

COMMISSION DECISION

of 11 June 2003

on the compatibility of a merger with the common market and the EEA Agreement

(Case COMP/M.3506 — Celanese/Degussa/JV (European Oxo-Chemicals))

(notified under document number C(2003) 1821)

(Only the German text is authentic)

(Text with EEA relevance)

(2004/105/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to the Agreement on the European Economic Area, and in particular Article 57(2)(a) thereof,

Having regard to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings ⁽¹⁾, as last amended by Regulation (EC) No 1310/97 ⁽²⁾, and in particular Article 8(2) thereof,

Having regard to the Commission decision to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having consulted the Advisory Committee on Concentrations ⁽³⁾,

Having regard to the final report of the Hearing Officer ⁽⁴⁾,

Whereas:

(1) On 18 December 2002 the Commission received notification of the planned merger in accordance with Article 4 of Council Regulation (EEC) No 4064/89 (hereinafter 'Merger Regulation'). According to the notification, Celanese Chemicals Europe GmbH (Celanese), a wholly owned subsidiary of Celanese AG,

and Oxeno Olefinchemie GmbH (Oxeno), a wholly owned subsidiary of Degussa AG (Degussa), are establishing a joint venture (JV) in which they will merge their respective European Oxo-C3 business. The JV is to trade as European Oxo-Chemicals GmbH (EOC).

(2) Following examination of the notification, the Commission found that the notified operation falls within the scope of the Merger Regulation and raises serious doubts as to its compatibility with the common market. On 30 January 2003 the Commission, in accordance with Article 6(1)(c) of the Merger Regulation, decided to initiate proceedings. After detailed examination of the case, the Commission has come to the conclusion that the planned operation would not create a dominant position as a result of which competition would be significantly impeded in a substantial part of the common market.

I. THE PARTIES

(3) The German firm Celanese Chemicals Europe GmbH is a wholly owned subsidiary of the German firm Celanese AG, a chemicals firm operating worldwide with core business in basic chemicals, acetates, technical synthetic fibres, polypropylene foil and food additives. The oxo-chemicals to be merged in the JV are oxo-alcohols, plasticisers and solvents used as intermediate products in the production of synthetic fibres, petrol additives, polyethylene foil, paints and varnishes.

(4) The German firm Oxeno Olefinchemie GmbH, with headquarters in Marl, Germany, is a wholly owned subsidiary of Degussa AG, with headquarters in Düsseldorf. At the time of the notification, Degussa was controlled by E.ON AG but is now part of RAG Aktiengesellschaft, Essen, Germany. It is in business

⁽¹⁾ OJ L 395, 30.12.1989, p. 1; Corrigendum OJ L 257, 21.9.1990, p. 13.

⁽²⁾ OJ L 180, 9.7.1997, p. 1.

⁽³⁾ OJ C 36, 10.2.2004.

⁽⁴⁾ OJ C 36, 10.2.2004.

worldwide in speciality chemicals. Oxeno produces C3 and C4 chemicals (including oxo-alcohols, plasticisers and solvents), used in processing synthetic fibres, in the varnish and paint industry and in cosmetics and pharmaceuticals.

II. THE PLANNED OPERATION

- (5) The merger is for the establishment of a full-function JV by Celanese and Oxeno. The JV will produce and distribute mainly oxo-C3 chemicals, in particular butyric aldehyde, butanol, butyl acetate, 2-ethylhexanol (2-EH), dioctylphthalate (DOP) and carbon acids (trimethylhexane acid, 2-ethylhexane acid, butyric acid).
- (6) The parties will merge their respective European oxo-C3 business in the JV. For technical reasons, Oxeno cannot transfer its butyric aldehyde facility in Marl to the JV. But Oxeno will produce butyric aldehyde there exclusively for the JV and deliver its entire butyric aldehyde production to the JV. As regards butyl acetate, only Oxeno is transferring its business to the JV; Celanese will retain its butyl acetate business as it is not conducted in the context of its oxo-chemicals but of its acetyl business. As regards 2-EH, Degussa will transfer only the existing 2-EH delivery contracts and the 2-EH customer base to the JV but will abandon 2-EH production once the JV is established and focus on the longer-chain substitute product INA. The same applies to the 2-EH downstream product DOP, where Degussa will likewise transfer only its customer base. Celanese will not transfer its carbon acid facilities to the JV.
- (7) The JV will also acquire a number of ancillary services from Degussa (tank facility, fatty alcohol distillation, ethanol finishing, resin production, hydrogenation of cyclododecatriene into cyclododecane and processing of butylene glycol and acetic acid into butylene glycolacetates).

III. MERGER

- (8) The JV will be a full-function joint venture within the meaning of Article 3(2) of the Merger Regulation. It will be jointly controlled by Celanese and Oxeno, will be established for a limited period and will exercise all the functions of an autonomous economic entity.
- (9) Celanese and Oxeno will each have a 50 % holding in the JV. Strategic business decisions as to financial planning, management appointments, major investments

and the business plan, which are to be taken by the General Meeting and the Meeting of Partners, require a unanimous vote. The JV will thus be jointly controlled by the two parties.

- (10) Ultimately, the JV will exercise all the functions of an autonomous economic entity. It will be established for an unlimited period and production facilities will be transferred to it permanently. Moreover, it will exercise on the relevant markets the functions that are also exercised by other firms on those markets. It will have its own management dealing with day-to-day business and adequate financial resources to cover its business needs. It will produce the oxo-chemicals that it markets almost exclusively in its own production facilities and using its own staff transferred from Celanese and Oxeno. The JV will in addition have its own direct access to the market. It will be responsible for marketing its own production itself.
- (11) The planned operation is accordingly a merger within the meaning of Article 3(2) of the Merger Regulation, read in conjunction with Article 3(1)(b).

IV. COMMUNITY DIMENSION

- (12) The firms concerned have a worldwide turnover of more than EUR 5 billion (Celanese AG EUR 5 097 million, RAG Aktiengesellschaft approximately EUR 13 billion). Celanese and RAG each have a Community turnover of more than EUR 250 million ([...] (*)). Celanese achieves more than two thirds of its Community turnover in a single Member State. The notified merger accordingly has a Community dimension.

V. ASSESSMENT IN TERMS OF COMPETITION

- (13) Following detailed scrutiny of the merger, it has been established that this merger would not create or strengthen a dominant position as a result of which competition would be significantly impeded in the common market or in a substantial part thereof.

SUPPLIERS ON THE RELEVANT MARKETS

- (14) The basic material for the relevant products is butyric aldehyde, which is produced from propylene and

(*) Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk.

synthetic gas. Butanol, 2-ethylhexanol (2-EH), carbon acids, TMP and NPG are produced from this basic product at the first subsequent processing stage. At a further processing stage, butyl acetate can be produced from butanol, but other products such as the butyl aminate and butyl acrylate supplied by Celanese can also be produced. 2-EH acrylates and dioctylphthalate (DOP) among others are made from 2-EH. Suppliers tend to be vertically integrated and use their preliminary products primarily in their own processing facilities.

- (15) Apart from the parties, BASF, Perstorp, Atofina and Zakłady Azotowe 'Kędzierzyn' SA are among the most important vertically integrated suppliers.
- (16) BASF is the world's largest chemicals group. Following the closure of its works in Tarragona, Spain, its entire oxo-chemicals production is now concentrated in Ludwigshafen. BASF is the only competitor to be present on all six markets where the JV will be in business. By means of its integration strategy, which seeks to enhance synergies through integrated production systems, BASF is less dependent than other competitors on the oxo-chemicals market on sales to third parties upstream. BASF is not very strongly represented on many markets for oxo-intermediate products.
- (17) Perstorp is a Swedish firm that is active in oxo-intermediates, engineering materials, coating intermediates, performance chemicals and formox and has a turnover of approximately SEK 670 million. It was born of the merger of Perstorp AB and Neste Oxo. Among other things, it produces butyric aldehyde, butanol, 2-EH and DOP.
- (18) Atofina is a TotalFinaElf subsidiary consisting of Elf Atochem and the chemicals division of Petrofina. Atofina is in the oxo-chemicals business primarily through Oxochimie at Lavera, near Marseilles, France. Oxochimie is a joint venture founded in 1968 by Atofina and BP, making butyric aldehyde, butanol and 2-EH. The two companies each hold 50 % of the capital in Oxochimie and are entitled to supplies of butanol and 2-EH accordingly, while butyric aldehyde is reprocessed internally apart from some deliveries to a few customers. Atofina produces the most important 2-EH downstream product, DOP, but in 2001 BP dropped DOP production. Since then BP has been vertically integrated only in downstream products of butanol.
- (19) Zakłady Azotowe 'Kędzierzyn' S.A. (Zakłady) is a Polish producer based in Kozle, Poland. The Oxo-division produces oxo-alcohols and semi-finished products (2-EH, n- and iso-butanol, n- and iso-butyric aldehyde). Among other things, the plasticisers division produces

DOP but also dibutyl phthalate (DBP) and di-isobutyl phthalate (DIBP). When the firm was in business difficulties, it was renationalised; the Polish State publicly offered to enter into negotiations for the sale of the firm. According to one of Zakłady's customers, the firm is under bank supervision and can accept only business contracts that generate an immediate profit.

1. BUTYRIC ALDEHYDE

- (20) Butyric aldehyde is the first chemical step in the oxo-C3 chemistry. It is produced from propylene through a reaction with a synthesis gas (syngas). This reaction leads to the production of two isomers of butyric aldehyde: iso-butyric aldehyde and n-butyric aldehyde in a ratio of 10 to 12 tonnes of n-butyric aldehyde for 1 tonne of iso-butyric aldehyde. From the two isomers are derived further products such as iso-butanol and neopentylglycol (NPG) from iso-butyric aldehyde and n-butanol, 2-ethylhexanol (2-EH), trimethylolpropane (TMP) and carboxylic acids from n-butyric aldehyde. Each producer of butyric aldehyde also produces some downstream products so that the merchant market for n- and iso-butyric aldehyde is more limited than their captive use. The merchant market represents 1/30 of total production.

(1) RELEVANT MARKET

- (21) The parties submitted that butyric aldehyde could not be considered as a real market but was only an intermediate product. Nevertheless, even though the related merchant market is much smaller than the captive use, it still exists: more than 20 chemical firms throughout Europe buy these products and depend on this supply to produce downstream chemical products. Buying patterns range from spot purchases to long-term contracts.
- (22) On the supply side, five firms produce butyric aldehyde in the EEA: Perstorp in Sweden, BASF, Celanese and Oxeno in Germany, Atofina in France. They all sell butyric aldehyde on the merchant market and also have captive uses. Imports are mainly due to a producer located in Poland: Zakłady. The latter and Atofina are smaller players in the merchant market for butyric aldehyde. Consequently, butyric aldehyde business exhibits all characteristics of a market. In addition, n-butyric aldehyde and iso-butyric aldehyde have to be regarded as two distinct product markets for the following reasons:

(a) **No demand side substitutability between n-butyric aldehyde and iso-butyric aldehyde: the two isomers lead to different downstream products**

- (23) The investigations carried out by the Commission revealed that the two isomers are used for different purposes and cannot be substituted for each other in most cases. This is especially true for the manufacture of the following downstream products: TMP, PVB and NPG, which represent more than 95 % of sales of butyric aldehyde on the merchant market. This is due mainly to the fact that the two molecules exhibit different chemical properties, so that a given downstream product can be derived from only one of the two isomers through a specific chemical reaction.
- (24) Moreover, most customers buy only one specific isomer. The only ones which bought both isomers did so to produce two different products: TMP or PVB from n-butyric aldehyde and NPG from iso-butyric aldehyde only.
- (25) Lastly, the average prices of the two isomers show significant differences, ranging from 15 to 40 % over the years, as shown in the table below. This can partly be explained by the fact that customers commonly buy much smaller volumes of iso-butyric aldehyde than in the case of the n-isomer. As a result, the market for iso-butyric aldehyde is much smaller than for n-butyric aldehyde [10 to 15]* kt compared with [50 to 55]* kt for n-butyric aldehyde in 2002).

