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***Case No COMP/M.5424 -
DOW / ROHM AND
HAAS***

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**REGULATION (EC) No 139/2004
MERGER PROCEDURE**

Article 6(1)(b) NON-OPPOSITION
Date: 08/01/2009

***In electronic form on the EUR-Lex website under document
number 32009M5424***



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 08.01.2009

SG-Greffe(2009) D/52

C(2009) 77

PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus [...]. Where possible the information omitted has been replaced by ranges of figures or a general description.

To the notifying party:

Dear Sir/Madam,

**Subject: Case No COMP/M.5424 – DOW/ ROHM AND HAAS
Notification of 24 November 2008 pursuant to Article 4 of Council
Regulation No 139/2004¹**

1. On 24 November 2008, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 ('the EC Merger Regulation') by which the undertaking The Dow Chemical Company ('Dow', United States of America) acquires within the meaning of Article 3(1)(b) of the Council Regulation control of the whole of the undertaking Rohm and Haas Company ('R&H', United States of America) by way of purchase of shares.²

I. THE PARTIES

2. Dow is a diversified chemicals company headquartered in the United States of America and is the ultimate parent company of the Dow group of companies, which is active in plastics and chemicals, agricultural sciences, and hydrocarbon and energy products and services.
3. R&H is a specialty chemicals manufacturing company, also headquartered in the United States of America, with activities in the production of performance polymers, specialty chemicals, electronic materials and salt.

¹ OJ L 24, 29.1.2004, p. 1.

² The proposed transaction was first notified to the Commission on 10 November 2008. This notification was subsequently withdrawn on 21 November 2008 (OJ C 307, 2.12.2008, p. 7.)

II. THE OPERATION AND THE CONCENTRATION

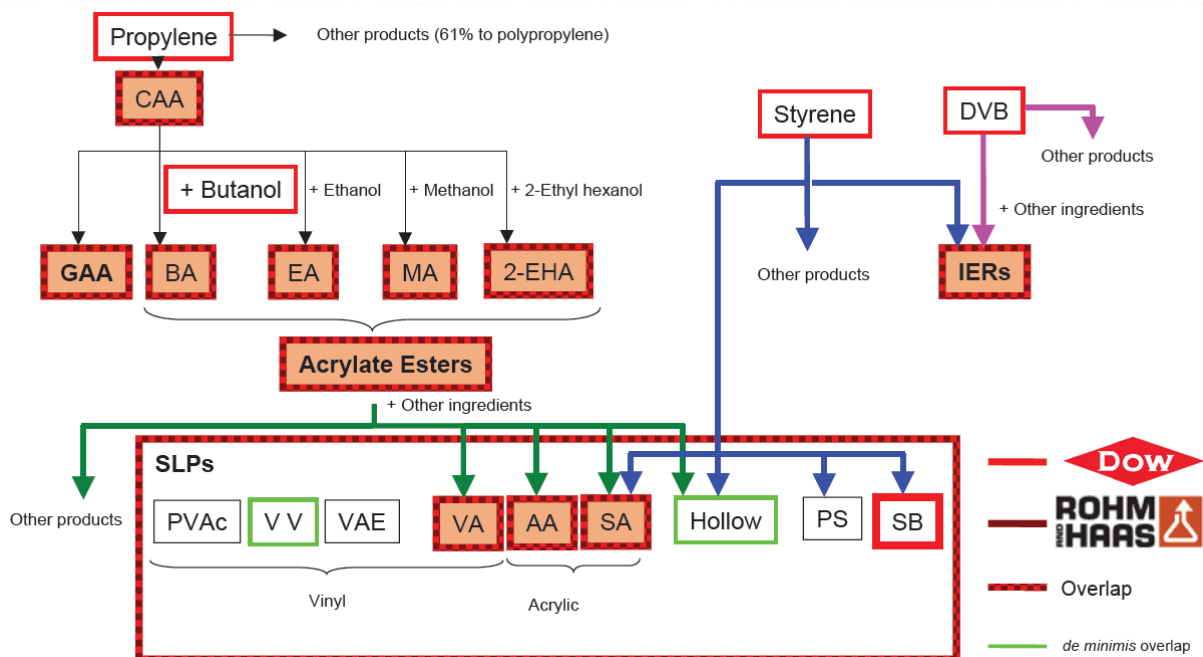
- On 10 July 2008, Dow and R&H announced the execution of an Agreement and Plan of Merger under which Dow intends to acquire all outstanding shares of R&H common stock. Upon completion of the proposed Transaction, Ramses Acquisition Corp., a wholly-owned subsidiary of Dow incorporated in Delaware for the purposes of acquiring R&H, will merge with and into R&H. R&H will then become a wholly-owned subsidiary of Dow. The notified operation therefore constitutes a concentration within the meaning of Article 3(1)(b) of the EC Merger Regulation.

III. COMMUNITY DIMENSION

- The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million (Dow EUR 39,046 million, R&H EUR 6,491 million). Each of them has a Community-wide turnover in excess of EUR 250 million (Dow EUR [...], R&H EUR [...]), but they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension pursuant to Article 1(2) of the EC Merger Regulation.

IV. COMPETITIVE ASSESSMENT

- The proposed transaction would give rise to a number of horizontal overlaps between the merging parties' activities most notably in the markets for acrylic acid and its esters (collectively known as the acrylic acid 'envelope') and ion exchange resins ('IERs'). Downstream of the acrylic acid envelope, there are additional overlaps in the manufacture of certain synthetic latex polymers ('SLP'). These overlaps are shown in the following diagram.



- The proposed transaction would also give rise to horizontal overlaps in biocides, rheological additives and industrial adhesives and sealants.

8. In terms of vertical relationships, the operation would give rise to affected markets in respect of: divinylbenzene ('DVB') and styrene that are upstream of IERs; glacial acrylic acid ('GAA') which is upstream of polyacrylates, hydroxyethyl acrylates and [...] of rheological additive; and glycidyl methacrylate which is downstream of glacial methacrylic acid ('GMAA'). There are additional relationships, which do not give rise to affected markets, in respect of a number of other products including propylene which is upstream of crude acrylic acid ('CAA') and, depending on the scope of the geographic market, butanol which is upstream of butyl acrylate.
9. The competitive assessment of the notified operation is structured in the following manner. First, the horizontal overlaps arising from the proposed transaction in (i) the acrylic acid envelope, (ii) ion exchange resins, (iii) latexes, (iv) biocides, (v) rheological additives and (vi) industrial adhesives and sealants are discussed. Within the section of the decision dealing with the acrylic acid envelope, the Commission will also assess the vertical relationship arising between butanol and butyl acrylate and propylene and crude acrylic acid. Similarly, the vertical relationships arising between styrene and divinylbenzene, which are upstream of ion exchange resins, will be assessed in the section of the decision concerning ion exchange resins. All remaining vertical relationships arising from the proposed transaction are addressed in a separate section on vertical issues.

1. ACRYLIC ACID ENVELOPE

10. The acrylic acid envelope comprises crude acrylic acid ('CAA') and the downstream products glacial acrylic acid ('GAA') and acrylate esters (also called 'acrylic esters'). Acrylic acids and acrylate esters are monomers used in the production of various polymers.³

1.1. Crude acrylic acid

11. Crude acrylic acid ('CAA') is an intermediate product that is further processed into either glacial acrylic acid ('GAA') or acrylate esters (also called 'acrylic esters'). CAA is a clear colourless liquid with an acrid odour and is most commonly produced via the catalytic oxidation of propylene. CAA is generally used captively by producers and is not sold on the merchant market. This has been confirmed by the market investigation.⁴ Therefore, for the purposes of the present case, the question whether CAA would constitute a distinct product market and the scope of the relevant geographic market can be left open. Nonetheless, even though there is no merchant market for CAA, the

³ A monomer is a small molecule that may become chemically bonded to other monomers to form a polymer.

⁴ The only exception to the direct captive use of CAA relates to certain arrangements between CAA and downstream product producers which, according to the notifying party, are made on "co-producer" rather than merchant market terms. In what are known as "back to back" arrangements, which are in essence tolling arrangements, a CAA producer may supply CAA to another company which then toll manufactures GAA and/or an acrylate ester on its behalf. The market investigation has also demonstrated that CAA is on occasion 'swapped' between producers.

merging parties' position in terms of capacity and production is relevant for the competitive assessment of the proposed transaction and is therefore considered below.

12. Dow and R&H both produce CAA in the EEA. Dow operates a CAA production facility at Böhlen, Germany. R&H produces CAA through its interest in StoHaas Monomer GmbH & Co. KG ("StoHaas"),⁵ a 50/50 joint venture with Stockhausen GmbH & Co. KG (today "Evonik Stockhausen GmbH," "Stockhausen"), a subsidiary of Evonik Industries AG (companies in the Evonik group, the former Degussa, will hereinafter be referred to as "Evonik"). StoHaas manufactures CAA in Marl, Germany.⁶ Stockhausen and R&H have [...] to StoHaas' CAA production capacity at Marl.⁷ [...]
13. Outside of the EEA, Dow operates two production facilities in the United States of America at St. Charles, Louisiana (sometimes referred to as the "Taft" plant) and Clear Lake, Texas, U.S.A. R&H operates five CAA production lines at its Deer Park facility in Texas. Three are owned by R&H entirely for its own use and the other two are owned by, but operated by R&H on behalf of, the StoHaas joint venture.⁸
14. Other EEA manufacturers of CAA are BASF SE ("BASF"), Arkema S.A. ("Arkema", the 2004 spin-off of Total/Atofina's chemical business),⁹ and Hexion Specialty Chemicals ("Hexion"). Beyond the EEA, other manufacturers of CAA include OJSC Acrylat (Russia, "Acrylat"), Sasol Ltd. (South Africa, "Sasol"), Nippon Shokubai KK (Japan, "NSKK"), Formosa Plastics Corporation (Taiwan, "Formosa"), LG Chemical (South Korea, "LG Chem"), Mitsubishi Chemical (Japan, "Mitsubishi"), and a number of other Asian manufacturers.
15. According to the notifying party's estimates, the global installed production capacity for CAA is approximately [4,000-6,000] kilo tonnes (kt) of which some [1,000-1,500] kt is located in the EEA. At the global level, the merged entity would have a share of approximately [10-20]% of capacity (Dow [5-10]%, R&H [10-20]%).¹⁰ On the basis of the

⁵ The StoHaas joint venture was notified to the Commission on Form A/B in 1999: see Commission Notice pursuant to Article 19(3) of Council Regulation No 17 concerning Case COMP/E-2/37.747 – StoHaas Joint Venture, OJ C 117, 21.4.2001, p. 3.

⁶ The CAA plant is operated on StoHaas' behalf by Infracor GmbH (a subsidiary of Evonik), which manages and operates the entire Marl Chemical Park on behalf of the approximately 20 - 30 companies with operations on the site.

⁷ [...].

⁸ R&H also announced in 2008 its plan to create a joint venture, the Saudi Acrylic Monomer Company ("SAMC"). The joint venture will be owned by Tasnee and Sahara Olefins Company (75%) and R&H (25%). SAMC intends to construct an acrylic acid production facility at Al-Jubail, Saudi Arabia with production capacity of 250 kt per year. The facility will not begin operations before 2011. The primary use of materials from the new facility will be to support the growth of R&H's acrylics business in rapidly developing economies.

⁹ BASF and Arkema also have CAA production facilities outside the EEA.

¹⁰ The parties have made a number of adjustments to their capacity figures to reflect certain long term arrangements with other companies. [...] In the case of R&H, [...] kt of its Deer Park plant in the United States is dedicated to Evonik and used by R&H to toll manufacture GAA for Evonik. This volume has been reallocated to Evonik. R&H estimates the production capacity of the Evonik Stockhausen plant at Marl in Germany to be [...] kt and has split this [...] between the joint venture partners.

notifying party's estimates, the merged entity would have a share of approximately [10-20]% of capacity in the EEA (Dow [0-5]%, R&H [5-10]%).

16. On the basis of responses received from CAA manufacturers with production facilities in the EEA (some of which also have facilities outside the EEA) as well as a number of other producers, the notifying party's estimates for global production capacity appear reasonable even though the figure for one producer (BASF) was significantly over estimated due to the timing of a capacity expansion.¹¹ As far as EEA production capacity is concerned, given the timing of BASF's capacity expansion, it is apparent that the notifying party has overestimated current production capacity. On the basis of evidence gathered in the market investigation, the merged entity's share of current EEA capacity would be in the region of [10-20]% (Dow [0-5]%, R&H [10-20]%).
17. It should be noted that as part of the regulatory approval process in the United States of America, the notifying party has expressed its intention to divest its Clear Lake facility in Texas which has the capacity to produce crude acrylic acid, glacial acrylic acid, butyl acrylate and ethyl acrylate.¹² Should this divestiture occur, the merged entity's share of global CAA production capacity, absent other changes, would decrease to approximately [10-20]% (the divestiture would have no effect on capacities located in the EEA).

1.2. Glacial acrylic acid

Relevant product market

18. Glacial acrylic acid is produced by a further purification of CAA either by additional crystallisation or distillation.¹³ GAA is used in the manufacture of a number of products including super absorbent polymers ('SAP'), polyacrylates, certain specialty acrylates, certain rheological additives as well as acrylic copolymers for surface coatings, water treatment and textile applications. In terms of demand-side substitution, the investigation confirmed that customers do not consider there are substitutes for GAA in the applications in which it is used.
19. The notifying party submits that GAA is a fungible product that does not differ in terms of chemical composition or purity whether it has been produced by way of crystallisation or distillation. It acknowledges that the precise level of purity of GAA sold can vary according to the customer's precise requirements with SAP manufacturers,

¹¹ The market investigation highlighted a number of differences between the production capacity estimates of the notifying party and the figures reported by certain CAA producers in the Commission's market investigation. The most notable concerns a capacity expansion of 160 kt by BASF at its Antwerp plant in Belgium. The notifying party assumed that this came on stream in 2008 but according to BASF this will take effect in 2009 (see response to question 13 of the Commission's questionnaire to acrylic acid competitors of 17.10.2008, non confidential version).

¹² See Dow press release of 10.9.2008 at http://news.dow.com/dow_news/corporate/2008/20080910a.htm

¹³ In the crystallisation process, the CAA is frozen, crystallised and then melted into the final GAA. This removes most of the remaining impurities and results in >99% pure acrylic acid. In the distillation process, CAA is heated in a distillation tower or column to remove impurities. The impurities (aldehydes) are reacted with another additive to bind them up and make it easier to boil them out. This process also leads to >99% pure acrylic acid.

for example, requiring a slightly higher purity. However, all producers are capable in the notifying party's opinion of producing different purities above 99%.

20. The market investigation has broadly confirmed the notifying party's submission. All GAA manufacturers indicated that there are no significant differences between the GAA produced by different manufacturers. A majority of customers also confirmed that there are no significant differences between the GAA available on the merchant market and that they are able to switch easily between suppliers.¹⁴ On the basis of the results of the market investigation, the Commission considers that it is not necessary to make a further segmentation of GAA for the purposes of the competitive assessment.

Relevant geographic market

21. The notifying party submits that the relevant geographic market for GAA is probably EEA-wide though it may be global. It submits that there are limited imports of GAA into the EEA but at the same time it recognises that it is somewhat more difficult and expensive to ship GAA when compared to other products such as acrylate esters as it must be shipped in ISO containers or drums.
22. The market investigation has indicated that customers have a clear preference to source GAA in the region in which they are active, for example Europe, North America or Asia, in view of the logistical demands involved in shipping the product over long distances.¹⁵ Moreover, a number of customers indicated that there can be price differences between world regions for GAA, although not within the EEA, because of factors such as feedstock prices, currency fluctuations and regional supply and demand dynamics. The market investigation therefore leads to the conclusion that the scope of the geographic market for GAA is no wider than the EEA. However, in the absence of competition concerns under either definition, the precise scope of the geographic market can be left open.

¹⁴ A limited number of customers pointed to the level of impurities as an important factor in the suitability of GAA for certain applications.

¹⁵ As noted above, the purification of CAA into GAA, whether by distillation or crystallisation, results in a product that is more than 99% pure. Certain impurities such as dimer can still be present in some GAA at very low levels when it is sold onto the market. Dimer formation, which occurs as result of a reaction between two acrylic acid molecules, occurs at two points during the acrylic acid manufacturing process. First, it occurs most significantly during CAA production, where high temperatures encourage dimer formation. These dimers are almost completely removed during the purification of CAA into GAA. Second, dimer is produced in small quantities during the storage of GAA, the level of formation depending upon the conditions (temperature) and length of storage. Dimers formed at this stage are a naturally occurring uncatalyzed reaction between GAA molecules that cannot be prevented or slowed through the use of polymerization inhibitors.

If dimer levels rise to too high a level, the acrylic acid will no longer be considered to be GAA. Since the formation of dimer is time and temperature dependent, in order to keep dimer levels to a minimum, GAA is typically stored in refrigerated tanks and inventories are kept to a minimum. GAA shipments to customers use transportation modes that reduce the amount of transit time the GAA is left in unrefrigerated conditions, to minimize the risk of dimer formation, and to reduce the risk of polymerization. Accordingly, there are additional costs associated with shipping GAA over very long distances, relative to other monomers such as butyl acrylate.

Competitive assessment

23. In the EEA, Dow produces GAA at its Böhlen facility in Germany.¹⁶ R&H does not have a GAA production facility in the EEA¹⁷. Stockhausen toll-manufactures GAA for R&H¹⁸ at its GAA plant in Marl, pursuant to agreements entered into in connection with the formation of the StoHaas joint venture. [...] ¹⁹
24. In terms of production capacity, the merged entity would have a share of [10-20]% on a global basis (Dow [5-10]%, R&H [5-10]%) and [10-20]% in the EEA (Dow [0-5]%, R&H [10-20]%). Consequently, the increment brought about by the proposed transaction in the EEA in capacity terms is not significant and even at the global level, where the increment is more significant, the merged entity's share of capacity is not of a magnitude that would give it market power.
25. Other producers of GAA with production capacity in the EEA include BASF, Arkema and Evonik (these companies also have production facilities outside the EEA).²⁰ In addition to these three producers and the merging parties, there are several GAA producers with production facilities outside the EEA including NSKK, Formosa, LG Chem and Mitsubishi and a number of other Asian producers.
26. As noted above, GAA is used in the manufacture of a number of downstream products. According to the notifying party, the most significant downstream application of GAA is the production of SAP though neither of the merging parties is active in the production or sale of SAP. The parties do however use a significant proportion of their GAA production in other downstream applications.²¹ The market investigation has shown that many other producers including BASF, Arkema, NSKK and Evonik are also integrated downstream in the production of SAP and/or other products.²² As a result, the presence of these companies as well as the merging parties on the merchant market for GAA may depend upon a combination of factors including their GAA production capacity, level of captive use and merchant market demand.

¹⁶ Dow also produces GAA in its Clear Lake, Texas, U.S.A. facility.

¹⁷ R&H produces GAA at Deer Park, Texas, U.S.A.

¹⁸ The toll-manufacturing arrangement involves the purification of a proportion of R&H's off-take of CAA from the StoHaas plant at Marl. This CAA plant was formerly owned by Stockhausen and is operationally integrated with Stockhausen's GAA plant at Marl, as well as with R&H's BA plant at Marl.

