# Case No COMP/M.4835 - HEXION / HUNTSMAN

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

Article 6(1)(b) in conjunction with article 6(2) NON-OPPOSITION

Date: 30/06/2008

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#### COMMISSION OF THE EUROPEAN COMMUNITIES



Brussels, 30.06.2008

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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 Where possible the information omitted has been replaced by ranges of figures or a general description.

PUBLIC VERSION

MERGER PROCEDURE ARTICLE 6(2) DECISION

To the notifying party

Dear Sir/Madam,

**Subject:** Case COMP/M.4835 – Hexion/Huntsman

Notification of 8 May 2008 pursuant to Article 4 of Council Regulation

No 139/2004<sup>1</sup> (the "Merger Regulation")

- 1. On 8 May 2008, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation No 139/2004 ("the Merger Regulation") by which the undertaking Hexion Specialty Chemicals, Inc. ("Hexion", USA), belonging to the Apollo Group ("Apollo Group", USA), acquires within the meaning of Article 3(1)(b) of the Merger Regulation control of the whole of Huntsman Corporation ("Huntsman", USA) by way of purchase of shares.
- 2. After examination of the concentration, the Commission has concluded that the notified operation falls within the scope of the Merger Regulation. Following submission by the parties of undertakings aimed at eliminating the competition concerns identified by the Commission, in accordance with Article 6 (2) of the Merger Regulation, the Commission has concluded that the notified operation does not raise serious doubts as to its compatibility with the common market and with the functioning of the EEA Agreement.

#### I. THE PARTIES

3. Hexion, which is owned by the US-based private investment company Apollo Group, is a US-based company producing a range of chemicals and in particular epoxy resins.<sup>2</sup>

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<sup>&</sup>lt;sup>1</sup> OJ L 24, 29.1.2004 p. 1.

4. Huntsman is also a US-based company producing a more diverse range of chemicals, including inter alia epoxy resins and polyurethanes.

#### II. THE OPERATION AND THE CONCENTRATION

- 5. The proposed concentration consists of the acquisition of sole control by the Apollo Group through Hexion over Huntsman by way of purchase of shares. Therefore, the transaction constitutes a concentration within the meaning of Article 3(1) of the Merger Regulation.
- 6. Hexion considers the activities of Huntsman to be complementary to its own business and wishes to expand its range of products by the acquisition of Huntsman.
- 7. According to the parties, the main competitive impact of the transaction will be in the area of epoxy resins and the upstream and downstream products.

#### III. COMMUNITY DIMENSION

8. The undertakings concerned have a combined aggregate worldwide turnover of more than EUR 5 billion (EUR [...]million for the Apollo Group and EUR [...] million for Huntsman). The undertakings concerned each have a Community-wide turnover in excess of EUR 250 million (EUR [...] million for the Apollo Group and EUR [...] million for Huntsman) and do not each achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The operation has therefore a Community dimension in the sense of Article 1(2) of the Merger Regulation.

#### IV. COMPETITIVE ASSESSMENT

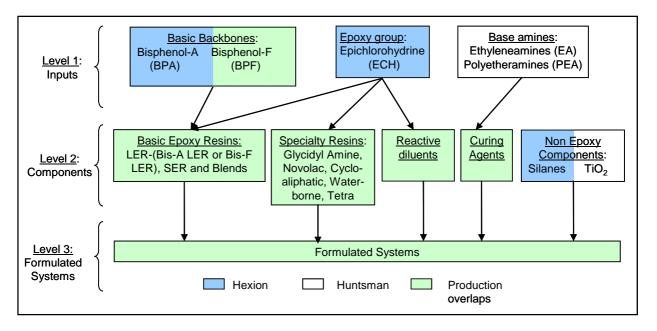
#### A. <u>INTRODUCTION</u>

#### **A.1. EPOXY VALUE CHAIN**

- 9. Hexion and Huntsman are chemical manufacturers producing a wide range of chemicals operating facilities throughout the world. The only significant overlaps and vertical relationships relate to epoxy resins and related products businesses, which account for about [...] of Hexion's, and [...] of Huntsman's revenues.
- 10. Epoxy resins are high performance synthetic materials used in applications in which adhesion, strength, toughness as well as electrical and chemical resistance are necessary.
- 11. Epoxy resins are the core products in the epoxy resin value chain. In this chain, the proposed merger affects the following three main "levels" of products: a first level of inputs for the production of epoxy components, a second level for the production of the epoxy components, and a third level for the production of formulated systems. The

Hexion was formed in 2005 through the combination of the Apollo Group portfolio companies Borden Chemical, Inc., Resolution Performance Products LLC, Resolution Specialty Materials LLC, and Bakelite AG.

diagram below shows in a schematic manner how the various products in the epoxy resins industry are inter-related:<sup>3</sup>



- 12. The first level of the epoxy value chain concerns the production of precursors for the production of the components. The inputs include in particular bisphenol-A ("BPA"), bisphenol-F ("BPF"), epichlorohydrin ("ECH"), and basic amines (including ethyleneamines ("EA") and polyetheramines ("PEA")).
- 13. The second level of the epoxy value chain is represented by the components used for the production of formulated systems. These components include epoxy components (epoxy resins, reactive diluents and curing agents) as well as non-epoxy components (pigments, fillers or thickeners).
- 14. Within epoxy resins, (i) basic epoxy resins, which can be in liquid form (Liquid Epoxy Resins or "LER") or in solid form (Solid Epoxy Resins or "SER"), and (ii) specialty resins can be distinguished. LER are formed by reacting ECH with a so called "backbone" which can be either BPA, producing Bis-A-LER, or BPF, producing Bis-F-LER. These LER can also be sold in the form of blends of various resins with "reactive diluents" (see paragraph 16). SER are produced by reacting BPA with ECH or by reacting LER with additional BPA.
- 15. Specialty resins are produced by reacting ECH with other backbones, and include inter alia glycidyl amine resins (which can possibly be further subdivided into triglycidyl para-aminophenol ("TGPAP"), tetraglycidyl methylenedianiline ("TGMDA"), and tetraglycidyl meta-xylenedianiline ("TGMXDA")), cycloaliphatic resins (resins based on hexahydrophthalic anhydride ("HHPA") and resins based on peracetic acid chemistry), epoxy novolac resins (epoxy bisphenol-A novolac ("EBPAN"), epoxy phenol novolac ("EPN"), and epoxy ortho-cresol novolac ("EOCN")), low brominated resin ("LBR"), tetraphenolethane glycidyl ether resin ("tetra resin"), and waterborne resins.

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<sup>&</sup>lt;sup>3</sup> See Annex 2 for the list of acronyms used in this decision.

16. Reactive diluents are products added to LER in order to decrease viscosity and to change the final physical properties. They are also used in formulated systems as an ingredient of the final formulation. Reactive Diluents can be further segmented into (i) monofunctional or multi functional, (ii) aromatic or aliphatic, and (iii) glycidyl esters or glycidyl ethers.

	Mono-functional	Multi-functional		
Aliphatic	Glycidyl ethers	Clysidyl others		
Anphatic	Glycidyl esters	Glycidyl ethers		
Aromatic	Glycidyl ethers	*****		

- 17. The main difference between mono-functional and multi-functional reactive diluents is the number of epoxy-functional sites on the molecule. Mono-functional reactive diluents are used primarily to reduce the viscosity of LER. Multi-functional reactive diluents, in addition to reducing viscosity, also provide LER with strength, thermal resistance and flexibility.
- 18. Curing agents react with the epoxide groups on epoxy resin molecules to form cross-links between the epoxy resin molecules, causing the epoxy resin to harden. Broadly speaking, two main groups of curing agents can be distinguished: amine-based curing agents (for which EA and PEA are used as inputs) and non-amine curing agents. Sometimes also catalysts/accelerators are grouped together with curing agents, although they can have different properties and functions. The curing agents considered in this case therefore include: amine-based curing agents, anhydride curing agents, phenolic curing agents, diaminodiphenylsulfone ("DDS") curing agents, and catalysts/accelerators.
- 19. With respect to non-epoxy components, the transaction concerns organosilanes and titanium dioxide (TiO2). Organosilanes are a type of silicon compound used as adhesion promoters and coupling agents in a wide variety of applications. TiO2 is an inert material used as pigment or filler in a wide range or products.
- 20. Epoxy resins are mixed with curing agents and/or reactive diluents to achieve specific properties and/or modify the performance of an epoxy resin system. Non-epoxy components are also added to the resin prior to curing to give it the final color and body.
- 21. At the end of the epoxy resin value chain is the process of "formulating", i.e. determining the exact combination and proportions of epoxy resins, curing agents, reactive diluents and other components in order to achieve a particular set of characteristics in the final product. These combined products are called "formulated systems", and are used in a wide range of applications for different end-uses (such as adhesives, coatings, composites, construction, electrical power, electronic, tooling) and in a wide range of industries (e.g. aerospace, automotive, construction, consumer (DIY) and general industrial).
- 22. Products from levels 1 and 2 can be sold either directly to final customers (who make their own formulations or blends in-house) or to formulators (who usually produce more complex formulated systems which are then sold to the final customers).

23. The transaction gives rise to a number of horizontal overlaps and vertical relationships on all three levels of the epoxy resin value chain. Please see Annex 1 showing all the markets in which the parties are active and the respective market shares. The assessment will be therefore structured in three main sections, the first section dealing with horizontally affected markets for which no competition concerns have been identified; the second section deals with horizontally affected markets for which competition concerns have been identified, and the third section deals with vertically affected markets where competition concerns have been identified.