Table 1

Celanese's average prices from 1999 to 2002

	n-butyric aldehyde	iso-butyric aldehyde
1999	EUR [...]*/t	EUR [...]*/t
2000	EUR [...]*/t	EUR [...]*/t
2001	EUR [...]*/t	EUR [...]*/t
2002	EUR [...]*/t	EUR [...]*/t

(b) **Very little supplier flexibility for production switchover**

- (26) The two isomers are produced at the same time and in the same reactor. Depending on the conditions of pressure and temperature and the modification of the characteristics of the catalyst, the ratio of production of the two isomers can be only slightly modified. The parties and the competitors confirmed that this ratio commonly remains in the range of 10:1 to 12:1. The ratio can be moved within this range but only slowly:

several months may be needed to modify the ratio by a few percentage points. Therefore, it appears not to be possible to produce significant quantities of one isomer instead of the other, even though the same equipment is used for both.

- (27) As a consequence, two distinct product markets will be distinguished in the following sections: n-butyric aldehyde and iso-butyric aldehyde. Oxeno is currently not active on the market for iso-butyric aldehyde, as opposed to the market for n-butyric aldehyde. Therefore, the following assessment will focus on the market for n-butyric aldehyde. In the following sections, each time the Commission does not specify one particular isomer, this means that the described characteristics apply to both isomers. The following observations relate to both isomers, except where specific reference is made to a particular isomer.

(2) GEOGRAPHIC MARKET FOR N-BUTYRIC ALDEHYDE

The markets for butyric aldehyde are at most European in scope

- (28) The parties submitted that the markets for butyric aldehyde, if they can be considered as real markets, are EEA-wide in scope, mainly because a few producers supplied all customers throughout Europe.
- (29) The investigation showed that these markets were at most EEA-wide: there have been no significant imports or exports of butyric aldehyde in recent years between the EEA and the rest of the world, with the exception of Zaklady's sales in Europe. Customers and competitors largely confirmed that the market was at most European in scope. On the one hand, butyric aldehyde is a raw material of low value and cannot economically be transported over long distances and, on the other, it is unstable in the presence of oxygen and therefore requires expensive storage infrastructures or special means of transport.

Northern Europe and Southern Europe constitute two distinct geographic markets for n-butyric aldehyde

- (30) Before attempting a more precise delineation of the geographic markets, it must be noted that all main customers of butyric aldehyde and therefore more than 95 % of the European sales are concentrated in three countries: Belgium, Germany and Italy, where five main customers together account for over 90 % of demand. The breakdown between the Member States is shown in the table below.

Table 2

Total sales of n-butyric aldehyde by country in 2002

Country	Volume sold (t)	Turnover (EUR 1 000)	Proportion of EEA sales
Germany	[...]*	[...]*	[60 to 70 %]*
Belgium	[...]*	[...]*	[20 to 30 %]*
Italy	[...]*	[...]*	[10 to 20 %]*
United Kingdom	[...]*	[...]*	[0 to 10 %]*
France	[...]*	[...]*	[0 to 10 %]*
Spain	[...]*	[...]*	[0 to 10 %]*
The Netherlands	[...]*	[...]*	[0 to 10 %]*
Total EEA	[...]*	[23 000 to 26 000]*	100 %

- (31) The investigations carried out by the Commission lead to the conclusion that two distinct geographic markets should be distinguished: northern continental Europe (in fact, mainly Germany and Belgium) and southern Europe (in fact, mainly Italy).
- (32) First, it appears that the sales conditions in Italy and in Germany and Belgium differ significantly. The average price for n-butyric aldehyde in Germany and Belgium in

2002 was around EUR [450 to 500]* per tonne, while it was around EUR [...] per tonne in Italy over the same period. This significant difference (EUR [100 to 150]*, i.e. [...]*% of the price in Germany) cannot be explained by transport costs alone: the latter are only EUR [20 to 40]* higher on average in Italy than in Germany. As a result, the margins of the supplier are much higher in Italy than in Germany or in Belgium, as the table below shows.

Table 3

Average prices, variable costs, gross margin and the percentage, i.e. gross margin as a proportion of the total price of all suppliers, on the basis of their 2002 sales in the country of destination

Country	Average price (EUR/t)	Average variable cost (EUR/t)	Average gross margin (EUR/t)	Percentage
Germany	[...]*	[...]*	[...]*	[...]*
Belgium	[...]*	[...]*	[...]*	[...]*
Italy	[...]*	[...]*	[...]*	[...]*

- (33) These differences cannot be explained only by smaller sales volumes: [...]*. This pattern is possible because the producers can discriminate in prices between customers, depending on volumes and country of destination: the products are delivered direct to the customer's plant for an all-in price per tonne, including transport costs. The producer is responsible for the logistics. And so a producer, when pricing a product, knows exactly who is the buyer as well as the country in which the buyer is located and the volumes bought in the past [...]*.

leading firm is Celanese. In Italy market shares are distributed in a very different way: Perstorp and BASF are the leading players and more competitors are active (five suppliers as compared with four main suppliers in Germany and Belgium). Some suppliers such as Perstorp and Zakłady enjoy significant market shares ([20 to 30 %]* and [10 to 20 %]* respectively) while they have very limited sales in Germany ([5 to 10 %]* and [0 to 5 %]* respectively). Atofina is not active in Germany but has sales in Italy ([0 to 5 %]*).

- (34) The market shares of the various producers are also very different: in Germany and Belgium, Celanese, Oxeno and BASF control most of the market. The

- (35) In Italy the strong presence of competitors such as Perstorp, which has low market shares in Germany, can be explained mainly by transport costs. Perstorp faces

high transport costs in Germany (EUR [...] per tonne) and therefore cannot effectively compete against the three local producers, which face much lower transport costs (ranging from EUR [...] to EUR [...] per tonne). In Italy Perstorp and the German producers all face higher transport costs and are therefore on a more equal competitive footing.

- (36) This situation is different from that of butanol or 2-EH, where Perstorp has intermediate storage tanks in Hamburg and Rotterdam to supply customers in northern Europe economically. In fact, butyric aldehyde is unstable in the presence of oxygen. It must be stored and transported in a nitrogen atmosphere and with special equipment for recycling the vapours of butyric aldehyde. Perstorp confirmed that such a tank would not make economic sense. Moreover, this tank would have to be carried by vessels transporting large quantities and having a vapour recycling system. Only a few vessels have such systems on board. Lastly, these vessels must be filled by pipe from the plant (like butanol and 2-EH), and Perstorp currently has no such pipe and does not plan to install one given the price of such a specific pipe. As a consequence, Perstorp has no choice but to fill iso-containers in Sweden (20 to 23 tonnes each) that can be transported by truck or by rail. These containers are shipped by ferry to Germany and then on to the final customers throughout Europe by truck or by rail.

- (37) The investigation has shown that, beside price, the most important parameters are security of supply and timely deliveries: customers commonly have comparatively small storage capacities (like the producers) and have just-in-time production. Delays are not tolerated. Admittedly, the storage capacities of [customer A] in particular could be expanded at relatively low cost. As a result, the locational advantages of German suppliers when supplying customers in Germany and Belgium would be only partly offset. For this reason, it appears that penetrating an area where the three German producers are located and offer a high level of security of supply is difficult for outside competitors, i.e. mainly Perstorp (Sweden) and, more recently, Zakłady (Poland). The German producers can even deliver within a day by truck, if need be. This also explains Perstorp's very low market share in Germany and Belgium as regards n-butyric aldehyde (<5% in 2002), even though Perstorp's transport costs are lower for deliveries of butyric aldehyde to Antwerp (around EUR [...] /tonne) compared with deliveries to southern Germany (around EUR [...] /tonne).

- (38) The competition conditions are quite different in Italy where there is no local producer. In this area, the German, Swedish and Polish suppliers appear to compete on a more equal footing, both in terms of transport costs and supply conditions (security of supply, timely delivery). This is reflected in the market shares, which are more evenly distributed among the different suppliers (in 2001, BASF: [30 to 40%]*, Perstorp: [20 to 30%]*, Celanese: [20 to 30%]*, Zakłady: [10 to 20%]*).

- (39) As a consequence, two distinct geographic markets for n-butyric aldehyde are distinguished in the following assessment: a northern European market, i.e. mainly Belgium and Germany, and a southern European market, i.e. Italy.

(3) COMPATIBILITY WITH THE COMMON MARKET

- (40) Through the proposed operation, Celanese and Oxeno are to contribute their production of butyric aldehyde, located respectively in Oberhausen and Marl in Germany, to a newly created joint venture. Oxeno is currently not active in the market for iso-butyric aldehyde: all the iso-butyric aldehyde produced at the same time as n-butyric aldehyde is used internally. When demand is not high enough, it reportedly can be burnt. Therefore, the assessment focuses on the market for n-butyric aldehyde, where there is an addition of activities.

(a) *Description of the conditions of competition on the markets prior to the proposed operation*

- (41) The markets for butyric aldehyde are currently oligopolistic markets where competition is not very strong. These markets are, moreover, rather transparent, the producers face similar costs, the characteristics of the markets are stable and the aggregate demand on a stagnating and mature market is relatively small. This industry can be seen as mature.

The markets for butyric aldehyde are particularly transparent

- (42) The characteristics of each isomer (n- and iso-butyric aldehyde) are standardised so that only one quality exists for each product. All customers confirmed that each isomer market is considered as a market for homogeneous products. The quality can differ in extreme cases where the product supplied does not respect the standard agreed upon or may contain by-products that are lethal for downstream reactions. In

this case, the product is reportedly not accepted and/or the commercial relations with the supplier terminated.

- (43) There are only six suppliers in Europe, three of which are located in Germany. As regards producers, they have all been on the market for many years. There has been no new entrant in the market over the past 10 years. As a consequence, the characteristics of each plant (technology, capacity) is public knowledge. This is true particularly since those plants are classified under Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances ⁽⁵⁾ and are required by that Directive to

publish their characteristics and the volumes of chemical substances that are used and/or stored. Furthermore, production capacities did not evolve dramatically in recent years (increase of less than 15 % over the past five years). Lastly, the other producers are also active in the downstream markets, which are also concentrated: the main players on the butyric aldehyde market are also the leading players in the downstream product markets, such as 2-EH, butanol, DOP and butyl acetate. Their knowledge of the merchant markets for downstream products thus enables them to have a precise idea of the captive uses of butyric aldehyde and, consequently, the spare capacity in the other producers' plants.

