweden	157 317	168 599	221 473	245 554	215 554
Finland	122 677	110 264	95 030	97 385	98 538
Netherlands	396 514	450 723	654 784	748 134	705 825
Belgium/Luxembourg	283 787	286 417	300 965	317 186	328 076
France	780 064	806 579	813 000	872 359	940 293
Spain	343 252	394 318	422 642	461 453	496 629
Portugal	75 552	77 363	81 799	88 975	89 906
Italy	702 643	704 710	726 500	748 500	830 501
Greece	86 329	89 488	83 995	88 485	94 649
Germany	1 902 095	1 840 625	1 979 472	2 101 059	2 200 999
Austria	225 000	218 400	215 000	218 000	220 000
Total volume	6 582 839	6 833 458	7 267 565	7 702 953	7 965 817
Average annual price (CHF)	46,32	47,23	47,15	49,45	50,46
Annual market (ECU)	188 071 834	208 795 930	218 550 730	231 697 704	247 809 921

## VITAMIN B2

Country	1994	1995	1996	1997	1998
United Kingdom	87 119	94 574	100 643	102 111	106 642
Ireland	8 200	8 885	8 666	9 338	7 709
Denmark/Iceland	41 063	39 711	41 093	40 400	43 899
Sweden	10 782	11 307	15 834	15 339	13 176
Finland	10 385	10 306	8 483	8 456	8 675
Netherlands	78 271	86 111	98 607	104 297	106 068
Belgium/Luxembourg	33 412	33 208	32 936	33 795	33 962
France	109 499	113 296	116 450	125 657	123 724
Spain	59 350	59 800	62 917	65 272	66 643
Portugal	12 718	13 032	12 423	13 961	13 961
Italy	96 700	97 000	101 001	98 403	99 805
Greece	9 000	9 155	9 067	9 101	9 864
Germany	131 405	131 760	132 385	133 521	142 515
Austria	21 500	20 501	21 500	21 000	20 000
Total volume	709 404	728 646	762 005	780 651	796 643
Average annual price (CHF)	93,75	93,66	78,84	69,17	69,33
Annual market (ECU)	41 021 061	44 150 364	38 316 522	32 845 274	34 050 701

## VITAMIN C

Country	1994	1995	1996	1997	1998
United Kingdom	1 702 400	2 212 248	2 171 733	2 395 566	2 457 381
Ireland	438 147	348 736	312 451	292 570	310 021
Denmark/Iceland	453 134	536 475	530 000	540 000	566 001
Sweden	421 949	423 941	425 085	414 700	384 443
Finland	221 558	209 591	220 858	234 541	321 984
Netherlands	871 697	881 926	912 994	883 260	903 141
Belgium/Luxembourg	509 312	501 595	498 546	537 224	550 239
France	2 421 500	2 471 069	2 362 760	2 357 765	2 423 742
Spain	1 320 095	1 317 095	1 171 347	1 076 080	1 076 082
Portugal	221 598	194 000	177 676	191 540	192 540
Italy	1 700 000	1 800 000	1 900 000	2 000 000	2 049 999
Greece	206 924	205 073	186 467	186 121	180 523
Germany	4 612 000	4 729 941	4 840 422	5 048 000	5 355 000
Austria	520 000	495 000	510 000	658 693	550 000
Total volume	15 620 314	16 326 690	16 220 339	16 816 060	17 321 096
Average annual price (CHF)	23,40	23,44	15,83	11,34	11,14
Annual market (ECU)	225 448 626	247 582 138	163 765 525	115 993 991	118 960 198