¹⁹ In addition to producing its own GAA at Deer Park, Texas, U.S.A., R&H also produces GAA for Stockhausen at Deer Park under a long-term tolling arrangement.

²⁰ BASF has announced plans to increase its EEA crude acrylic acid production by 160 kt (see BASF press release of 24.3.2006). Part of this capacity expansion will be used to meet increased demand in the company's SAP business. Other volumes will be available to strategic customers under long-term agreements.

²¹ Dow primarily uses GAA for the production of [...] In contrast, R&H uses the GAA produced at Marl that is not sold on the merchant market for the production of [...]

²² [...].

27. On the basis of the results of the market investigation, the merged entity's share of the EEA merchant market would be [20-30]% (Dow [0-5]%, R&H [20-30]%). The increment resulting from the proposed transaction is not substantial at [0-5]%. On a global basis, the merged entity's merchant market share would be [10-20]% (Dow [5-10]%, R&H [10-20]%).²³
28. The merged entity would continue to face competition from a number of other producers with production facilities in the EEA including Arkema with a merchant market share of (25-35%), BASF (15-25%) and Hexion (5-10%). The market investigation has also shown that other producers are present on the merchant market with an aggregate share of approximately [20-30]%.²⁴
29. In the market investigation, a number of respondents expressed concern that the proposed transaction would lead to a reduction in the number of potential suppliers and that prices could rise as a result.²⁴ However, given the presence of alternative suppliers on the merchant market, some with market shares greater than the merging parties, the fact that the GAA produced by different manufacturers is interchangeable and indications in the market investigation of excess capacities both within the EEA and beyond, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the common market.

1.3. Acrylate esters – horizontal issues

30. Other than GAA, the primary use for CAA is as a raw material in the production of the following acrylate esters: butyl acrylate, ethyl acrylate, methyl acrylate and 2-ethylhexyl acrylate. These esters are produced in a condensation reaction (known as esterification) between CAA and an alcohol.²⁵ Acrylate esters impart colour stability and clarity, heat and ageing resistance, weather resistance, low temperature flexibility and/or other qualities to the polymeric materials in which they are used. The main end uses of these polymers include the production of coatings, adhesives and sealants, paper, polymer additives, textiles and inks.
31. The notifying party submits that it can be left open whether these 'commodity' acrylates (butyl acrylate, ethyl acrylate, methyl acrylate and 2-ethylhexyl acrylate) form part of one single product market or each represents a distinct product market as the proposed transaction would not raise competitive concerns even if each of these acrylate esters were to be assessed separately. It submits that there is a certain degree of demand-side substitution between these acrylate esters as they are economic substitutes in a number of applications. In addition, it submits that from the supply-side perspective, most suppliers of acrylate esters are active in the production and/or sale of multiple acrylates and can adjust the allocation of CAA between their respective acrylate facilities

²³ The merged entity's share of the merchant market may exceed its share of production capacity depending on the level of its captive demand as well as that of other GAA producers.

²⁴ A number of respondents indicated that they were particularly concerned by the possible effects of the proposed transaction in the United States and only to a lesser extent, if at all, in the EEA.

²⁵ These alcohols are: butanol for butyl acrylate; methanol for methyl acrylate; ethanol for ethyl acrylate and 2-ethyl hexanol for 2-ethylhexyl acrylate. Butanol and 2-ethyl hexanol are oxo alcohols.

according to the demand for each acrylate. According to the notifying party, several suppliers have ‘swing plants’ which can be used to produce more than one acrylate ester.²⁶ It notes that the Commission has considered in a number of decisions that the opportunity to produce two or more non-identical products in a swing plant is a significant indicator that the products concerned form part of the same product market.²⁷

32. Acrylate esters have been discussed in three Commission decisions. In *Degussa/Laporte*, the Commission concluded that four types of hydroxyl acrylates/monomers (i.e. acrylates made from GAA or methacrylic acid rather than CAA) constituted one single product market.²⁸ In *Celanese/Clariant Emulsions Business*, the Commission left open whether each monomer considered in that case – including acrylate monomers – constituted a separate product market.²⁹ In *Celanese/Degussa/JV (European Oxo-Chemicals)* however, the Commission indicated that butyl acrylate and 2-ethylhexyl acrylate were separate product markets. Methyl acrylate and ethyl acrylate were not specifically discussed in any of these decisions.³⁰
33. The market investigation in the present case has not supported the notifying party’s submission that acrylate esters form part of a single product market. In terms of demand-side substitution between the various acrylate esters concerned by the present decision, the majority of respondents indicated that a small but significant, non-transitory increase in the price of a particular ester would not lead them to switch to another acrylate ester, or indeed any other product, for the same end-use. These customers value each acrylate ester for the particular qualities and properties they provide in the applications in which they are used.³¹ In terms of supply-side substitution, although the market investigation has confirmed that many suppliers of acrylate esters are indeed active in the production and/or sale of more than one type of acrylate ester, it has not been able to confirm the widespread presence of swing plants in the industry. In any event, as these plants are typically for heavy esters (butyl acrylate/2-ethylhexyl acrylate) or light esters (methyl acrylate/ethyl acrylate), they would not support the conclusion that there is sufficient supply-side substitution between all esters (i.e. heavy and light) such that they would form part of the same relevant product market. For these reasons, the Commission considers that for the purposes of the present case, each acrylate ester should be considered as representing a separate product market.

²⁶ According to the notifying party, swing plants for acrylates are typically BA/2-EHA (which are also called heavy esters) plants or MA/EA (light ester) plants. Light esters have a light molecular weight (ethanol has only two carbons, methanol only one).

²⁷ See Case COMP/M.2542 – *Schmalbach-Lubeca/Rexam*, Commission decision of 28.9.2001; case COMP/M.1939 – *Rexam/American National Can*, Commission decision of 19.7.2000.

²⁸ See Case COMP/M.2277 – *Degussa/Laporte*, Commission decision of 12.3.2001, para. 15 *et seq.*

²⁹ See Case COMP/M.3001 – *Celanese/Clariant Emulsion Business*, Commission decision of 16.12.2002, para. 12 *et seq.*

³⁰ See Case COMP/M.3056 – *Celanese/Degussa/JV (European Oxo Chemicals)*, Commission decision of 11.6.2003, para. 178 *et seq.*

³¹ A minority of respondents indicated that it would be technically possible to switch to another ester in certain applications. Nonetheless, this switching was generally not seen as commercially attractive.

34. In terms of the scope of the geographic market the notifying party submits that the relevant geographic market for the acrylates concerned by the present decision is global. It submits that they are commodity products that are traded globally, transport costs are not significant and there are substantial imports into the EEA. It submits that the pricing of monomers follows global trends and that a 5-10% price increase in one region would lead to increased product flows from other regions and/or decreased product flows out of the region in which the initial price increase was observed. The market investigation has provided some support for the notifying party's claims. For the reasons noted below, however, the geographic market definition can be left open in the present case.

1.3.1. Butyl acrylate

Relevant product market

35. Butyl acrylate is produced through the esterification of an alcohol known as butanol (or n-butyl alcohol) and CAA. It is used as a raw material in the production of emulsion polymers (which are in turn used in the production of paints, coatings, adhesives and other products), inks, engineered plastics and lubricating oil additives. Butyl acrylate is the largest volume acrylate ester produced from CAA. As stated above, the notifying party submits that the question of market definition for acrylate esters including butyl acrylate can be left open as the proposed transaction would not raise concerns even if each acrylate ester were considered to constitute a separate product market.

36. In a previous decision in which butyl acrylate was considered (*Celanese/Degussa/JV (European Oxo Chemicals)*), the Commission found that butyl acrylate constituted a separate product market. This conclusion has been supported by the market investigation in the present case which has shown that in most applications there is no demand-side substitution between butyl acrylate and other acrylate esters or indeed between butyl acrylate and other chemical products.

Relevant geographic market

37. As noted previously, the notifying party submits that the relevant geographic market for butyl acrylate, as for the other acrylates concerned by the present decision, is global. In *Celanese/Degussa/JV (European Oxo Chemicals)* the Commission assessed the transaction on the basis of an EEA-wide market for butyl acrylate noting that the level of imports at that time was not significant.

38. Respondents to the market investigation in the present case have confirmed that butyl acrylate and the other acrylate esters concerned by the present decision are commodity products that are traded on a global basis and do not vary between suppliers in terms of chemical properties. Notwithstanding this fact, however, the majority of respondents also observed that there are price differences between Europe and other world regions (although not within Europe) due to factors such as raw material costs, regional supply and demand factors and exchange rate movements. This would tend to indicate that the market is no broader than EEA-wide. Nevertheless, as the proposed transaction would not give rise to competition concerns even on the narrow basis of an EEA-wide market, the precise scope of the geographic market can be left open.

Competitive assessment

39. Dow manufactures butyl acrylate at its Böhlen facility in Germany and at two locations in the United States of America.³² Dow consumes about [...] of its butyl acrylate captively in its downstream polymer latex business. R&H produces butyl acrylate at Marl in Germany and at its Deer Park plant in the United States of America. R&H also uses [...] of its butyl acrylate production captively in its downstream polymers business.
40. On the basis of the results of the market investigation, the merged entity's share of the EEA merchant market would be [30-40]% (Dow [10-20]%, R&H [20-30]%).³³ In the EEA, the merged entity would continue to face competitive pressure from other suppliers some of which compete by selling imported butyl acrylate. In terms of merchant market sales, these other competitors are Arkema (10-20%), BASF (5-15%), Acrylat (5-15%), Sasol (5-15%) as well as a number of other suppliers with an aggregate market share of approximately [20-30]%.
41. A number of respondents to the market investigation expressed the concern that the proposed transaction could reduce competition as it would combine two companies with significant production capacities and a strong presence on the merchant market. As noted previously in connection with glacial acrylic acid, some of these concerns emphasised the effects of the proposed transaction in North America rather than the EEA.
42. On the basis of evidence gathered in the market investigation, the merged entity's share of production capacity for butyl acrylate would be in the region of [20-30]% at a global level (Dow [5-10]%, R&H [10-20]%) and [20-30]% in the EEA (Dow [10-20]%, R&H [10-20]%). If the potential divestment of Dow's Clear Lake plant is taken into consideration, the merged entity's share of global capacity would decrease to approximately [10-20]% (there would be no effect on capacity in the EEA).
43. Moreover, the merged entity would continue to face competition from a number of other producers both at a global and EEA level. In the case of the EEA, these competitors include BASF, Arkema, Acrylat, Sasol and Hexion. BASF, which already holds the leading position in terms of production capacity in the EEA, has announced plans to increase its production capacity for butyl acrylate.
44. In light of the above considerations, it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for butyl acrylate.

³² The plants are located at Clear Lake and St. Charles/Taft. [...]. Dow has proposed to the Federal Trade Commission to divest Clear Lake to address potential competition concerns arising from the proposed transaction in North America.

³³ According to the results of the market investigation, the merged entity would have a global merchant market share of [10-20]% (Dow [10-20]%, R&H [5-10]%). Other competitors include BASF (10-20%), Arkema (5-15%), Formosa (5-15%), NSKK (5-15%) and Sasol (0-5%).

1.3.2. Ethyl acrylate

Relevant product market

45. Ethyl acrylate is produced through the esterification of ethanol and CAA. It is primarily used in the production of polymer latexes that are in turn used for plastic sheet, textiles (such as carpet backing and industrial drape backliners), and coatings and adhesives (especially pressure sensitive adhesives).
46. The notifying party submits that the question of market definition for acrylate esters including ethyl acrylate can be left open as the proposed transaction would not raise concerns even if each acrylate ester were considered to constitute a separate product market.
47. However, in light of the reasons noted above in paragraph 33 with respect to demand-side and supply-side considerations, the Commission has concluded that ethyl acrylate constitutes a distinct product market.

Relevant geographic market

48. As noted previously, the notifying party submits that the relevant geographic market for ethyl acrylate, as for the other acrylates concerned by the present decision, is global.
49. Respondents to the market investigation in the present case have confirmed that ethyl acrylate and the other acrylate esters concerned by the present decision are commodity products that are traded on a global basis and do not vary between suppliers in terms of chemical properties. Notwithstanding this fact, however, the majority of respondents also observed that there are price differences between Europe and other world regions (although not within Europe) due to factors such as raw material costs, regional supply and demand factors and exchange rate movements. This would tend to indicate that the market is no broader than EEA-wide. Nevertheless, as the proposed transaction would not give rise to competition concerns even on the narrow basis of an EEA-wide market, the precise scope of the geographic market can be left open.

Competitive assessment

50. Neither Dow nor R&H produces ethyl acrylate in the EEA. [...]
51. On the basis of the results of the market investigation, the merged entity's share of the EEA merchant market would be [30-40]% (Dow [10-20]%, R&H [10-20]%).³⁴ In the EEA, the merged entity would continue to face competitive pressure from other suppliers some of which compete by selling imported ethyl acrylate. These competitors include Arkema (20-30%), Sasol (5-15%), Hexion (5-15%), BASF (0-10%) Acrylat (0-10%), as well as a number of other suppliers with an aggregate market share of approximately [20-30]%.

³⁴ According to the results of the market investigation, the merged entity would have a global merchant market share of [20-30]% (Dow [10-20]%, R&H [10-20]%). Other competitors include Arkema (5-15%), Sasol (5-15%), BASF (0-10%), Formosa (0-10%) and NSKK (0-10%).

52. On the basis of evidence gathered in the market investigation, the merged entity's share of production capacity for ethyl acrylate would be in the region of [30-40]% at a global level (Dow [10-20]%, R&H [10-20]%) and 0% in the EEA (as neither party produces the product in the region). If the potential divestment of Dow's Clear Lake plant is taken into consideration, the merged entity's share of global capacity would decrease to approximately [20-30]%.
53. As has been confirmed by the market investigation, ethyl acrylate is an undifferentiated commodity product. Customers would therefore be able to switch relatively easily and with little cost to alternative suppliers in the event that the merged entity was to try and impose a price increase on its customers. The ability to switch is further supported by responses from the majority of customers in the market investigation which have confirmed that ethyl acrylate is in sufficient supply on the merchant market.
54. In light of the above considerations, it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for ethyl acrylate.

1.3.3. Methyl acrylate

Relevant product market

55. Methyl acrylate is produced through the esterification of methanol and CAA. It is used for similar applications as other acrylate esters as well as in polymers for use in barrier applications.
56. The notifying party submits that the question of market definition for acrylate esters including methyl acrylate can be left open as the proposed transaction would not raise concerns even if each acrylate ester were considered to constitute a separate product market.
57. However, in light of the reasons noted above in paragraph 33 with respect to demand-side and supply-side considerations, the Commission has concluded that methyl acrylate constitutes a distinct product market.

Relevant geographic market

58. As noted previously, the notifying party submits that the relevant geographic market for methyl acrylate, as for the other acrylates concerned by the present decision, is global.
59. Respondents to the market investigation in the present case have confirmed that methyl acrylate and the other acrylate esters concerned by the present decision are commodity products that are traded on global basis and do not vary between suppliers in terms of chemical properties. Notwithstanding this fact, however, the majority of respondents also observed that there are price differences between Europe and other world regions (although not within Europe) due to factors such as raw material costs, regional supply and demand factors and exchange rate movements. This would tend to indicate that the market is no broader than EEA-wide. Nevertheless, as the proposed transaction would not give rise to competition concerns even on the narrow basis of an EEA-wide market, the precise scope of the geographic market can be left open.

Competitive assessment

60. R&H does not produce methyl acrylate anywhere in the world. Its limited presence on the merchant market, both at an EEA and global level, derives from [...]. Dow also lacks production capacity for methyl acrylate in the EEA. [...]
61. On the basis of the results of the market investigation, the proposed transaction would not give rise to an affected market if the market is considered to be no broader than the EEA. On this basis, the merged entity's market share would only be [5-10]% (Dow [5-10]%, R&H [0-5]%). Given the relatively limited market position of the merged entity in the EEA, the small increment of [0-5]% arising from the proposed transaction and the presence of other competitors including the market leader BASF, Arkema, Acrylat and Hexion, the notified operation does not give rise to serious doubts as to its compatibility with the common market.
62. In a similar fashion, the proposed transaction does not give rise to serious doubts if the scope of the geographic market is considered to be global. On this basis, the merged entity's share of the merchant market would be approximately [10-20]% (Dow [10-20]%, R&H [0-5]%). The increment that would result from the proposed transaction is negligible and the merged entity would continue to face competition from a number of other suppliers including the market leader BASF, Formosa, Arkema, NSKK and others. Furthermore, as R&H does not produce methyl acrylate anywhere in the world, the proposed transaction would not add to Dow's existing share of global production capacity of approximately [10-20]%.
63. In light of the above considerations, it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for methyl acrylate.

1.3.4. 2-Ethylhexyl acrylate

Relevant product market

64. 2-ethylhexyl acrylate is produced through the esterification of 2-ethyl hexanol and CAA. It is used in applications similar to those that employ other acrylate esters.
65. The notifying party submits that the question of market definition for acrylate esters including 2-ethylhexyl acrylate can be left open as the proposed transaction would not raise concerns even if each acrylate ester were considered to constitute a separate product market.
66. In a previous decision in which 2-ethylhexyl acrylate was considered (*Celanese/Degussa/JV (European Oxo Chemicals)*), the Commission found that 2-ethylhexyl acrylate constituted a separate product market.
67. This finding has been confirmed by the market investigation in the present case and in light of the reasons noted above in paragraph 33 with respect to demand-side and supply-side considerations, the Commission has concluded that 2-ethylhexyl acrylate constitutes a distinct product market.

Relevant geographic market

68. As noted previously, the notifying party submits that the relevant geographic market for 2-ethylhexyl acrylate, as for the other acrylates concerned by the present decision, is global. In *Celanese/Degussa/JV (European Oxo Chemicals)* the Commission assessed the transaction on the basis of an EEA-wide market for 2-ethylhexyl acrylate noting that there were no barriers to trade within the region and that imports were not significant.
69. Respondents to the market investigation in the present case have confirmed that 2-ethylhexyl acrylate and the other acrylate esters concerned by the present decision are commodity products that are traded on global basis and do not vary between suppliers in terms of chemical properties. Notwithstanding this fact, however, the majority of respondents also observed that there are price differences between Europe and other world regions (although not within Europe) due to factors such as raw material costs, regional supply and demand factors and exchange rate movements. This would tend to indicate that the market is no broader than EEA-wide. Nevertheless, as the proposed transaction would not give rise to competition concerns even on the narrow basis of an EEA-wide market, the precise scope of the geographic market can be left open.