Table 4

Capacities and total production of n-butyric aldehyde in the EEA over the last four years (in kt)

	2002		2001		2000		1999	
	Capacity	Production	Capacity	Production	Capacity	Production	Capacity	Production
Celanese	[450—500]*	[...]*	[450—500]*	[...]*	[450—500]*	[...]*	[350—400]*	[...]*
Degussa	[450—500]* ⁽⁶⁾	[...]*	[400—450]*	[...]*	[400—450]*	[...]*	[400—450]*	[...]*
JV	[900—1 000]*	[650—700]*	[900—1 000]*	[650—700]*	[900—1 000]*	[650—700]	[900—1 000]*	[650—700]
Atofina	[250—300]*	[250—300]*	[250—300]*	[250—300]*	[250—300]*	[250—300]*	[250—300]*	[250—300]*
BASF	[500—550]*	[450—500]*	[500—550]*	[450—500]*	[550—600]*	[500—550]*	[550—600]*	[500—550]*
Perstorp	[250—300]*	[200—225]*	[250—300]*	[200—250]*	[200—250]*	[200—250]*	[200—250]*	[200—250]*
Total	1 983	1 649	2 015	1 617	2 024	1 701	1 899	1 693

- (44) Several technologies exist throughout the world to produce butyric aldehyde. All producers in Europe use the same technology based on rhodium catalyst. As a result, the quantity of energy, propylene and syngas (carbon monoxide and hydrogen) needed to manufacture one tonne of butyric aldehyde represents most of the variable costs and is significantly the same for all producers: variable costs = A* propylene price + B* syngas price + energy (a few percentage points), where A is around EUR [...]/tonne, B around EUR [...]/tonne and energy around EUR [...]/tonne. The syngas being much less expensive than propylene, it represents only 18 % of the final variable cost of producing butyric aldehyde.

variable costs are very similar. The variation ranges up to EUR [...]* per tonne, i.e. 10 %. This differences must not be overestimated: (i) they may result simply from variations in the price of propylene over the year and (ii) they must be assessed in comparison with the gross margins which are at least EUR [...]* per tonne (cf. subsequent sections).

Table 5

Average variable costs in 2002 per tonne of butyric aldehyde produced, for each producer

Firm	Average variable costs
Celanese	EUR [...]/tonne
Degussa	EUR [...]/tonne
Perstorp	EUR [...]/tonne
BASF	EUR [...]/tonne
Atofina	EUR [...]/tonne
Zakłady	n.a.

- (45) The table below provides the producers' average variable costs in 2002 and shows that the different producers'

⁽⁵⁾ OJ L 10, 14.1.1997, p. 13.

⁽⁶⁾ Oxeno reduced its capacity to [...]*t per year in the course of 2002, following the launch of a new product, INA, which is produced using part of the butyric aldehyde plant.

(46) Consequently, one producer can easily work out the variable costs of its competitors since the bulk of variable costs is determined by the price of propylene, which is quoted daily on international markets (ICIS-LOR publishes propylene prices in Europe, for instance). The remaining variable costs comprise energy, which is similar (EUR [...]*/tonne) for each producer, and syngas, which accounts for a much smaller fraction of variable costs than propylene: syngas accounts for 40 % in weight but for less than 20 % of cost of the final product). Its cost is much more stable than propylene since it is made of carbon monoxide and hydrogen, which are produced in the neighbourhood of the chemical plant (by refineries).

The characteristics of the markets are stable over time

— *Prices are much more stable than they appear*

(47) The price of butyric aldehyde fluctuates over time. This is due mainly to the fact that most of the cost of producing butyric aldehyde is dependent on the price of the main raw material, i.e. propylene, which fluctuates significantly over time. Nevertheless, most of n-butyric aldehyde sales, for instance, are sold under supply contracts, where the agreed price is based on a formula that takes into account the price of propylene and the quantity of propylene (0,65 to 0,70 t) needed to produce one tonne of butyric aldehyde. The formula for most contracts is:

butyric aldehyde price = C * propylene price ⁽⁷⁾ + charge, where C ranges from 0,65 to 0,70.

The charge comprises reworking costs, transport costs and the producers' margin. Therefore, price negotiations relate exclusively to the level of this charge and exclude all fluctuations in the price of propylene.

(48) The contracts that are not based on this formula are mainly short-term contracts, i.e. monthly or quarterly contracts. They are considered in this industry as fixed-price 'spot' purchases. Admittedly, this fixed price reflects both the cost of propylene (0,65*price of propylene at the time) and the reworking and transport costs plus the margin: the latter corresponds to the charge. The Commission's investigations showed that the only large customers which use spot contracts for significant volumes of butyric aldehyde are [firm A]* and [firm B]*.

— *No technological innovation, mature business*

(49) As mentioned above, the plants that produce butyric aldehyde in Europe are several decades old. The technology has not evolved significantly in recent decades. The only major modification relates to the catalyst: cadmium has been replaced by rhodium for all producers. All players in the market confirmed that this was a mature business.

(50) The market for n-butyric aldehyde is stable. As regards n-butyric aldehyde, even a slight decline may be expected in the coming years owing to the declining sales of 2EH (which is produced from n-butyric aldehyde). In fact, the plasticiser produced from 2EH, DOP, has recently been classified as toxic. Its use in certain applications may therefore be prohibited in the future (the phase relating to risk assessment based on the type of application has not been completed yet), and this will affect the volumes of 2EH produced and hence the production of n-butyric aldehyde.

— *No countervailing buying power*

(51) The number of customers in these markets is very limited. Five to ten customers commonly account for more than 90 % of a given producer's sales. Nevertheless, these customers do not appear to hold strong countervailing buying power because, firstly, the customers who buy butyric aldehyde are not vertically integrated, unlike most butyric aldehyde producers and, secondly, most of them value security of supply and timely delivery. The investigation showed that, for this reason, most customers regard only a very limited number of producers as serious alternatives ⁽⁸⁾ and maintain with them long-term commercial relationships involving close cooperation, in particular in terms of logistics. Switching to a new supplier would therefore entail higher risks and uncertainties, require setting up an efficient logistics chain and testing the compatibility of the product with the characteristics of the chemical reaction performed in the plant. Having one additional supplier may also make it necessary to use an additional tank in order to store separately the products supplied by the different producers. In case of production problem, this enables the customer to identify which product is responsible for it. Lastly, the merchant market for butyric aldehyde represents less than 5 % of the total production of butyric aldehyde. Therefore, the loss of one customer would have a very limited impact on the activity of the producer.

⁽⁷⁾ This formula is based on the fact that 0,65 tonne to 0,70 tonne of propylene is needed to produce 1 tonne of butyric aldehyde.

⁽⁸⁾ Only one large customer reported five suppliers. In all other cases, the number of suppliers was between one and three.

(52) In light of the market conditions described above, the markets for n- and iso-butyric aldehyde should be regarded as highly concentrated oligopolistic markets where competition is weak.

(b) The impact of the merger on the markets

(53) The proposed joint venture does not lead to any overlap in Italy since Oxeno is not active there. Therefore, the following assessment focuses on the northern European market for n-butyric aldehyde, comprising mainly Germany and Belgium.

(54) In this market, the proposed operation will result in a combined market share of [60 to 70 %]* (Celanese: [50 to 60 %]* and Oxeno: [10 to 20 %]* in 2002). The remaining players are BASF, with a [20 to 30 %]* market share, Perstorp ([0 to 10 %]*) and Zaklady (less than [10 %]*). Such market shares are high enough to raise serious doubts as to whether the proposed operation may lead to the creation or the strengthening of dominant positions. As is analysed in detail below, the investigation carried out by the Commission showed that, firstly, the market shares were not very reliable indicators of market power in this case and, secondly, several competitors enjoyed enough spare capacities to challenge the notifying parties' position.

Table 6

Volumes sold in 2002 and related market shares for n-butyric aldehyde in Germany + Belgium

Germany + Belgium		
Firm	Volume sold (kt)	Market share
Celanese	[...]*	[50 to 60 %]*
Degussa	[...]*	[10 to 20 %]*
Joint venture	[...]*	[60 to 70 %]*

Germany + Belgium		
Firm	Volume sold (kt)	Market share
BASF	[...]*	[20 to 30 %]*
Perstorp	[...]*	[0 to 10 %]*
Atofina	[...]*	[>5 %]*
Zaklady	[...]*	[<5 %]*
Total	[...]*	100 %

Market shares

(55) The merchant market for n-butyric aldehyde is very small: it represents around 3 % of the total annual production of n-butyric aldehyde. Therefore, any producer could supply the whole merchant market either by using spare capacities or theoretically by switching a part of the butyric aldehyde used internally for downstream products into the merchant market. The latter is far more unlikely to occur than the former since it requires that the demand for downstream products decreases or that the margin generated by butyric aldehyde becomes significantly higher than the one generated by downstream products. However, as explained below, some competitors enjoy spare capacities.

(56) Further, the parties' market shares have been declining sharply over the past years, from [70 to 80 %]* in 1999 to [60 to 70 %]* in 2002 in the EEA. This pattern is the same when the German+Belgian market is considered since Degussa is not active in Italy and Celanese has only a small turnover there. Since the size of the total market shrank over the period, the loss in term of sales is even bigger: the parties' combined sales fell from [...]* kt in 1999 down to [...]* kt in 2002, a decrease of [more than 30 %]*.

Table 7

The parties' sales and market shares for butyric aldehyde in the EEA from 1999 to 2002

	1999		2000		2001		2002	
	Sales (kt)	Market share	Sales (kt)	Market share	Sales (kt)	Market share	Sales (kt)	Market share
Celanese	[...]*	[70 to 80 %]*	[...]*	[60 to 70 %]*	[...]*	[50 to 60 %]*	[...]*	[40 to 50 %]*
Degussa	0	0 %	0	0 %	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*
Joint venture	[...]*	[70 to 80 %]*	[...]*	[60 to 70 %]*	[...]*	[50 to 60 %]*	[...]*	[50 to 60 %]*
Total market	[...]*	100 %	[...]*	100 %	[...]*	100 %	[...]*	100 %

(57) The main reason for this strong evolution relates to the characteristics of the market for butyric aldehyde. Even though more than twenty companies purchase butyric aldehyde, only a handful have significant sales. In the northern European market (Germany+Belgium), four companies purchase most of the butyric aldehyde sold on this market: Bayer (Germany, [...] kt per year), Solutia (Belgium, [...] kt per year), Kuraray (Germany, [...] kt per year), Wacker (Germany, [...] kt per year). As a consequence, as soon as one customer changes its purchase pattern, the impact on market shares can be significant.

Table 8

BASF sales of n-butyric aldehyde in kt and corresponding market share in the EEA from 1999 to 2002 ⁽⁹⁾

BASF	1999	2000	2001	2002
Sales (kt)	[...]*	[...]*	[...]*	[...]*
Market share	[...]*	[...]*	[...]*	[...]*
Total market	[...]*	[...]*	[...]*	[...]*

(58) This is demonstrated by the Oxeno and BASF cases: in 2001 [firm B]* chose Oxeno as an additional supplier for n-butyric aldehyde. As a result, Oxeno suddenly acquired a [10 to 20 %] market share. Similarly, BASF lost sales to Perstorp in 1999 but not in 2000 and 2001. As a result, BASF's market share jumped from [10 to 20 %]* in 1999 to [10 to 30 %]* in 2000-2001.

(59) Consequently, given the very limited number of customers and the small size of the merchant market compared with the level of production, the market shares of the various competitors fluctuate widely. This tends to minimise the role of market shares as an indicator of market power. Even so, market shares in the last four years show that there is competition on the market in n-butyric aldehyde.

Spare capacities

(60) Given the parties' leading position in this already highly concentrated market, the proposed operation could lead to detrimental effects if competitors faced capacity constraints and could not significantly increase the quantities that they put on the merchant market as a reaction to any output reduction or price increase by the parties.