## PANTOTHENATES/CALPAN (B5)

Country	1994	1995	1996	1997	1998
United Kingdom	154 263	163 728	172 850	175 849	179 925
Ireland	21 234	22 593	5 744	22 363	17 810
Denmark/Iceland	102 308	106 513	123 522	116 421	117 967
Sweden	20 531	22 879	29 711	31 359	26 022
Finland	17 692	16 313	14 738	15 208	12 329
Netherlands	169 310	186 635	195 503	201 804	201 637
Belgium/Luxembourg	92 061	91 675	90 106	92 329	92 843
France	261 001	265 989	266 500	260 951	268 200
Spain	148 112	148 112	155 166	163 473	163 549
Portugal	32 023	31 862	33 662	34 237	34 237
Italy	283 000	284 750	281 499	284 500	285 000
Greece	21 842	22 436	21 538	22 562	22 286
Germany	344 100	333 310	331 600	332 501	334 100
Austria	39 999	38 000	42 001	43 500	45 000
Total volume	1 707 476	1 734 795	1 764 140	1 797 057	1 800 905
Average annual price (CHF)	29,48	28,67	28,52	29,63	31,73
Annual market (ECU)	31 047 316	32 176 545	32 089 593	32 388 564	35 229 136

## VITAMIN B1

Country	1994	1995	1996	1997	1998
United Kingdom	90 064	104 219	111 561	122 120	95 849
Ireland	5 363	7 254	6 164	8 407	7 194
Denmark/Iceland	32 000	42 050	42 500	42 500	42 000
Sweden	6 119	6 984	9 189	9 019	8 688
Finland	18 284	18 457	19 245	20 868	25 018
Netherlands	46 514	25 069	44 677	60 171	51 651
Belgium/Luxembourg	25 448	27 441	26 669	30 301	31 010
France	156 999	158 999	160 700	173 567	182 284
Spain	31 800	31 900	41 109	45 426	48 191
Portugal	4 946	4 852	4 975	5 360	5 360
Italy	76 600	78 000	82 999	86 000	90 000
Greece	4 939	5 119	5 342	6 015	6 657
Germany	133 315	139 219	143 500	148 501	191 001
Austria	17 499	16 999	17 000	16 751	15 000
Total volume	649 890	666 562	715 630	775 006	799 903
Average annual price (CHF)	44,12	35,04	27,13	29,12	30,26
Annual market (ECU)	17 685 500	15 110 130	12 382 832	13 727 600	14 922 699

## VITAMIN B6

Country	1994	1995	1996	1997	1998
United Kingdom	59 939	67 510	75 040	73 100	81 239
Ireland	3 895	5 400	4 906	5 178	4 944
Denmark/Iceland	29 000	30 248	38 728	34 884	33 916
Sweden	11 178	11 205	14 731	14 240	13 349
Finland	8 989	9 346	7 133	7 244	8 381
Netherlands	20 462	24 167	45 007	63 050	56 789
Belgium/Luxembourg	23 024	23 567	22 719	27 319	44 541
France	49 430	36 909	33 025	30 012	14 335
Spain	44 400	44 400	45 829	54 700	55 460
Portugal	5 741	5 368	6 222	6 811	6 939
Italy	68 300	70 999	70 000	86 600	74 000
Greece	6 866	6 882	7 310	7 877	9 557
Germany	101 800	103 900	108 410	110 500	120 500
Austria	28 000	26 500	35 000	34 500	47 001
Total volume	461 024	466 401	514 060	556 015	570 951
Average annual price (CHF)	53,41	37,78	29,07	29,63	30,73
Annual market (ECU)	15 187 563	11 399 478	9 531 044	10 021 122	10 816 893