Competitive assessment

70. Neither Dow nor R&H produces 2-ethylhexyl acrylate anywhere in the world. As such, the merging parties' presence on the merchant market derives from [...]
71. On the basis of the results of the market investigation, the merged entity's share of the EEA merchant market would be approximately [20-30]% (Dow [10-20]%, R&H [10-20]%).³⁵ In the EEA, the merged entity would continue to face competitive pressure from other suppliers including BASF, Arkema and Hexion, all of which have production capacities in the region.
72. A number of respondents to the market investigation indicated that 2-ethylhexyl acrylate has on occasion been in short supply on the merchant market. It was even suggested by one respondent that this shortage could be exacerbated in future if Dow, which was considered to be a producer of 2-ethylhexyl acrylate by this respondent, were to supply R&H in the future and therefore reduce its sales on the merchant market. The market investigation indicated that past shortages on the merchant market appear to have been the result of a lack of availability of the oxo-alcohol (2-ethyl hexanol) which is used together with crude acrylic acid to produce the ester concerned. It should be recalled that neither Dow nor R&H is active in the production of 2-ethylhexyl acrylate in the EEA. Indeed, R&H has no production of 2-ethylhexyl acrylate anywhere in the world [...]. Consequently, any concerns relating to the future behaviour of the merged entity as a producer of 2-ethylhexyl acrylate are unfounded. Moreover, neither Dow nor R&H is backward integrated into the production of 2-ethyl hexanol. For these reasons, the Commission considers that the product shortage cannot be attributed to the merging parties and the structural change brought about by the proposed transaction on the merchant market for 2-ethylhexyl acrylate is not significant given that the merged entity will have no activity either in the production of 2-ethyl hexanol or 2-ethylhexyl acrylate.

³⁵ According to the results of the market investigation, the merged entity would have a global merchant market share of [10-20]% (Dow [10-20]%, R&H [5-10]%). Other competitors include the market leader BASF (15-25%), Formosa (10-20%), NSKK (10-20%) and Arkema (0-10%).

As a final point, the market investigation also confirmed that one EEA producer (Arkema) intends to expand its production capacity for 2-EHA by 50 kt during the course of 2009.³⁶ This capacity expansion is significant when compared to the current level of capacity in the EEA and the size of the EEA merchant market which, according to the results of the market investigation, is in the region of [80-100] kt.

73. In light of the above considerations, it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for 2-ethylhexyl acrylate.

1.3.5. Other concerns raised in the market investigation relating to the acrylic acid envelope

74. During the course of the market investigation, the concern was expressed that the proposed transaction could reduce the degree of competition in acrylate esters and downstream polymer applications. It was suggested that the interests of the relatively few players active on the market for these products on a global basis, which would be reduced by the transaction, were closely aligned. It was also suggested that the pricing power of these companies, which are active at many points in the value chain, would increase as a result of the proposed transaction. It was said that the production of alcohols that are upstream of acrylate esters (butanol, ethanol, methanol and 2-ethyl hexanol) was dominated by relatively few companies including Dow and that as a result they could hinder the expansion of acrylate production by creating a tighter supply of these raw materials.
75. The Commission examined these claims but considers that the proposed transaction will not result in a significant lessening of competition as has been suggested. In the first place, the degree to which the companies concerned are vertically integrated and the products and markets in which they are active is not symmetrical. For example, whereas Dow and R&H are both active in the production of glacial acrylic acid, they are not active in the downstream application of super absorbent polymers unlike a number of other glacial acrylic acid producers such as BASF, NSKK and Evonik. In addition, the production capacities, level of captive demand and presence on the merchant market of these producers in the markets under consideration is not similar and may vary over time. Taken together, these factors are not indicative of markets where coordination is likely to emerge.
76. At the same time, Dow's backward integration into the alcohols necessary for the production of acrylate esters is not as extensive as has been suggested. In actual fact, Dow is only active in one of these alcohols (butanol) and for the reasons described in the following section, the Commission has concluded that the proposed transaction does not raise concerns in this market. R&H does not produce any of the alcohols that are upstream of the acrylate esters concerned by the present decision. As a consequence, it cannot be said that the change brought about by the proposed transaction in this regard is significant.
77. In view of the above considerations, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the common market

³⁶ See press release of 19.8.2008 on the Arkema website: "New 2-ethyl hexyl acrylate production unit at Carling industrial site."

in the products encompassed by the acrylic acid envelope and applications that are downstream of this envelope.

1.4. Vertical issues

1.4.1. – Butanol and butyl acrylate

78. Butanol is one of the main raw materials used in the production of butyl acrylate which has itself been defined above under section 1.3.1 as a relevant product market. Butanol is a downstream product of propylene and syngas (hydrogen and carbon monoxide). Together, propylene and syngas can be used to produce butylaldehyde (also called butyraldehyde).³⁷ Butanol is produced by the catalytic hydration of butylaldehyde. Dow, but not R&H is active in the production of butanol.
79. Butanol has been considered in a number of previous Commission decisions including *Celanese/Degussa/JV (European Oxo Chemicals)* where the Commission defined butanol as a relevant product market but left open the question whether there are separate product markets for the two types of butanol: n-butanol (made from n-butylaldehyde) and iso-butanol (primarily made from iso-butylaldehyde, but also produced in limited quantities when producing n-butanol).³⁸ In *Celanese/Degussa/JV (European Oxo Chemicals)*, the Commission considered the geographic market for butanol to be EEA-wide.³⁹
80. The notifying party submits that butyl acrylate can only be produced with n-butanol. Consequently, there is no vertical link between iso-butanol and butyl acrylate. The notifying party further submits that the geographic market for butanol is at least EEA-wide if not broader. Nevertheless, for the purposes of the present case it is not necessary to reach a conclusion on the relevant product and geographic markets as the proposed transaction would not give rise to competition concerns even assuming that n-butanol constitutes the relevant product market.
81. As Dow's share of the merchant market for butanol is less than 25% at an EEA-wide and global level ([0-5]% and [10-20]% respectively)⁴⁰, the proposed transaction would only

³⁷ See Case COMP/M.3056, *Celanese/Degussa/JV (European Oxo Chemicals)*, decision of 11.6.2003, para. 80, 181 *et seq.*

³⁸ In Case COMP/M.1710 – *Industri Kaptial 1997 ltd (Marmorandum)/Neste Chemical*, decision of 29.11.1999, the market investigation confirmed a separate market for n-butanol but the Commission left the definition open in the absence of competition concerns. In Case COMP/M.3288 – *TNK-BP/Sibneft/Slavneft JV*, decision of 19.12.2003, the Commission only considered n-butanol because one party did not produce iso-butanol.

³⁹ In Case COMP/M.1710 – *Industri Kaptial 1997 ltd (Marmorandum)/Neste Chemical*, the Commission, in the absence of competition concerns, did not take a position on the scope of the geographic market. In Case COMP/M.3288 – *TNK-BP/Sibneft/Slavneft JV*, the Commission considered both EEA-wide and global markets for the purposes of the competitive assessment without reaching a definitive conclusion.

⁴⁰ As butyl acrylate can only be produced using n-butanol, the market share data in this section relate to n-butanol only. In light of Dow's small position in iso-butanol, Dow's market share in any butanol market would be even lower if iso-butanol were part of the same market as n-butanol.

give rise to a vertically affected market if the scope of the geographic market for butyl acrylate were considered to be no broader than EEA-wide as the merged entity would have a market share of [30-40]%, Dow [10-20]%, R&H [20-30]%. Even if this were the case, it is not considered that the transaction would give rise to anti-competitive effects in terms of input or customer foreclosure for the following reasons.

82. In terms of input foreclosure, Dow's share of the merchant market for butanol in the EEA is limited at less than [0-5]%. There are at least four other suppliers of butanol to the EEA merchant market, Perstorp, Oxea, ZAK and BASF, each of which has a greater share of the merchant market than Dow and butanol production facilities in the EEA whereas Dow does not. In terms of production capacity, although Dow has no butanol production facilities in the EEA, it is one of the largest producers of butanol on a global scale with [10-20]% of installed capacity. However, this figure is not reflective of its merchant market position as it consumes [...] of its butanol output internally for the production of [...]. Moreover, it expects its share of global capacity to decline in the near future as other producers enter the market. Finally, Dow does not sell butanol to butyl acrylate producers anywhere in the world with the exception of [...].
83. In terms of customer foreclosure, it should be noted that R&H [...] purchases [...] of its total butanol requirements (approximately [...]%) from [...].⁴¹ R&H's purchases of butanol from firms other than [...], namely [...] in the EEA and [...] in North America, represent approximately [10-20]% of the EEA butanol merchant market and less than [0-5]% of the worldwide butanol merchant market. [...]
84. In the market investigation, one producer raised the concern that the proposed transaction could increase the competitive disadvantage of those producers of butyl acrylate that are not backward integrated in the production of n-butanol as they would have to purchase butanol on the merchant market at a higher cost than their vertically integrated competitors.
85. On the basis of the evidence gathered in the market investigation, the Commission considers that the proposed transaction does not raise concerns in respect of the vertical relationship between butanol and butyl acrylate. First, it should be noted that although butyl acrylate is the main downstream application in which butanol is used, there are a number of other applications including glycol ethers, butyl acetate and solvents where the aggregate demand for butanol is as significant as it is for butyl acrylate. Therefore, even if the merged entity were to meet its entire butanol requirement internally, there would still be a sufficient customer base for other butanol producers not only in terms of other non-integrated butyl acrylate producers such as Hexion, Acrylat and NSKK but also in other downstream applications. This fact was confirmed by a second butanol producer in the market investigation as well as by the butanol producer mentioned above which also acknowledged that a greater degree of vertical integration between R&H and Dow would not significantly change the butanol merchant market. Second, the change in the structure of the market arising from the proposed transaction is relatively modest as Dow and a number of its competitors in butyl acrylate, including BASF and Arkema, are already backward integrated into the production of butanol [...]. In any event, given the merged entity's share of production capacity and merchant market sales, it cannot be said to have market power in the production and sale of butanol regardless of the

⁴¹ [...].

geographic market considered. Finally, the merger would not add any increment to Dow's pre-existing butanol production.

86. In light of the above considerations, the Commission considers that the proposed transaction would not give rise to foreclosure concerns either in respect of input foreclosure or customer foreclosure in these markets.

1.4.2. Propylene and crude acrylic acid

87. Propylene is a gaseous olefin used as a raw material for the production of a number of important basic petrochemical products including the thermoplastic polypropylene, which consumes approximately 61% of all propylene, propylene oxide (“PO”), acrylonitrile (“ACN”), OXO alcohols (such as butanol), cumene, CAA, and other products.
88. CAA is most commonly produced from propylene and oxygen by a two-stage oxidation of propylene. CAA is an intermediate product that is further processed into either GAA or acrylate esters.⁴² Downstream products from CAA (and thus indirectly vertically-related to propylene) include GAA and acrylate esters, such as butyl acrylate.
89. Dow is active in the production and sale of propylene [...]. R&H does not produce or sell propylene anywhere in the world. R&H does not purchase propylene in the EEA and does not purchase from Dow anywhere in the world. Dow produces CAA in the EEA but R&H has no CAA production apart from the production of its 50/50 Joint venture with Stockhausen, StoHaas (see supra). CAA is not sold on the merchant market but rather consumed captively. The only downstream product produced by both parties in the EEA is the acrylate ester, butyl acrylate.

Relevant product and geographic markets

90. Propylene has been treated as a distinct product market in previous Commission's decisions.⁴³ The market test did not contradict this finding. The Commission has not found it necessary to delineate the precise scope of the geographic market for propylene in the previous decisions, but has suggested that the market was at least Western European and possible EEA-wide. However, there is no need to determine the precise geographic market for propylene, as the transaction does not raise any serious doubts about the supply of propylene, irrespective of the market definition.
91. For the reasons discussed above under section 1.1, CAA is not a relevant product market as there is essentially no merchant market. Therefore, both the product and geographic market definition can be left open.

Competitive assessment

⁴² See sections 1.1, 1.2 and 1.3 above for an analysis of crude acrylic acid, glacial acrylic acid and acrylate esters respectively.

⁴³ COMP/M.4848 – *Basell/Lyondell*, paragraph 14; Case COMP/M.4426 – *SABIC/Huntsman Petrochemicals UK*, paragraph 13; Case COMP/M.4401 – *Basell/Münchsmünster Cracker and Associated Assets*, paragraph 16; Case COMP/M.2345 – *Deutsche BP/Erdölchemie*; Case COMP/M.2092 – *Repsol Quimica/Borealis JV*; Case IV/M.361 – *Neste/Statoil*.

92. Dow's propylene activities focus on production for internal consumption, and as a result its share of the merchant market is well below 25% in the EEA. R&H is not active in the production or sale of propylene anywhere in the world [...].
93. The combined entity will not have the ability to raise downstream producers' costs by restricting or foreclosing access to propylene, as it lacks market power to do so. Furthermore, there will still be several competitors on the market such as Polimeri, Shell, BP and Total. Downstream propylene consumers, including those CAA producers which are not backward integrated in the production of propylene, have several options for their propylene supply, including purchasing propylene directly from manufacturers or from traders.
94. The combined entity will not have the ability to foreclose other propylene producers' access to customers in the downstream production of CAA by reducing its purchases of propylene from the combined entity's upstream propylene competitors. This is because most propylene is sold for consumption in the production of products other than CAA. The propylene requirements of the StoHaas JV do not represent a sufficiently large proportion of propylene purchases from third party suppliers to enable the merged entity to impede effective competition on the market for propylene. [...] In CAA, the parties do not sell on the merchant market and their share of capacity is limited at [10-20]%.
95. Therefore, the transaction does not raise any serious doubts as to its compatibility with the common market regarding the markets for propylene and its downstream products CAA and acrylate esters.

2. ION EXCHANGE RESINS

2.1. Horizontal assessment

96. Both Dow and R&H are major producers of ion exchange resins ('IER' or 'IERs'), although this activity has a relatively minor importance compared to their overall business.⁴⁴

Relevant product market

97. IERs are small plastic resin beads (between 0.3 and 1.2 mm) containing ions with a positive or negative electric charge. IERs are used primarily at industrial scale for the purification of liquids. IERs can remove or separate soluble impurities that cannot be filtered out. The resins charged with a particular electrically charged ion use ionic attraction to selectively remove soluble impurities from liquids (such as calcium from water), whereas the ions contained in the liquid and in the resin bead are being 'exchanged'. IERs have to be regenerated over time by replacing the impurity ions with the type of ions originally loaded into the resin. As a result of this regeneration, IERs may be reused multiple times, with a total lifespan up to 10 years (but typically shorter than that). IERs are used in a wide range of applications including water softening in households, industrial water treatment, the pharmaceutical industry and in nuclear power plants.

⁴⁴ IERs are not a major part of the parties' business in terms of turnover ([0-5]% of global turnover of R&H and only [0-5]% of Dow in 2007). The estimated total value of the total IER market is around EUR 700-800 million worldwide and less than EUR 200 million in the EEA.

98. IERs are produced in different stages. First a copolymer bead is produced by reacting divinylbenzene ('DVB') together with styrene (or sometimes with methyl acrylate). These copolymer beads are then functionalized by adding an ion (there are many ions used according to the intended use) containing an electric charge to attract the impurity ions and remove them from the liquid. IERs are typically produced in batches and they are very differentiated products – apart from different ions loaded into the resins (which either belong to the group of anionic or cationic ions⁴⁵), IERs are produced in different sizes, different forms of resins (gel or macroporous), the resins can be based on different chemistry (styrene or acrylic), and the IERs may be acidic (strong or weak) or basic (strong or weak).
99. Absent any Commission precedents in this area, the parties in this case submit that the relevant market is the supply of IERs, although they suggest that alternative technologies used to remove soluble impurities from liquids may be viewed as substitutable from the customers' perspective.

IERs and alternative technologies

100. The market investigation confirmed that certain alternative technologies, in particular *reverse osmosis* (an alternative technology based on membranes), is to some extent interchangeable with IERs and that some switching by customers between IERs and reverse osmosis occurred in the past.⁴⁶ Generally, it was observed that reverse osmosis, replaced IER in some projects in the past, but the situation seems to have stabilized in recent years. In any event, despite a certain competitive pressure exercised by reverse osmosis on IERs⁴⁷, the investigation points to several elements which lead to the conclusion that the two applications are not as close as to constitute one single relevant product market.
101. From the demand perspective, it is noted that each of these two alternative technologies has its field of application where it is best suited and the overlapping areas where both technologies can be used alternatively seem to be limited, without there being substitutability in general between the two applications. Reverse osmosis seems to overlap with IERs mostly in the area of industrial water treatment, such as for water demineralisation, but often there will be no substitutability as the use of one or other technology may depend on the size of the project⁴⁸ and it is also determined by a mix of factors relating to both the feed water characteristics and specifications of the pure water.⁴⁹ Therefore, the technical substitutability has to be evaluated on a project-by-

⁴⁵ Anionic ions are charged with negative ions such as chloride (Cl-) and hydroxide (OH-). Cationic ions contain positive ions, such as hydrogen (H+) or sodium (Na+).

⁴⁶ Commission questionnaire to IER customers, questions 7 and 8.

⁴⁷ From the various alternative technologies, the IER producers responding within the market investigation recognized a competitive pressure on IER coming from reverse osmosis, but no such pressure was referred to with regards to other technologies (see Commission questionnaire to IER competitors, question 7)

⁴⁸ One important IER supplier noted that while IERs remain the preferred application for bigger plants, reverse osmosis is better suited for use in smaller plants.

⁴⁹ For example, it was submitted by a market participant that reverse osmosis can be used in high salinity water environment in which IERs are not suitable.

project basis and even within industrial water treatment area, substitution is not technically possible for a significant part of the projects⁵⁰ and it is not a technically viable alternative for many further applications.

102. Further, it is observed that in those situations where these two technologies are technically substitutable for a particular purification need, customers tend to compare the price of reverse osmosis and IERs and in general try to optimize their costs. However, a small but significant permanent increase in the range of 5-10% of IER prices would likely not trigger significant switching to reverse osmosis, as demonstrated by the customer replies within the investigation.⁵¹ In fact, one important customer explained that when looking at the total system costs of a water solution system, IER or reverse osmosis represents only a relatively minor part ([0-10]%) of these total costs, so a relative price increase of a magnitude of 5-10% would translate into less than [0-5]% of the total system costs; that does not make a large difference on the total costs and may not alone trigger a lot of switching.⁵² Another customer explains that "*a price increase of 5-10% on IER would not effect the selection of technology very much. Main parameter is operating costs and other requirements (e.g. chemical-free operation)*".⁵³ As regards operating costs, it is noted that IERs for example produce less water losses, and that the volumes of effluent water from the purification process are different when comparing the two alternative systems. Generally, rather than a mere reaction to a relative price increase of the material (IERs or reverse osmosis), it seems that the choice between alternative technologies is more a technical one. Customers therefore generally do not consider those technologies as perfect substitutes between which they would switch in case of a SSNIP of a magnitude of 5-10%.

103. On the supply-side, it is noted that reverse osmosis is a completely different production process, making any hypothetical production switching unrealistic. It should be noted that out of all IER suppliers, only one producer (Dow) is active in both reverse osmosis and IERs, whereas all others either produce one or another solution, but never both at the same time. The competitive landscape and interaction on the supply side of the market thus necessarily differs for IERs and reverse osmosis.

⁵⁰ For example, one important IER competitor estimated that for about half of projects for industrial water treatment there would technically be no substitution due to water quality or local parameters excluding the use of reverse osmosis.