Table 9

Capacity, production, captive use and merchant market for n-butyric aldehyde in 2002 in the EEA

	Capacity	Share	Production	Captive use	Non-captive EEA	Market share
Celanese		[...]*	[...]*	[...]*	[...]*	[40 to 50 %]*
Degussa		[...]*	[...]*	[...]*	[...]*	[5 to 15 %]*
Joint venture		[40 to 50 %]*	[...]*	[...]*	[...]*	[50 to 60 %]*
Atofina		[10 to 20 %]*	[...]*	[...]*	[...]*	[>5 %]*
BASF		[20 to 30 %]*	[...]*	[...]*	[...]*	[20 to 30 %]*
Perstorp		[10 to 20 %]*	[...]*	[...]*	[...]*	[5 to 10 %]*
Zakłady	n.a.	n.a.	n.a.	n.a.	[...]*	[5 to 10 %]*
Total	1 983	100 %	1 649	1 601	[...]*	100 %

⁽⁹⁾ Since BASF's turnover in Italy has not fluctuated, this situation reflects that in Germany in Belgium.

The parties

- (61) The parties reported in their reply to the statement of objections that Oxeno's capacity has been dramatically reduced in 2002 as a consequence of launching the production of INA: part of the butyric aldehyde plant has been used to produce INA. As a result, Oxeno's butyric aldehyde capacity has been reduced to [...] kt per year, instead of [...] kt per year. From 2003 onwards, the joint venture's capacity will be [...] kt per year and its spare capacity (based on the 2002 production figures): [...] kt per year. The parties will therefore still enjoy the largest capacity and spare capacity on the market, but the difference with BASF ([...] kt per year spare capacity) will be much smaller.

Atofina

- (62) Atofina produces butyric aldehyde through its subsidiary Oxochimie, in Lavera. Oxochimie has no spare capacity: it confirmed (see transcription of their telephone call of 4 April 2003) that it has important internal needs to produce butanol and 2-EH, which it regards as its core business. It is able to sell on the merchant market little more than [...] kt of n-butyric aldehyde. According to Atofina, the price of n-butyric aldehyde would have to increase significantly before it considers diverting part of its internal use of butyric aldehyde to sell it on the merchant market. Atofina's strategy and its capacity constraints are confirmed by its level of production compared with its capacity over the last years: it remained at the high level of [...]%. Atofina considers the latter as an excellent ratio for the industry. In the past, it produced less only because of incidents or periodic maintenance: it had to stop production of butyric aldehyde for a month in 2001, for instance.

Perstorp

- (63) Perstorp enjoys some spare capacities. Nevertheless, when asked about its margins of manoeuvre, it admitted that they were more limited than the raw figures may indicate: First, it puts its real capacity at lower than the nominal capacity by [...] kt. Second, it also produces [chemicals] using part of the butyric aldehyde capacity, namely around [...] kt. As a consequence, Perstorp has around [...] spare capacity. However, this represents more than 20 % of the northern European market and could be enough to offset any output reduction by the parties.
- (64) Lastly, despite its spare capacity, Perstorp does not appear as a very competitive player in the northern European market for n-butyric aldehyde. Its only

significant customer in this area is [customer C]*, which purchased [...] tonne in 2001 and [...] t in 2002. [Customer C]* decided to switch to [supplier A]* and [supplier B]*. As a result, Perstorp's sales in this area in 2003 are less than [...]%. When asked about the reasons for this switch, [customer C]* explained that Perstorp's prices (that is, the charge on top of the cost of propylene) are much higher than the prices usually proposed by the German producers: by around EUR [...] a tonne (compared with a charge of between EUR [...] and EUR [...]). According to [customer C]*, the cost of transporting butyric aldehyde from Sweden could be the main reason.

- (65) Perstorp is competitive when the other producers raise their charges. This has been the case in 2001 and 2002: Perstorp's charge did not change but became attractive because the German producers proposed a much higher price to [customer C]*. In 2003 the prices proposed by BASF and Celanese returned to normal and [customer C]* switched back to them. [Customer C]* stated that Perstorp was really concerned by losing such a significant volume and came back several times with lower prices. The lowest price proposed by Perstorp nevertheless remained significantly higher than BASF's and Celanese's prices (which appear to be the prices usually proposed in this area).
- (66) This analysis is confirmed by the data gathered during the in-depth investigation: in 2002, for instance, Perstorp's prices for butyric aldehyde were in the range of EUR [...] — EUR [...] a tonne (EUR [...] in Germany, EUR [...] in Italy), while BASF and Celanese sold their butyric aldehyde at prices ranging from EUR [...] to EUR [...] in Germany over the same period. When asking for a quote in the past months, [customer D]* also received a similar price level from Perstorp and discarded the proposal. [Customer E]* also confirmed Perstorp's non-competitive price level.
- (67) As regards transport costs, data also confirm the difference between the local producers and Perstorp: Perstorp's transport costs range from EUR 90 to EUR 110 per tonne to deliver in Germany. As a comparison, Celanese's transport costs range from EUR 25 to EUR 39 per tonne to deliver in the same area.
- (68) Consequently, Perstorp will restrict local producers' room for manoeuvre only if it increases prices by some EUR [...] per tonne, i.e. by [10 to 20]%. The fact that Celanese and BASF lowered prices for [Customer C] after they lost sales to Perstorp shows that Perstorp already exerts some competitive control over BASF and the notifying parties.

Table 10

Volumes of n-butyric aldehyde sold on the merchant market and the related market share over the past four years in the EEA

		Celanese	Degussa	Joint venture	BASF	Perstorp	Atofina	Zakłady	Total
2002	Volume (kt)	[20 to 25]*	[0 to 10]*	[25 to 30]*	[...]*	[...]*	[...]*	[...]* ⁽¹⁰⁾	[...]*
	Market share	[40 to 50 %]*	[0 to 10 %]*	[50 to 60 %]*	[20 to 30 %]*	[0 to 10 %]*	[0 to 10 %]*	[0 to 10 %]*	100 %
2001	Volume (kt)	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Market share	[50 to 60 %]*	[0 to 10 %]*	[50 to 60 %]*	[20 to 30 %]*	[10 to 20 %]*	[0 to 10 %]*	[0 to 10 %]*	100 %
2000	Volume (kt)	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Market share	[60 to 70 %]*	[0 to 10 %]*	[60 to 70 %]*	[20 to 30 %]*	[10 to 20 %]*	[0 to 10 %]*	[0 to 10 %]*	100 %
1999	Volume (kt)	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*
	Market share	[70 to 80 %]*	[0 to 10 %]*	[70 to 80 %]*	17 %	[0 to 10 %]*	[0 to 10 %]*	[0 to 10 %]*	100 %

BASF

(69) In light of the above, BASF appears to be a strong competitor which has spare capacities to sell additional n-butyric aldehyde on the German/Belgian market. BASF's spare capacity amounted in 2002 to [...]* kt, i.e. [...]* % of nominal capacity and [more than 100 %]* of the size of the merchant market in Germany and Belgium. Unlike Perstorp, BASF also faces low transport costs to supply German and Belgian customers. It could therefore very easily use its large spare capacities to gain additional market shares should the joint venture reduce sales volumes or raise prices.

(70) When asked about its strategy in the market for n-butyric aldehyde, BASF replied that it was definitely active in this market but had a conservative and long-run approach to this business: suddenly placing significant additional volumes on the market would not be profitable in the long term since prices would consequently remain low. In particular, the price at which it sells butyric aldehyde has to be compared with the price of the downstream products that can be produced from it internally to give ideal margins. Besides, it has to achieve certain targets, e.g. in connection with return on capital employed (ROCE). Therefore, it must manage its business in the long run

in such a way that turnover covers fixed costs and their financial targets are met. This strategy is also being pursued by other suppliers of butyric aldehyde.

(71) Even so, BASF's market share in the EEA over the last five years has expanded from [15 to 25 %]* to [25 to 35 %]*. Only 1999 was a maverick year in this respect. BASF explained that it lost significant sales to Perstorp in 1999 and realised that it would have to reduce its dependence on this customer⁽¹¹⁾. As a result, it reorganised its portfolio of customers, won back a major customer and increased its sales up to [10 to 20]* kt, as shown in the table below. BASF was therefore able to increase its sales over the five-year period 1998 to 2002 by [considerably more than 35 %]*.

Table 11

BASF's sales of n-butyric aldehyde (in kt) from 1995 to 2002

1995	1996	1997	1998	1999	2000	2001	2002
[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*	[...]*

⁽¹¹⁾ Perstorp was purchased by Neste in 2002. Before this acquisition, it used to buy butyric aldehyde from various suppliers, among which Neste. After the acquisition, the company producing butyric aldehyde took the name of 'Perstorp'. Sales previously made to Perstorp are now internal sales.

⁽¹⁰⁾ No precise data have been received from Zakłady.

- (72) Some customers reported that BASF was not always available on the market or proposed only limited volumes. This was the case, for instance, with supply contracts negotiated recently with two important customers in [country]*: [customer E and customer F]*. Each of them asked BASF for a quotation to be fully supplied by the latter. In both cases, BASF agreed to supply them at market price (i.e., in line with Celanese's and Oxeno's prices) but for a limited volume (roughly half of the demand). However, it cannot be concluded from the historical trend of market shares that BASF will, in future, be a less active competitor.
- (73) Given the spare capacities, BASF will also be able to counteract possible price increases by the joint venture. In the course of the investigation, the Commission found no evidence that BASF would alter its strategy and would not react to a reduction in supply and possible future price increases by the joint venture by expanding supply. BASF could thus improve its position in this market and exert effective competitive pressure on the JV. Its behaviour in recent years shows that it was in a position, and found it advantageous, to expand its market share significantly over the last five years.

New entrants and producers outside the EEA

- (74) Strong competition cannot be expected from new entrants: no new entrant has been reported in the past 10 years and, given the size of the European market, which already exhibits substantial overcapacity, the cost of building a new plant and the strict regulations applying to Seveso sites, the construction of a new plant is highly unlikely in the near future.
- (75) Several existing chemical plants outside the EEA produce butyric aldehyde, namely Zaklady in Poland and two other firms in Russia and Romania. However, no customer reported having been supplied by the Romanian or Russian firm. These appear to be too far away to offer the level of security of supply required by European customers and particular those in Germany and Belgium, where closer and more reliable suppliers are active.
- (76) A few customers in Germany have been and may still be supplied by Zaklady (less than [5]* % market share). Besides, Zaklady is a significant player on the Italian market. Several German customers reported that they considered that Zaklady currently did not offer a level of security of supply high enough for them to take the risk of being supplied by it. Further, Zaklady declined several

times to commit to long-term supply contracts (this has been the case, for instance, with Solutia and Kuraray) and proposed only spot contracts for a short period. The use of spot contracts may be a sign of short capacities or unsecured supply in propylene. Therefore, Zaklady can be seen as a fringe player in Germany and Belgium that does not seem to be currently in a position to exercise any counter pressure against the joint venture. However, Zaklady has been a significant player in Italy for several years ([10 to 20 %]* market share in 2002), where it has been apparently able to supply butyric aldehyde with a satisfactory logistics chain. Therefore, it cannot be ruled out that, being located close to Germany, Zaklady will in the years ahead develop an efficient sales organisation and increase its market share in Germany.