#### Horizontal overlaps

- 24. The investigation has identified horizontal overlaps in various merchant markets which lead to a number of affected markets.
- 25. At the inputs level, both parties are backward integrated and overlap in the production of several inputs: Hexion is backward integrated into the production of BPA, BPF, ECH, formaldehyde and tetraphenolethane ("TPE"). Huntsman is backward integrated into BPF, TPE, EA and PEA. However, for BPF and TPE, Huntsman is not active on the respective merchant markets. Hence, for inputs, no horizontally affected markets were identified.
- 26. At the components level, horizontal overlaps exist between the parties. Hexion is a large-scale producer and seller of basic resins while Huntsman has a smaller output of basic resins and focuses on selling higher margin specialty resins.
- 27. With respect to basic resins, these overlaps lead to horizontally affected merchant markets for Bis-A LER, Bis-F LER, solid SER (EEA level) and SER solutions.
- 28. In the specialty resins area, both parties produce TGPAP and TGMDA, but neither of them produces TGMXDA. For the novolac resins, Huntsman does not produce EBPAN. Both Hexion and Huntsman produce HHPA-based cycloaliphatic resins, and sell only small quantities on the merchant market. [Hexion and Huntsman activity in peracetic and acid-based cycloaliphatic resins]. Both parties sell negligible quantities of tetra resin in the EEA, [Huntsman activity in tetra resin]
- 29. The following specialty resins markets have been identified as affected: glycidyl amines TGMDA, glycidyl amines TGPAP (worldwide), cycloaliphatic resins HHPA, epoxy novolacs EPN, epoxy novolacs EOCN (EEA level), tetra resins and waterborne resins.
- 30. Both parties are active in the production of monofunctional aliphatic glycidyl ethers, multifunctional aliphatic glycidyl ethers, and in monofunctional aromatic glycidyl ethers. Hexion is the sole producer of glycidyl ester reactive diluents (sold under the Cardura brand).
- 31. For reactive diluents, the following affected markets have been identified: monofunctional aliphatic glycidyl ethers (worldwide), monofunctional aromatic glycidyl ethers (EEA level), and multifunctional aliphatic glycidyl ethers (EEA level).
- 32. In the area of curing agents, both Hexion and Huntsman are active in the production of amine-based curing agents. [Hexion and Huntsman activity in anhydride curing agents]. For the phenolic curing agents, both parties produce solely a part of these curing agents they sell, relying on third party producers for the remainder of their sales. In the area of

- DDS curing agents, [Hexion and Huntsman activity in DDS].), however Hexion's sales are de minimis.
- 33. For curing agents, the following affected markets have been identified: amine blends/adducts curing agents, PAA/AA (EEA level), phenolic (EEA level), and DDS curing agents.
- 34. For formulated systems, the activities of the parties overlap in several applications: Huntsman has a broad product line of formulated systems that includes adhesives, composites, construction, electronics, electrical power, and tooling while Hexion's business concentrates on adhesives, composites and electrical power.
- 35. The following applications have been identified as affected markets (technology application): adhesives wind energy, adhesives general industry, composites commercial/military aerospace, composites general industry, composites wind energy, composites recreation, electrical power all applications and electronic encapsulating.

#### **A.2 NON-EPOXY OVERLAPS**

36. Outside the epoxy resin value chain, the parties also horizontally overlap in polyurethane amine catalysts, which are intermediate products used in the production of polyurethanes. They are produced by Huntsman while they are also sold (but not produced) by Momentive Performance Materials, Inc., an Apollo Group portfolio company. The parties also overlap in the oriented strand board ("OSB") resins, which are neighbouring applications in the production of a type of wood panel. The markets for polyurethane amine catalysts and for OSB resins (EEA level) have been identified as horizontally affected markets.

### B. <u>AFFECTED MARKETS WITHOUT HORIZONTAL COMPETITION</u> <u>CONCERNS</u>

37. Most of the identified affected markets do not raise competition concerns.

### B.1. GENERAL PRINCIPLES REGARDING PRODUCT AND GEOGRAPHIC MARKET DEFINITIONS

- 38. In many cases, broader and narrower definitions can be envisaged and the results of the market investigation on the most appropriate segmentation are not clear cut. For this reason, the assessment has been conducted on the basis of alternative market definitions proposed and, whenever considering narrower and broader market definitions provides similar indications, the market definition has been left open.
- 39. Concerning in particular <u>product market definitions</u>, the market investigation indicated that sub-segmentations of each of the substances according to the particular grades that can be produced would be excessively narrow and therefore inappropriate. For those products for which no competition concerns have been identified, allowing to leave the precise product market definition open, the following segmentations and sub-segmentations have therefore been considered:

Epoxy resins and related products (see section B.2.):

- LER All
  - Bis-A LER
  - Bis-F LER
- SER All
  - Solid SER
  - SER Solutions
- Epoxy Novolac Specialty Resins All
  - EPN
  - EOCN
- Waterborne Specialty Resins
- Reactive Diluents All
  - Glycidyl Ethers Reactive Diluents All
    - o Monofunctional Glycidyl Ethers All
      - Monofunctional Aliphatic Glycidyl Ethers
      - Monofunctional Aromatic Glycidyl Ethers
    - o Multifunctional Aliphatic Glycidyl Ethers
- Amine-based Curing Agents All
  - Amine Blends/Adducts (excl. pure amines)
  - PAA/AA
- Phenolic Curing Agents
- DDS Curing Agents [Hexion and Huntsman activity in DDS]
- Formulated Systems / Adhesives All
  - used in General industry
- Formulated Systems / Composites All
  - used in General industry

Non-epoxy products (see section B.3.):

- Polyurethane amine catalysts
- OSB resins
- 40. Similarly, for the geographic market definitions, whereas the parties submitted that the market for all these products is global and the market investigation tends to confirm this in most cases (namely in view of significant trade flows and of the related pressure that imports exercise on EEA production), the assessment has been conducted on the basis of both EEA-wide and worldwide definitions. National market definitions could be excluded. As no competition concerns could be identified at any of these levels, the precise geographic market definition can be left open.

#### **B.2. ASSESSMENT: EPOXY VALUE CHAIN**

41. The table below summarises the market shares (based on value except for liquid basic epoxy resins which are based on volume) in all horizontally affected markets in the epoxy value chain where no competition concerns have been identified<sup>4</sup>:

With the exception of Bis-F LER, these market shares data are estimates of the parties, and a reconstruction of the relevant markets based on information gathered in the course of the market investigation would not have a significant impact on the competitive assessment.

Product/ Type		EEA			WW		
		Huntsma	Combine		Huntsma	Combine	
	Hexion	n	d	Hexion	n	d	
Basic Epoxy Resins (*)							
			[30-			[20-	
LER - All	[20-30%]	[5-10%]	40%]	[15-20%]	[5-10%]	30%]	
			[30-			[20-	
Bis-A LER	[20-30%]	[5-10%]	40%]	[15-20%]	[2-5%]	30%]	
			[80-			[50-	
Bis-F LER	[60-70%]	[15-20%]	100%]	[40-50%]	[10-15%]	60%]	
			[30-			[15-	
LER Blends	[20-30%]	[5-10]	40%]	[10-15%]	[5-10%]	20%]	

<sup>(\*)</sup> Market shares calculated on the basis of the Form CO and data from the market investigation for Bis-F LER, based on volumes.

			[20-			
SER - All	[10-15%]	[5-10%]	30%]	[5-10%]	[5-10%]	[10-15
			[15-			[10-
Solid SER	[5-10%]	[5-10%]	20%]	[5-10%]	[5-10%]	15%]
			[30-			[30-
SER Solutions	[20-30%]	[2-5%]	40%]	[20-30%]	[5-10%]	40%]

### **Specialty Resins**

			[30-			[10-
<b>Epoxy Novolacs - All</b>	[5-10%]	[20-30%]	40%]	[5-10%]	[5-10%]	15%]
			[20-			[15%-
Epoxy Novolacs - EPN	[5-10%]	[15-20%]	30%]	[2-5%]	[10-15%]	20%]
		[80-	[80-			
Epoxy Novolacs - EOCN	[2-5%]	100%]	100%]	[2-5%]	[2-5%]	[5-10%]

			[15-			[30-
Waterborne resins	[15-20%]	[2-5%]	20%]	[30-40%]	[2-5%]	40%]

#### **Reactive Diluents**

Reactive Diluents – All (*)	[20-30]	[5-10%]	[30- 40%]	[15-20%]	[5-10%]	[20-30%]
Glycidyl Ethers - All	[5-10%]	[5-10%]	[15- 20%]	[5-10%]	[5-10%]	[10- 15%]
Monofunctional Glycidyl Ethers - All	[10-15%]	[5-10%]	[15- 20%]	[5-10%]	[5-10%]	[10- 15%]
Monofunctional Aliphatic Glycidyl Ethers	[5-10%]	[5-10%]	[10- 15%]	[5-10%]	[5-10%]	[15- 20%]
Monofunctional Aromatic Glycidyl Ethers	[15-20%]	[2-5%]	[20- 30%]	[10-15%]	[2-5%]	[10- 15%]

Product/ Type	EEA			ww		
	Huntsma Combine				Huntsma	Combine
	Hexion	n	d	Hexion	n	d

<sup>(\*)</sup> The market share for "Reactive Diluents – All" includes Hexion's sales in Glycidyl esters, in which market it has a 100% market share as it is the only producer worldwide.