## VITAMIN D3

Country	1994	1995	1996	1997	1998
United Kingdom	54 604	56 380	69 750	52 039	54 000
Ireland	7 444	7 624	8 788	6 728	6 434
Denmark/Iceland	15 269	18 406	18 696	16 578	16 916
Sweden	8 544	8 516	9 949	10 883	8 423
Finland	5 579	5 189	6 861	6 121	5 538
Netherlands	36 458	40 564	43 771	46 695	45 968
Belgium/Luxembourg	22 254	28 977	29 320	22 860	27 112
France	92 243	86 464	92 898	93 296	90 545
Spain	32 746	40 051	41 699	35 529	35 761
Portugal	8 274	10 067	9 796	8 930	8 953
Italy	66 755	66 872	66 870	66 859	66 879
Greece	5 997	5 787	5 559	5 524	5 771
Germany	86 230	86 933	85 505	83 300	85 203
Austria	8 499	9 305	9 804	8 850	9 851
Total volume	450 896	471 135	499 266	464 192	467 354
Average annual price (CHF)	57,73	63,36	62,67	61,13	70,84
Annual market (ECU)	16 055 355	19 311 859	19 955 992	17 260 375	20 411 064

## CANTHAXANTHIN

Country	1994	1995	1996	1997	1998
United Kingdom	2 480	4 756	5 653	6 301	6 403
Ireland	1 099	850	20	700	1 200
Denmark/Iceland	1 318	1 232	872	1 054	589
Sweden					
Finland	417	426	163	148	139
Netherlands	2 830	2 564	2 368	2 501	2 363
Belgium/Luxembourg	1 367	1 279	1 379	1 337	1 314
France	5 594	5 384	5 034	6 010	6 207
Spain	6 419	6 115	6 374	6 362	6 459
Portugal	2 500	2 500	2 500	2 500	2 150
Italy	5 410	5 340	4 807	4 824	4 628
Greece	466	483	462	521	488
Germany	8 271	8 076	8 311	8 305	8 111
Austria	1 020	965	800	851	802
Total volume	39 191	39 970	38 743	41 414	40 853
Average annual price (CHF)	2 016,72	1 991,76	2 016,18	2 060,41	1 999,55
Annual market (ECU)	48 749 922	51 503 259	49 820 053	51 903 783	50 361 347

## BIOTIN (VITAMIN H)

Country	1994	1995	1996	1997	1998
United Kingdom	1 365	1 422	1 577	1 605	1 750
Ireland	174	178	41	161	122
Denmark/Iceland	943	928	1 058	1 005	1 127
Sweden	200	219	320	334	282
Finland	231	199	193	208	164
Netherlands	585	727	969	1 086	1 213
Belgium/Luxembourg	238	266	263	308	339
France	1 173	1 447	1 511	1 935	2 093
Spain	633	634	649	686	683
Portugal	138	140	137	147	147
Italy	1 117	1 124	1 121	1 129	1 842
Greece	114	117	140	143	200
Germany	1 760	1 980	2 251	2 695	2 911
Austria	223	288	283	285	316
Total volume	8 894	9 669	10 513	11 727	13 189
Average annual price (CHF)	6 385,08	5 777,99	4 645,23	3 520,91	2 858,96
Annual market (ECU)	35 027 202	36 142 809	31 146 950	25 115 396	23 246 687