(c) Conclusion as regards n-butyric aldehyde

- (77) Accordingly, it appears that the proposed operation would, on the basis of 2002, give the joint venture a [60 to 70 %]* market share. Although this market share appears significant, it has fallen sharply in recent years following Celanese's losses of market share. In addition, the market share level does not seem to be a very reliable indicator of market power given the very small size of the merchant market and the very limited number of customers. Developments in market shares over the last five years (see recitals 58 and 71) have shown that competition exists on the n-butyric aldehyde market. Moreover, even though this market is already very highly concentrated, the parties' main competitor, BASF, and, to a lesser extent, Perstorp enjoy spare capacities that are sufficient for them to avert any output reduction or price increase by the merging parties. Besides, the Commission has not found any strong evidence that BASF would alter its strategy and is not using its spare capacity but would instead follow price increases effected by the parties. Lastly, Zaklady was in a position to develop a logistics chain on the highly priced southern European market. The possibility cannot, therefore, be ruled out that, in the event of a small, significant but not merely temporary price increase, Zaklady will also step up deliveries to the northern European market.
- (78) In the present case, it is therefore to be noted that the merger would lead not only to the creation or the strengthening of a dominant position.

(d) Commitments given by the parties

(79) The Commission takes note of the commitments given by the parties. These commitments are the following:

(a) The parties undertake to maintain durable secure supplies to their butyric aldehyde customers in accordance with their market activity hitherto. To this end, they declare their readiness to renew all existing supply contracts with customers currently purchasing from them, if so requested, as follows: [...]*. In volume terms, at least the quantities of butyric aldehyde currently supplied must be made. Current sales prices or price formulas will be maintained, subject only to a cost- or inflation-related adjustment factor applying the usual parameters; [...]*.

(b) [...]*

(c) [...]*

These commitments are not a condition of approval.

2. BUTANOL

(1) THE RELEVANT PRODUCT MARKET

(80) Butanol (BuOH) is a downstream product of butyric aldehyde. It is produced by catalytic hydration from butyric aldehyde. It is the precursor for a series of chemical intermediate products such as butyl acetate, butylamine, butylacrylate and phthalate plasticisers. There are no truly adequate substitute products for butanol. Only in varnish production can butanol, technically speaking, be replaced by a series of other products with comparable solvent and thinning capacities (such as, after adaptation of the formula, propanols, ketones, glycol ether and aromatics). In the absence of adequate substitutability, it can be assumed that the relevant product market consists only of butanol.

(81) Butanol comes in the form of two isomers: n- and iso-butanol, n-butanol being made from n-butyric aldehyde and iso-butanol from iso-butyric aldehyde. There are arguments for accepting separate product markets for the two types of butanol. On the demand side, for instance, there is only a low degree of substitutability. For most applications, only one type can be used; only in solvents can one be replaced by the other. On the supply side, there is again no substitutability (flexibility in organising production processes). Producers cannot basically switch production capacity from n-butanol to iso-butanol to any great extent. The reason for this is that in the production of

the precursor, butyric aldehyde, the two types n- and iso-butyric aldehyde are used in a basically fixed ratio. If a butanol producer, for instance, wished to raise its production of iso-butanol, it would also have to boost production of iso-butyric aldehyde. If it did so, n-butyric aldehyde output would rise in the same proportion. The producer would then have to find a use for the excess n-BuH. In many cases n-butanol production would be the only option. So, at the end of the day, production of the two types of butanol would have risen by the same proportion.

(82) But the following situation is also conceivable. An integrated producer produces butyric aldehyde, of which it obtains both types. For its production of reprocessed products it needs mainly one of the two types, say iso-butyric aldehyde, so that only a small quantity of iso-butyric aldehyde is left over for hydration, in other words for iso-butanol production. The producer will then produce larger quantities of n-butanol but only small quantities of iso-butanol. In such a situation there is no possibility of offering to supply more iso-butanol except by renouncing the possibility of processing the iso-BuH and selling the products made from it.

(83) It follows that some suppliers, depending what products are made from the two butyric aldehyde isomers, obtain different market shares for n- and iso-butanol. But this does not apply to the parties, who have similar market shares for the two butanol isomers.

(84) An argument in favour of accepting separate markets is the fact that price trends for the two isomers are not parallel. In 1998, for instance, the price of n-butanol was around 15 % higher than the price for iso-butanol, but in 2002 average prices were virtually identical.

(85) But the question whether separate markets should be defined for n- and iso-butanol can be left unanswered for the moment, as the merger does not appear to be compatible with the common market, regardless of whether a single butanol market or separate markets for the two types are accepted.

(2) THE RELEVANT GEOGRAPHIC MARKET

(86) As the parties see it, the butanol market is (at least) EEA-wide. But some customers feel that demarcating national markets is more realistic.

(87) The investigation revealed that there are grounds for believing that German suppliers delivering butanol to

German customers enjoy a comparative advantage over foreign suppliers, with the result that the parties have a substantially higher market share in Germany, but that the impact of these advantages is not such as to warrant a conclusion that national markets are fragmented. Nor does there seem to be a defined regional market consisting of Germany and neighbouring countries.

(88) But the uneven distribution of market shares in the EEA countries does not point to the existence of separate markets. For one thing, there is no pattern whereby suppliers each have dominant positions on their home markets. It is true that the parties are particularly successful in Germany, but they also have sizeable market shares in Sweden and France, Perstorp's and Atofina's home markets. And BASF, on the other hand, has no above-average market share in Germany.

(89) Transport costs are not an argument for accepting narrower geographic markets than the EEA market. Data from DB Cargo show that the parties' main competitors are at a 3 % to 6 % transport cost disadvantage. This narrow gap has no significant negative effect on foreign suppliers selling butanol in Germany.

(90) Nor is there any evidence that foreign manufacturers cannot supply the German market for security-of-supplies considerations. It is true that security of supplies is an important competitive factor for butanol buyers, alongside price and quality. But there is no evidence that foreign suppliers cannot supply the German market simply because they cannot guarantee security of supplies on account of the distance from their facilities to the customer's works. This much is clear from the replies to the Commission's questions, according to which the distance from the supplier is not a significant factor. Not is there any

reason to believe that the likelihood of supplies being unreliable rises with distance.

(91) Finally, a foreign supplier can erect or rent a tank in Germany. Recent examples are that of Perstorp, which acquired a tank in Hamburg and put it into operation in 2001, whereupon its butanol sales in Germany increased considerably, and the South African producer Sasol, currently erecting a tank in Marl.

(3) COMPATIBILITY OF THE MERGER WITH THE COMMON MARKET

(92) The merger generates significant market shares on the EEA-wide butanol markets. But the merger will not give the parties such a market share as to raise fears of a dominant position as a result of which competition would be significantly impeded in the common market or in a substantial part of it.

(93) The assessment is not affected by whether a single market for butanol or a specific market for each of the two butanol isomers is posited.

Assessment in competition terms on the basis of an EEA-wide market for butanol

(94) If a single EEA-wide market for butanol is posited, if in other words no distinction is made between n- and iso-butanol, the market structure after the merger will be as follows:

Table 12

Market share for butanol

	1999		2000		2001		2002		2002+	
	kt	Share	kt	Share	kt	Share	kt	Share	kt	Share
Celanese	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*
Oxeno	[...]*	[10 to 20 %]*	[...]*	[10 to 20 %]*	[...]*	[30 to 40 %]*	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*
O+C	[...]*	[40 to 50 %]*	[...]*	[40 to 50 %]*	[...]*	[50 to 60 %]*	[...]*	[50 to 60 %]*	[...]*	[40 to 50 %]*
Atofina	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*
BASF	[...]*	[10 to 20 %]*	[...]*	[10 to 20 %]*	[...]*	[10 to 20 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*
Perstorp	[...]*	[20 to 30 %]*	[...]*	[20 to 30 %]*	[...]*	[10 to 20 %]*	[...]*	[20 to 30 %]*	[...]*	[10 to 20 %]*
BP	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[10 to 20 %]*
Sasol	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*	[...]*	[0 to 10 %]*
Imports	[...]*	9,2 %	[...]*	9,0 %	[...]*	7,6 %	[...]*	7,9 %	[...]*	6,5 %
Total	229		233		277		[...]*		[...]*	

- (95) For 2002 the Commission has identified a volume on the free market of slightly more than 266 kt. Celanese accounts for [... kt]* ([20 to 30 %]*) and Oxeno for [... kt]* ([20 to 30 %]*). If the monthly sales figures given by the parties are added up, they have a market share of slightly over [50 to 60 %]*. Oxeno's share and, consequently, the combined share of the parties (and the volume of the market) are even greater than the table indicates since Oxeno's figures do not include deliveries to the joint venture with [...]*, in which Degussa has a 50 % share. If this firm is regarded as independent of Oxeno, the relevant deliveries are not part of its internal group deliveries but part of the merchant market.
- (96) The second largest supplier after the joint venture is the Swedish firm Perstorp, with sales of [...]* kt and a market share just over 20 % [...]*.
- (97) All other suppliers have market shares below 10 %. 'Imports' include imports from non-EEA countries. The most important importer is the Polish firm Zakłady, and butanol from Russian and Czech producers is also sold through dealers in the EEA.
- (98) The parties rightly point to a series of effects suggesting that the future market share of the joint venture will be significantly lower, at no more than [30 to 40 %]* or so.
- The corresponding corrections have been incorporated in table 12 in the 2002+ column.
- (99) If supplies to the joint venture with [...]* are added to the merchant market, this means that the figures both for Oxeno deliveries and for the volume of the market must be increased by [30 to 40 kt]*, which generates an increase in the combined market share by just under [... %]* (the [...]* effect).
- (100) The opposite is achieved by the 'Ineos effect', which stems from the fact that Ineos no longer belongs to BP so that what were internal deliveries within the BP group to its former butyric acetate plant in Antwerp are now part of the merchant market. This increases the volume of the market and BP's share by about [...]* kt and substantially increases BP's market share, making it the joint venture's second largest competitor.
- (101) Finally, the entry into operation of Sasol's new butanol plant in South Africa and its new n-butanol tank in Marl must be factored in. For one thing, Sasol will be able to meet its needs in Marl from its own butanol imported from South Africa. For that purpose, Sasol has already terminated its contract with Oxeno. This cuts Oxeno's sales on the market by [...]* (the Sasol/1 effect). For another, Sasol will be able to supply customers in the EEA (Sasol/2 effect). Depending on how large Sasol's sales to third firms are and on what proportion is

accounted for by sales to the parties, its combined market share comes to slightly below or slightly above [30 to 40%]*. The calculations underlying Table 12 assume that Sasol will succeed in selling not only the production of the Brunsbüttel facility but also a further [...] kt of butanol, of which [...] kt to the parties. The parties put both figures a little higher than that.

(102) The parties further argue that they have lost a significant customer [...] so that the joint venture's market share is likely to fall even further, although the loss of this customer makes only a minor dent in their combined market share.

(103) In assessing these effects, account must be taken of the following: [...]*. For the purposes of assessing the future JV's market power, the 'Sasol effect' is therefore considerably less significant than the resulting reduction in market shares.

(104) Conversely, in assessing the impact of the [...] effect, it must be remembered that this is an equally owned joint venture of a firm in the Degussa Group and another firm. It must be assumed that the relevant customer is jointly controlled by Degussa and [...]*. There is therefore no apparent reason for treating the relevant deliveries in the same way as other deliveries to the free market.

(105) Sales volumes were taken as the basis for calculating market shares. For one thing, fuller documentation is available on quantities sold than on turnover. For another, price differences here reflect fluctuating commodity prices rather than pricing based on market power. For the rest, market shares calculated from sales volumes or turnover do not differ widely.