Multifunctional Aliphatic			[15-			[10-
Glycidyl Ethers	[2-5%]	[10-15%]	20%]	[5-10%]	[5-10%]	15%]

#### **Curing Agents**

Amine-based Curing Agents - All	[5-10%]	[15-20%]	[20- 30%]	[5-10%]	[10-15%]	[15- 20%]
Amine Blends/Adducts (excl. pure amines)	[10-15%]	[15-20%]	[20- 30%]	[10-15%]	[10-15%]	[20- 30%]
PAA/AA	[<2%]	[15-20]	[15- 20%]	[2-5%]	[5-10%]	[10- 15%]

Phenolic	[5-10%]	[5-10%]	[15- 20%]	[2-5%]	[2-5%]	[5-10%]
[Hexion and Huntsman activity in DDS]	[<2%]	[60-70%]	[60- 70%]	[<2%]	[20-30%]	[20- 30%]

#### **Formulated Systems**

			[20-			[15-
Adhesives - All	[<2%]	[20-30%]	30%]	[2-5%]	[10-15%]	20%]
			[30-			[15-
Adhesives general industry	[<2%]	[30-40%]	40%]	[<2%]	[15-20%]	20%]

Composites - all	[20-30%]	[20-30%]	[40-50]	[20-30%]	[15-20%]	[40- 50%]
Composites general industry	[20-30%]	[10-15%]	[30- 40%]	15-20%]	[10-15%]	[20- 30%]

#### Basic Epoxy Resins - LER

#### **Product** market definition

- 42. As mentioned above, <u>LER</u>, which is the most common form of basic epoxy resins, is produced by reacting ECH with BPA or BPF. The use of BPA results in Bis-A LER (which has a high viscosity) while the use of BPF results in Bis-F LER (which has a low viscosity). The viscosity of the final resin can be adjusted by blending resins of different viscosity grades or by blending a resin with a reactive diluent. Customers therefore purchase Bis-A LER and Bis-F LER either separately or in blended form.
- 43. The parties submit that LER of different viscosities (including Bis-A LER, Bis-F LER and blends) belong to the same product market due to their chemical similarity and

because they are used for the same applications and are most commonly used blended together.

- 44. The Commission has previously<sup>5</sup> considered Bis-A LER and Bis-F LER as separate product markets due to demand-side considerations and due to a restricted supply-side substitutability as a result of a shortage of BPF at the time of the decision, which prevented producers of Bis-A LER to switch part of their production of Bis-F LER.
- 45. In the present case, the market investigation has confirmed the previous findings of the Commission revealing strong demand-side factors pointing towards the definition of Bis-A LER and Bis-F LER as separate markets. While many respondents agreed that viscosity is an important property of LER, a range of other important factors determining the choice between Bis-A LER and Bis-F LER were also mentioned (e.g. reactivity, total chlorine content, epoxy equivalent weight, heat, chemical and crystallisation resistance). Furthermore, respondents emphasised that the use of reactive diluents in blends in order to reduce the viscosity of Bis-A LER, argued by the parties as a means to substitute Bis-F LER, also changes the physical properties and performance of the epoxy resin. A switching from Bis-F LER to Bis-A LER in response to a small but significant non-transitory increase in the price of Bis-F LER seems therefore difficult for many applications, not so much because a specific application would require Bis-F LER, but because of the time and costs associated with a re-formulation of the final product.<sup>6</sup>
- 46. This applies even more in applications where customer approval is necessary for any change in raw materials, production process, production location or performance of the cured design (so-called "qualification"). Such a qualification is often required in high-performance applications (e.g. aerospace), and respondents have underlined that requalification processes are particularly time consuming and costly.<sup>7</sup>
- 47. However, it was also indicated by respondents that switching from Bis-F LER to Bis-A LER might be easier in some low-performance applications (e.g. ambient cure coatings and flooring applications). Furthermore, the parties submit that it would virtually never be the case that, for a given application, only Bis-F LER can be used. [Description of Hexion and Huntsman blend composition] The parties also submit that Bis-F LER is used in the US to a much lesser extent than in Europe due to historical reasons. The market investigation confirmed the lower use of Bis-F LER in the US, and respondents explained that this gap in the use of Bis-F LER is due to price, availability and regulation differences between the US and Europe.<sup>8</sup>
- 48. For the purposes of this decision, however, the final relevant product market definition can be left open since the competitive assessment does not lead to a different result even on the basis of the narrowest possible market definitions, i.e. if separate markets for Bis-A and for Bis-F LER were assumed.

<sup>&</sup>lt;sup>5</sup> Case No COMP/M.3593 - APOLLO / BAKELITE, paras. 106 and 107.

Replies to Art 11 RFI to Customers, replies to Art 11 RFI to Competitors.

<sup>&</sup>lt;sup>7</sup> Replies to Art 11 RFI to Customers, replies to Art 11RFI to Competitors.

<sup>&</sup>lt;sup>8</sup> Replies to Art 11 RFI to Customers, replies to Art 11 RFI to Competitors.

- 49. It should be noted that such narrower markets also include blends. The Commission has found previously that the straightforward operation required to produce blends does not constitute a separate market but can rather be considered as a simple service provided by LER suppliers to their customers. Also the present market investigation did not reveal that sophisticated equipment or know-how would be necessary for blending. On the contrary, a majority of customers is able to make blends on their own in the short term and at low cost. Also a competitor confirmed that customers could easily produce blends themselves, for instance if they wish to avoid costs or to maintain secrecy about their formulations. <sup>10</sup>
- 50. The use and volume of Bis-A LER and Bis-F LER contained in LER blends vary from blend to blend and from producer to producer. For instance, [...]% of all blends sold in the EEA by Hexion contain Bis-F LER, while only [...]% of all blends sold in the EEA by Huntsman contain Bis-F LER (worldwide, the figures are[...] % and [...]%). For this reason, the parties are unable to provide estimates on the market segment for all blends containing Bis-F LER. <sup>11</sup>
- 51. Furthermore, it is not necessary to distinguish between different grades of Bis-A and Bis-F LER. Although many barriers to switch mentioned above in paragraph 45 also hinder customers from switching between different grades of the same LER, the parties submit that the different LER grades are produced in the same equipment and according to the same basic production processes. Most competitors have confirmed that they are able to produce the whole range of LER grades in the same reactors, and the only switching costs indicated for such a change of production between grades are the time necessary to clean the reactors and equipment, and the costs caused by the interruption of production processes. It follows that no separate product markets should be assumed for the different grades of Bis-A and Bis-F LER due to the supply-side substitutability of these grades.

#### Geographic market definition

- 52. The parties submit that the relevant geographic market for all LER (Bis-A LER, Bis-F LER and blends) is worldwide as LER would be shipped between continents and imports represent a significant share of European consumption.
- 53. The Commission has previously indicated that the geographic market for Bis-A LER and Bis-F LER are rather EEA-wide than worldwide in scope but the exact geographic market definition was left open.<sup>13</sup>
- 54. The market investigation revealed that the relevant geographic market for Bis-A and Bis-F LER is at least EEA-wide, but it does not allow a conclusion on the precise geographic

<sup>&</sup>lt;sup>9</sup> Case No COMP/M.3593 - APOLLO / BAKELITE, para. 108.

Replies to Art 11 RFI to Customers, replies to Art 11RFI to Competitors.

Reply of the parties of 3 June 2008 to Art 11 RFI.

Replies to Art 11 RFI to Competitors.

<sup>13</sup> Case No COMP/M.3593 - APOLLO / BAKELITE, para. 110.

market definition: while imports of Bis-A and Bis-F LER and blends by suppliers established outside the EEA appear to play a certain role, and several customers consider non-EEA suppliers as credible alternative suppliers for Bis-A, Bis-F LER and blends, respondents have also mentioned that transport cost and trade barriers play a significant role and that non-EEA producers offer a lower level of supply volumes, and might not be able to guarantee a timely delivery.<sup>14</sup>

55. For the purposes of this decision, the precise relevant geographic market definition can be left open since, regardless of the final definition retained, the final assessment does not change.

#### Competitive assessment

- 56. On a market for Bis-A LER (excluding blends containing Bis-A LER), the combined market share of the parties would be [30-40%] in the EEA (Hexion [20-30%], Huntsman [5-10%]) and [20-30%] at worldwide level (Hexion [15-20], Huntsman [5-10%]). Similarly, on a market comprising all LERs, the combined market share would be [30-40%] in the EEA (Hexion [20-30%], Huntsman [5-10]) and [20-30%] at worldwide level (Hexion [10-20%], Huntsman[5-10%]) while in the blends segment (comprising both blends with Bis-A LER and blends with Bis-F LER), the combined market share is [30-40%] in the EEA (Hexion [20-30%], Huntsman [5-10%]) and [15-20%] worldwide (Hexion [10-15%], Huntsman [5-10%]). Although concerns have been raised by market participants concerning the reduction of Bis-A LER suppliers on the market, following the assessment of the market structure and the market shares of the parties, it is unlikely that the transaction may have significant anti-competitive effects. The market can be characterised by a number of other competitors such as Dow ([20-30%] EEA, [20-30%] worldwide), Nan Ya ([5-10%] EEA, [5-10%] worldwide), Leuna Harze ("Leuna") and Spolchemie (each [5-10%] EEA, [2-5%] worldwide). Furthermore, several competitors in and outside the EEA have recently expanded their production capacities or have plans to do so.<sup>15</sup> It follows from the market structure and the available spare capacity that no competition concerns arise with regard to Bis-A LER.
- 57. With respect to <u>Bis-F LER</u>, the proposed transaction leads to the combination of the Bis-F-LER activities of the parties. While the parties are unable to estimate data for a market that includes Bis-F LER as well as blends containing Bis-F LER, they submit that their combined merchant market share in Bis-F LER alone amounts to [40-50%] in the EEA, and to [30-40%] worldwide. However, the information gathered by the Commission during the market investigation indicates that the size of the merchant Bis-F LER market is smaller than the parties' estimate, giving rise to a higher level of concentration. The market structures both at the production level and in the merchant market for Bis-F-LER alone, on the basis of the information provided by the parties and as far as possible complemented by the information from the market investigation, are therefore as follows:

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Replies to Art 11 RFI to Customers, replies to Art 11RFI to Competitors.