TABLE II

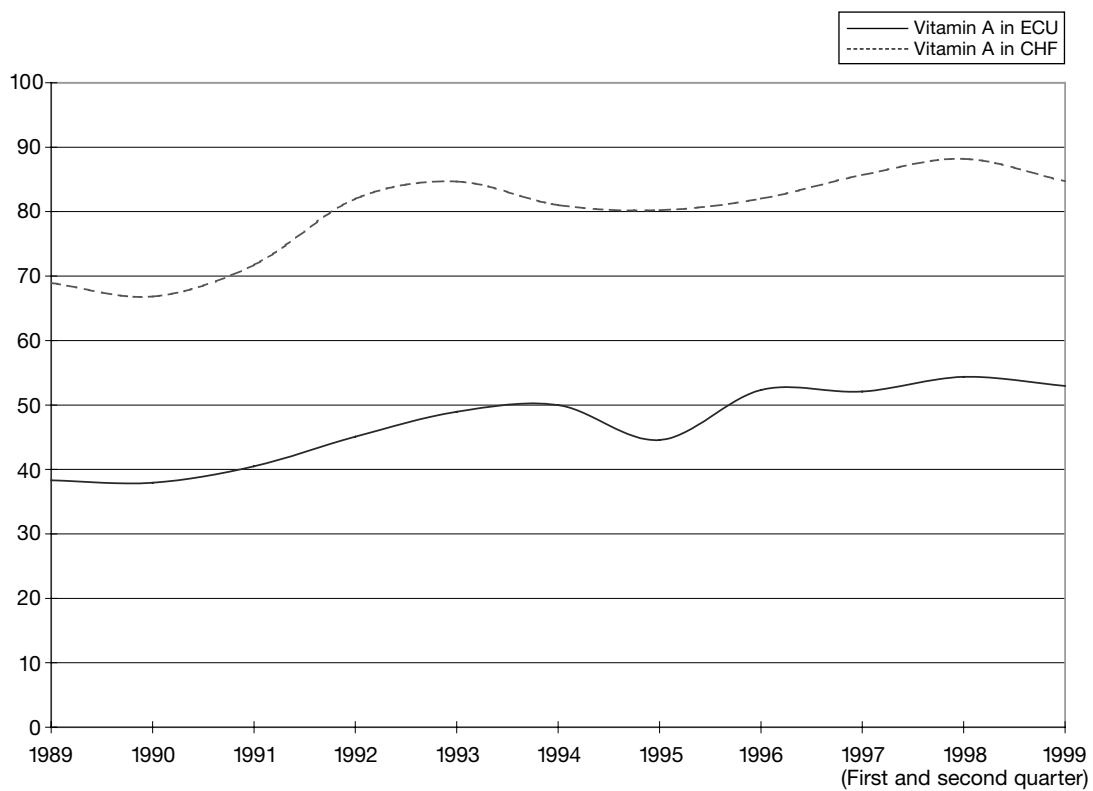


TABLE III

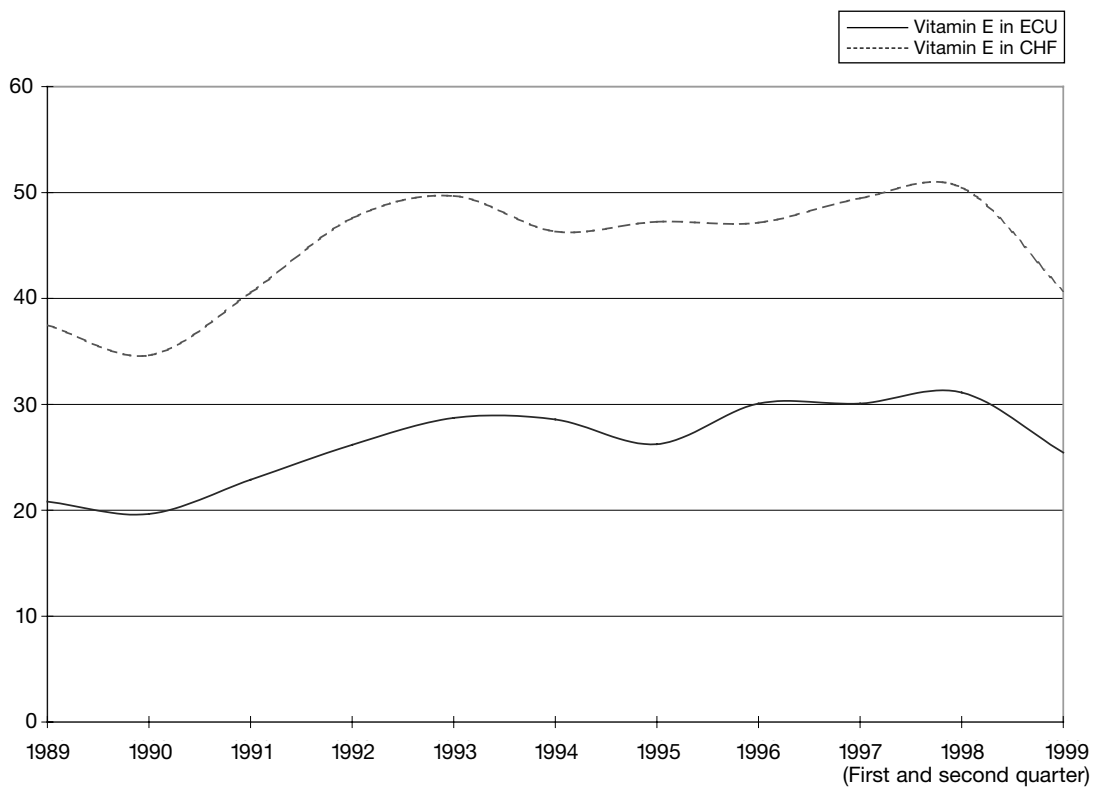