(106) The parties admittedly have a relatively large combined market share at 40 %, twice as large as the next two competitors, Perstorp and BP. The joint venture will have the structural advantage of being the only European supplier with two production facilities. This is an advantage in the event of a planned or unplanned production stoppage.

(107) It can be assumed, however, that the parties will be subject to sufficient competitive pressure from other

suppliers, primarily Perstorp and BASF. Both suppliers have market shares of [10 to 20%]* respectively. This makes them substantially smaller than the joint venture but large enough that the joint venture cannot ignore them.

(108) Perstorp has a tank in Hamburg from which German customers can be supplied. This means that it is easier for Perstorp than for other non-German suppliers to deliver to customers in Germany.

(109) BP obtains its butanol from Oxochimie, the joint venture with Atofina. In the past, this firm used virtually all its butanol production from within the group. After BP sold its butyl acetate plant in Antwerp to Ineos, the corresponding deliveries must be regarded as being on the free market. BP does have a supply contract with Ineos for some time but, once that contract runs out, BP will be an alternative supplier for other potential customers. And it is already active with small but by no means negligible sales on the spot market.

(110) Other suppliers — BASF, Atofina, Zakłady and Sasol — will also exert competitive pressure. Admittedly, at each of these competitors there are circumstances suggesting that their competitive pressure will not be very great. BASF has a market share of around [0 to 10%]*. But several customers have expressed the opinion that, as a result of its extensive internal demand and its policy of producing as many final products as possible from a limited number of input products, BASF is not always available to supply the market and cannot be seen as a full alternative. Atofina is also active on this market, especially in France and Italy. But Atofina's competitive pressure should also be limited, as it is already operating at full capacity. Zakłady is also on the EEA market, but most potential customers do not regard it as a serious alternative, if only because it is in business difficulties and does not enjoy full freedom of business action. Customers have, for example, reported that Zakłady has been reluctant to enter into long-term contracts. The most likely source of competitive pressure is Sasol. It produces in South Africa, using coal mined there rather than petroleum as the raw material to manufacture its precursor, propylene. Its cost structure is accordingly very different from that of the other suppliers. Sasol is

building a large tank at the Marl Chemsite, from which it can supply customers in Germany and the Benelux countries economically. Sasol has limited but not negligible quantities available from its Brunsbüttel facility, where it produces long-chain alcohols, with butanol coming out as a by-product. Lastly, the parties refer to imports from the Czech Republic and Russia, sold in the EEA via dealers. Here again there should be some competitive pressure, albeit not strong, when these firms operate on the spot market.

Countervailing power on the demand side

(111) Potential customers can also exert competitive pressure on the parties. Butanol customers include major firms that are perfectly familiar with market situations and pricing factors and are capable of exerting demand-side power. In 2002, for instance, Celanese had only [...] customers; the five largest accounted for just over [...] of turnover. The situation is similar for Oxeno: the five largest customers accounted for [...] of turnover, the ten largest for [...] and the 20 largest for [...]. These customers exert a degree of countervailing demand-side power. Some of them operate a multi-vendor strategy to avoid becoming dependent on one or other supplier. Since competitive pressure is also brought to bear by the fact that customers cover only part of their total demand from other suppliers, it can be assumed that buyers exert a degree of demand-side power that makes it difficult for the joint venture to exercise market power. Unlike the position for butyric aldehyde, substantial quantities of butanol are sold on the free market; Perstorp has no 'captive use' for butanol and sells its entire production on the merchant market. It cannot, therefore, be argued that the major potential customers do not exercise demand-side influence since suppliers are not dependent on sales on the free market.

Outcome if a single EEA-wide market for butanol is posited

(112) There is accordingly no reason to fear that a dominant position will be created as a result of the merger on the EEA market for butanol that would restrict effective competition in the common market.

Competitive assessment assuming separate markets for n- and iso-butanol

(113) If it is assumed that there are separate markets for n- and iso-butanol, the market structure and conditions of competition on the market for n-butanol broadly

correspond to the foregoing analysis of the market for butanol generally. This is already clear from the fact that n-butanol accounts for five sixths of the merchant market for butanol. The parties' market shares for n-butanol are slightly higher than for butanol overall. The Commission's investigations reveal that the volume of the market was roughly 152 kt, 168 kt, 214 kt and 203 kt in the years from 1999 to 2002. For 2002 the parties' market share comes to rather more than 50 % [... %]*; the figure is even 3 % higher than for butanol generally. From 1999 to 2001 the parties' combined market share was always within 4 % of their market share for butanol generally. The market share for n-butanol was slightly lower in 1999 and slightly higher in 2000 and 2001 than the overall butanol market share [1999: ... %; 2000: ... %; 2001: ... %]*.

(114) Apart from the fact that (except in 1999) the n-butanol market share was slightly higher than for butanol in general, the analysis given above for the butanol market applies likewise here. In particular, the parties' combined market share is still more than double the share of its nearest competitor, Perstorp.

(115) The Sasol effect is admittedly more powerful here than in the case of a single market for butanol generally. Bearing in mind the four effects mentioned above (R&H, Ineos, Sasol/1 and Sasol/2), on a market totalling 261 kt the parties have a combined market share of about [40 to 50 %]*. The main competitors are Perstorp, with [20 to 30 %]*, and BP, with [10 to 20 %]*. Even if the parties' market position is somewhat stronger than on the assumption of an aggregate market for butanol, the assessment in competition terms remains much the same.

(116) Assuming a single EEA-wide market for iso-butanol, there is likewise no reason to believe that the merger will create or strengthen a dominant position. The volume of the market will be around 62 kt or EUR 25 million. The parties' combined market share is still above that of their competitors. But factoring the above effects in brings the parties' market share below 40 % [... %]*. BASF has adequate free capacity and can exert real competitive pressure. The capacity of the second largest competitor, Atofina, is limited but, even so, represents a share of [10 to 20 %]*. If prices were to rise substantially, Atofina could divert some of the products it consumes internally to the merchant market. And the smaller suppliers — BP, Zakłady, Perstorp and, in future, Sasol — can exert a measure of competitive pressure.

(117) The Commission has therefore concluded that the merger is compatible with the common market in relation to the market or markets for butanol, however demarcated.

3. 2-ETHYL-HEXANOL (2-EH)

(1) THE RELEVANT PRODUCT MARKET

(118) 2-EH is a downstream product of n-butyric aldehyde. It is produced through aldolisation of n-butyric aldehyde, downstream catalytic hydration and subsequent distillation. 2-EH is an oxo-alcohol that is used as an intermediate product in the produce of plasticisers such as dioctylphthalate (DOP) and dioctyladipate (DOA) applied in (PVC-) synthetic fabrics, solvents (2-ethylacrylate; application: paints and varnishes), diesel additives (2-ethylhexylnitrate) and lubricants.

(119) In the EEA the use of 2-EH for these purposes is distributed as follows:

— PVC plasticisers	66 %
— Diesel additives (Cetan improvers)	13 %
— Solvents	12 %
— Lubricant additives	5 %
— Other	4 %

(120) In the application as alcohol-plasticiser for the produce of PVC plasticisers, 2-EH can technically be substituted by polyalcohols. According to Chemical Economics Handbook 2002, about 70 % of 2-EH applications as PVC plasticisers can be replaced by polyalcohols. For other 2-EH applications (diesel additives, solvents, lubricants, etc.) there are no substitute products. The outcome is that 2-EH is technically substitutable in approximately 46 % of all applications. Admittedly, as a result of differing process features, replacing 2-EH by polyalcohols requires a different formulation and reorganised production.

(121) The polyalcohols used as 2-EH substitutes in manufacturing plasticisers are iso-nonyl alcohol (INA), iso-decyl alcohol (IDA) and propylheptanol. The most important of these is INA, from which the plasticiser di-isononylphthalate (DINP) is produced. DINP is also the most important competing product for the plasticiser DOP made from 2-EH. Prices of the precursor INA, however, behave differently from those for 2-EH. The annual average prices of INA rose sharply from 1998 to 2001 and only slackened again in 2002, after Degussa's new capacity hit the market. According to

ICIS-LOR, by contrast, 2-EH prices fell in 1998 and 1999 and rose again until 2002. Comparison of the prices charged by Degussa as the largest INA producer in the EEA and the larger of the only two suppliers in the EEA over that period shows that INA was between 20 % cheaper and 30 % more expensive than 2-EH.

(122) Given that 2-EH is only partly substitutable, that conversion costs are considerable and, above all, that INA prices behave so differently, it is assumed for the purposes of this Decision that 2-EH is a distinct relevant product market.

(2) THE RELEVANT GEOGRAPHIC MARKETS

(123) For all relevant product markets, the parties to the merger proceed on the basis of at least EEA-wide geographic markets. Since bulk products are concerned, all products are stated to be offered by all substantial suppliers on an EEA-wide basis.

(124) Some players on the market, however, were of the opinion that narrower national or regional markets should be used for 2-EH, primarily on account of transport costs. The market analysis also revealed that the market shares of Celanese and Degussa and the other competitors doing business throughout the EEA differed in individual EEA States, sometimes considerably. Unlike the position regarding butyric aldehyde, there is no clear demarcation of markets for 2-EH on the basis of the producer's home country or country of production. In Germany and in France, two countries in which 2-EH is produced, imports account for over 25 % and over 50 % respectively. The Swedish firm Perstorp Oxo is the only dominant 2-EH supplier in Sweden. But the main reason for this is that the level of demand in Sweden, at less than 1 000 tonnes, is minimal and there is no incentive for competitors to do business there.

(125) 2-EH can be and is carried by all means of transport — by road, sea or rail tankers or in barrels. To keep transport costs as low as possible and to be able to supply more distant customers, all EEA suppliers except Atofina have storage tanks in the EEA. Degussa has two, one in Rotterdam and one in West Thurrock. BASF has a 2-EH storage tank in Tarragona. The Swedish producer Perstorp has three 2-EH storage tanks in the EU: one in Hamburg, one in Rotterdam and one on Teesside (GB). These storage tanks mean that Perstorp can achieve market shares of over 15 % in the three regions. The Polish firm Zakłady also has a storage tank in Antwerp.

(126) The relevant geographic market for 2-EH is accordingly the EEA.

(3) COMPATIBILITY OF THE MERGER WITH THE COMMON MARKET

(127) As a result of the merger, the number of significant suppliers in the EEA will fall from five to four. In 2002

the JV would have had a market share of [30 to 40 %]* (Celanese [20 to 30 %]*, Degussa [10 to 20 %]*). The other competitors are Atofina ([10 to 20 %]*), BP ([10 to 20 %]*) and Perstorp ([10 to 20 %]*). BASF has a share of [0 to 5 %]* and Zakłady one of [0 to 10 %]*.

Table 13

Market shares for 2-EH

	1999		2000		2001		2002	
	Quantity kt	Market share	Quantity kt	Market share	Quantity kt	Market share	Quantity kt	Market share
Celanese		[20 to 30 %]*		[20 to 30 %]*		[20 to 30 %]*		[20 to 30 %]*
Degussa		[20 to 30 %]*		[20 to 30 %]*		[20 to 30 %]*		[10 to 20 %]*
JV		[40 to 50 %]*		[40 to 50 %]*		[40 to 50 %]*		[30 to 40 %]*
Atofina		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
BP		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
BASF		[10 to 20 %]*		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
Perstorp		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
Zakłady		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
Others	5	2	5	2	5	2	5	3
Total	[...]*	100	[...]*	100	[...]*	100	[...]*	100

(128) According to the information provided by the parties, there are 'Other' suppliers that account for about 10 % of the market. In addition to sales by BP, not listed by the parties as an independent supplier, these are mainly imports by firms in Russia and from Romania by Oltchim via dealers in the EEA. The Commission has not been able to verify the figures. But the answers to questions put to dealers and customers reveal that the figure quoted by the parties is too high. In recent years, imports from Russia and Romania probably ran at no more than 5 kt annually.