<sup>15</sup> Replies to Art 11RFI to Competitors.

	Production `	Merchant Market Volume (**)			
	EEA	WW	EEA	WW	
Hexion	[65-75%]	[30-40%]	[60-70%]	[40-50%]	
Huntsman	[15-25%]	[10-15%]	[15-20%]	[10-15%]	
Combined	[85-95%]	[40-50%]	[80-100%]	[50-60%]	
Leuna	[5-15%]	[5-10%]	[10-20%]	[5-10%]	
Nan Ya		[5-10%]		[5-10%]	
DIC		[0-5%]	[0-5%]	[5-10%]	
Dow <sup>16</sup>			[0-5%]	[0-5%]	
Aditya		[0-5%]	[0-5%]	[0-5%]	
Birla					
CVC		[0-5%]	[0-5%]	[0-5%]	
Kukdo		[0-5%]	[0-5%]	[0-5%]	
Others		[30-40%]		[10-20%]	

<sup>(\*)</sup> Source: table 92 of Form CO.

- 58. Therefore, the parties' combined Bis-F LER market share in volume amounts to approximately [80-100%] in the EEA (Hexion [60-70%], Huntsman [15-20%]) and [50-60%] worldwide (Hexion [40-50%], Huntsman [10-15%]). In the EEA three other competitors will be on the market: Leuna with a market share of [15-20]%, Dow with a market share of [1-5]% and Aditya Birla with a market share of [1-5]%. The competitors present at worldwide level are NanYa ([5-15%]), Leuna ([5-15]%), Dow, Aditya Birla and CVC with [1-10]% each as well as further smaller players.
- 59. The above data show that, in particular in the merchant market for Bis-F LER alone, the combined entity would gain a very high market share, followed far beyond by Leuna as the second player and other smaller players such as Dow and Aditya Birla. In addition, Dow is not a producer of Bis-F-LER, but obtains it through a long term supply agreement with Hexion. At the world-wide level, other players would be NanYa and CVC as well as further smaller players. This market structure would in principle be indicative of market power enjoyed by the merged entity. Some respondents have expressed concerns about the reduction of Bis-F LER suppliers on the market and about capacity constraints of the remaining players.<sup>17</sup>
- 60. However, the Commission considers that it is not likely that the proposed transaction will have significant anti-competitive effects as regards Bis-F LER for the following reasons.
- 61. First, it has to be noted that Bis-F LER is hardly used alone in any application, but is usually blended with other ingredients.<sup>18</sup> Customers can choose to buy Bis-F LER alone (and blend it themselves) or to buy blends containing Bis-F LER. As mentioned above, such blends containing Bis-F LER pertain to the same product market as Bis-F LER

<sup>(\*\*)</sup> Source: data from market investigation and table 74 of Form CO.

<sup>&</sup>lt;sup>16</sup> [Description of Hexion's relationship with a specific customer]

Replies to Art 11 RFI to Customers.

<sup>&</sup>lt;sup>18</sup> Form CO and reply of the parties of 3 June to Art 11 RFI.

- market. The parties estimate their position in the blends segment (comprising blends made of both Bis-A LER and Bis-F LER) to be around [30-40%] in the EEA and [15-20%] worldwide.
- 62. Indeed, the suppliers of pure Bis-F LER, mentioned above, compete with a number of other suppliers which offer blends containing Bis-F LER on the merchant market (such as DIC, Aditya Birla and Kukdo) and which all produce Bis-F LER for the purpose of manufacturing their blends. Dow and Spolchemie, which purchase Bis-F LER from Hexion on a co-producer basis, compete through the resale of both pure Bis-F LER and Bis-F LER blends. Also the suppliers which are based outside the EEA appear to be able to exert competitive pressure on the parties, as is evidenced by a statement of an important Asian supplier that it would be able to immediately increase its exports of Bis-F LER and blends in case prices increased in the EEA. This appears to be confirmed by trade statistics as monthly imports of epoxy resins from Asia into the EEA have nearly doubled since 2005.<sup>20</sup>
- 63. It follows from the two preceding paragraphs that the market shares and the market structure mentioned in relation to the sale of pure Bis-F LER do not reflect the way competition works in the market, and do not allow to conclude on the existence of market power.
- 64. Secondly, the market data provided by the parties for pure Bis-F LER (complemented by information obtained in the market investigation) show that the size of the Bis-F LER merchant market in 2007 amounts to [10-20] Kt in the EEA and [20-30] Kt worldwide. This market is small compared to the total Bis-F LER production levels which are estimated by the parties (complemented by information obtained in the market investigation) to be approximately [30-40] kT in the EEA and [50-60] kT worldwide. This discrepancy in the production and merchant market volume can be explained by the fact that Bis-F LER producers can use their Bis-F LER captively for the production of blends and formulated systems instead of selling it in the merchant market.
- 65. It follows that any price increases on the merchant market for Bis-F LER might create an incentive for producers which are vertically integrated in Bis-F LER to sell more Bis-F LER on the merchant market.
- 66. In addition, due to the small size of the Bis-F LER merchant market, even small amounts of spare capacity or imports can have a significant influence on that market and therefore on prices.
- 67. In this respect, it should be noted that Leuna has considerable spare capacity following a recent increase of its production capacity for BPF and Bis-F LER. Leuna could therefore supply a substantial additional amount of Bis-F LER to the merchant market which would account for around [50-100]% of the current size of the merchant market. In fact, since establishing its new plant a few years ago, Leuna has been able to acquire a market share of [15-20%] on the EEA level and of [5-15%] on the worldwide level, and the

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<sup>&</sup>lt;sup>19</sup> Table 63 of the Form CO and confirmed by the market investigation.

Email of the parties of 19 June 2008.

Commission has no indications that this may not happen again in case of an increased demand of Bis-F LER.

- 68. Furthermore, Bis-F LER producers at world-wide level have recently expanded their production capacities or have plans to expand them. These producers have already entered the EEA market, and have spare capacity which amounts to approximately [50-100]% of the current size of the EEA merchant market and which could also be diverted into the EEA. It is also interesting to note in this context that Honshu, which is described by the parties as the leading BPF (precursor for the production of Bis-F LER) merchant supplier, has recently doubled its BPF production capacity from 2 kT to 4 kT.<sup>21</sup>
- 69. Thirdly, and as already stated above, the use of Bis-F LER in a blend or application can to a significant extent be substituted by Bis-A LER. Respondents have indicated that such a switching is possible in particular in low-performance applications. [Description of Hexion and Huntsman blend composition] The fact that, as mentioned above, Bis-F LER is used to a much lesser extent in the US than in Europe confirms the substitutability between Bis-A LER (or blends containing Bis-A LER) and Bis-F LER. While such a substitution might cause reformulation and requalification costs in the short term, it appears possible for customers to switch from Bis-F LER to Bis-A LER for many applications and they could do so in particular when developing new formulations.
- 70. Therefore, even if post merger the combined market share of the parties for sales of Bis-F LER alone will be high in the EEA, various reasons indicate that competition is not significantly affected in this market: first, blends containing Bis-F LER pertain to the same product market as Bis-F LER, and competition from these blends is therefore likely to mitigate any market power of the parties. Secondly, significant spare capacity of Bis-F LER exceeding the current size of the merchant market for pure Bis-F LER is currently available inside and outside the EEA, and further competitive pressure emanates from increasing imports of blends into the EEA. Thirdly, customers have technical alternatives at their disposal in order to substitute the use of Bis-F LER by using Bis-A LER. For all these reasons, it is not likely that the proposed transaction will have significant anti-competitive effects in relation to Bis-F LER.

#### Basic Epoxy Resins - SER

#### Product and geographic market definitions

71. With regard to <u>solid SER</u> and <u>SER solutions</u>, the Commission has previously left open whether distinct product markets need to be defined for both types of SERs, and it also left open the geographic scope of the market(s).<sup>22</sup> The parties submit that both forms of SER belong to the same product market which would be worldwide in scope. However, the precise product market definition can be left open for the purposes of this decision since the competitive assessment does not lead to different results. For the same reasons,

<sup>&</sup>lt;sup>21</sup> Form CO, Annex Joint/IV/LER/6.3.

Form CO, Annex Joint/IV/LER/6.3

 $<sup>^{22}</sup>$  Case No COMP/M.3593 - APOLLO / BAKELITE, para. 121. The results of the market investigation however indicated that the market was at least EEA-wide in scope.

the precise definition of the geographic market, which was confirmed by the market investigation to be at least EEA-wide in scope, can also be left open.<sup>23</sup>

#### Competitive assessment

72. The majority of the respondents to the market investigation did not raise any concerns with respect to SERs, although some voiced concerns as regards the reduction of SER suppliers on the market, possible loss of competition and price increase. It should be noted that the combined entity would have a market share in the market for solid SER of [15-20%] in the EEA and [10-15%] at worldwide level. This market can be characterized by the presence of a number of other competitors such as Dow ([20-30%] EEA, [15-20%] worldwide), SIR ([20-30%] EEA, [5-10%] worldwide), Spolchemie ([15-20%] EEA, [2-5%] worldwide), and Nan Ya ([2-5%] EEA, [10-15%] worldwide). In the market for SER solutions, the market share of the merged entity would be [30-40%] both in the EEA and at the worldwide level. However, it should also be noted that there are several other competitors active in this market, such as Dow ([20-30%] both EEA and worldwide), Leuna ([10-15%] EEA, [2-5%] worldwide), Spolchemie ([10-15%] EEA, [2-5%] worldwide), SIR ([5-10%] EEA, [2-5%] worldwide), Sarzyna ([5-10%] EEA, [2-5%] worldwide), and Kukdo ([2-5%] EEA, [10-15%] worldwide). Following the assessment of the market structure and the market shares of the parties, it is unlikely that the transaction may have significant anti-competitive effects.