TABLE IV

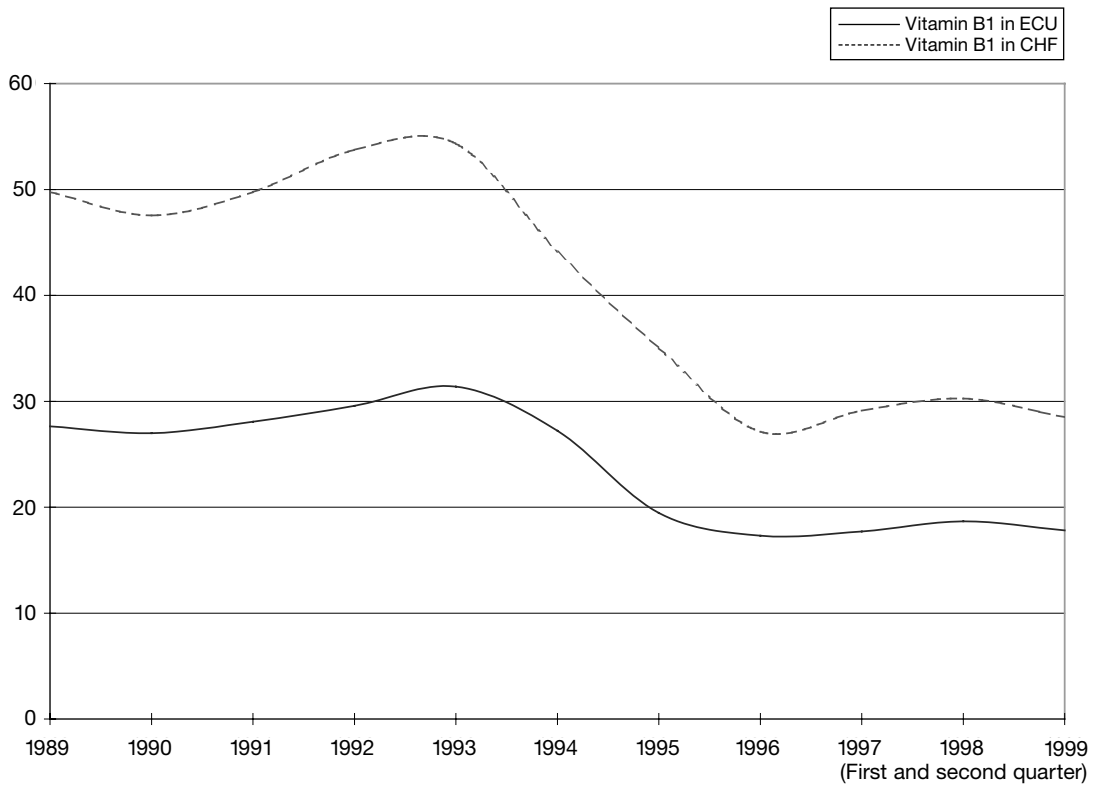


TABLE V