(129) The parties' market share was constantly well above 40 % between 1999 and 2001 and fell below 40 % only in 2002. The JV would be twice as large as its two nearest competitors, Atofina and Perstorp. BASF's market share has shrunk in recent years and for the last two years has been below [5]* %. A few players on the market even believe that BASF is about to withdraw altogether. However, BASF itself denies this. But both BASF and the Polish firm Zakłady must be classified, if anything, as 'also-rans'.

Table 14

Capacity and production of 2-EH

	1999		2000		2001		2002	
	Capacity (kt)	Production	Capacity (kt)	Production	Capacity (kt)	Production	Capacity (kt)	Production
Celanese		[200 to 300]*		[200 to 300]*		[200 to 300]*		[200 to 300]*
Degussa		[<100]*		[<100]*		[<100]*		[<100]*
JV		[300 to 400]*		[300 to 400]*		[300 to 400]*		[300 to 400]*
Atofina		[<100]*		[<100]*		[<100]*		[<100]*
BP		[<100]*		[<100]*		[<100]*		[<100]*
BASF		[<200]*		[<200]*		[<200]*		[<200]*
Perstorp		[<100]*		[<100]*		[<100]*		[<100]*
Total EEA	1 040	[...]*	1 040	[...]*	1 020	[...]*	1 000	[...]*

(130) Moreover, the JV also had the largest capacity on the market. With [50 to 60 %]* in 2002, it accounted for more than half of aggregate EEA capacity of a good 1 000 kt. Its free capacity is also by far the largest on the market and would be enough to serve the entire merchant market. But the parties are of the opinion that, despite high market shares and capacities, there is no threat to competition.

(131) The two parent companies' market share slipped steadily from [nearly 50 %]* in 1999 to [30 to 40 %]* in 2002. While, in a generally contracting market Celanese was able to maintain its market share at around [20 to 30 %]*, Degussa's market share fell from [20 to 30 %]* in 1999 to [10 to 20 %]* now. In recent years Degussa has steadily cut its 2-EH production. The reason for this lies in the strategic decision it took two years ago to withdraw from the downstream market for DOP, for which the bulk of the 2-EH it produced was needed, and to produce DINP instead. DOP production has fallen in recent years from [...]* kt in 1998 to just [...]* kt in 2002. There was a corresponding decline in internal consumption of 2-EH from [...]* kt in 1998 to just [...]* kt in 2002.

(132) Degussa has declared that it is abandoning 2-EH production in Marl whether or not the notified joint venture is set up. This decision was taken back in 1999. The number of significant suppliers in the EEA would then fall from five to four even without the joint venture.

(133) Parts of the 2-EH production facility, such as the hydration plant, are to be refitted for butanol production that is to be transferred to the JV. All 2-EH production is to be concentrated in Oberhausen. As a result, [...]* kt of 2-EH production capacity would be taken off the market. This corresponds to a quarter of aggregate capacity available in the EEA. The JV would even then still have the largest capacity in the EEA, though with sharply reduced free capacity.

(134) For the above reasons, the Commission is of the opinion that the proposed merger will not create a dominant position for the joint venture in the supply of 2-EH in the EEA.

4. DOP

(1) THE RELEVANT MARKETS

(135) Diethyl phthalate (DOP), also known as diethyl hexylphthalate (DEHP), is derived from 2-EH. It is a chemical in the phthalates group that is produced by esterisation of an alcohol, in this case 2-EH, with phthalic anhydride (PSA). It is the standard plasticiser for synthetic materials, in particular PVC. In addition to its use as a plasticiser, DOP is used on a small scale as a bonding agent in varnishes and glues and to dilute pigments.

- (136) DOP is a bulk product. All producers have comparable quantities. But a distinction is made between technical quality and food quality. To manufacture food quality, a further distillation stage is needed.
- (137) In recent years DOP has attracted attention since it is toxic to reproduction. The skull symbol must therefore be placed on it. Demand has accordingly fallen, particularly in its application as a PVC plasticiser. DOP is now hardly ever used as a plasticiser in the manufacture of toys.
- (138) In this primary use as a PVC plasticiser, DOP can be replaced by plasticisers made from polyalcohols. These include the C₉-phthalate di-isononylphthalate (DINP), the polyalcohol derivative isononylalcohol, the C₁₀-phthalate di-isodecylphthalate (DIDP), isodecylalcohol derivatives and dibutylphthalate (DBP) or di-isobutylphthalate (DIBP), which are butanol derivatives. The most important substitute product is DINP.
- (139) DINP is both technically and economically a very close substitute for the standard plasticiser DOP. Price trends for the two products between 1998 and 2002, without being actually parallel, are very close to each other. In some years DOP is more expensive than DINP, in other years the opposite applies. The trend is influenced primarily by the trend in prices for the precursor INA. But the margin of fluctuation is generally narrower and usually is below 5 %.
- (140) In Case COMP/M.2314 — BASF/Eurodiol/Pantochim, a distinction was made between short-chain phthalates (C1 to C4) and standard phthalates on the basis of C4-or polyalcohols⁽¹²⁾. But in the present case there is no need to consider whether there is objectively a distinct market (only) for DOP, as the parties argue, for DOP and DINP or for all PVC plasticisers, as the JV will not have a dominant position in any event.
- (2) THE RELEVANT GEOGRAPHIC MARKET
- (141) In Case BASF/Eurodiol/Pantochim⁽¹³⁾ the Commission made its competition assessment on the basis of an EEA market but left open the question whether the relevant geographic market for phthalates, to which DOP belongs, was the EEA alone or included eastern Europe.
- (142) The investigations in the present case have shown that there is an EEA market. All competitors represented with production facilities on the European market supply the EEA. The Polish firm Zakłady has a tank in Antwerp and also delivers via dealers. For the purposes of this decision, an EEA market is assumed.
- (3) ASSESSMENT IN COMPETITION TERMS
- (143) In 2002 the JV had a market share of [20 to 30 %]* (Celanese [10 to 20 %]*, Degussa [below 10 %]*). The other competitors are BASF ([20 to 30 %]*), Atofina ([10 to 20 %]*), Perstorp ([10 to 20 %]*), Lonza ([below 10 %]*), Zakłady ([below 10 %]*) and Cepsa ([below 10 %]*). BP abandoned DOP production in 2001.

⁽¹²⁾ Case COMP/M.2314 BASF/Eurodiol/Pantochim, 11 July 2001, point 11.

⁽¹³⁾ Case COMP/M.2314 BASF/Eurodiol/Pantochim, 11 July 2001, point 42.

Table 15

Market shares for DOP

	2000		2001		2002	
	Quantity kt	Market share %	Quantity kt	Market share %	Quantity kt	Market share %
Celanese		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
Degussa		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
JV		[20 to 30 %]*		[20 to 30 %]*		[20 to 30 %]*
Atofina		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
BP		[0 to 10 %]*		[0 to 10 %]*		—
BASF		[10 to 20 %]*		[20 to 30 %]*		[20 to 30 %]*
Perstorp		[10 to 20 %]*		[10 to 20 %]*		[10 to 20 %]*
Lonza		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
Zakłady		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
Cepsa		[0 to 10 %]*		[0 to 10 %]*		[0 to 10 %]*
Others		6		7		7
Total	409	100	401	100	[...]*	100

(144) The size of the market shares is such that there appears to be no risk of a dominant position being created. Moreover, after abandoning production of the precursor 2-EH, Degussa will abandon production of DOP whether or not the JV is formed. Degussa will transfer only its residual clientele to the JV.

(146) Against this background, there are no objections on competition grounds to the planned joint venture between Celanese and Degussa in relation to the EEA market for DOP or the combined DOP/DINP plasticisers market.

5. BUTYL ACETATE

(1) THE RELEVANT PRODUCT MARKET

(145) Celanese produces no other high-grade plasticisers. Degussa produces minimum amounts of DBP and DIBP but has a dominant position for DINP. DOP can be replaced in virtually all PVC plasticiser applications by DINP. Unlike DOP, DINP is not classified as toxic to reproduction and sales have been expanding steadily in recent years. In the EEA there are three producers of DINP: Degussa, BASF and Exxon Mobil. On this growth market Degussa raised its market share to about [35 to 45 %]* in the last three years, while BASF and ExxonMobil have taken roughly equal shares of the rest. If DOP and DINP were assumed to be part of the same product market, Degussa and the JV would have a combined market share of [30 to 40 %]*, followed by BASF with [20 to 30 %]*.

(147) Butyl acetate is derived from butanol by esterifying acetic acid with butanol. It is used mainly as a solvent. It can be used in varnish kits, as a cosolvent in low-solvent varnishes with high solid concentrations. It dissolves substances such as fats, oils, cellulose nitrate and both natural and synthetic resins. There are no substitute products that can replace butyl acetate in all circumstances. In view of its specific applications, the parties consider that the relevant product market does not extend beyond the product butyl acetate.

(148) Butyl acetate also occurs in the two isomers n-butyl acetate and iso-butyl acetate. Unlike in the case of

butyric aldehyde, the Commission is inclined to accept the idea of a single market as the same reactors can be used to produce either n- or iso-butyl acetate. It can also be produced in batches, where the plant is used for a specific period to produce one of the isomers and then cleaned before being used for the other. From the producer's point of view, therefore, there is a degree of flexibility. Here too, however, it is unclear whether both isomers have their own product markets or are part of a single product market, as the competition assessment makes no significant distinction. N-butanol has the lion's share of the free market, with iso-butyl acetate accounting for only about 10 %. Accordingly, it makes little or no difference to the assessment whether a single market for butyl acetate is assumed or whether n-butyl acetate alone is taken into consideration. However, the merger has no competition implications as regards a possible market for iso-butyl acetate.

(2) THE RELEVANT GEOGRAPHIC MARKET

- (149) The parties believe that the market for butyl acetate covers the whole of the EEA. Operators questioned have also endorsed this view. Some have even said that butyl acetate was also obtained from overseas; Celanese also sells products produced in its US plant in Europe. It must therefore be assumed that the market covers the whole of the EEA; but, for the purposes of the assessment in competition terms, it must be remembered that imports from non-EEA countries are not without significance.

(3) COMPATIBILITY WITH THE COMMON MARKET

One-sided contribution

- (150) The only party to assign its trade in butyl acetate to the JV is Oxeno. The parties take the view that, where the contribution to a JV is one-sided in this way, the competitive assessment should not add together the market shares. This follows from the established practice of the Commission under Article 81 of the EC Treaty, which applies this provision to the competitive relationship between a full-function cooperative joint venture and one of its parent companies. They also refer to Article 2(4) of the Merger Regulation and the (new) Commission Notice of 4 July 2001 on restrictions directly related and necessary to concentrations. It follows from recital 35 and following that the Commission assumes that competition between a full-function cooperative joint venture and its parent companies is protected under Article 81. If it were assumed that the JV and its parent companies formed a competitive unit, non-competition clauses would

automatically need to be removed from the field of application of Article 81(1) of the EC Treaty (and exemptions would not need to be made), much like restrictions on competition within groups. However, the notice simply states that such restrictions on competition are eligible for exemption and may be exempted only for a limited period of time. Furthermore, in the present case no non-competition agreement between the JV and Celanese has been concluded, and so it must be assumed that Celanese and the JV will continue to compete on the markets for butyl acetate and carboxylic acids after the merger. Any other conclusion would amount to implying that the parties have infringed Article 81 of the EC Treaty. The situation would be different only if, as in *Viho v Commission* ⁽¹⁴⁾, the parent company and the subsidiary formed an economic unit managed on a unified basis.