#### Specialty Resins

#### EPN and EOCN

#### Product and geographic market definitions

73. EPN and EOCN are two of the three main types of epoxy novolac resins. The parties submit that the relevant product market includes at least the three main types of epoxy novolac resins (EPN, EOCN and EBPAN). There are no previous Commission decisions in this respect. Customers of epoxy novolac resins have indicated during the market investigation that the respective types of epoxy Novolac resins are not interchangeable and would hence constitute distinct product markets. This has also been confirmed by the competitors. For the purposes of this decision, however, the final product market definition can be left open since, even if the narrower product market definitions are retained, the transaction does not raise serious doubts as to its compatibility with the common market. With respect to the geographic scope of the market, the parties submit that the relevant geographic market is global. The market investigation however has not been conclusive. Although some respondents to the market investigation confirmed the parties' view, the majority of them also indicated that imports into the EEA do not exert a strong competitive pressure upon these markets and, although most customers source globally, some also submitted that it is important for them to source at the EEA level, due to their limited needs and in order to avoid additional transport costs. For the purposes of this decision, however, also the geographic market definition for EPN and EOCN can be left open since the final assessment does not change regardless of the definition retained.

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<sup>&</sup>lt;sup>23</sup> Replies to Art 11RFI to Customers, replies to Art 11RFI to Competitors.

#### Competitive assessment

- 74. With respect to <u>EPN</u>, the market investigation indicated that there have been shortages in the market for EPN recently and some respondents complained that the merger might lead to anticompetitive effects due to a reduction of the number of suppliers on the market, having as a consequence a price increase. However, the effect of the merger is not likely to give rise to significant anti-competitive effects. Firstly, post-merger the situation on the market would not change significantly since the parties do not enjoy significant market presence pre-merger; the combined market share would be [20-30%] (Hexion [5-10%], Huntsman [15-20%]) at EEA level and [15-20%] (Hexion [2-5%], Huntsman [10-15%]) at world-wide level. Secondly, a number of other players remain in the market both at EEA level (Dow [60-70%], Spolchemie ([5-10%]) and Leuna ([2-5%]) and at world-wide level (Dow [40-50%], DIC [15-20%], Kukdo, Aditya Birla, and Sumitomo, [2-5%] each.
- 75. With respect to <u>EOCN</u>, the respondents to the market investigation did not express any concerns. The parties would have a combined market share post transaction of [80-100%] at EEA level (Hexion [2-5%], Huntsman [80-100%]) and of [5-10%] at world-wide level (Hexion [2-5%], Huntsman [2-5%]). However, this is due to the fact that the EEA market represents solely 1% of the global demand for EOCN, the bulk of the demand and of the suppliers being concentrated in Asia. In addition, Hexion does not produce EOCN in the EEA, and its market share is based on imports from Asia, showing that distance is not an obstacle for other suppliers to serve EEA customers in case prices increased. Other market players, present at worldwide level, are CCP ([40-50%]), DIC ([20-30%]), Kukdo ([10-15%]), Sumitomo and Aditya Birla (each [5-10%], respectively).
- 76. On the broader market for epoxy novolacs, the combined market shares of the parties post-transaction would be [30-40%] in the EEA (Hexion [5-10%], Huntsman [20-30%]) and [10-15%] worldwide (each Hexion and Huntsman [5-10%]).

#### Waterborne resins

#### Product and geographic market definitions

77. Waterborne resins are LER or SER that have been dispersed with surfactants that keep the resin particles suspended in water with minimal settling of the particles over time. Waterborne resins can be used without solvents, making them useful in applications where exposure to volatile organic compounds could be dangerous. The main applications are as coatings including protective coatings for metal and cement, glass fibre sizing, civil engineering, and adhesives. According to the parties, the market for waterborne resins constitutes a distinct relevant product market. This has been confirmed by the market investigation. With respect to the geographic scope of this market, the parties submit that it is global. The respondents to the market investigation opposed this assertion, indicating that the market is EEA-wide. In any event, for the purposes of this decision, the final definition of the relevant geographic can be left open since the final assessment does not change regardless of the final definition retained.

#### Competitive assessment

78. Although the vast majority of the respondents have not expressed any competition concerns with respect to this market, some respondents were concerned that the transaction would lead to a reduction of viable suppliers, that the new entity would control critical raw materials and that customers would be left with reduced choice during

the qualification process. However, the transaction, which only leads to a small increment in market share, does not have a significant impact on this market. The combined market shares of the parties post-transaction would be [15-20%] in the EEA (Hexion [15-20%], Huntsman [[2-5%]) and [30-40%] worldwide (Hexion [30-40%] Huntsman [2-5%]). Both at EEA and at world-wide level, the parties would be constrained by several other competitors, in particular Cytec ([40-50%] EEA, [15-20%] worldwide), DSM ([15-20%] EEA, [20-30%]worldwide), Dow ([5-10%] EEA, [2-5%] worldwide), and Cognis ([5-10%] EEA, [2-5%] worldwide).

#### **Conclusion**

79. In the light of the foregoing, the Commission concludes that the proposed transaction does not raise serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement with respect to the horizontal effects on the markets for epoxy novolacs in general, and the respective possible sub-segments EPN and EOCN as well as for waterborne resins.

#### **Reactive Diluents**

#### Product and geographic market definitions

- 80. The parties claim that all reactive diluents constitute a distinct product market, notwithstanding the differences between their specific types. This is also justified by the supply-side substitutability together with some degree of substitution between the different types of reactive diluents. The Commission has left the market definition open in previous decisions.<sup>24</sup> The present market investigation has indicated that only some limited degree of substitution may be possible. Hence, the particular types of reactive diluents will be assessed for the purposes of this decision under any alternative market definition, i.e. all reactive diluents, monofunctional aliphatic glycidyl ethers, monofunctional aromatic glycidyl ethers, and multifunctional aliphatic glycidyl ethers. However, the final market definition can be left open, as no competition concerns arise regardless of the definition retained.
- 81. With respect to the geographic market definition, the parties submit that the scope is global due to the importance of imports. The Commission concluded in previous decisions that the geographic scope of the market for all reactive diluents is EEA-wide.<sup>25</sup> This has been confirmed also in the present market investigation by the majority of the respondents, who indicated that the markets are EEA-wide or regional. The final geographic market definition can however be left open, as no competition concerns arise at any geographic level.

#### Competitive assessment

82. The majority of the respondents to the market investigation did not express any concerns following the transaction, although some of them indicated that the merger reduces the number of viable competitors in Europe, leading to less competition and possible price increases. It was also stated that the merging parties would have a dominant position on the market. However, the assessment of the market structure indicates that the parties do

<sup>&</sup>lt;sup>24</sup> Case No COMP/M.3593 - APOLLO / BAKELITE, para. 135.

<sup>&</sup>lt;sup>25</sup> Case No COMP/M.3593 - APOLLO / BAKELITE, para. 139.

not have a significant market position neither on the market for reactive diluents, nor on any of the possible sub-segments of reactive diluents. In all of these markets, numerous other competitors are active. For all reactive diluents, the combined market share of the parties would be [30-40%] at EEA level (Hexion [20-30%], Huntsman [5-10%]) and [20-30%] at the worldwide level (Hexion [15-20%], Huntsman [5-10%]). If glycidyl esters, where only Hexion is active worldwide, are excluded, the combined market shares would be [15-20%] at EEA level (Hexion [5-10%], Huntsman [5-10%]) and [10-15%] at the worldwide level (Hexion [5-10%], Huntsman [5-10%]). For monofunctional aliphatic glycidyl ethers, the combined market shares of the parties would be [10-15%] at EEA level (Hexion [5-10%], Huntsman [5-10%]) and [15-20%] at world-wide level (Hexion [5-10%], Huntsman [5-10%]), other competitors being EMS-Primid Grilonit ([30-40%] EEA, [10-15%] worldwide), Dow ([10-15%] EEA, [10-15%] worldwide), Leuna ([15-20%] EEA, [5-10%] worldwide), Sachem ([10-15%] EEA, [5-10%] worldwide) and Aditya Birla ([5-10%] EEA, [5-10%] worldwide). On the market for monofunctional aromatic glycidyl ethers, the combined market shares of the parties would be [20-30%] at EEA level (Hexion [15-20%], Huntsman [2-5%]) and [10-15%] at world-wide level (Hexion [10-15%], Huntsman [2-5%]), other competitors being Atul ([10-15%] EEA, [15-20%] worldwide), Sachem, Leuna, EMS-Primid Grilonit and Dow (each [10-15%] EEA, [5-10%] worldwide). In the market for multifunctional aliphatic glycidyl ethers, the combined market shares of the parties would be [15-20%] at EEA level (Hexion [2-5%], Huntsman [10-15%]) and [10-15%] at world-wide level (Hexion [5-10%], Huntsman [5-10%]), other competitors being Dow ([40-50%] EEA, [30-40%] worldwide), EMS-Primid Grilonit ([15-20%] EEA, [5-10%] worldwide), and Sachem ([5-10%] EEA, [2-5%] worldwide).

83. The market structure post-transaction in the markets for all glycidyl ethers, monofunctional aliphatic glycidyl ethers, monofunctional aromatic glycidyl ethers, and multifunctional aliphatic glycidyl ethers and the lack of significant concerns shown during the market investigation leads the Commission to conclude that it is very unlikely that the transaction would lead to serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement with respect to the horizontal effects on these markets.