⁵¹ See Commission questionnaire to IER customers, question 9. A clear majority of customers indicated that it would not switch, whereas a lot of those respondents who would indicated an inclination to switch explain that they would need to study the available options on a case by case basis, one also referring to the need to evaluate the financial effectiveness of the solutions.

⁵² See minutes of a conference call of 3 November 2008 with an important OEM customer active in industrial water treatment area [...]: "In theory both technologies are substitutable, but in practice the engineers decide which one to apply, so the choice is mostly technology-driven, but the price of the system is also a decisive factor. However, a 5-10% price increase would be too insignificant in order to motivate [the customer] to change the technology, because the costs for RO or IERs constitute between [0-10]% of the total capital cost of a water purification solution. That means that a relative price increase of 10% of the IERs would not make a big difference in the total system costs and probably not alone trigger switching. If the price difference would be much more significant, than this would play a bigger role."

⁵³ Answer of an OEM customer active in development and installation of water treatment plants ([...]) to Commission questionnaire to IER customers, question 9.

104. Based on the above, it is thus concluded that the results of the market investigation support the view that the market for IER is not as wide as to encompass alternative technologies and in particular reverse osmosis, even though some competitive pressure from reverse osmosis is observed at some edges of the market.

Segmentation of IER market according to end-use application areas

105. The parties submit that IERs comprise a single product market and should not be further narrowed down according to end-use application segments. In the parties' view, despite the fact that a wide range of IERs are used in various applications, there is a considerable degree of supply-side substitutability between IERs produced for different end-uses and all major competitors are active across segments.

106. As a preliminary remark, it has to be noted that IER producers questioned during the investigation internally do not use the same end-use segmentation⁵⁴ (and even if they do, sometimes they define the same segments differently⁵⁵), which indicates that there is no common alignment in the industry on the precise application segments. However, as end-use segmentation was suggested by a complainant in this case arguing that the parties' position would be particularly strong in some segments or even sub-segments (mainly in high-end application segments such as ultra-pure water, nuclear and the pharmaceutical segment), the Commission carefully analysed the transaction also with regard to these specific segments of the IER market.

107. The parties consider that the principal basis of a segmentation of the IER market would be between (1) water applications (*i.e.*, where impurities are separated from water so that the water can be used for its intended purpose) and (2) non-water applications (*i.e.*, where IERs are used to separate ions from non-water liquids). These two categories may be further segmented as follows: water applications into (i) residential water applications and (ii) industrial water applications (which *inter alia* also includes ultra-pure water and nuclear applications); and non-water applications into (i) food/beverage-related applications; (ii) pharmaceutical and medical applications; and (iii) industrial processing applications (which *inter alia* also includes catalysis and chemical processing applications). As stated above, there are slightly different perceptions of competitors about the precise segments. However, it seems to be common in the industry to refer to end-use application segments suggesting that it is not unreasonable from a business perspective to distinguish end-use segments of the IER market as proposed by the parties, with more or less details as regards further sub-segmentation. On the basis of the market investigation, it is however considered that these segments are rather unlikely to constitute separate product markets.

108. From a demand side, as IERs used in a particular segment are usually tailor-made to best suit the needs of that customer segment or indeed a particular application within that segment, they are typically not substitutable for another specific need. As such, in the context of a differentiated product such as IER, a closer look at the supply-side

⁵⁴ See Commission questionnaire for IER competitors, question 11.

⁵⁵ For example, in the 'nuclear' segment, which would in the parties' view be comprised of three main groups of IERs used in the nuclear power industry (demineralisation, condensate polishing and radioactive applications), one other competitor only reported one of these groups as belonging to the 'nuclear' segment. Similarly, the segment of 'industrial water' shows some divergences between different producers.

characteristics of the market appears more meaningful in relation to the relevant product market definition.

109. The market investigation points out that all major established IER producers (Dow, R&H, Lanxess, Purolite, Mitsubishi) are indeed active across application segments, although their presence and focus on certain areas varies (partly due to historical or strategic reasons), and it seems that they are all capable of producing IERs suited for all segments.⁵⁶ The investigation also suggests that there would be no particular reasons why these established producers would not be able to develop and expand further in a particular segment should an opportunity arise and it would prove to be more commercially attractive than serving another segment.⁵⁷
110. On the production side, the main limitation to switching between different IERs relates to the different chemical processes that may be involved in the production process, i.e. anionic or cationic resins. It is indeed common in the industry to use dedicated production facilities for cationic and for anionic resins. However, this distinction only refers to the second stage of the production process, namely the functionalisation of the resins with a particular ion, whereas the first production step (of creating the copolymer beads) can be common for both anionic and cationic resins and thus a certain degree of substitution can take place there. Further production switching bottlenecks were pointed out by one producer in the first production step, such as dedicated equipment for producing gel-type and macro-porous type of resins.⁵⁸ However, it is important to note that there is usually a mix of different resins comprising both anionic and cationic resins (and similarly, both gel and macro-porous resins, etc.) offered and used across and within most application segments. In other words, the different types of IERs (which accordingly need different production equipment for a particular production step, as explained above) are not at all specific to a particular application segment. All established IER producers offer all of these types of IERs. Accordingly, subject to some very specific types of resins, switching production of IERs used in different end-use applications seems generally feasible, in particular as IERs are produced in batches.⁵⁹
111. The investigation however also indicates that some specialized IERs (used in nuclear, ultra-pure water and pharmaceutical segments) require more sensitive production processes. Some special equipment is needed to produce these IERs (such as

⁵⁶ Apart from the parties, Purolite confirmed that it has a complete line of IERs; Mitsubishi confirmed it is capable of offering IERs for all application segments (it is currently not offering nuclear and ultra-pure water resins in Europe but does so in Asia); Lanxess also offers IERs for all application segments. Contrary to these major established competitors, a number of relatively newly established competitors from India and China focus on more commodity-type resins and their presence is limited in more sensitive applications in nuclear plants or the pharmaceutical industry. On the other hand, there are small niche players such as the Finnish company Finex specializing on high-end IERs such as those for nuclear use.

⁵⁷ See minutes of conference call with Resindion (the subsidiary of Mitsubishi in Europe) of 3 December 2008.

⁵⁸ See reply of Lanxess to Commission questionnaire to IER competitors, question 10.

⁵⁹ Although it is understood that producers are optimizing their production according to their current product portfolio and thus some adjustments/investments may be necessary for a significant change of the product mix.

a 'clean room') to comply with stricter requirements, so dedicated production lines are used. Therefore, production switching from IERs used in less demanding applications to these more sensitive IERs would not be as quick as within the other segments and requires some further investment. It seems however that all major players do possess the know-how and technology to produce these types of IERs. Even if this switching would require some time and money, it seems that if production of these special resins would be attractive commercially, producers would be ready to switch, as is demonstrated by Mitsubishi which is currently not producing ultra-pure and nuclear resins in Europe but explains that "*if the sales of UPW and/or nuclear IERs in Europe would become commercially attractive for Mitsubishi, the company would certainly be able to make the necessary investments and switch the production to IERs which would be more profitable to sell.*"⁶⁰ Finex, a niche European producer active in the production of *inter alia* nuclear IERs even considers, from a production point of view, the ultra-pure water IERs as "*more a commodity product than a high-end product despite the purity requirements*".⁶¹ Apart from differences in production as discussed above, some segments (such as IERs for the pharmaceutical industry and for drinking water) require more regulatory approvals for IERs or qualification of suppliers by the customers (for sensitive nuclear uses for example), and customers would be more stringent about the quality assurances and track-record of the suppliers. However, all main established IER producers are already active across segments including the production of the more specialized and more sensitive IERs.

112. Based on the arguments as set out before, the Commission considers that no separate markets need to be defined for different end-use application segments. However, the Commission carefully analysed the likely impact of the concentration on the segments claimed to be most affected and found out that the merger would not lead to serious doubts even within these particular market segments. Therefore, the question whether the relevant product market is IER or narrower according to end-use application segments may ultimately be left open in this case.

Relevant geographic market

113. The parties submit that the relevant geographic market for the supply of IERs is global, since these products are supplied globally from a few plants worldwide, transportation costs are relatively low and there are important cross-regional trade flows and that IERs are often purchased internationally by clients.
114. These elements are largely confirmed by the market investigation. In fact, all major competitors agree that IERs are supplied globally into all regions from plants across the world⁶², and that transportation costs (which usually are below 5%) are not a barrier to trade. As regards trade flows, it is noted that according to parties' estimates about [30-40]% of EEA consumption of IERs was imported in 2007, predominantly from China.⁶³

⁶⁰ See minutes of conference call with Resindion (the subsidiary of Mitsubishi in Europe) of 3 December 2008.

⁶¹ See minutes of conference call with Finex of 10 December 2008.

⁶² See Commission questionnaire to IER competitors, question 14.

⁶³ These imports include imports done by producers having a European plant such as Rohm and Haas who also has a production site in Asia.

Most competitors also agree with the parties that a significant part of business is done with customers operating globally (such as large OEMs or service companies) which purchase IERs internationally.⁶⁴ In fact, some large OEMs questioned during the investigation explained that they indeed have global contracts with their preferred suppliers. Other customers, which do not have worldwide operations, may prefer to source locally.

115. IER customers consistently stressed the importance of a local presence for an IER supplier in terms of sales and technical support.⁶⁵ It was explained that this is relevant mostly at the beginning of the selection procedure for a project when IER suppliers have to do a number of testing, analysis and process design operations and thus a more intense contact is necessary. As concerns after sales services during the operation phase, customers generally do not require technical assistance from the supplier apart from the ‘renewal’ of resins which is done once every few years. Even though the main suppliers maintain their own offices worldwide, it seems that a local presence in terms of technical support can be ensured by dedicated distributors, which is also demonstrated by [...]⁶⁶. It seems irrelevant whether this technical support would be provided by a distributor or the supplier itself⁶⁷, and establishing such a local presence was not referred to by any competitor as a barrier to enter a particular region. In fact, when asked whether there would be any specific barriers to sell IERs in a particular region of the world, all major competitors replied that there would be none, except for one remarking that for certain applications (such as food or drinking water) regulatory approvals are necessary at a national level in some countries.
116. Also, it has to be noted that some regional approaches in terms of pricing were reported by customers. For example, it was reported by one internationally operating OEM that prices differ across world regions even if they have a worldwide contract with a global price cap with their suppliers – prices were reported to be higher in USD regions compared to Europe, whilst this difference would mainly be attributable to currency exchange rates.
117. When looking at the presence of the main IER suppliers, all of them are active in all world regions and can be considered true global players, however their strength varies across the regions. According to parties' estimates of market shares by world regions, Dow has a relatively stronger position in North America, Mitsubishi primarily focuses on Asia, both Lanxess and Purolite are stronger in Europe and North America than in Asia. In Asia, there is a significantly higher presence of Indian and Chinese IER suppliers than in other regions. Thus, the competition landscape differs across regions to some extent but is generally not significantly different when looking at a global and EEA-wide level. In particular, the parties' market shares on worldwide and EEA-wide levels of the IER market are within relatively similar ranges.

⁶⁴ See Commission questionnaire to IER competitors, question 17.

⁶⁵ See Commission Questionnaire to IER customers, question 11 and 12.

⁶⁶ See minutes of a conference call with [...] of 2 December 2008.

⁶⁷ See also minutes of conference call with [...] of 31 October 2008.

118. However, given that the competition assessment would not materially differ on the EEA-wide and worldwide market and the operation does not lead to serious doubts as to its compatibility with the common market under either market definition, the geographic scope of the market may ultimately be left open.

Competitive assessment

Overview of the main players and market shares

119. R&H is the market leader in IERs at a worldwide level and has a significant position in the EEA alongside Lanxess (formerly owned by Bayer). R&H is present across the whole range of IERs and specially focused on more value-added specialized applications. Other important suppliers include Purolite and Dow which are about the same size in terms of market share. Mitsubishi is an IER provider with a reputed track-record, especially for high-end applications but focuses primarily on Asian customers. Other Asian producers (from India and China), on the other hand, are present in commodity applications, also in the EEA. However, customers contacted in the market investigation do not currently see these Indian and Chinese producers as sufficiently reliable and experienced at the present time for high-end applications.

120. The market shares on both worldwide and EEA levels in value and volume are presented in the table below.

Table 1: Market shares for Ion Exchange Resins 2007

SUPPLIER	WORLDWIDE		EEA	
	SHARE (BY VOLUME)	SHARE (BY VALUE)	SHARE (BY VOLUME)	SHARE (BY VALUE)
Dow	10-20%	10-20 %	10-20%	10-20%
R&H	10-20%	25 -35 %	20-30%	30-40%
Dow + R&H	30-40%	40 - 50%	30-40%	40-50%
Lanxess	10-20%	10 – 20 %	30-40%	30-40%
Purolite	10-20 %	10-20 %	10-20%	10-20%
Mitsubishi	0-5%	5-10 %	0-5%	0-5%
Other	30-40 %	10-20%	10-20%	5-10%

Source: parties' estimates and market reconstruction

121. As can be seen from the table above, the parties' combined share by volume would be in the range of 30-40%, and in value it would be 40-50% both worldwide and EEA-wide.

122. The Commission conducted an extensive market investigation in this case, contacting all major competitors and a significant number of customers representing a very large part of both parties' customer base across the spectrum of the IER market.⁶⁸
123. The results of the market investigation clearly confirm that the marketplace would not be changed substantially by the merger so as to lead to a significant lessening of competition as Dow is not a particularly close competitor of R&H, and as post-merger there will remain a sufficient degree of competition from other strong suppliers capable of expanding their activities, particularly with the support of large and strong customers.

⁶⁸ The Commission received feedback from all three major competitors of the parties and two smaller competitors. Requests for information were sent to 56 customers (comprising OEMs, service companies, distributors, end customers), which represent a significant proportion of parties' sales across various segments and sub-segments of the market in Europe: [...]% of Dow's and [...]% of R&H's in industrial water applications, [...]% of Dow's and [...]% of R&H' in nuclear applications, [...]% of Dow's and [...]% of R&H's in ultra-pure water applications, [...]% of Dow's and [...]% of R&H's in residential water applications, [...]% of Dow's and [...]% of R&H's' in food/beverage applications, [...]% of Dow's and [...]% of R&H's in pharmaceutical applications, [...]% of Dow's and [...]% of R&H's in industrial processing applications, [...]% of Dow's and [...]% of R&H's in catalysis applications and [...]% of Dow's and [...]% of R&H's in chemical processing applications. Answers to the Commission's questionnaires were received from over 30 customers. In addition to these requests for information, the case team conducted a number of telephone interviews (13 interviews) with major customers and with competitors.

Parties are not close competitors

124. The investigation confirmed that the parties are not seen as the closest competitors in the IER market, but that their IER businesses would be rather complementary. As noted by one important competitor, "*There is not a large impact on competition caused by the merger as Dow and R&H have a rather complementary business in IER. Dow is more focused on large volumes bulk commodity products. R&H is also present on the commodity segments but is also focused on the specialized resins.*"⁶⁹ Although both parties compete partly in the same areas, this overall perception that the focuses and strengths of their business are rather complementary is shared by a number of customers.⁷⁰ This is consistent with the submissions of the parties who explain that Dow is rather focused on more bulky business (where all competitors are well active), whereas R&H is present across the spectrum but has a particular focus on speciality business.
125. The market investigation also pointed out that customers predominantly see Lanxess as the closest competitor to R&H⁷¹, citing reasons such as its comparable product range and quality. This is consistent with the own assessment of Lanxess, which explains in its answer that "*When looking at the overall IER market, we consider ourselves to be Rohm & Haas' closest competitor as we are no.2 in terms of market share and because Lanxess and Rohm & Haas are the only suppliers which offer the full range of IERs.*"⁷² Dow does not appear to be seen by customers as a very close competitor of R&H and only ranked after Puralite as the closest competitor to R&H. There is thus a consistent pattern in replies clearly pointing to the fact that Dow is not a particularly close competitor to R&H.
126. Apart from qualitative evidence, the different focus is also clearly evidenced by the significant difference in market shares by volume and by value attributable to R&H which focuses on activities in the higher end of the market with higher value-added products (R&H has worldwide market shares of 10-20% in volume and 25-35% in value). On the contrary, there are no such large differences in value and volume market shares in case of Dow.
127. These elements pointing to a conclusion that Dow and R&H are not competing very closely has been complemented by a bidding analysis of data submitted by R&H. On 17 September 2008, R&H submitted data on [>300] new or existing projects that R&H lost

⁶⁹ See minutes of conference call with Resindion (the subsidiary of Mitsubishi in Europe) of 3 December 2008.

⁷⁰ See, for example replies to Commission questionnaire to IER customers, question 25, where one IER distributor notes "R&H will get more standard business; DOW will get more specialities --- for the market it will be good", and one very large global OEM, [...], observes: "Positive is that both companies have a part of their portfolio that is complementary." A similar perception was expressed by another OEM who notes that "when one compares the product portfolio, Lanxess would be the closest competitor to R&H – these two companies have a broad range of products, and Lanxess is in particular closer to R&H in the specialty applications, where Dow is not very present." (Minutes of conference call with [...] of 9 December 2008).

⁷¹ See questionnaire to IER customers, question 23 (plus minutes of telephone call with [...] of 9 December 2008). The majority of customers that responded mentioned Lanxess as the closest competitor to R&H, followed by Puralite, and only a minority mentioned Dow and Finex and Mitsubishi.

⁷² Answer of Lanxess to Questionnaire to IER competitors, question 34.

or did not get, due to [...], between [...] and [...] and between [...] and [...].⁷³ [...]. Of the [>300] lost projects described, [...] ([20-30]%) do not identify an alternative supplier. For the other [...], Dow is identified [...] times as a potential competing supplier. Thus, according to the R&H submission, Dow and R&H competed only on [0-10]% of all R&H lost business ([5-15]% in value terms), which corresponds to [0-10]% of all R&H business with at least one identified competing supplier ([5-15]% in value terms). In other terms, despite the inherent bias that could be attached to the restriction of the analysis to lost business, there is no indication in the database submitted by R&H that would contradict the conclusion reached above regarding a rather limited competitive interaction between the parties.⁷⁴

The merger will not lead to a significant loss of a major competitive force

128. As was elaborated above, pre-merger Dow was not a particularly close competitor to R&H and in any event not its closest competitor. In terms of pricing, Dow is often referred by customers as being relatively higher pricing for similar comparable products of its competitors and it seems that Dow was not expanding aggressively on the market by offering low prices. It is evident from Dow's internal business documents that [...] On the other hand, internal documents of Dow rather consider [...] as the player with its pricing policy being most aggressive towards its competitors, and [...] as the player with an interest to win more volumes and thus seeking to expand business.
129. The market investigation also shows that Purolite was referred to by many market participants as the most price competitive, offering lower prices in order to win business.⁷⁵ Lanxess publically announced a significant capacity expansion, building a new IER plant in India with significant new capacity which it wants to have operational in 2010, so it may be expected that Lanxess will also try to actively win new business.⁷⁶ [...] In terms of innovation, there are no indications that Dow would be the main innovator on the IER market.
130. Therefore, it seems that the disappearance of Dow would not lead to the significant loss of a major competitive force which was pre-merger fundamental to constrain R&H and to stimulate competition. Rather, it seems that the remaining players Lanxess and Purolite, together with Mitsubishi and a number of smaller competitors will continue to exercise a considerable competitive pressure on the merged entity.