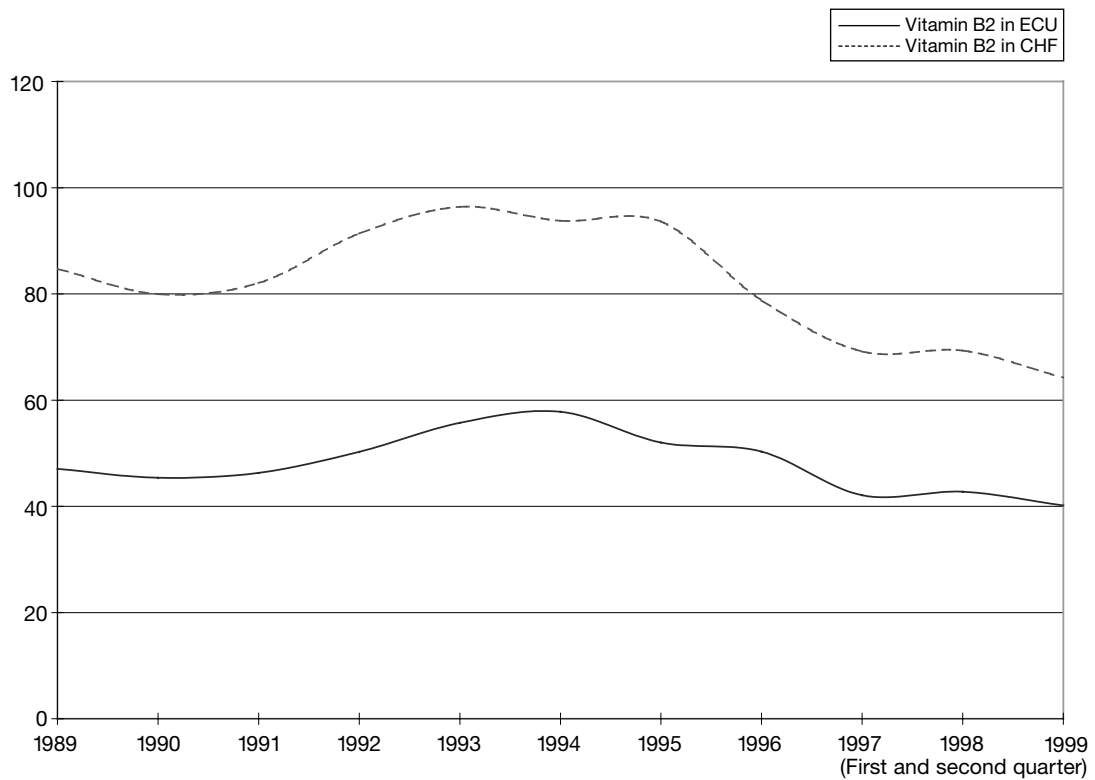


TABLE VI

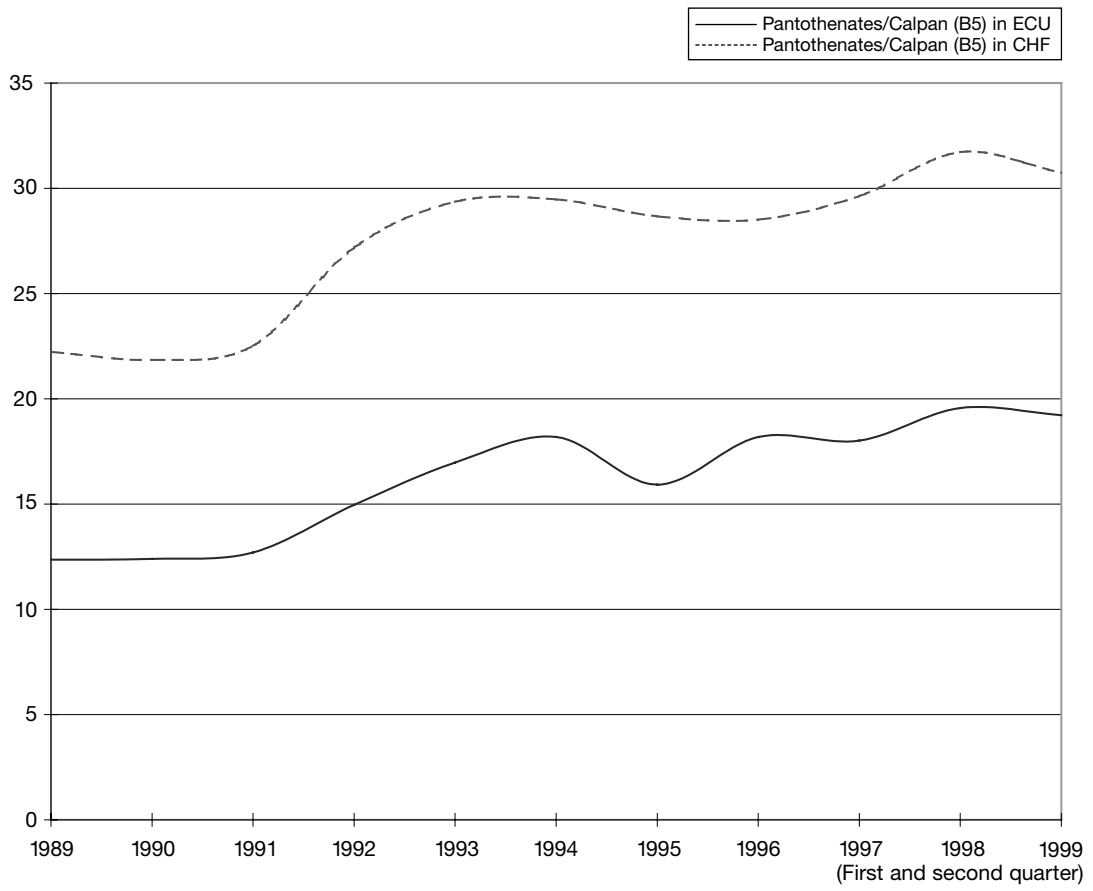