#### **Curing Agents**

Product and geographic market definitions

84. The types of curing agents that, if considered as separate markets, are affected markets are the following ones: amine based curing agents (which can be split into amine blends and adducts as well as polyaminoamine/polyamide and amidoamine ("PAA/AA"), phenolic curing agents and DDS curing agents. Each of these three types has been considered by the parties as a separate relevant product market. With respect to amine-based curing agents, the parties also submit that it constitutes a single product market comprising both amine blends and adducts as well as polyaminoamine/polyamide and amidoamine ("PAA/AA") curing agents. In a previous decision, the Commission left the market definition open.<sup>26</sup> The parties have however provided data with respect to each of these two sub-segments of amine based curing agents. In general, the respondents to the market investigation excluded substitutability between the distinct groups of curing

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<sup>&</sup>lt;sup>26</sup> Case No. COMP/M.3125 – Huntsman/Matlin Patterson/Vantico, para. 14.

agents, and for some types of curing agents also within these groups. For the purposes of this decision, the final product market definition can be left open since, even at the level of the narrowest possible market definition, the transaction does not give rise to competition concerns.

85. For the geographic scope, the parties believe the market for amine-based, phenolic and DDS curing agents is global. In a previous Commission decision, the exact geographic market definition for amine based curing agents was left open.<sup>27</sup> The respondents to the market investigation submit that they source both on the global level and at the EEA-level. The latter was based on the necessity of close contact with the suppliers due to approvals, specific requirements, or transport costs. For the purposes of this decision, the final geographic market definition can be left open since, the final assessment does not change regardless of the definition retained.

#### Competitive assessment

- 86. In the market for amine-based curing agents, the combined market share of the parties would be [20-30%] at EEA level (Hexion [5-10%], Huntsman [15-20%]) and [15-20%] at worldwide level (Hexion [5-10%], Huntsman [10-15%]).
- 87. In the market for amine blends and adducts, the combined market share of the parties would be [20-30%] at EEA level (Hexion [10-15%], Huntsman [15-20%]) and [20-30%] at worldwide level (Hexion [10-15%], Huntsman [10-15%]). Several competitors are active both at the EEA and at worldwide level, in particular Air Products ([20-30%] EEA, [20-30%] worldwide), Cardolite ([5-10%] EEA, [20-30%]worldwide), Reichhold ([5-10%] both EEA and worldwide), Dow ([5-10%] EEA, [2-5%] worldwide), BASF ([5-10%] EEA, [2-5%] worldwide), Cognis and EMS-Primid Grilonit (each [2-5%] EEA and [2-5%] worldwide).
- 88. In the market for PAA/AA curing agents, the market shares of the parties are not very significant: [15-20%] at EEA level (Hexion [<2%], Huntsman [15-20%]) and [10-15%] at worldwide level (Hexion [2-5%], Huntsman [5-10%]). In addition, the following competitors are active in the merchant markets both at the EEA and worldwide levels: Cognis ([15-20%] EEA, [30-40%] worldwide), Arizona ([15-20%] EEA, [10-15%] worldwide), Air Products ([10-15%] EEA, [15-20%] worldwide), Cray Valley ([5-10%] EEA, [5-10%] worldwide), Dow ([5-10%] EEA, [2-5%] worldwide), Reichhold ([5-10%] EEA, [2-5%] worldwide), SIQ ([5-10%] EEA, [2-5%] worldwide) and Leuna ([5-10%]EEA, [<2] worldwide).
- 89. In addition, although a few respondents expressed concerns with respect to the disappearance of one supplier and the strong position of the merged entity both in this market as well as in the markets for formulated systems, leading to possible price increases and control of the access to raw materials, the majority of the respondents did not raise any concern and the assessment of the market structure shows that the few concerns raised are not substantiated.
- 90. With respect to <u>phenolic curing agents</u> the market shares of the parties are not very significant: [15-20%] at EEA level (Hexion [5-10%], Huntsman [5-10%]) and [5-10%] at worldwide level (Hexion [2-5%], Huntsman [2-5%]). Dow is the clear market leader with

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<sup>&</sup>lt;sup>27</sup> Case No. COMP/M.3125 – Huntsman/Matlin Patterson/Vantico, para. 15.

- a market share of [60-70%] EEA and [60-70%] worldwide. The market investigation did not raise any competition concerns in this market.
- 91. For <u>DDS curing agents</u> the combined market share of the parties would be [60-70%] at EEA level (Hexion [<2%], Huntsman [60-70%]) and below [20-30%]at worldwide level (Hexion [<2%], Huntsman [20-30%]).
- 92. The increment to Huntsman's market share brought by Hexion post-merger would be therefore minimal, amounting to [<2%] or less than [<2%], respectively. Other significant players are present in the markets: at EEA level Atul with [10-15%] and Dufon with [20-30%]; at worldwide level Wuxu Cidic ([20-30%]), Dufon ([10-15%]), Aceto ([10-15%]), Shanghai Qunli Chemical Co ([5-10%]), Atul, Jiansu Yangzhong Chemical and Jiangsu Aolunda High Tech Industrie (each [5-10%]). The respondents to the market investigation did not raise any concerns, but for one respondent who was concerned about possible price increase post-merger.
- 93. The market structure post-transaction in the markets for amine-based curing agents, for amine blends and adducts, PAA/AA, phenolic and DDS curing agents and the fact that the vast majority of the responses to the market investigation did not show concerns has led the Commission to conclude that it is very unlikely that the transaction would lead to serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement with respect to the horizontal effects on these markets.

#### Formulated Systems

- 94. The product and geographic market definitions are discussed below in sections "C.2.1. Product Market Definition" and "C.2.2. Geographic Market Definition".
- 95. The markets for which the parties' activities have horizontal overlaps but no competition concerns have been identified are adhesives and composites for applications for the general industry. In the market for adhesives general industry, the merged entity would have a market share of [30-40%] in the EEA (Hexion [<2%], Huntsman [30-40%]) and [15-20%] at the worldwide level (Hexion [<2%], Huntsman [15-20%]). In the market for composites general industry, the market share of the merged entity would amount to [30-40%] in the EEA (Hexion [20-30%], Huntsman [10-15%]) and [20-30%] at worldwide level (Hexion [15-20%], Huntsman [10-15%]). Having considered the market structure post-transaction, it is unlikely that the transaction would raise competition concerns.

#### **B.3. ASSESSMENT: NON-EPOXY OVERLAPS**

96. The table below summarises the market shares in all horizontally affected markets in the area of non-epoxy overlaps where no competition concerns have been identified:

Product/ Type	EEA		WW				
	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined	
Non-epoxy overlaps							
Polyurethane amine catalysts	[10- 15%]	[15- 20%]	[20- 30%]	[10- 15%]	[10- 15%]	[20-30%]	
OSB resins	[5-10%]	[15- 20%]	[20- 30%]				

- 97. The parties submit that the market for polyurethane amine catalysts constitutes a distinct product market, which is at least EEA-wide and possibly global in its geographic scope. There has not been any previous Commission decision in this area. The market shares of the merged entity would be [20-30%] on the EEA and [20-30%] on the worldwide level post-transaction. There are several other competitors active on this market: Air Products ([15-20%]EEA, [20-30%] worldwide), Borsodchem ([15-20%] EEA, [5-10%] worldwide), BASF ([10-15%] EEA, [5-10%] worldwide), Tosoh ([5-10%] EEA, [10-15%] worldwide), and Rhein Chemie ([5-10%]EEA, [5-10%] worldwide). The respondents to the market investigation have not raised any concerns. Following the assessment of the market structure and the market shares of the parties, it is unlikely that the transaction may have significant anti-competitive effects on this market.
- 98. The parties claim that there is no distinct OSB resins market, but that there are distinct markets for phenolic resins used for OSB face binders, and polymeric methylenediphenyldiisocanate ("pMDI", a grade of MDI) used for OSB core binders. Phenolic resins are produced only by Hexion, pMDI is produced only by Huntsman, and hence they would not overlap. In previous cases, the Commission considered phenol formaldehyde based resins as a distinct product market.<sup>28</sup> With respect to the geographic market definition, the parties submit that the scope for phenolic resins used for OSB face binders is national or narrowly cross-border, and that for pMDI used for OSB core binders is EEA-wide. This is in conformity with previous Commission decisions.<sup>29</sup>
- 99. As both substances are used in neighbouring applications in the production of OSB, the parties were requested to provide also an analysis of the market shares for a "hypothetical OSB binders market". The parties estimate that their combined market share in this "hypothetical market" would amount to [20-30%] in the EEA, based on the estimated capacities of 13 OSB factories in the EEA. No complaints have been received with respect to the OSB binders. It therefore appears unlikely, based on this combined market share, that the transaction may have significant anti-competitive effects on this market.

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See case COMP/M.1813 – Industri Kapital (Nordkem)/Dyno ("Dynea"), para. 30; COMP/M.2396 – Industri Kapital/Perstorp (II) ("Perstorp"), para. 26.

See case COMP/M.1813 – Industri Kapital (Nordkem)/Dyno ("Dynea"), para 68; COMP/M.2396 – Industri Kapital/Perstorp (II) ("Perstorp"), para. 43; COMP/M.2355 Dow/Enichem Polyurethanes, paras. 15 to 17.

## C. HORIZONTALLY AFFECTED MARKETS WHERE COMPETITION CONCERNS WERE IDENTIFIED

- 100. For the following markets, competition concerns have been identified on the horizontal level:
  - Horizontal overlaps in specialty resins:
    - o glycidyl amines TGMDA,
    - o cycloaliphatic resins HHPA,
    - o tetra resins;
  - Horizontal overlaps in the markets of formulated systems mainly as regards composites and adhesives for wind energy applications.