⁷³ Source: R&H [...].

⁷⁴ Note that one other IER supplier also submitted a similar database describing information on lost business between 2004 and 2008. However, the database in many instances does not indicate the identity of the competing companies participating in the reported projects.

⁷⁵ Even if some market participants pointed out that Purolite suffers from a certain reputation issue with respect to quality.

⁷⁶ See Lanxess press release of 27 June 2008, available at <http://www.lanxess.com/uploads/media/2008-0123e.pdf>

There will remain a number of strong competitors capable to expand

131. The market investigation indeed confirms that post-merger, there will still be a critical number of strong competitors to the merged entity capable and having a strong incentive to compete vigorously on the market.
132. Lanxess is the strongest competitor to the parties and can now be seen as the challenger to R&H. It has a 10-20% worldwide market share and a very strong position with a share of 30-40% within the EEA. Lanxess is considered as the closest competitor to R&H in terms of product offering, covering the whole range of IERs. It enjoys a strong track-record of projects and quality recognition on the market. Lanxess currently operates two IER plants in Germany, where it recently completed some capacity expansions increasing its capacity by 10%⁷⁷. More importantly, as noted above, Lanxess is currently constructing a new IER plant in India which will increase its production capacities significantly and which is expected to be operational in 2010 and Lanxess will thus have every incentive to utilise this new capacity by winning new customer orders.
133. Purolite is another strong IER producer based in the US, with production plants in the US, China and Romania. It has a market share of 10-20% on both a worldwide and EEA-wide level. Purolite confirms that it has a complete line of ion exchange resins⁷⁸ and it is interesting to note how Purolite itself explains its way to the market: "Purolite has built its business on the basis that customers switch suppliers. As the latest entrant into the ion exchange resin business, we have taken a lot of business from our competitors because we have been able to convince the customers that we can provide a better service, product or value than the competitor."⁷⁹ As explained above, Purolite is seen by many customers as a player with a low pricing policy. Even if some customers refer to a slightly lower reputation of Purolite, other customers confirmed that they view Purolite's product as good quality and some important customers were able to grow business with Purolite significantly in the very recent years.⁸⁰
134. Mitsubishi is another worldwide supplier of IER resins reputed for high-tech quality especially in more complicated applications. Mitsubishi has a global market share of 5-10%, and is currently primarily focusing on Asia, and is capable of serving customers with IER products for all applications segments.⁸¹ In Europe it has a subsidiary in Italy (Resindion) and its presence is not as significant as the other market players (a market share below 5%). However, the investigation confirms that customers - in particular larger ones - value Mitsubishi's track-record and established quality IER products and

⁷⁷ See previous footnote.

⁷⁸ See Purolite's answer to the Commission questionnaire to IER competitors, question 13.

⁷⁹ Purolite's answer to the Commission questionnaire to IER competitors, question 26.

⁸⁰ See Minutes of a conference call with an important OEM customer ([...]) of 31 October 2008. See also minutes of call with another important OEM customer of 30 November 2008 ([...]) viewing Purolite as a quality supplier.

⁸¹ Even if in Europe it is currently not offering nuclear and ultra-pure resins, but does so in Asia. See para 109 and footnote 57 above.

count on it as a back-up option with which they could potentially develop supply relationships.⁸²

135. Fringe players are also expanding their presence: Asian competitors from India and China are increasingly selling in Europe, focusing on more commodity-type products and offering lower prices. According to parties' estimates, the market share of those players in value is about 5-10% and 10-20% in volume in Europe, and significantly more on a worldwide level (mostly driven by local Asian demand). Customers in the investigation often dismissed these players for a lack of quality assurance, but a number of customers are scouring their IERs for more commodity-type applications. Some customers noted that the quality has improved compared to 10 years ago and there is a general feeling on the market that their importance will grow in the future. It is interesting to note that one large OEM – [...] – has recently started a JV with an Asian producer, which is so far focused on the local market, but [this large OEM] does not exclude it could 'develop' the producer also for its worldwide operations.⁸³ Also, it seems that some Asian producers may team-up with some of the more established IER suppliers for which they could provide an economic production base.

Customers do not voice any significant competition concerns

136. The market investigation revealed that customers do not feel particularly concerned about the merger, as they see strong alternatives to the merging parties. In fact, over two-thirds of the customers participating in the investigation expressed positive or neutral comments in relation to the deal, not expecting any negative anti-competitive impact.⁸⁴ Customers expressing a more mixed or more negative feedback referred mostly to a reduction of competition due to a reduced number of players but there were no substantiated concerns expressed.⁸⁵ It seems however that a critical number of well-positioned and strong competitors would still be available.

⁸² See for example minutes of telephone calls with large customers [...]

⁸³ Minutes of telephone conference with [...] of 31 October 2008.

⁸⁴ See Commission questionnaire to IER customers, question 25, questionnaire to IER customers (II), question 13 and minutes of follow-up telephone calls. Customers make comments such as "*no problem; enough competition at reasonable prices*", "*enough competition, more to come from Asia*", "*enough competition, also from Asia; post-merger no big possibility for the parties to become too strong*" "*negative impact-unlikely. Parties occupy different 'spaces' in the market. Dow-commodity; R&H: speciality resins for niche markets*"; "*No, there are many IER suppliers*"; "*Lanxess expanding capacity in India will increase competitiveness*".

⁸⁵ A number of the customers who expressed a more negative feedback (which are in a clear minority in relation to customers expressing a neutral or positive position towards the merger) are actually supplied by a number of alternative suppliers and often not even supplied by either one or the other party or only to a minor proportion. One smaller customer expressing concerns did not even know any alternative producers to R&H as it was solely supplied by this company. A number of follow-up interviews clarified that a critical number of actual or potential suppliers would still be available to customers as potentially viable alternatives. One customer expressing more mixed/negative feedback noted that "*the merger would reduce [the customers'] choice of IER suppliers, leading to less competition. [...] [However] the Dow/R&H merger would from [the customers'] perspective still be acceptable from the competition point of view as there still is a critical number of players on the market, but this would be the last merger which the industry can accept and further consolidation of the IER suppliers would be more problematic, leading to more significant negative effects on competition.*"

137. The investigation reveals that most customers responding in the market investigation multi-source, i.e. they have more than one IER supplier.⁸⁶ Although for one particular project there would typically only be one supplier (in that case the competition takes place at the stage of competing for winning the supply for the project), for new projects customers can use alternative suppliers⁸⁷. Even if switching is often not immediate and requires testing or qualification⁸⁸, customers (in particular larger ones) would often have qualified multiple suppliers amongst which they could choose. Also, the investigation shows that a lot of customers make competitive bidding (or bidding-like) procedures for selecting their IER suppliers, although spot purchases are not uncommon as well.⁸⁹ The market investigation also shows a particular feature of large OEMs (i.e. companies engineering and building water treatment systems for their final clients), namely that they operate on the basis of ‘preferred supplier’ relationships. That means that they have 2-3 IER suppliers which they choose typically in a tender and with whom they sign a global contract running for a longer time and negotiate a price for the IERs. Then, the OEMs would typically choose only amongst their preferred suppliers for the multiple projects they are pursuing with their final clients. The competition then does not take place for a particular project, but the suppliers would compete to be able to get and maintain a preferred supplier status. Large OEMs have a considerable degree of buyer power, keeping their suppliers under competitive pressure; the investigation shows evidence that OEMs can actively ‘push’⁹⁰ and ‘develop’ an alternative supplier.⁹¹
138. Thus, given all the above and in particular the fact that there is a number of IER suppliers which will remain post-merger as strong alternatives to the merged entity, the merger is unlikely to lead to a significant impediment to effective competition.
139. It has to be noted that the overwhelming majority of the parties’ competitors share the view that the merger will not lead to anticompetitive effects on the IER market. Of the five IER producers responding to the market investigation only one expressed concerns.

Nature of the complaint

140. One market participant has raised a complaint with the European Commission, in which it claims that the transaction will have a negative impact on the IER market. It was submitted that the combined entity may (i) benefit from Dow's strong presence in

⁸⁶ See Commission questionnaire to IER customers, question 6; questionnaire to IER customers (II), question 5.

⁸⁷ An exception seems to be the pharmaceutical industry where regulatory approvals are more burdensome. In the nuclear segment however, multisourcing seems not uncommon by, for example, operators of nuclear power plants.

⁸⁸ That takes longer time for regulated areas, in particular in the pharmaceutical industry.

⁸⁹ See Commission questionnaire to IER customers, question 15a.

⁹⁰ The choice of the IER supplier for a project can heavily be influenced by the OEM as it assumes responsibility for the project, although the final client may have particular preferences.

⁹¹ See the example of an important OEM [...] which was able to develop PuroLite as an alternative preferred supplier. In two years PuroLite achieved 20% share of all [of this important OEM's] IER needs. See paragraph 154.

the neighbouring reverse osmosis market to impose its IERs on large OEM customers buying both systems (ii) have a very strong (dominant) position in some market segments, in particular in pharmaceutical, nuclear and ultra-pure water segments and (iii) may have the ability and incentives to foreclose a downstream IER supplier from Dow's supplies of a key input material for IERs – divinylbenzene (DVB).⁹²

(i) Bundling of IERs with reverse osmosis

141. According to the complainant, the merged entity would be able to bundle its IERs with reverse osmosis. In particular, due to a current shortage on the reverse osmosis market the complainant alleges that the merged entity which has via Dow, a strong position on the reverse osmosis market, would be able to impose IERs in a bundle on customers which use both of these products. Dow is the only IER player who offers reverse osmosis. The complainant explains that such bundling would be possible with major international OEMs who in fact use both systems.
142. The results of the market investigation show that customers do not share such concerns and quite clearly dismiss this theory.⁹³ The investigation revealed that the merged entity would have no significant advantage in being able to offer both solutions together and it would not be in a position to impose its IERs on customers buying reverse osmosis solutions.
143. In the majority of projects, these two products are not applied simultaneously in one project. However, even in cases where both are used at the same time (to perform different functions in industrial water purification for example), customers explained that the procurement of these two solutions is independent, there are enough alternatives on both markets, and price and quality are the main drivers behind the purchasing process. Customers explained that there would be thus no incentive to buy a bundle from the merged entity, if they can get it separately under better conditions.
144. Furthermore, the market investigation did not confirm, contrary to what the complainant alleged, that there is a shortage on the reverse osmosis market which would compel customers to buy IERs from Dow in order to secure reasonable lead times for reverse osmosis.
145. Also, it has to be mentioned that Dow already offers these two solutions pre-merger, and could thus try to already bundle the products. However, such bundling is not being put in practice by Dow and in fact customers generally do not see significant advantages in Dow offering both solutions in the past. The complainant alleges that the attractiveness of a bundle would increase after the merger due to the fact that the combined entity will offer a larger IER portfolio. However, customers explained that they do not see a significant advantage in the merged entity offering both solutions post-merger.

⁹² See minutes of telephone conference with the complainant of 21 November 2008 summarizing the nature of the complainant's concerns. The complainant submitted several submissions to the Commission elaborating on their complaint, and replied to requests for further information. The case team also held a meeting with the complainant.

⁹³ Questionnaire to IER customers, question 16. See also minutes of conference calls with OEM customers [...].

146. Lastly, the customers referred to by the complainant as targets of the possible bundling practice are large OEMs active in water treatment (such as [...]). It is noted that these customers enjoy a significant bargaining position on both markets. When contacted during the investigation, these large customers clearly dismissed this conglomerate issue.

(ii) Segmentation according to end-use applications

147. The complainant argues that the merged entity will have a particularly strong position on some market segments (or rather sub-segments), in particular in nuclear, ultra-pure water and pharmaceutical segments⁹⁴. The Commission carefully analysed the competitive situation in these segments, and contacted a significant number of customers in Europe representing a major part of the parties' sales in these segments.⁹⁵ The Commission also attempted to gather market data from other competitors in order to verify the parties' estimates of their position in the respective segments.⁹⁶ The segments concerned are discussed below.

Nuclear segment⁹⁷

148. In the *nuclear segment*, the combined market share of the parties would be around 40-50% EEA-wide (and less worldwide)⁹⁸, however Dow is only a minor player and the overlap would be relatively small (Dow would have a [0-10]% market share EEA-wide, less worldwide). In fact, about [a very significant proportion] of Dow's EEA sales in this segment in the last year were made to [a very limited number of customers], demonstrating that Dow is a very small player on this segment. [...]did not show any concerns about the merger, noting that there are many other sources from which [to] buy IERs.⁹⁹ Furthermore, Dow and R&H largely offer complementary products. Dow almost entirely focuses on the supply of IERs for [...] whereas it offers only [...] resin for sensitive radioactive use [...]. On the other hand, R&H focuses precisely on these special sensitive resins (which represent [a significant proportion] of its worldwide sales within the nuclear segment worldwide, and up to [a very significant proportion] within the EEA).

149. Purolite and Lanxess are the key competitors also active on this segment and so is a niche player Finex, to which a number of European customers referred as a reliable supplier. Lanxess has been awarded a significant contract in 2008 to become the supplier for 10 EDF nuclear plants and it supplies 12 nuclear power plants in

⁹⁴ In addition, the complainant alleged a relatively high position in catalysis. To a lesser extent, it also was concerned about the chemical processing segment and consumer/food/sugar segment.

⁹⁵ See footnote 68.

⁹⁶ Competitors of the parties were sent requests for information with regard to market data according to segments, as uniformly defined in the information request according to definition of the parties.

⁹⁷ Worth approx. EUR [30-40] million worldwide and [5-10] million EEA-wide, thus a relatively minor part of the overall IER market.

⁹⁸ According to parties' estimates, which were broadly confirmed by the market investigation.

⁹⁹ See reply on questionnaire of [...]

Germany.¹⁰⁰ Purolite is the longstanding supplier of EDF, the largest European nuclear power plant operator, and was awarded a new 3-year contract in 2008 with that customer, although EDF was shifting significant volumes to Lanxess; Purolite supplies a number of other nuclear power plants in Europe including six in the UK and a number of others in Spain and Germany as well as 15 nuclear plants in the US.¹⁰¹ Mitsubishi has a significant track record of nuclear projects in Japan. It stopped producing and supplying nuclear IERs in Europe (whereas it still produces IERs in its Japanese plant), however it confirmed that if nuclear IERs would be commercially more attractive for the company in Europe, Mitsubishi would have the interest and ability to supply them in Europe again. Finex, a high-end niche player supplying nuclear IERs, is seen as a quality producer.

Pharmaceutical segment¹⁰²

150. In the pharmaceutical segment the parties would have a 65-75% combined market share both worldwide and EEA-wide (with Dow's share close to [20-30]% in the EEA and worldwide).¹⁰³ Despite this high overlap (which however represents only about [...] EUR in Europe), it is noted that Dow is not a major player in the pharmaceutical area and in fact around [a very significant proportion] of Dow's pharmaceutical IER sales in the EEA by volume are attributed to one special resin ([...]) sold by Dow to [a very limited number of customers]. [...] these sales de facto representing all Dow's EEA market share do not reflect any recent wins of new business. The [...] in question did not raise any negative comments about the merger. Apart from [...], Dow has a very limited presence in the pharmaceutical segment in the EEA and the merger would thus not bring about a very significant change on the market. Also on the worldwide level, the sales of the special resin - [...] - together with a second product (XUS 43598 which is more a standard resin – unfinished raw material in the production of a particular drug) accounted for [a very significant proportion] of Dow's worldwide pharmaceutical sales. [...] As regards [the special resin], this product is also offered by R&H, but there is no customer overlap and Purolite is also offering this specific IER on the market. The investigation confirms that customers (which are indeed large pharmaceutical companies) could also gradually develop this special IER with other players which are already active in the pharmaceutical area such as Lanxess and Mitsubishi.¹⁰⁴ Within the pharmaceutical segment, the buyer power of the few customers is considerable. R&H is also relying on a relatively few big customers – its top 5 customers (which are mainly large pharmaceutical companies) account for [a significant proportion] of R&H's sales into this segment in Europe. These customers were not particularly concerned, as they either buy a special resin that Dow is not offering or they are also supplied by

¹⁰⁰ Publicly available information provided by the parties in their submission of 22 October 2008.

¹⁰¹ Idem.

¹⁰² Approximate market value: WW [50-60] million, EEA: [15-20] million, thus a relatively minor part of the overall IER market.

¹⁰³ According to parties' estimates, which were broadly confirmed by the market investigation.

¹⁰⁴ Although the time to switch to alternative IER producer is longer within the pharmaceutical sector, mainly due to heavy regulatory procedures, supply arrangements tend to be longer and thus the incentive for IER producers to compete more vigorously for this business and for the current IER supplier to retain it is all the greater.

alternative producers for the resins they need. Indeed, Dow is generally not seen as an IER producer with a vast specialized pharmaceutical expertise and it cannot be considered as closely competing with R&H in this segment. Although R&H is the leader in pharmaceutical applications, the competitive interaction with Dow appears to be very limited.

151. As regards other IER suppliers, Mitsubishi, Lanxess and Purolite are all active in the pharmaceutical area. Mitsubishi in Europe reported that pharmaceutical applications are one of its main areas of focus in Europe¹⁰⁵ and Lanxess also offers pharmaceutical IERs as well as Purolite. Lanxess is currently significantly expanding its production capacities and publicly claims on its website that it intends to use it also for the pharmaceutical industry. In case of special reverse chromatographic resins, other companies like GE Healthcare, Varian and others also supply this product.

Ultra-pure water "UPW" applications¹⁰⁶

152. UPW is used primarily in the electronics industry for semiconductors/chip production and in laboratories. The parties would have around [60-70]% worldwide and EEA-wide, with an overlap of about 15-20% on both levels¹⁰⁷ (representing Dow's sales of only EUR [...] globally and EUR [...] in the EEA). However, this relatively large market share comes from sales to very few customers. In Europe, around [a very significant proportion] of Dow's sales in this segment were made to [...]. R&H is the leader in this segment but still made [a significant proportion] of its sales in Europe to [...].¹⁰⁸ Both companies were contacted during the investigation and neither of them expressed any competition concern. On the contrary, both were confident that sufficient competition will remain and that the merger does not change the competitive landscape significantly.
153. [...] stated that it *"is not concerned about the merger and it thinks it will not entail any problems with competition, as there are enough alternative suppliers to the merging parties, including in ultra-pure water where it is active."* and explains that *"the quality of R&H as well as the three additional IER suppliers with whom [...] is working is OK for its needs, incl. for ultra-pure water applications. [...] thinks it would be able to establish these other three companies as their first IER supplier and in fact all these companies would be very interested to take over the business from R&H. It has to be noted that there is a testing period of several months before a launch is possible, but it seems feasible to do it."*¹⁰⁹

105 See minutes of conference call with Resindion (the subsidiary of Mitsubishi in Europe) of 3 December 2008.

106 Approximate market value: worldwide [50-60] million, EEA: [5-15] million, thus a relatively small proportion of the overall IER market.

107 Indicative market share resulting from the market reconstruction and parties' estimates.

108 Similarly on worldwide level, there is a very large dependence of the parties in this segment on a few large customers. As UPW is mostly used in the electronics industry which is primarily located in Asia, Dow's [40-50]% of global sales in that segment are made [...], whereas R&H makes [50-60]% of its global sales in that segment to [...].