- (151) The legal interpretation is not compelling. But, for the purposes of this Decision, there is no need to settle the issue as the merger is compatible with the common market even if Celanese and the JV are regarded as a single business unit.

Competition assessment assuming that the market for butyl acetate covers the whole of the EEA

- (152) If it is assumed that the market for butyl acetate is the whole of the EEA and if no distinction is made between n-butyl acetate and iso-butyl acetate, there is no reason to assume that the merger will create a dominant position.

- (153) The Commission has calculated that the market volume was around 275 kt in 2002, which is in line with the parties' estimates. When making these calculations, it attributed to 'other suppliers', i.e. suppliers other than the parties, namely BASF, BP/Ineos and Cepsa, sales of [...] kt. It has established that the market volume was between 240 kt and 260 kt in the years from 1999 to 2001.

- (154) On this market, taking Celanese and the joint venture EOC as a single business entity, the merger would reduce the number of major suppliers in the EEA from four to three. With sales in 2002 of [...] kt (Degussa)

⁽¹⁴⁾ Case C-73/95 P [1996] ECR I-5457.

and [...] kt (Celanese including Celanese USA), the parties would have a market share of around [40 to 50 %]*; using turnover figures in euros, the sum of the market shares is slightly lower, at around [...] %.

(155) The parties' market share is also far greater than those of the two next largest suppliers, BASF and Ineos, each with a market share of about 20 %. The remainder of the market is taken by the Spanish supplier Cepsa, which is in business mainly in Spain and Portugal but, to a lesser extent, also in France, and by imports from outside the EEA. Significant here are the American firms Dow and Eastman; there were also imports from Poland and Russia.

(156) Between 1999 and 2002, the market shares of the parties and the competitors remained more or less constant. Over the four year there was a slight increase in the parties' total market share. The Commission has calculated that the parties' total market share was 4,2 % lower than the 2002 figure in 1999 and 2,7 % lower in 2000; in 2001 it was at the 2002 level.

(157) Despite the parties' large combined market share and the substantial gap between them and the nearest competitors, the merger cannot be expected to create a dominant position.

(158) In particular the two larger competitors, Ineos and BASF, each with a market share of around 20 %, can exert competitive pressure that is enough to control the room for manoeuvre of Celanese and the JV.

(159) In addition, the other suppliers can exert tangible competitive pressure. In the recent past, the American producers have imported substantial quantities into Europe. If prices for butyl acetate were to rise to supra-competitive levels, it would be particularly useful for those firms to enter the EEA market on a larger scale. The fact that imports from America to Europe are currently a realistic business proposition can also be seen from the example of Celanese, which takes a market share of more than [...] % with imports from the United States. The remaining suppliers from non-EEA countries still achieve a market share of between 5 % and 10 %.

(160) The absence of spare capacity cannot be taken as an argument against the possibility of competitive pressure from these firms. It is true that, in Europe especially, capacity is close to being fully utilised. BASF has some spare capacity and could easily enough step up production. Ineos's capacity is being extensively utilised.

But Ineos produces n-butyl acetate, iso-butyl acetate and iso-propylacetate in batches at the same plants. As Ineos has confirmed, additional quantities of butyl acetate can be produced by lengthening production batches through less frequent changeovers, each of which takes a day for cleaning. Sales on the European market could also be expanded if exports to non-EEA countries were diverted to the EEA market. The parties add that capacity extensions are both technically easy and financially inexpensive to make. Companies questioned by the Commission confirm that the technology is available and that the requisite extra facilities should not be too expensive. But there were doubts as to the profitability of investments for the manufacture of butyl acetate for firms that are not vertically integrated in the production of acetyl acid and butanol.

(161) Lastly, there is no reason to believe that the merger will create a collective dominant position. After the merger the parties, together with BP and Ineos, will have a very large market share of 90 % or so, but there is no reason to expect tacit coordination between them. Their market shares differ too widely and their cost structures also diverge substantially. They differ in size, in the number and location of their production facilities, and in the use they make of the two precursors, acetyl acid and butanol. The parties (Celanese and the JV seen as a single entity) have two production facilities in Europe and one in the United States. In addition, Celanese is the market leader for acetyl acid, so that the parties describe Celanese's US butyl acetate business as 'acetyl-acid-led', unlike Oxeno's business, which rather tends to be 'butanol-led'. BASF is an integrated business while Ineos has to buy in the butanol it needs to produce butyl acid.

Competition assessment assuming separate markets for n-butyl acetate and iso-butyl acetate

(162) Basing the competition assessment on separate markets for the two butyl acetate isomers does not significantly alter the outcome.

(163) In this case, the sum total of the market shares on the larger market for n-butyl acetate would be slightly greater (by less than 2 %) than if a single market were taken as the basis; however, there would be no notable change to the market structure.

(164) It must be taken into consideration that BP/Ineos are in a significantly stronger position on the smaller market for iso-butyl acetate. The company's market share remains far smaller than the sum of the parties' market shares but is still sufficiently significant at more than 35 % for the Commission to assume that a dominant position is unlikely to be created on that market.

(165) It has therefore been decided that there are no objections to the merger in competition terms as regards the European market or markets for butyl acetate.

6. CARBON ACIDS

(1) THE RELEVANT PRODUCT MARKET

(166) Carbon acids are generally made by the oxidation of aldehydes such as butyric aldehyde⁽¹⁵⁾. In all, there are more than 1 500 carbon acids with different chain-lengths, specifications and raw materials (olefins or naturally occurring substances).

(167) Carbon acids are used in the following applications among others: metal carboxylates (salts) for varnish input products, chloric acid for organic peroxydes/peroxydesters, polyolesters for the production of synthetic lubricants, lubricant additives, esters for plasticisers in safety glass panes, basic materials for the flavour and fragrance industry, catalysts, pharma-chemicals, UV stabilisators and plant-protection substances.

(168) The JV is expected to produce three carbon acids: 2-ethylhexane acid (2-EH-Säure), butyric acid and trimethylhexane acid (TMH). 2-EH acids and butyric acids are downstream products of butyric aldehyde; TMH is produced from the oxidation of trimethylhexanal.

(169) Carbon acids are produced at multi-purpose facilities; a single plant can be used to produce different carbon acids depending on the aldehyde that is available for use. They are in part mutually substitutable on both the supply and the demand sides. The Commission is therefore proceeding on the assumption of a single market for carbon acids for the purposes of this decision.

(2) THE RELEVANT GEOGRAPHIC MARKET

(170) Basically, carbon acids can be transported safely and marketed in cross-border business. In the EEA there is cross-border demand for carbon acids. There is no

evidence of substantial imports into the EEA. Exports from the EEA are also only on a limited scale. The Commission is accordingly proceeding on the assumption of an EEA market for the purposes of this decision.

(3) COMPATIBILITY WITH THE COMMON MARKET

(171) There are many suppliers of carbon acids. Not all of them offer the full range of carbon acids. Since carbon acids can be produced at multi-purpose facilities on demand, it is difficult to estimate the capacities available to competitors. Since various carbon acids can be produced on demand depending on the availability of aldehydes, the individual suppliers' market volumes and market shares fluctuate.

(172) Celanese will not be contributing its carbon acid production to the JV but will continue in its speciality chemicals division. Celanese produces ten different carbon acids, two of which overlap with the JV's production — butyric acid and 2-ethylhexane acid. According to the parties' own information for 2002, the combined market share is [30 to 40 %]*. Perstorp Oxo is the market leader with a market share of around 40 %, followed by BASF and ExxonMobil with more than 10 % each. These figures were broadly confirmed by the market investigation. All three principal competitors have their own production of the precursor butyric aldehyde or, in ExxonMobil's case, the corresponding olefins such as heptane and nonane.

(173) No dominant position can therefore be expected to be created or strengthened.

7. VERTICALLY RELEVANT MARKETS

(174) The merger further affects a series of markets in vertical terms. These are the markets for butylamine, 2-ethylhexacrylate and for butyl acrylate.

(a) BUTYLAMINE

(175) Butylamine is a derivative of butanol used as an intermediate product for the manufacture of plant protection substances, sealants, speciality plasticisers for polyamides, synthetic additives and other products. Given its specific applications and the lack of substitutability, butylamine is an individual product market.

⁽¹⁵⁾ In some cases, further intermediate stages are required.

(176) There is cross-border business in the product. Imports into the EEA are unknown, however. It can therefore be assumed that the butylamine market is EEA-wide.

(177) The butylamine market is affected by the merger in vertical terms as only Celanese but not Degussa is in business. On its own estimate, Celanese has a market share of [...%]*. The parties consider the most important competitors to be BASF, with around [...%]*, and Atofina. Given BASF's strong position Celanese does not consider itself to be dominant. The merger would, however, raise no objections in relation to the butylamine market even if Celanese was dominant. The two competitors obtain their butanol from their own production and are not dependent on deliveries from the parties or the JV. Consequently, no negative effects are to be feared.

(b) 2-ETHYLHEXYL-ACRYLAT

(178) 2-ethylhexyl-acrylate (2-EH-acrylat) is a downstream product of 2-EH used for the production of fertilisers, sealants, press-down adhesives, paints, and textile and paper coatings. It is a distinct product market.

(179) Here again the geographic market can be taken to include the entire EEA as there are no barriers to trade; small quantities are imported from Asia.

(180) This market is also vertically affected by the merger as only Celanese is in business here but not Oxeno. Celanese estimates its own market share at around [...%]*. Still according to the parties' information, the main competitors are BASF and Atofina, with market shares of the same order of magnitude. No negative effects are to be feared from the merger here either. BASF and Atofina obtain their input material for 2-EH-Acrylat from their own production and are not dependent on deliveries from Celanese or the JV. There is no dominant position for 2-EH. Consequently, no negative effects are to be feared.

(c) BUTYL ACRYLATE

(181) Butyl acrylate is a downstream product of butanol. It is used in solvent-based enamels, latex paints, adhesives,

sealants, and textile and paper coatings. Given its specific applications, it is a distinct product market.

(182) There is cross-border trade in butyl acrylate; there are no barriers to trade in the EEA. Imports into the EEA run at a low level. It can therefore be assumed that the relevant geographic market is the EEA.

(183) Only Celanese but not Oxeno is active in the butyl acrylate business. Celanese is the self-declared market leader with a market share of [30 to 40%]*. BASF and Atofina are once again its main competitors with comparable market shares. The merger will have no noteworthy effects on the market as the two competitors obtain the butanol needed for butyl acrylate production from their own production. No dominant position can be expected to be created or strengthened on this market,

HAS ADOPTED THIS DECISION:

Article 1

The notified operation whereby Celanese AG and Degussa AG acquire joint control within the meaning of Article 3(1)(b) of Regulation (EEC) No 4064/89 over their joint venture European Oxo Chemicals GmbH is declared compatible with the common market and the EEA Agreement.

Article 2

This Decision is addressed to:

Celanese AG
Frankfurter Straße 111
D-61476 Kronberg im Taunus

Oxeno Olefinchemie GmbH
Paul-Baumann-Straße 1
D-45764 Marl.

Done at Brussels, 11 June 2003.

For the Commission

Mario MONTI

Member of the Commission