# <u>C.1. SPECIALTY RESINS: Glycidyl amines TGMDA, Cycloaliphatic resins HHPA, Tetra resin</u>

101. The table below shows the market shares of the parties in each of the specialty resin considered:

Product/ Type	EEA			WW		
	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined
Glycidyl Amines - All	[2-5%]	[80- 100%]	[80- 100%]	[2-5%]	[80- 100%]	[80- 100%]
Glycidyl Amines - TGMDA	[5- 10%]	[80- 100%]	[80- 100%]	[2-5%]	[70-80%]	[80- 100%]
Glycidyl Amines - TGPAP	[<2%]	[80- 100%]	[80- 100%]	[<2%]	[80- 100%]	[80- 100%]
Cycloaliphatic Resins - HHPA	[70- 80%]	[<2%]	[70-80%]	[10- 15%]	[70-80%]	[80- 100%]
Tetra Resin	[80- 100%]	[10-15%]	[80- 100%]	[50- 60%]	[<2%]	[50-60%]

#### C.1.1. TGMDA and TGPAP

<u>Product and geographic market definitions</u>

102. With respect to TGMDA and TGPAP, the parties submit that glycidyl amine resins as such constitute a single relevant product market including all glycidyl amines.<sup>30</sup> Glycidyl amine resins are generally used to produce engineered composite parts and adhesives. The most significant application of glycidyl amines is in composites for

TGMDA and TGPAP exhibit different viscosities and somewhat different performance profiles. They are both mostly used in aerospace applications, but more as complementary rather than substitute products. Another glycidyl amine resin is TGMXDA, which is not produced by Hexion or Huntsman and is rather used in electronics applications in view of its different properties. Despite a limited substitutability on the demand side, the parties submit that supply-side factors would strongly support the inclusion of all these glycidyl amine resins in a single relevant product market.

structural aerospace components accounting for more than 90% of glycidyl amine demand and who normally qualify their suppliers. Small amounts are also used in other applications, such as structural components for high-performance sports cars and in other industrial applications such as electronics to improve the thermal performance of printed circuit boards or paper mill rollers. There are no previous Commission decisions in this respect. The market investigation, however, confirmed that TGMDA and TGPAP exhibit different viscosities and somewhat different performance profiles and that therefore they may be considered as separate product markets<sup>31</sup>. In any event, the final definition can be left open since the final assessment does not change regardless of the definition retained.

103. For the geographic market definition, the parties submit that the market for glycidyl amine resins is global. This has been largely confirmed by the market investigation also with respect to the possible narrowest markets for TGMDA and TGPAP. However, as the assessment does not change regardless of the geographic market definition, the final definition can be left open.

#### Competitive assessment

- 104. With respect to TGMDA the market presence of the parties is very significant both at the EEA and at the world-wide levels, with combined market shares of [80-100%] (Hexion 5-10%], Huntsman [80-100%]) and [80-100%] (Hexion [2-5%], Huntsman [70-80%]) respectively. Other competitors on the market were Atul with [2-5%] EEA, and [2-5%] worldwide market shares, and Sumitomo with [10-15%] on the worldwide market. TGMDA is used in particular in composites for aerospace applications.
- 105. The market investigation showed concerns with respect to the possible competitive situation on the market for TGMDA post-merger, linked to the reduction of competition on the market due to the removal of the main alternative competitors, leading to lock-in situations, reduction of output, and increase of prices. <sup>32</sup>
- 106. Regarding TGPAP, some complaints have been received during the market investigation. The transaction would not change the current TGPAP market structure significantly. At EEA level, although the market share of Huntsman is high ([80-100%]), there is no overlap since Hexion is not active in the EEA. At world-wide level, the market share of Huntsman is also high ([80-100%]) but the increment resulting from the transaction is negligible amounting to [<2%]. However, it has to be taken into account that in this market competition takes place at the development stage and then between the suppliers that have been qualified. Hexion TGPAP resin is qualified in a number of cases in addition to Huntsman's resins (and in at least one case it is the only qualified alternative to Huntsman's products). Therefore, even when Hexion's market share at worldwide level is very small, its position as the main credible alternative potential competitor of Huntsman cannot be dismissed.

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Replies to Art 11 RFI to Customers, replies to Art 11 RFI to Competitors.

#### C.1.2. HHPA-based cycloaliphatic resins

#### Product and geographic market definitions

- 107. There are two main types of cycloaliphatic resins: peracetic acid-based resins and peracetic acid-based and hexahydrophthalic anhydride ("HHPA") based resinsThe parties submit that both types of cycloaliphatic resins are by large used in the same applications and can be considered as a whole as a distinct product market. There are no previous Commission decisions in this respect. The market investigation has however given some indications that the two types of cycloaliphatic resins may constitute distinct product markets. In addition, the parties have significantly differing market positions in both types of resins (negligible activities in cycloaliphatic peracetic resins, while their presence in HHPA-based cycloaliphatic resins is much stronger), which may indicate that there are specific features differentiating them. The parties also recognise that there are some high voltage applications for which only peracetic acid-based resins can be used. In the light of the foregoing, the Commission considers that for the purposes of this decision HHPA-based cycloaliphatic resins constitute a separate relevant product market.
- 108. For the geographic scope of the cycloaliphatic resins market the parties state that this market is global, in particular due to significant export and import flows as well as low transport costs and duties. Some respondents to the market investigation support however the view that the geographic market for HHPA-based resins may be EEA-wide at present, especially due to the necessity to provide technical support. Given that, on the basis of the market investigation, a final conclusion on the geographic market cannot be taken, the final definition is left open as the competitive assessment will be conducted at both EEA and worldwide level.

#### Competitive assessment

- 109. The market structure in the market for HHPA-based resins would be post-merger highly concentrated. At EEA level, Hexion's market share amounts to [70-80%], while Huntsman's share is [<2%], and the only significant competitor is Aditya Birla with [10-15%]. However, at world-wide level the change brought about by the transaction is significantly larger. The market shares of the parties are Hexion [10-15%], Huntsman [70-80%], leading to a combined market share of [80-100%] with an important increment of market share. Other market players have small market shares (Aditya Birla [2-5%]; CVC [2-5%]).
- 110. In addition, some market participants complained about possible loss of competition, not only at world-wide level but also at the EEA level, leading to dominant/monopolistic market positions of the merged entity. According to the respondents, this may have as consequences reduced R&D efforts at the merged entity, possibly also reduction in production, and price increases.

#### C.1.3. Tetra resin

#### Product and geographic market definitions

111. The parties submit that the relevant product market for <u>tetra resin</u> should include also TPE-modified LBR, as both resin types compete in the production of electrical laminates, which account for the vast majority of tetra resin demand. Electrical laminates are the

base material for printed circuit boards ("PCBs"). The market investigation confirmed the substitutability of TPE-modified LBR and tetra resin for the production of PCB, however, it was indicated that dedicated equipment for the production of each type would be necessary. Hence, the narrowest possible product market definition for the purposes of this decision is the market solely for tetra resin, strictly defined as tetraphenolethane glycidyl ether resin.

112. With respect to the geographic scope of the market, the parties note that this market is global. As the PCB industry is located mainly in Asia, the demand for tetra resin and TPE-modified LBR is minimal in Europe, accounting to less than 1% of all tetra resin demand. The market investigation indicated no pressure through imports of tetra resin into EEA. For the purposes of this decision, the geographic market shall be considered to be at least EEA-wide.

#### Competitive assessment

113. At the EEA-level, Hexion and Huntsman are the only two producers present in the merchant market, and post-merger, the new entity would hold [80-100%] thereof (Hexion [80-100%], Huntsman [10-15%]). At world-wide level, Hexion holds a market share of [50-60%] while Huntsman sales represent less than [<2%], other competitors being CCP ([30-40%]), and Kukdo ([10-15%]). The high level of market shares raises therefore serious competitive concerns in the EEA.

#### C.1.4. Conclusion

114. Based on the market structures, in particular the high market shares of the parties, and the concerns expressed in the market investigation, the proposed transaction raises serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement with respect to the horizontal effects of the proposed transaction on the markets for glycidyl amines TGMDA, TGPAP, HHPA-based cycloaliphatic resins and tetra resin.

#### C.2. FORMULATED SYSTEMS

#### **C.2.1. Product Market Definition**

- 115. Formulated systems are fully integrated combinations of epoxy resins, diluents, curing agents, fillers, pigments and other additives. They are generally tailored to the specific needs of particular customers and/or end uses. They differ from the individual components in two ways: first, they embody a significant amount of know-how. Secondly, they are sold as complete systems that can be used "as is", without any additional processing.
- 116. The parties submit that formulated systems as a whole constitute a distinct, albeit highly differentiated product market. They state that the key competitive factors are know-how and R&D, service, support and close contact to the customers. Based on the acquired know-how, each player in this market has an unlimited ability to use different ingredients and proportions to produce different formulated systems and therefore to, at

least potentially, enter any application. This is in line with previous Commission decisions.<sup>33</sup>

- 117. The market investigation confirms that formulated systems are more sophisticated than simple blends, both competitors and customers agree that formulated systems constitute a distinct product market in itself.34 With respect to a possible subsegmentation of formulated systems according to the technological function, such as adhesives, coatings, composites, construction, electronics, power and tooling and the specific applications in which they are used (such as wind energy, general industry, construction, aerospace, etc), the respondents largely confirm that these sub-segments can be considered as distinct product markets.<sup>35</sup> Moreover, the market participants put emphasis on know-how, expertise and research and development as key factors alongside with service and reputation. Some competitors indicated that this business requires mostly customized solutions for specific customers, hence the know-how to understand customers' needs and transfer these needs into solutions is one of most important key factors.<sup>36</sup> For success. The investigation further shows that the absence of these factors can be seen as a main barrier for an easy market entry, next to the lack of production and distribution equipment<sup>37</sup>, difficult raw material access<sup>38</sup> and long qualification requirements in some industrial sectors.<sup>39</sup>
- 118. For the purposes of this decision, it is assumed that at least the applications of the respective technologies in which formulated systems are used are considered as separate product markets.