109 Minutes of conference call with [...] of 11 December 2008.

154. OEM customers such as [...] also seem to have considerable buyer power with regards to the IER suppliers remaining post-merger. Those large OEMs are able to play the main producers against each other to compete for a 'preferred supplier' status. [...] explained that it is not concerned about the merger since it will have sufficient alternatives among the other established players that it could develop as suppliers. The loss of the competitive interaction between the two parties (even though they are currently the two strongest suppliers in UPW applications) is not perceived by this customer as an impediment to competition: "[...] *does not expect significant negative impacts on competition following the merger, as there are still enough alternatives on the market. Even if the two merging companies are currently the two largest suppliers of [...], it is always possible to re-launch a new global tender should the need arise (if Dow/R&H would not offer competitive pricing for example). There will always be a strong threat for the merging companies and a price pressure from potential alternative suppliers which [...] could develop and 'push' with its customers. Within only 2 years Purolite has already developed into a quite significant supplier within [...] and they have the capacity to develop further. Similarly, this would be the case for the current strong 'outsiders' Lanxess and Mitsubishi, if the situation would require to add them as suppliers. Therefore, [...] is not concerned about the merger.*"¹¹⁰

155. The above quotes illustrate that within the small segments such as ultra-pure water where the parties are dependent on a very few large buyers, the market share provides only a very imperfect picture about the competitive interaction. In fact, a loss of one single customer for the market leader R&H would mean a loss of [a significant proportion] of its roughly [40-50]% market share in this niche segment. Customers active in the UPW application area indeed confirm that, as seen above, alternative producers such as Purolite, Lanxess and Mitsubishi¹¹¹ are present in this segment and capable of expanding, stimulated by considerable buyer power of the key customers within the segment.

Other segments

156. Other segments were also highlighted by the complainant, but already in terms of market shares appear less critical than the ones analysed above. In the industrial processing applications, the parties' combined shares would be [30-40]% EEA-wide and [40-50]% worldwide. However, Dow would only have a market share of less than [0-5]% EEA-wide and around [5-10]% globally, while Lanxess would hold a market share similar or even greater than the combined entity in Europe and above [20-30]% globally, with Purolite holding 5-15% both EEA-wide and globally, and Mitsubishi also being present on the market with a position not very different to Dow's in both the EEA and globally.¹¹² Within industrial processing, in the special application for catalysis, there would only be a *de minimis* market share of Dow of below [0-5]% in the EEA and [0-5]% worldwide, while R&H being the leader with a [40-50]% worldwide and 55-65% EEA-wide. Other global players present in catalysis IERs are much stronger than Dow –

¹¹⁰ Minutes of telephone call with [...] of 31 October 2008

¹¹¹ Mitsubishi currently does not have sales of UPW resins in Europe, but confirmed it could re-enter the segment in Europe if it would be more commercially attractive. It is currently offering UPW resins in Japan.

¹¹² Market reconstruction and parties' estimates.

Lanxess (over [20-30] % EEA-wide and over [10-20]% worldwide), Purolite ([10-20]% EEA-wide and [5-15]% worldwide) and Mitsubishi on the worldwide level ([10-20]%).¹¹³ In the other application of industrial processing - chemical processing, the market share of Dow would be [0-10]% both worldwide and EEA-wide, while R&H would be below 30% EEA-wide and below [30-40]% worldwide, other significant players being again Lanxess (around 30-40% in the EEA and 10-20% EEA-wide), Purolite (5-15% worldwide and EEA-wide) and Mitsubishi on the worldwide level ([10-20]%), beside other players estimated at 15-25% worldwide and 10-20% EEA-wide by the parties.¹¹⁴ In food/beverage applications the parties would have a combined market share of [10-20]% EEA-wide and around 35-40% globally, whereas Lanxess' market share would amount to the largest in Europe (more than half of the total market), not significantly different from the combined entity's worldwide share, with Purolite (with around 5-15% EEA-wide and 10-25% worldwide), Mitsubishi and other players (such as Finex) active in the area. Dow is in food applications [...]oriented towards bulk nutrition applications related to the processing of sugar and sweeteners and in fact [a very significant proportion] of its global sales are represented by large multinational companies such as [...]. Replies from customers active in this area and questioned during the investigation indicate that these customers do not see the parties as the closest competitors, and consider Purolite, Lanxess and even Chinese competitors as alternative players. In fact, one starch manufacturer notes that "*R&H and Dow were not hard competitors to each other in Europe and in the USA.*"

Conclusion on segments

157. Despite a seemingly strong position of the combined entity in terms of higher market shares on some possible (sub)segments of the IER market, for all the reasons analysed above negative effects on competition are unlikely even on these narrow segments, and they would not lead to serious doubts as to the compatibility with the common market. To recapitulate: (i) R&H is a strong player on these segments but Dow is generally not; (ii) there is a minor overlap in terms of customers, and Dow only has [a very small number of] key customers per segment which make a very significant proportion of its sales in the particular segment; (iii) the market shares are not representative as a proxy in terms of market power (for example if Dow loses its largest customer in the [...] field, it would lose almost all of its market share in the EEA), (iv) there is a strong dependence of the parties on a few large customers that would have considerable buyer power within a hypothetical market comprising the segment in question, (v) there is evidence of strong OEM buyers pushing for alternative suppliers and able to grow them, (vi) there are strong alternative producers (Purolite, Lanxess, Mitsubishi) as well as a niche player (Finex) able to offer IERs in these high-end segments and to expand, (vii) Lanxess, the largest competitor overall on IER, is significantly expanding its capacities in India (on-stream in 2010), publicly claiming that the plant "*will supply products for the generation of ultra-pure water for the semiconductor and pharmaceutical industries and for industrial water treatment*", (viii) the value of these niche segments is relatively low, compared to the overall market (viii) and customers active in this segment which provided a feedback in the market investigation, and which constitute a considerable

¹¹³ Parties' estimates. Within the catalysis segment, the complainant points to 2 specific products – Bis-A and MTBE resins, however the combined market share of the parties would be for both at most [30-40]% with almost non-existing or de minimis overlap.

¹¹⁴ Parties' estimates and market reconstruction.

proportion of the parties' sales in this segment did not express any substantiated concerns about the merger.

158. Therefore, even though in high-end areas of IERs such as ultra-pure water, nuclear and pharmaceuticals there is a tendency of customers to rely on the known suppliers to avoid any risks and thus entry barriers are higher in particular for non-established competitors, still a sufficient number of key competitors will remain post-merger. The investigation clearly confirms that the main competitors Lanxess, Purolite and Mitsubishi all have a track record in these applications and customers' replies indicate that they see them as alternatives. It thus can be assumed that those players will exert sufficient competitive pressure on the parties and they seem to be able to develop and expand in these segments, even if their shares may currently be smaller.

Conclusion on IERs

159. For all the reasons as explained above, the transaction does not lead to serious doubts as to the compatibility with the common market in the market for IERs.

2.2. Assessment of the vertical relationship IER-Divinylbenzene (DVB)

160. Dow, but not R&H, produces divinylbenzene (DVB), a product that is upstream of IERs.

Relevant product market

161. DVB is produced through the dehydrogenation of diethylbenzene. This process also gives rise to ethylvinylbenzene, a co-product produced with and sold with DVB. DVB is produced in different concentrations, depending on the required proportion of DVB in the final product. According to the parties, around [70-80]% of DVB sold on the merchant market is used to produce ion exchange resins, where DVB is used as a cross-linking compound in the production of copolymers that form the basis of the majority of (but not all) IERs. DVB is supplied in different concentration levels (or purity grades), e.g., 53%, 65%, and 80%, with the customer determining the particular concentration of DVB required. In fact, IER producers use different concentration levels depending on their production recipes. In turn, all DVB producers manufacture the various concentrations of DVB on the same production line with the same equipment by adjusting the distillation process conditions.
162. In the absence of a Commission precedent, the notifying party submits that DVB constitutes a distinct product market, as there is no substitute for DVB used in the production of IERs. The notifying party does not consider it appropriate to segment the market further according to concentration levels in view of the demand-side and supply-side considerations noted in the previous paragraph.
163. The investigation did not find any particular elements disproving the notifying party's suggestion that DVB is a relevant product market. However, the market definition can be left open in this case since there are no serious doubts as to the proposed transaction's compatibility with the common market.

Relevant geographic market

164. The notifying party considers the relevant geographic market to be global, as there are significant trade flows between regions worldwide, and DVB is not even produced in Europe but imported from other regions of the world.
165. The investigation confirmed the parties' claims. Indeed, there are no European DVB production sites, so all European customers import DVB from suppliers in China, Japan, and the United States. All producers supply across the globe from a single plant worldwide, and customers do procure DVB globally. It is therefore concluded that DVB is a worldwide market.

Competitive assessment

166. Unlike Dow, neither R&H nor any other IER producer is vertically integrated in the production of DVB. Dow supplies DVB worldwide [...]. According to the parties' estimates, Dow has a worldwide market share of about [20-30]%, with other producers including Deltech (United States, [10-20]%), Nippon Steel (Japan, [20-30]%), DongDa (China, [10-20]%) and other Chinese producers (combined market share of [20-30]%). Dow supplies DVB to [...] and uses its DVB captively for its own IER production. DVB accounts on average for about [5-15] % of the total price of IERs.

Input foreclosure

167. One of the merging parties' IER competitors expressed the concern that it could be vertically foreclosed by the merged entity from accessing the DVB which it currently buys from Dow and that it will see a further cost increase post-merger (having already experienced cost increases prior to the notification of the proposed transaction). The complainant obtains substantial requirements from Dow. Although the parties submit that DVB is a commodity product, the competitor claimed that switching DVB suppliers is very difficult. It explained that the DVB supplied by Dow is tailored to the different types of IERs it produces and due to Dow's unmatched logistics for DVB¹¹⁵, it would be almost impossible for it to change its DVB supplier in the medium term.¹¹⁶
168. The Commission investigated any possible vertical issue, and came to the conclusion that concerns expressed by the complainant are not well founded and that the merged entity will likely have no incentive, and in any event no ability to foreclose this company from access to DVB supplies.¹¹⁷

¹¹⁵ It is true that Deltech had a logistic-related incident in the past, when transporting higher-degree DVB which suffered from quality deterioration during transport (DVB is reactive chemical which can be prevented from deteriorating via refrigeration). However, as Deltech confirmed, "*this was a temporary occurrence which was solved and now there is no problem with transporting even this higher grade DVB. Deltech now uses refrigerated containers and has a tank in Antwerp to supply Europe.*" (Minutes of conference call with Deltech of 4 November 2008). [footnote moved from a different location due to confidentiality reasons]

¹¹⁶ See the complainant's reply on Commission questionnaire for IER competitors, question 51 f.

¹¹⁷ The case team communicated its preliminary findings to the complainant during a telephone conference on 21 November 2008, see minutes of conference call with the complainant of that day. Due to confidentiality reasons, part of those findings relating to the complainant's internal business, will not be elaborated in this decision.

169. As a preliminary point, it has to be stressed that in the past the company faced a situation where it had to reorganize its supply of DVB because of the market exit of its main supplier, at which time Dow happened to become its main DVB supplier. Since that date, the company has been qualifying additional suppliers. The dependence on Dow's DVB and its efforts to qualify alternative suppliers are therefore not merger specific, but relate to the exit of its previous supplier some years ago. Similarly, any price increases of Dow's DVB which this company claims to have experienced after that date and which it fears may continue post-merger, relate to the contractual relationship with Dow and to that company's DVB supply situation which existed pre-merger.

No ability to foreclose

170. Dow would only have the ability to foreclose this customer from DVB supplies, if the latter would be totally dependent on Dow's DVB and would have no ability to switch to other DVB suppliers before Dow would terminate or reduce its DVB supplies to this company. However, this is not supported by the investigation.

171. The market investigation showed that there is evidence of past switching of DVB suppliers by IER producers. In fact, R&H itself was in a comparable situation when in 2005, after a major supplier exited the market, R&H in its French IER plant qualified [new suppliers other than Dow]. Now, [30-50]% of R&H's French plant's requirements are supplied by [...]. This demonstrates that switching is indeed possible. It further demonstrates that [...] is capable of supplying a premium IER supplier without this having any material impact on the good quality of R&H IER products. Moreover, the fact that [...]’s DVB is supplied from [...] puts in doubt the complainant's claims about Dow's "unmatched logistics".

172. When asked in the market investigation how long it would take to switch a DVB supplier, competitors answering this question as well as DVB suppliers stated that it would take a matter of several months to qualify an alternative producer and a matter of several months to adjust the IER production process. One IER producer explains: "*DVB is a commodity product and there is no real difference in quality of DVB from various suppliers. However, switching is not immediate as the IER production process has to be adjusted to the different impurities of DVB. When switching, precautions also have to be made for transportation as DVB must be kept conserved. These issues take some time but they can be solved and they are not an insurmountable obstacle to switch DVB suppliers.*"¹¹⁸

173. The complainant on the other hand claims that the switching process is more problematic and takes a longer time. However, upon inquiry, the complainant explained to the Commission¹¹⁹ that it started the process of qualifying alternative DVB suppliers two years ago in 2006 and is now already sourcing DVB from these companies. It is thus reasonable to assume that it must be now very advanced with switching. This conclusion is based on the complainant's explanations about the switching process,

¹¹⁸ See minutes of conference call with Resindion (the subsidiary of Mitsubishi in Europe) of 3 December 2008.

¹¹⁹ Answer of the complainant of 18 November 2008 on Commission questionnaire dated 11 November 2008.

explanations about its precise timeline within the company, and of the estimated duration of the particular steps necessary to complete switching.¹²⁰

174. The Commission also took into consideration the complainant's current supply contract duration with Dow, which will run at least until [...]. Based on the apparent advanced stage of the complainant's switching process and its own estimations on the duration of the switching phases, it appears reasonable that within this time the complainant would be able to complete securing its back-up supplies to at least a very appreciable level.
175. Moreover, the parties submitted evidence [...]¹²¹ The complainant thus has been given the opportunity to secure these supplies from Dow.
176. In any event [...] there is no reason to believe that there would not be enough DVB available on the market from other suppliers. In fact, if R&H were to start sourcing DVB internally from Dow (as the complainant supposes would happen in the mid term), the DVB volumes which it is now sourcing from other sources would become available on the merchant market.

No incentive to foreclose

177. [...] Even if it was submitted that with an enlarged IER portfolio the merged entity would have a greater commercial interest on the IER market than Dow alone and therefore a bigger incentive to foreclose its IER customers than pre-merger, the DVB capacity situation of Dow has to be taken into account when looking at the incentives of the merged entity to supply its significant DVB customers. [...] It is thus in Dow's commercial interest [...] by supplying its competitors with DVB.

Conclusion on input foreclosure

178. For the reasons stated above, it is thus concluded that the merged entity would not have an incentive and in any event would not have the ability to foreclose the complainant from access to DVB. Therefore, the vertical relationship of DVB and IER does not lead to serious doubts as to the compatibility of the proposed transaction with the common market. The same holds true if considering narrower product markets for IER end-use application segments, as the competitive assessment would not change.¹²²

Customer foreclosure

179. The investigation also confirmed that the merger would not lead to a significant impediment to effective competition by foreclosing competing DVB suppliers from

¹²⁰ Answer of the complainant of 18 November 2008 on Commission questionnaire dated 11 November 2008. For the precise timeline and the case team's conclusions see minutes of telephone conference with the complainant of 21 November 2008.

¹²¹ Submission of Dow of 8 December 2008.

¹²² To the extent DVB is a product that is procured by IER producers for the production of their complete range of IER products and not in a differentiated way according to the end-use segments, the vertical assessment should thus be analysed on the IER market as a whole, irrespective of the customer segments.

access to a sufficient customer base.¹²³ Dow already meets its own DVB requirements internally. R&H is supplied by [...]. Even if R&H were to start sourcing its DVB requirements internally from Dow after the merger and thus reduce its purchases on the merchant market, this would not deprive its upstream DVB rivals of the possibility of selling their DVB elsewhere.

180. According to the figures provided by the parties, R&H's purchases of DVB from suppliers [...] represented around [10-20]% of the total DVB merchant market in 2007. Moreover, individual DVB suppliers are not dependent on R&H and the share of their DVB sales to R&H is not in excess of 15-20% of their DVB sales.¹²⁴ During the investigation one DVB supplier indicated that it is concerned about losing R&H as a customer, should the latter decide to source internally from Dow. However, even if DVB suppliers may lose an important customer in R&H, they would not be cut-off from a sufficient customer base as there will still be other customers to which they can sell and which represent 80% or more of their current sales. One other DVB supplier also noted that "*As regards possible vertical integration of Dow/R&H, which can mean that R&H may turn away from [the DVB supplier] to be supplied internally, this is not a problem in the long run for [the DVB supplier], even if the short-term effect would be losing R&H as a customer. There are other customers to which [the DVB supplier] can sell its DVB.*" In addition, it is noted that competing IER producers to the merged entity have announced significant expansion plans of their IER business, which would lead to an increase of the demand for DVB.

3. LATEXES

181. Latexes are used mainly as binders in the production of materials such as papers, carpets, textiles and paints. They are produced through the polymerization of one or more of various monomers, principally butadiene, styrene, methyl methacrylate, ethyl acrylate, 2-ethylhexyl acrylate, butyl acrylate, vinyl acetate, or ethylene.
182. The principal types of latex are acrylic, which includes all-acrylic ("AA") and styrene-acrylic ("SA"); vinyl, which includes vinyl-acrylic ("VA"), vinyl versatate ("VV"), polyvinyl acetate ("PVAc") and vinyl acetate ethylene ("VAE"), styrene butadiene ("SB"); and hollow sphere particles ("Hollow") and polystyrene ("PS").

3.1. The relevant product and geographic markets

183. The Commission has defined product markets according to the type of latex dispersion (i.e., chemical composition) and also by application¹²⁵. In Rhodia/Raisio/JV the Commission therefore identified markets i.a. for SA latex polymers, SB latex polymers, and

¹²³ The same holds true if considering narrower product markets for IER end-use application segments, as the competitive assessment would not change. See previous footnote.

¹²⁴ Figures provided by the parties in Form CO (Table 6.2 on page D-8) and table 10.1 of the parties' reply of 14 November 2008 to Commission questions dated 6 November 2008. The figures were broadly confirmed by the DVB producers contacted in the investigation.