TABLE VII

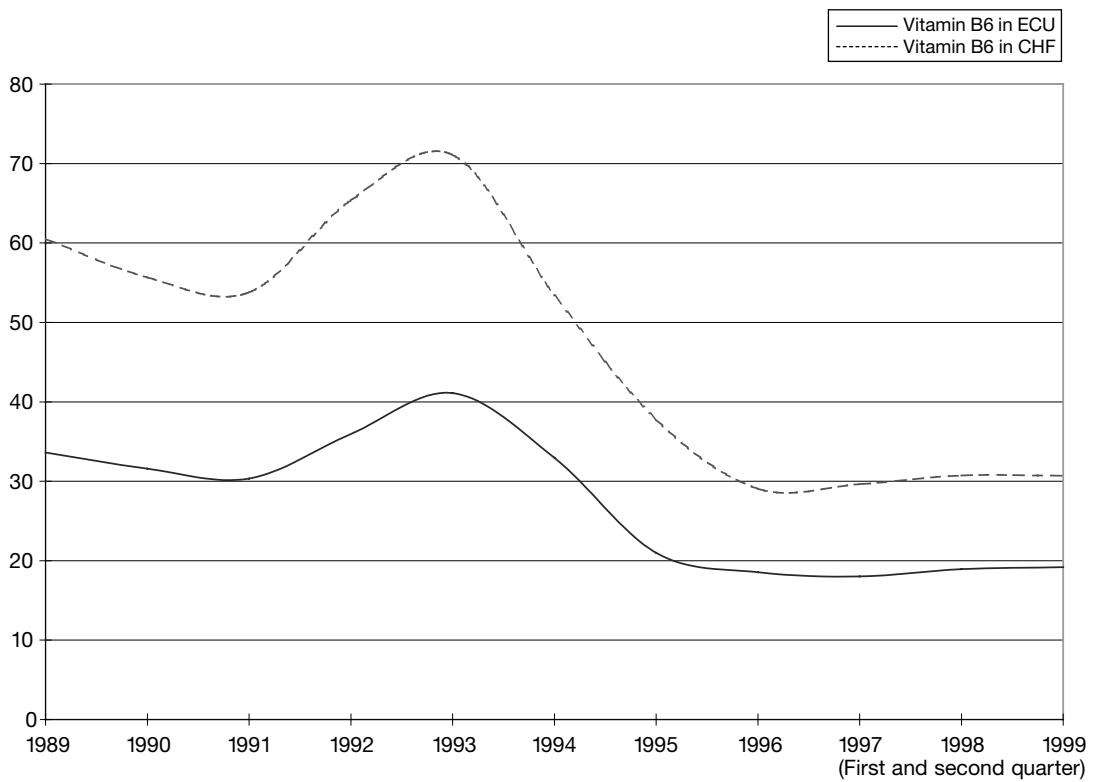
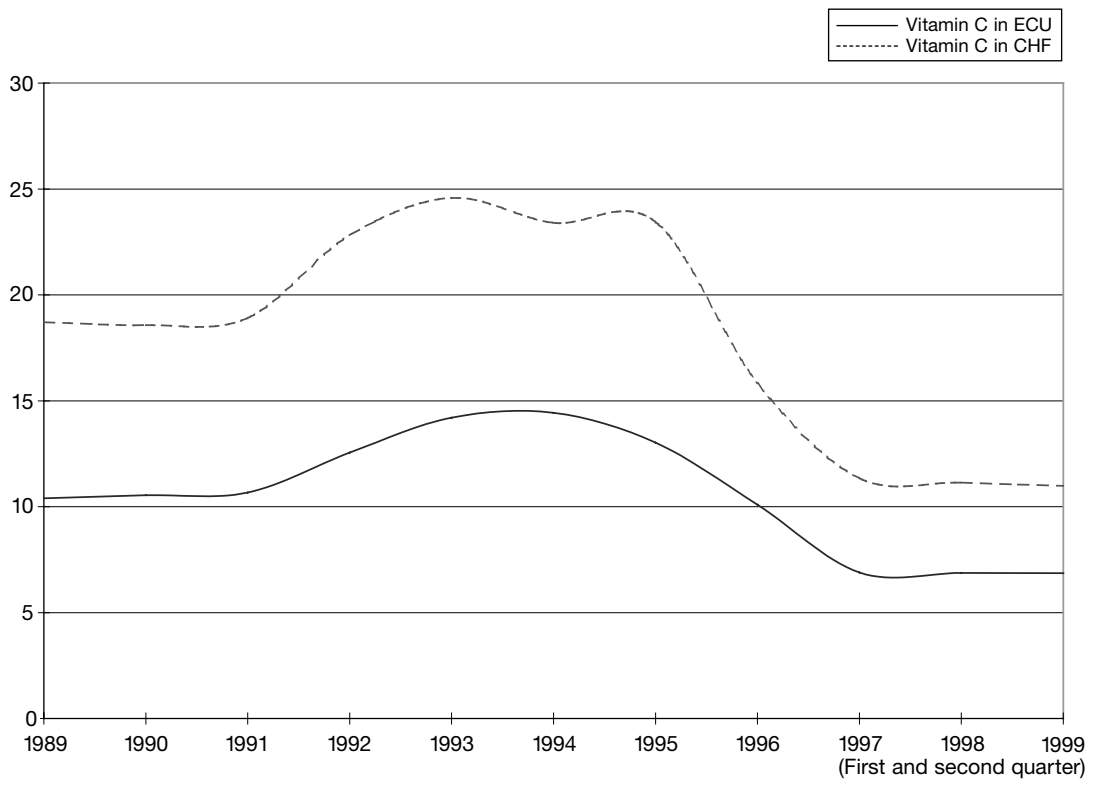




TABLE VIII



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