¹²⁵ See COMP/M.1993 – *Rhodia/Raisio/JV*

AA latex polymers¹²⁶, with a further segmentation by application of the latexes in the production of paper, carpet and non-woven textiles. In the present case both the Parties are also active in VA¹²⁷. The Commission has previously also found that the market should not be further divided into submarkets according to the grade qualities of the latexes. As to the geographic scope, the Commission has considered the relevant geographic market for latex to be EEA-wide.¹²⁸

184. The market investigation has confirmed that the segmentation according to the type of dispersion and also the application is the one most commonly used within the latex industry. The market investigation also demonstrated that the different latexes are partially substitutable or interchangeable with one another, also in line with the findings in previous cases.
185. The market investigation did not indicate a need for further segmentation by grades used in sub applications of paper and packaging, for example wood-free coated paper, mechanical coated paper, or of paints and coatings; for example decorative coatings, paints and wood care products, or of adhesives and sealants; and/or according to the end distribution method of applications where latex is used as one component, i.e. trade or retail markets.
186. The customers' sourcing policy is based on the need to obtain a certain quality level in the end product, and the choice between latex is therefore driven by a balance of cost and quality taking into account the particular machinery available to the customer. All customers confirmed that switching within a latex dispersion used in a certain end-use application is possible. The customers and competitors also confirmed that switching is possible between AA and SA latexes.
187. Major suppliers normally tend to supply a number of different grades across the range, and have generally the technical capability to switch production to other or new grades due to the fact that the end product properties based on customer requirements determine the chemicals to be used. This finding is also in line with the cited decisions *Rhodia/Raisio/JV*, *Wacker/Air Products*, and *Bayer/Hüls*. As stated above, the Commission explicitly found that the market should not be further divided into submarkets according to the grade qualities of the latexes in *Rhodia/Raisio/JV*.
188. In conclusion, the Commission has examined the affected applications (paper and packaging, paints and coatings and adhesives and sealants) in line with its previous decisions without resorting to sub-segmentation of these applications according to grades for sub-applications.
189. As to the geographic market, the market investigation supported the previous findings of the Commission. The relevant geographic market for SA and AA dispersions in the relevant applications is EEA wide.

¹²⁶ Pure acrylic latex polymers and all acrylic latex polymers are synonymous terms used in the chemical industry.

¹²⁷ The combined market shares of the Parties in any and all VA product markets remain below 15%, and therefore these are not affected markets.

¹²⁸ *Bayer/Hüls*, M.751, *Wacker/Air Products*, M.1097 and *Rohm & Haas/Morton*, M.1467.

3.2. Competitive assessment

Horizontal effects

190. The principal area where both parties are active is in SA. Within SA, both of them have activities in particular in paper and packaging, paints and coatings, adhesives and sealants, construction, and industrial applications. There are also small overlaps in AA¹²⁹ and VA, where the parties are small players overall¹³⁰. There are also de minimis overlaps (with one or both parties having shares well below [0-5]%) in VV where both parties have de minimis sales¹³¹, and Hollow where Dow has de minimis sales.¹³²
191. The parties submit that the combined share for SA latex is around [10-20]% and for AA latex around [20-30]% in the EEA. The parties further submit that they have a combined market share exceeding 15% in the following applications: SA for paper and packaging applications, AA for paints and coatings applications, and AA for adhesives and sealants applications. This submission was confirmed by the market investigation.
192. The market investigation confirmed that the capacity usage rate of the producers is between 70-80%, and that there are spare capacities in latex products available. The market investigation also confirmed that the producers seem generally to be able to switch from SA to AA.
193. In view of the above considerations, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for latexes. The paper and packaging and paints and coatings applications are analyzed more in detail below.

Styrene acrylic latex (SA) paper and packaging applications

194. SA is used in paper/packaging principally as a binder in paper coatings, or to impart gloss or low odour to the coating. The market investigation confirmed that the merging parties' combined EEA market shares is around [20-30]% in this application. The biggest competitor seems to be BASF with at least 35% market share. Also other strong competitors in SA exist: i.a. Ciba, Hexion, PolymerLatex, Organik Kimya and Synthomer¹³³.
195. The market investigation showed that there are spare capacities in SA available. It is also possible to switch in between SA latexes from other producers in this application from the customers point of view. The market investigation confirmed that the producers seem generally to be able to switch from SA to AA, and the customers could substitute SA with

¹²⁹ Dow is very small in AA overall.

¹³⁰ Not an affected market, cf. point 183.

¹³¹ Dow had (by volume) less than [0-5]% of VV sales in the EEA in 2007, and no sales at all of VV in the EEA in 2008. R&H accounted for less than [0-5]% of EEA sales by volume in 2007.

¹³² Below [...].

¹³³ Each with a market share between 5-15% in SA.

AA and/or other products e.g. SB and starches to a varying degree in this application to replace SA.

196. The market investigation further confirmed that Dow is a more important supplier of SA than R&H (more than [0-10] times larger than R&H). R&H's increment to Dow's share is below [0-5]%¹³⁴. Accordingly, the combined market share of [20-30]% in the EEA derives mostly from Dow's position on this market.

197. In conclusion, the Commission considers that the proposed transaction does not raise serious doubts with regard to SA markets as to its compatibility with the common market.

Styrene acrylic latex (SA) and Styrene Butadiene ("SB") paper and packaging applications

198. Two customers in this segment raised the issue of the interaction of the markets for SA and Styrene Butadiene ("SB"). The market investigation revealed that SB is to a certain extent substitutable with SA in paper and packaging applications. However, the Commission also found out that as only Dow is active in SB, this is not a reportable market. In addition, the possible issues relating to bundling of SA and SB (if presumed that the merger would raise such issues) are not merger specific. As described above, R&H's increment in the SA market is small compared to Dow's pre-existing market presence. Thus, Dow already has the possibility to bundle the two products and the market investigation did not evidence such practice.

199. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in this segment.

All acrylic latex (AA) paints and coatings, and adhesives and sealants applications

200. AA latex is used to provide resistance to ultra-violet light and moisture, and to provide hardness and gloss in the paints/coatings application. In the adhesives/sealants application, AA latex is used mainly in respect of tapes and labels. The market investigation confirmed that there is a very small overlap between the parties in these fields. Dow has minimal AA sales, whereas R&H is primarily focused on AA.

201. On an overall EEA market for AA, Dow's market share is [0-5]% and R&H's share is [20-30]%. In the paints and coatings applications these shares are Dow [0-5]% and R&H [20-30]%, and in adhesives and sealants, Dow [0-5]% and R&H [10-20]%. BASF and Celanese are the biggest competitors in paints and coatings with 10-15% market shares. In adhesives and sealants, BASF has [30-40]% market share. Other strong competitors in AA are Hexion, Synthomer, DSM, Icap and PolymerLatex. Although the AA market for paints and coatings application is technically affected, the increment brought about by Dow is negligible. In AA for adhesives and sealants application, Dow has only a minor market share and the combined entity's market share barely exceeds 15%.

¹³⁴ R&H's market share in SA is approximately [0-5]% in the EEA.

202. In conclusion, the Commission considers that the proposed transaction does not raise serious doubts with regard to AA markets as to its compatibility with the common market.

Vertical effects

203. During the market investigation, concerns were raised relating to the strength of the merged entity in products that are upstream of latexes (vertical foreclosure concerns between acrylate esters and downstream polymer applications). The market investigation showed however that there are not significant merger-specific grounds for vertical concerns. These concerns are further analyzed in points 74-76 above.

204. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for latexes.

4. BIOCIDES

205. Biocides consist of a large variety of chemicals that are used in a range of applications to kill or control the growth of organisms that might otherwise have a negative effect on processes, products, machinery, and end-users.

206. Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market (“Biocides Directive”)¹³⁵ defines “biocides” as “Active substances and preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means.” Biocides are subject to the registration obligations in accordance with the Biocides Directive.

207. Other products that can also be used for the same technical functions but which are only subject to the Biocides Directive when used for biocidal purposes include bulk chemicals such as chlorine, chlorine dioxide, sodium hypochlorite (bleach), ammonium-based compounds, and other chemicals.

Relevant product market

208. In the absence of Commission precedents, the notifying party has identified four possible alternative market definitions for biocides as follows: (i) all biocides; (ii) all specialty biocides (a narrower sub-market that excludes bulk and commodity products); (iii) specialty biocides according to their active ingredient (‘AI’) chemistry and (iv) segmentation by application.

209. The market investigation has indicated that the first two definitions proposed by the notifying party are too broad in scope and that it would be more appropriate to assess the competitive effects of the proposed transaction on the basis of AI or end use.¹³⁶

¹³⁵ OJ L 123, 24.4.1998, p. 1.

¹³⁶ The proposed transaction would not result in an affected market on either an EEA or worldwide basis for the first two product market definitions proposed by the notifying party, i.e. all biocides and all specialty biocides. as whole or at either the EEA wide or global basis

However, in the absence of competition concerns even on this narrow basis, the exact product market definition can be left open in the present case.

Geographic market

210. The notifying party submits that the geographic market for biocides, under any product market definition, is worldwide. It argues that the cost of transporting biocides at the AI level is insignificant and manufacturers typically ship their products across the world from centralized production facilities. Although this view was generally supported by the market investigation, a majority of respondents also indicated that biocide prices varied between the EEA and other regions of the world which would suggest that the market is not broader than the EEA. However, given the absence of competition issues under either alternative (i.e. global or EEA-wide), the exact geographic market definition can be left open.

Competitive assessment

211. In the case of a product market of specialty biocides segmented by AI, the position of the merging parties on worldwide and EEA basis would be as follows:

Table 1. Worldwide sales and market share by AI (values in thousands of euro)

Active Ingredient	Dow Share	R&H Share
GLUT	[40-50]%	[0-5]%
DBNPA	[50-60]%	[0-5]%
Bronopol	[5-10]%	[0-5]%
BIT	[0-5]%	0-5]%
CMIT/MIT	[0-5]%	[50-60]%
OIT	[0-5]%	[50-60]%
IPBC	[0-5]%	[0-5]%

Table 2. EEA sales and market share by AI (values in thousands of euro)

Active Ingredient	Dow Share	R&H Share
GLUT	[30-40]%	[0-5]%
DBNPA	[50-60]%	[0-5]%
Bronopol	[0-5]%	[0-5]%
BIT	[0-5]%	[5-10]%
CMIT/MIT	[0-5]%	[30-40]%

OIT	[0-5]%	[40-50]%
IPBC	[0-5]%	[5-10]%

212. As can be seen from the above tables, in each AI chemistry where one of the parties to the merger has a market share in excess of 15%, the other party has either no or very limited sales. The market test also confirmed that the merging parties face significant competition from various manufacturers¹³⁷. The market test confirmed that there are more than 20 players in the chemistries and/or applications where the parties are active including Arch, Buckman, BASF, Clariant, ISP, Lanxess, Lonza, Thor, Troy, BWA Water Additives (formerly Chemtura), and Akzo Nobel.
213. As the above tables also show, the principal focus of Dow's business by specialty chemistry is GLUT¹³⁸, an AI developed specifically for oil and gas applications, where it is commonly used. The principal focus of R&H's business is CMIT/MIT¹³⁹, which is most commonly used for in-can preservation and water treatment purposes. Almost [20-30%] of R&H's worldwide biocides sales and more than [20-30%] of its EEA biocides sales are into the paints/coatings application. Dow's sales into this application are de minimis.
214. In end-use applications, apart from sales of Dow's formulated product sold only in [...] ¹⁴⁰, Dow and R&H do not produce any formulated products that could in general serve as close substitutes to each other in the same end-use applications. This was confirmed by the market investigation. Also, wherever the parties both produce or resell biocidal products that could be used in the same end-use applications, the sales by one party are very small, and there are other, more significant, competitors.
215. The market share post-merger of the new entity in biocides in applications where the parties are active will remain below or only slightly above 25% threshold in point 18 of the Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (HMG)¹⁴¹.
216. Therefore, under any possible product market definition, there is no risk of anti-competitive effects arising from the proposed transaction. A number of customers highlighted that the merging parties' biocides are complementary in nature rather than closely competing. The competitor and customer replies also pointed to various alternative producers to Dow and R&H in each of the specialty chemistries or applications. The majority of competitors and customers did not express any merger-related concerns.

¹³⁷ More than one significant competitor in each of the specialty chemistries and/or applications.

¹³⁸ Glutaraldehyde.

¹³⁹ 5-chloro-2-methyl-4-isothiazolinone and 2-methyl-4-isothiazolinone ("CMIT/MIT"), which are co-produced in the same reaction.

¹⁴⁰ [...].

¹⁴¹ OJ C 31, 5.2.2004, p. 5.

217. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for biocides.

5. RHEOLOGICAL ADDITIVES

Relevant product market

218. Rheological additives (or rheology modifiers) are substances that affect the deformation and flow properties of the liquid preparations to which they are added by acting as thickening or suspensory agents. They are used across a range of industries including paints and coatings, inks, cosmetics and adhesives.

219. In *Rockwood/Süd Chemie*, the Commission segmented the market for rheological additives into those intended for water-based applications and those for solvent-based applications whilst leaving open the question whether a further sub-division within each of these categories on the basis of the chemical composition of the additives (e.g. cellulosic, synthetic, inorganic etc.) was warranted as the transaction did not raise serious doubts on any possible market definition.¹⁴² The notifying party agrees with the Commission's findings in *Rockwood/Süd Chemie* but submits that the definition of the relevant product market can be left open as the proposed transaction would not raise concerns even if it were assessed on a narrower, chemistry-by-chemistry basis.

220. The market investigation in the present case has confirmed the findings in *Rockwood/Süd Chemie*, namely that it is appropriate to make the distinction between rheological additives according to whether they are intended for water-based or solvent-based applications. In this regard, many respondents to the market investigation confirmed that additives intended for water-based applications are not suitable for solvent-based applications and vice versa. At the same time, a number of respondents have indicated, contrary to the position of the notifying party, that users are not indifferent between the various chemistry groups which would suggest that a further segmentation could be appropriate. However, as the proposed transaction does not raise concerns under any potential market definition, the product market definition can be left open.

Geographic market

221. In *Rockwood/Süd Chemie*, the Commission left open the question of whether the relevant geographic market was worldwide or EEA-wide as no competition concerns arose under either alternative. In the present case, the notifying party considers that the market could be either global or EEA-wide but submits that this issue can be left open in the absence of competition concerns.

222. The majority of respondents to the market investigation in the present case have indicated that the markets for rheological additives are EEA-wide as transport costs are not a significant element of the final cost of most types of additives¹⁴³, the prices of the same

¹⁴² See Case COMP/M.3910 – *Rockwood/Süd Chemie*.

¹⁴³ It was acknowledged that transport costs for additives sold in liquid form, such as HASE, could represent a more significant part of the price of the product than would be the case for additives supplied in powder form.

type of additive do not vary significantly between member countries and there are no barriers to trade. Nevertheless, as the proposed transaction would not give rise to concerns under any alternative definition, the precise scope of the geographic market can be left open.

Competitive assessment

223. Dow sells rheological additives for water-based and solvent-based applications whereas R&H only sells rheological additives for water-based applications. Therefore, the only overlap between the parties' activities arises in rheological additives for water-based applications. However, this potential market would not be affected at either a global or EEA-wide level as the parties' combined share would be less than 15% (less than [5-10]% in the EEA).
224. If a further segmentation is made on the basis of chemistry groups, the only chemistry group in which the parties' activities overlap would be synthetic rheological additives for water-based applications where the merged entity would have an EEA share of [30-40]% (Dow [0-5]%, R&H [30-40]%).¹⁴⁴ The increment brought about by the transaction ([0-5]%) would not be significant and there are several competing producers with significant market positions including Elementis ([10-20]%), OM Group ([10-20]%) and Lubrizol ([10-20]%) as well as a number of other suppliers with a combined market share of [20-30]%. Moreover, the parties' activities in this segment would only overlap in the case of one type of additive, hydrophobically modified alkali soluble emulsions ('HASE'), which are primarily used as thickeners in paints. Even at this level, the increment brought about by the proposed transaction would be negligible.¹⁴⁵ Therefore, it is considered that the proposed transaction would not lead to serious doubts even on the basis of chemistry groups.
225. Notwithstanding the above, concerns were raised in the market investigation by certain competitors that the merged entity would have a strong position in a number of different types of rheological additive such as HASE (which is sold in liquid form) and cellulosic additives (which are typically supplied in powder form) and would therefore be able to offer these products as a bundle to customers in the paint industry where both types of additive are used. It was also suggested that the merged entity's ability to bundle to this customer group would be increased by its position in other products such as latex polymers and biocides which are also raw materials for the production of paints. Beyond the paints and coatings sector, it was suggested that the merged entity would be able to leverage its existing position in silicone technologies that are used in personal care products and bundle these products with its rheological additives, thereby gaining an unfair advantage vis-à-vis its competitors that cannot offer similar bundles. One respondent also expressed the concern that the proposed transaction would reduce the number of companies active on a global scale in the production and sale of rheological additives based on acrylics to only two (Dow/Rohm and Haas and BASF/Ciba).

¹⁴⁴ The notifying party's estimates are on a volume basis. It submits that it is not in a position to provide market share data on a global basis although it considers its worldwide position in synthetic rheological additives for water-based applications would be similar to its EEA position.

¹⁴⁵ According to the notifying party's estimates, R&H's share of HASE sales in the EEA would be in the region of [50-60]% whereas Dow's share would be approximately [0-5]%. The only other synthetic rheological additives for water-based applications supplied by the merging parties are polyethylene oxides (only by Dow) and hydrophobically modified ethoxylated urethanes ('HEUR') (only by R&H).

226. Although each of the merging parties currently sells a range of products to paints and coatings customers including rheological additives, latex polymers and biocides, neither party presently bundles its products. According to the notifying party, paints and coatings customers are large, sophisticated buyers that purchase numerous ingredients to formulate their end products. It notes that purchasing decisions are made on an ingredient-by-ingredient basis and that negotiations for each product typically occur separately. This would therefore make it difficult for the merged entity, were it to have the incentive, to engage in a successful bundling strategy.
227. It should also be noted that there are a number of strong competitors for each of the types of additives where bundling concerns were raised. In the case of cellulosic additives such as HEC (which is the main cellulosic sold into the paints and coatings sector), the merged entity would face strong competitive pressure from Aqualon/Ashland (the leader in HEC in the EEA) as well as Shin-Etsu and Akzo Nobel (which is itself the world's largest paints and coatings manufacturer). Moreover, as has been noted above, there are also many competitors in synthetic rheological additives for water-based applications.¹⁴⁶
228. In the case of silicone-based products, it should be noted that Dow does not sell these products. Rather, they are sold by Dow Corning Corporation ('Dow Corning'), which is a joint venture between Dow and Corning Incorporated. Dow and Dow Corning are distinct legal entities that are independently managed, employ separate sales forces and management. The two sets of products at issue, rheological additives and silicone-based products, are sold separately by the separate sales forces of Dow and Dow Corning respectively. Moreover, Dow would not have the incentive to sacrifice profitability on rheological additives (e.g. by conditioning the sale on the customer also buying Dow Corning silicones) in order to boost Dow Corning silicone sales, because Dow would suffer the entire profit sacrifice on rheological additives.
229. In terms of the possible reduction in the number of suppliers of acrylic-based rheological additives active on a global scale, it should be noted that at this juncture, the proposed acquisition of Ciba by BASF has not been formally notified to the Commission. For the time being, therefore, BASF and Ciba must be considered as independent entities. Moreover, as the market investigation has confirmed, there are alternative suppliers of these additives in the EEA, some of which are also active in other regions of the world. In addition, the demand side for rheological additives is concentrated and consists of a small number of large customers in industries such as paints/coatings and personal care products, many of which are active on a global scale, as well as chemical distributors. In the EEA for example, the five largest customers of each of the merging parties accounted for approximately [...] of their sales of synthetic rheological additives for water-based applications. These customers, some of which also purchase other types of rheological additives, therefore have a certain degree of buyer power vis-à-vis the merging parties.
230. In view of the above considerations and in the absence of concerns from customers in the market investigation it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market in the market for rheological additives.

¹⁴⁶ According to the notifying party, alternative suppliers of HASE include Aqualon/Ashland and Clariant.

6. ADHESIVES AND SEALANTS

231. Both Parties are active in the production and sale of industrial adhesives and sealants. They have different focuses and the only horizontal overlap between the Parties' activities is on the market for automotive adhesives.

Product market for automotive adhesives

232. In the Henkel cases¹⁴⁷, the Commission assessed the concentrations on the basis of an overall market for automotive adhesives. In *Dow Chemical/Gurit-Essex*¹⁴⁸ the Commission left open whether to further sub-segment the overall market for automotive adhesives according to sub-applications and/or adhesives technologies. All except one customer reply did not consider relevant sub segmenting the overall market for automotive adhesives according to sub-applications and/or adhesives technologies.

233. All customer replies also pointed to the high degree of substitutability of different adhesives and sealants in the automotive segment end uses. Therefore, it is not appropriate in the present case to sub-segment the automotive adhesives and sealants according to sub-applications and/or adhesives technologies.

Geographic market for automotive adhesives

234. The Commission has also concluded in the past that the geographic market for automotive adhesives is at least EEA-wide in scope.¹⁴⁹ This was supported by the customer replies to the market investigation.

¹⁴⁷ See COMP/M4941 – *Henkel/Adhesives & Electronic Business* and COMP/M.3612 - *Henkel/Sovereign*.

¹⁴⁸ See COMP/M.2175 – *Dow Chemical/Gurit-Essex*.

¹⁴⁹ *Ibid.*

Competitive assessment

235. Dow is a specialized supplier with limited activities in adhesives and sealants. [A very significant proportion] of Dow's adhesives and sealants sales in the EEA (and more than [a very significant proportion] worldwide) are for automotive applications. The market investigation confirmed that R&H only has minor activities in automotive adhesives.¹⁵⁰
236. The parties submitted the following estimated market shares: Dow [10-20]%, R&H [0-5]% worldwide, and Dow [20-30]%, R&H [0-5]% in the EEA. According to the Parties, Henkel and Sika are the strongest competitors with [20-30]% market share world-wide and [30-40]% in the EEA. However, according to the market investigation it is conceivable that the Parties underestimate the total market size of automotive adhesives. Depending on the market size, the Parties combined share could range from [10-20] to [20-30]%. The market investigation showed that there are several important competitors in the same range in this segment.
237. The market investigation also showed that there is over capacity and strong customer buyer power especially in the end application of automotive adhesives. Due to R&H's small market share, the fact that the Parties' automotive adhesives do not seem to compete in practice with each other, as well as strong competition in this sector, the transaction will not have any appreciable competitive effects.
238. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market.

7. VERTICAL ISSUES

239. Apart from the DVB/IER, butanol/butyl acrylate and propylene/CAA relationships analysed above, the transaction also results in the following vertical relationships: styrene and the downstream products IERs and certain styrene acrylic latexes: glacial acrylic acid (GAA) which is upstream of polyacrylates (PA), hydroxyethyl acrylates and one grade of rheological additive; R&H's glacial methacrylic acid (GMAA) for the downstream product glycidyl methacrylate (GMA). Dow's polyurethane products methylene diphenyl diisocyanate (MDI), toluene diisocyanate (TDI) and polyether Polyols (PEOL) as well as epoxy products (Bis-A liquid epoxy resins and solid epoxy resins (SER) which are upstream of flexible packaging adhesives and solvents for automotive adhesives.

150 Indeed, [...] of R&H's sales in adhesives is for flexible packaging applications, where Dow is not active. R&H also sells adhesives for tapes & labels, where Dow only has limited sales [...]. Both Parties are minor suppliers of adhesives and sealants for building & construction applications.

7.1. Styrene and the downstream products IERs and certain styrene acrylic latexes

240. Dow is active in the upstream product styrene whilst both of the merging parties produce the downstream products IERs and styrene acrylic latex polymers (SA).¹⁵¹ Dow is engaged in the production and sale of styrene in the EEA¹⁵² and across the globe. The parties are engaged in the production and sale of IERs on a global basis, with a combined market share that exceeds [20-30]%. Styrene is an input in styrene acrylic latex polymers for paper and packaging applications, where each of Dow and R&H are engaged, and where the parties' combined market share is approximately [20-30]%. Styrene is therefore an affected market.

Relevant product market

241. Styrene is made from ethylene and benzene, which are first processed into ethylbenzene (an intermediate chemical product without a merchant market or any application other than the production of styrene) and then into styrene.

242. Styrene is an intermediate chemical product used as a monomer for the production of a number of polymers and synthetic rubbers. These downstream products include polystyrene¹⁵³, IERs¹⁵⁴, SA¹⁵⁵. On global and EEA basis IERs and styrene acrylic latex polymers each consume less than 1 % of styrene production.

243. The derivatives downstream also include acrylonitrile-butadiene-styrene ("ABS"), styrene acrylonitrile ("SAN"), styrene-butadiene rubber ("SBR"), styrene-butadiene latex ("SBL"), styrene-isoprene-styrene ("SIS"), and styrene-butadiene-styrene ("SBS").

244. The notifying party submits in accordance with previous Commission decisions¹⁵⁶ that styrene is a separate product market. The market investigation has not brought to light any indication that would contradict these earlier findings.

¹⁵¹ SAs are a type of synthetic, water-based latex polymer ("SLPs" or "latex"). SLPs are polymer emulsions that are used as a binding component in the production of materials such as paper and packaging. Styrene-acrylic is one of many types of SLPs. SAs for paper and packaging is a horizontally affected market, analyzed in detail in section 3.

¹⁵² R&H is not engaged in the production or sale of styrene in the EEA, although it does resell a small quantity of styrene in [...].

¹⁵³ 45% of all styrene is used to produce polystyrene, which is a commodity plastic used i.a. for disposable food packaging.

¹⁵⁴ IERs are generally based on copolymers of DVB and either styrene or methacrylate, and are functionalized with chemicals to generate IERs that can be used for the reversible exchange of positively or negatively charged ions

¹⁵⁵ Styrene acrylic latex polymers ('SA') are a type of synthetic, water-based latex polymer used as a binding component in the production of materials such as paper and packaging.

¹⁵⁶ See Case COMP IV/M.1078 *BP/Hüls*; Case COMP/M.4737 *Sabic/GE Plastics*.

Geographic market

245. The Parties submit that styrene is a global market. Previous Commission investigations of the styrene market have not found it necessary to delineate the precise geographic market definition but have suggested that the market was either EEA or worldwide.¹⁵⁷
246. However, as the proposed transaction does not raise concerns under any potential market definition, the geographic market definition can be left open.

Competitive assessment

247. The merged entity will lack the ability to foreclose input of styrene. The market share post-merger of the new entity in styrene will remain below the 30% threshold mentioned in point 25 of the Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (NHMG)¹⁵⁸.
248. Dow is active in the production and sale of styrene with a worldwide capacity share of less than [5-10]% and an EEA capacity share of around [20-30]%. However, it consumes more than [75-95]% of its production captively and has therefore a share of merchant sales of below [0-5]%, both on an EEA and a worldwide basis. [...]
249. The capacity shares do not include Dow's capacities from three joint ventures with a participation of 50% or less¹⁵⁹. The joint ventures are located outside the EEA. [...]
250. Styrene is a fungible commodity traded globally. Any styrene can be used to produce IERs, SA latexes or polystyrene. With regard to customer foreclosure of IERs, SA latexes or polystyrene the Commission notes the following:
251. R&H does not produce styrene anywhere in the world, but it resells a very small amount of styrene in [...]. Its share of merchant market sales is less than [0-5]% on a global basis. R&H does not represent a sufficiently large proportion of styrene purchases from third party suppliers to enable the merged entity to customer foreclose competitors on the upstream styrene market.
252. The merged entity will face significant competition in the styrene merchant market. Shell, Repsol, Ineos-Nova and LyondellBasell are the major players on the styrene merchant market in the EEA. The market shares of each of these companies in the styrene merchant market in the EEA and world wide are between 5-15% as opposed to the merged entity's market share of approximately [0-5]%

¹⁵⁷ See Case COMP IV/M.1078 *BP/Hüls*, paragraph 9; Case COMP/M.3578 *BP/Nova Chemicals JV*, paragraph 40.

¹⁵⁸ OJ C 265, 18.10.2008, p. 6.

¹⁵⁹ [...] These joint ventures have no EEA merchant sales and thus no impact on Dow's market share. They will have at most very limited merchant sales even on a global basis. Therefore, the Commission has granted a waiver from providing detailed sales information for the above three plants.

253. The merged entity will not have the ability to foreclose access to styrene customers. As mentioned above, whereas on a global and EEA basis IERs and styrene acrylic latex polymers each consume less than 1% of styrene production, polystyrene production alone consumes 45% of all styrene.
254. Polystyrene is not a reportable market since R&H is not active in polystyrene. It is not an affected market due to the fact that the parties' combined market shares at any level remain below 25%. Also, Dow, even though active in polystyrene, [...]. As R&H does not produce styrene, the potential external suppliers will not be deprived of a customer due to the merger.
255. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts on as to its compatibility with the common market that would be based on vertical foreclosure regarding styrene, IERs, SA latexes and/or polystyrene.

7.2. Glacial acrylic acid (GAA¹⁶⁰) for the downstream products hydroxyethyl acrylate (HEA) and hydroxypropyl acrylate (HPA), rheological additives (RA) and polyacrylates (PA)

256. GAA is produced by a further purification of CAA and it is used as a raw material in the manufacture of a number of products, including certain specialty acrylates, PAs and a small number of rheological additives grades and synthetic latex polymer grades. However, GAA is primarily used in the manufacture of super-absorbent polymers (SAP), which neither Dow nor R&H manufactures.
257. Several specialty acrylates¹⁶¹ are made from GAA. The so-called hydroxy monomers are one class of such specialty acrylates.
258. HEA is a hydroxy monomer, as is hydroxypropyl acrylate ("HPA") both made from GAA using different stabilizers, which do not themselves constitute vertically affected markets. One of the largest uses for HEA and HPA is in the production of acrylic enamels for the automotive industry and coatings. HEA is used in automotive undercoats and in engineered acrylic latexes. HPA is used in automotive topcoats.
259. The Parties' activities do not overlap with regard to hydroxy monomers (or other specialty acrylates). R&H manufactures HEA and HPA and also sells very minor amounts of HEA, but not HPA, in the EEA with an estimated market share of below [5-10]%. Dow does not produce or sell HEA or HPA.
260. In previous decisions¹⁶² the Commission identified a single market for so-called "hydroxy monomers", which also covered the specialty acrylate monomers HEA, HPA.

160 Horizontal analysis is to be found in points 18-29 above.

161 There are several different categories of specialty acrylates that consume GAA. The term specialty acrylates is loosely used to differentiate these products from commodity acrylates such as BA, EA, 2-EHA, and MA. This Part focuses exclusively on the GAA-derived specialty acrylates produced by R&H.

162 Case COMP/M.2277 – *Degussa/Laporte*.

In the same decision the Commission has considered the relevant geographic market for hydroxy monomers to be EEA-wide.¹⁶³ The product and geographic market definitions were not challenged in the market investigation. The market investigation did not reveal any concerns with regard to hydroxy monomers. The Commission has thus analyzed hydroxy monomers on the basis of an EEA wide market. In any event, given the absence of serious doubts as to the compatibility with the common market, there is no need to reach a conclusion on the definition of the relevant product and geographic markets.

261. Another downstream product from GAA are the rheological additives (“RA”, also known as “rheology modifiers”), which have been already dealt with above.¹⁶⁴ R&H uses GAA in very small quantities in the production of some grades of the synthetic RA hydrophobically modified alkali soluble emulsions (“HASE”) used as a thickener primarily in water-based paints.
262. Both Parties produce and sell RA. HASE is the only product overlap at the sales level between Dow and R&H in the EEA. [...] Whereas R&H uses GAA in the production of [...] HASE [...], Dow does not use GAA when producing HASE or indeed any other RA.
263. The combined entity will not have the ability to foreclose downstream HEA, HPA and rheological additives (HASE) producers' access to GAA. R&H, with a merchant sales share for GAA of slightly over [20-30]% in the EEA, is already vertically integrated into HEA and HPA, as well as into HASE. Dow only has an EEA-wide merchant sales share for GAA of [0-5]% and accordingly the transaction does not materially change R&H's ability to input foreclose its competitors downstream. In any event, only small amounts of GAA are used for RA or hydroxyl polymers.
264. In addition, other suppliers of HEA, HPA and RA can source GAA from a number of producers other than the Parties, such as Arkema, BASF, Hexion and others. The combined entity will neither have the ability to foreclose access to its competitors in the downstream markets for hydroxy monomers or RA by controlling the sales of GAA to the merchant market.
265. Another downstream product of GAA is polyacrylates (PAs), homopolymers of acrylic acid or copolymers of acrylic acid and other monomers, such as methacrylic acid. Most PAs are manufactured from GAA. PAs are used as dispersants, fluid-loss additives, thickeners and flocculants in market segments that include detergents, paper, clay, textiles, water treatment, mining, surface coatings and petroleum production.
266. Dow is not active in the production of PAs. R&H manufactures and supplies PAs globally with one location in the EEA with a merchant market share of below 25% at the EEA and global level.
267. In the absence of Commission precedents, the Parties consider that PAs are part of a wider market for “dispersants and additives”. Dispersants and additives include a range of chemicals, polymers and copolymers produced from GAA and GMAA monomers, as well as other chemicals, including phosphates, phosphonates, zeolites, and polymaleics.

163 Case COMP/M.2277 – *Degussa/Laporte*, para. 35.

164 Rheological additives are analysed in section 5.

268. The transaction only concerns PAs produced from GAA (as R&H makes PAs using only GAA as a monomer, and neither R&H nor Dow manufacture any of the abovementioned substitutes for PAs (other dispersants and additives: chemicals, polymers and copolymers produced from GAA and GMAA monomers, as well as other chemicals, including phosphates, phosphonates, zeolites, and polymaleics)). Therefore, the parties consider that it is appropriate to assess the competitive effects of the Transaction on the basis of the narrowest possible downstream relevant product market, i.e., PAs.
269. The investigation did not lead to serious doubts as to the compatibility of the merger with the common market, be it on the basis of a wider market definition of “dispersants and additives” or the more narrow definition of PAs as a stand-alone market. Therefore, the exact product market definition can be left open.
270. The Commission has not defined geographic market for PAs. The parties consider the geographic market for PAs to be at least EEA-wide, given that manufacturers in the EEA typically have only one or two production sites that serve customers throughout the EEA and beyond. However, the transaction again does not lead to serious doubts regarding the compatibility whether assessed on an EEA or global basis.
271. R&H does not use PAs captively. Its sales share in the merchant market for PAs is estimated to be below 25% at the EEA and global level. Its share of the product market of “dispersants and additives” is estimated to be lower, around [10-20]%.
272. The merged entity will face significant competition from the largest producer BASF and Arkema/Coatex, NSSK, Alco, Nalco and Mira in PAs. Also, the combined entity’s market share in the merchant GAA market in the EEA in 2007¹⁶⁵ is not sufficient to grant it the necessary degree of market power to foreclose downstream rival producers of PAs. The largest producers of PAs in the EEA are vertically integrated with GAA, and do not procure GAA from the merchant market for their PAs production. There are also other GAA producers able to supply competitors. In view of the minor downstream use of GAA for PAs and the fact that R&H is vertically integrated with its own GAA production there are no serious doubts regarding the possibility of customer foreclosure of the merged entity.

7.3. Glacial methacrylic acid (GMAA) for the downstream product glycidyl methacrylate (GMA) for synthetic latex polymers, coatings and other specialty chemicals

273. GMAA is produced by purifying crude methacrylic acid (“MAA”) and used as an input for the production of certain SLPs (mainly all-acrylic latex polymers), certain rheological additives, certain specialized methacrylic esters (such as hydroxy monomers and GMA), and other olefin-based co-polymers. The parties submit that there is no merchant market for MAA. Only R&H produces MAA, but uses its output captively to produce GMAA. MAA is thus not a reportable market.

¹⁶⁵ See supra (3.1)

274. GMA is produced from GMAA and epichlorohydrin and used mainly (50%) as a cross-linker in the production of polymers for automotive clear-coat applications (i.e., the top finish on automobiles). It is also used in the production of downstream products for other applications, including synthetic latex polymers.
275. R&H is active in the production of GMAA, but Dow is not active in this field. Dow is active in the production of GMA, but R&H is not.
276. In *Vebe/Degussa*¹⁶⁶, the Commission found that MAA was a separate product market. The parties submit that also GMAA is a separate product market. The parties submit that on the demand side, there is no substitute for GMA as the epoxy equivalent weight of the GMA molecule differentiates GMA from other products.
277. In *Vebe/Degussa*, the Commission found the relevant geographic market for MAA to be at least EEA-wide. The parties submit that this definition would also apply to GMAA and GMA.
278. With regard to GMAA and GMA there are no serious doubts as to the compatibility of the proposed merger with the common market under any feasible market definition. Therefore, the precise market definitions can be left open.
279. The merged entity will not have the ability to foreclose downstream GMA producers' access to GMAA. R&H's EEA share of GMAA merchant sales is only around [10-20]%. It is also an importer, without EEA production and Dow has only a [30-40]% share of the downstream worldwide GMA market ([10-20]% of the EEA market).
280. As to customer foreclosure, Dow does not have market power in respect of either purchases or sales. Dow's GMAA purchases account for only [0-5]% of GMAA merchant sales worldwide and around [0-5]% of GMAA merchant sales in the EEA. Should Dow decide to vertically integrate upstream post-transaction, the change would be too small to affect competition in the upstream GMAA market.
281. Furthermore, the competitors and customers did not express any concerns on input or customer foreclosure in the market investigation with regard to the transaction.
282. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market.

7.4. Polyurethane (PU) products and epoxies for the downstream production of flexible packaging epoxies, and solvents (methyl iso butyl ketone (MIBK)) for the downstream products automotive adhesives

283. Dow sells certain products upstream of R&H's EEA adhesives businesses, notably polyurethane (PU) products, epoxy products, solvents, acrylic monomers (BA and 2-EHA), emulsion (latex) polymers, and biocides. R&H is vertically integrated with acrylic monomers, synthetic latex polymers and biocides. R&H only sources PU and

¹⁶⁶ IV/M.942 – *Vebe/Degussa*.

epoxy products and solvents, which are considered to be the main vertical relationship in the production of flexible packaging and automotive adhesives.

284. The transaction does not lead to vertically affected markets in respect of flexible packaging or automotive adhesives and any of these upstream products, and in any event does not raise vertical foreclosure concerns. The parties' combined market shares always remain below 25%.

285. In view of the above considerations it is concluded that the proposed transaction does not raise serious doubts as to its compatibility with the common market.

V. CONCLUSION

286. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission
(signed)
Olli REHN
Member of the Commission