#### C.2.2. Geographic Market Definition

- 119. The parties submit that the geographic market for formulated systems is global, notwithstanding the fact that some customers require close and regular contact, and would not source globally. In a previous decision, the Commission defined the geographic market for formulated systems as EEA-wide.<sup>40</sup>
- 120. This view has been confirmed in the market investigation: the vast majority of the respondents indicated that the relevant geographic market is world-wide.<sup>41</sup> This applies also to the possible sub-segments of formulated systems according to the technological

COMP/M.3593 APOLLO/BAKELITE, para. 146.

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<sup>&</sup>lt;sup>36</sup> Replies to Art 11RFI to Competitors.

Reply to Art 11 RFI to Competitors.

Replies to Art 11 RFI to Competitors.

Reply to Art 11 RFI to Competitors.

<sup>40</sup> COMP/M.3593 APOLLO/BAKELITE, para. 149.

<sup>&</sup>lt;sup>41</sup> Replies to Art 11 RFI to Competitors, replies to Art 11 RFI to Customers.

function. Some respondents defined the geographic market as regional, e.g. EEA-wide, or both worldwide and EEA-wide. The main argument for markets narrower than worldwide was the necessity of close contact between the supplier and customer.

121. For the purposes of this decision, the respective geographic markets are considered to be at least EEA-wide. However, the exact geographic market definition can be left open since, regardless of the final definition retained, the final assessment does not change.

#### C.2.3. Assessment

	EEA			WW		
Technology / Industrial application	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined
Adhesives / Wind energy	[20- 30%]	[15-20%]	[30-40%]	[60- 70%]	[5- 10%%]	[70-80%]
Composites / Wind energy	[30- 40%]	[30-40%]	[70-80%]	[50- 60%]	[20-30%]	[70-80%]
Composites / Commercial & Military Aerospace	[50- 60%]	[30-40%]	[80- 100%]	[30- 40%]	[40-50%]	[70-80%]
Composites / Recreation	[<2%]	[80- 100%]	[80- 100%]	[<2%]	[30-40%]	[30-40%]
Electrical Power	[10- 15%]	[40-50%]	[50-60%]	[5- 10%]	[40-50%]	[40-50%]
Electronics / Encapsulating	[2-5%]	[70-80%]	[70-80%]	[<2%]	[40-50%]	[40-50%]

#### Adhesives for wind energy applications

- 122. <u>Adhesives for wind energy</u> are used to bind composite wind turbine blades together. It shall be also noted that some turbine blade manufactures produce one-piece seamless blades that do not require adhesives.
- 123. The combined market shares of the parties for adhesives for wind energy applications would amount to [30-40%] EEA (Hexion [20-30%] Huntsman [15-20%]), and to [70-80%] worldwide (Hexion [60-70%], Huntsman [5-10%]) in 2007. The merger would lead to a change from 4 to 3 market players in the EEA market, with two other significant market players being Dow (30-40%]) and Gurit ([20-30%]). On the worldwide level, Hexion is by far the strongest market player, which would be reinforced by the merger adding Huntsman's [5-10%] market share. Other players on the worldwide level are Gurit ([10-15) and Dow ([5-10%]).

#### Composites for wind energy applications

124. The combined market shares of the parties in <u>composites for wind energy</u> applications would amount to [70-80%] EEA (Hexion [30-40%], Huntsman [30-40%]), and to [70-80%] worldwide (Hexion [50-60%], Huntsman [20-30%]) in 2007. Through the merger, the two most significant market players would create one new entity. Other players in this sub-segment were considerably below the market position of the parties, namely Gurit with [15-20%] EEA and [10-15%] worldwide, Dow with [2-5%] EEA as

well as worldwide, Aditya Birla with [5-10%] worldwide, and NanYa with [<2%] worldwide.

#### Composites for commercial and military aerospace applications

- 125. The combined market shares of the parties in <u>composites for commercial/military</u> <u>aerospace</u> would amount to [80-100%] EEA (Hexion [50-60%], Huntsman [30-40%]), and to [70-80%] worldwide (Hexion [30-40%], Huntsman [40-50%]) in 2007.
- 126. The aerospace sub-segment is characterised by long-term agreements and strict qualification requirements, hence restricting the possibility of the customers to switch to other suppliers. In such cases, re-qualification of the supplied materials would be necessary.

#### **Composites for recreation**

127. The combined market share of the parties on the market for <u>composites – recreation</u> would amount to [80-100%] on the EEA, and to [30-40%] on the worldwide level. However, in both geographic scopes, the increment added to Huntsman's existing market share by the transaction would be minimal, being [<2%] or less.

#### Electrical power

128. The combined market share of the parties post-transaction would amount to [50-60%] at the EEA-level, and to [40-50%] at the worldwide level for <u>formulated systems in electrical power</u>. The market structure is characterized by a number of competitors with market shares below [2-5%] at the worldwide level, and of [<2%] and less at the EEA-level.

#### Electronics Encapsulating

129. The combined market share of the parties for <u>formulated systems in electronics</u> <u>encapsulating</u> would amount to [70-80%] at the EEA-level, and to [40-50%] at the worldwide level, although, considering each geographic scope, the increment added to Huntsman's existing market share by the transaction would be very small.

#### **Conclusion**

- 130. In all six areas mentioned above, the transaction gives rise to horizontal concerns, in particular due to the very strong position of the merging parties in the respective markets.
- 131. The market investigation confirms that most of the respondents expect a decrease of competition in the markets due to a strong consolidation in wind (both adhesives and

composites), aerospace, and electrical power sub-segments, in some segments assuming even a virtual monopoly post-merger (electrical power).<sup>42</sup>

- 132. The market investigation shows that high market shares of the merging parties post-transaction evoke significant competition concerns, both for customers as well as for competitors, including in particular the possibility of price increases, which was confirmed by most of respondents. The strong market position will allow an aggressive pricing policy, as the merging parties will be the only supplier able to guarantee the needed volumes of formulated systems to many of the customers. Many customers stressed that even in case of price increases up to 10% they would not be able and willing to source from other producers, as the absolute identity of the components is crucial. Formulated systems are usually tailor-made, i.e. developed for specific customers and applications, and it is therefore very difficult to change suppliers. In any case, testing and approval of the components supplied by the new supplier would be necessary. In most cases, re-qualification and possibly also re-formulations would be necessary. Furthermore, the lack of flexibility due to long-standing qualification processes constitutes a serious barrier to new market entry.
- 133. In the light of the above, the proposed transaction raises serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement with respect to the horizontal effects of the proposed transaction on the markets for formulated systems for adhesives in wind energy applications, for composites in wind energy applications, and for composites in commercial/military aerospace applications.

#### D. <u>VERTICALLY AFFECTED MARKETS WITH COMPETITION CONCERNS</u>

- 134. The market position of the parties on the markets on all three levels of the epoxy resin value chain leads to a number of vertically affected markets. *Prima facie* vertical competition concerns have been identified for the following relationships:
  - (i) Vertical relationship between the production of <u>base amines</u> (PEA or EA), curing agents containing them and formulated systems for (i) adhesives used in wind energy applications, (ii) composites used in wind energy applications and (iii) composites used in aerospace applications;
  - (ii) Vertical relationship between the production of <u>Bis-F LER</u> and formulated systems using Bis-F LER, in particular for composites used in wind energy applications;
  - (iii) Vertical relationship between the production of <u>epoxy novolac</u> specialty resins (namely, EBPAN and EOCN) and formulated systems for electronic applications;

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Replies to Art 11 to RFI Competitors.

<sup>44</sup> Replies to Art 11 RFI to Customers.

<sup>45</sup> Reply to Art 11 RFI to Customers.

<sup>&</sup>lt;sup>46</sup> Replies to Art 11 RFI to Competitors, replies to Art 11 RFI to Customers.

- (iv) Vertical relationship between the production of <u>glycidyl amine</u> specialty resins (TGMDA and TGPAP) and formulated systems for composites used in aerospace applications.
- 135. All these prima facie concerns can be dismissed on the basis of the market investigation, with the exception of the ones concerning the vertical relationship originating from PEA and from TGMDA and TGPAP.

### <u>D.1. Base amines (PEA or EA) / Amine-based epoxy curing agents / Formulated systems for wind energy and aerospace applications</u>

- 136. Possible vertical concerns were considered along the vertical supply chain going from the upstream market for basic amines, down to amine-based epoxy curing agents, further downstream to formulated systems for (i) adhesives used in wind energy applications, (ii) composites used in wind energy applications and (iii) composites used in aerospace applications.
- 137. Hexion is not active upstream in the merchant market for base amines. Huntsman has a much stronger position on the merchant market for PEA ([80-100%] in the EEA and [80-100%] worldwide) than in the merchant market for EA (not exceeding [20-30%] in the EEA, and below [30-40%] on a worldwide basis even considering possible EA sub-segments<sup>47</sup>).

#### **D.1.1. Polyetheramines (PEA)**

- 138. The notified transaction would give rise to a very strong position both in the upstream PEA market (all originating from Huntsman) and in the downstream market for formulated systems for composites for the specific applications mentioned above (with a relevant horizontal overlaps), as well as a significant position in the intermediate market for curing agents. While only Huntsman produces and sells PEA, both parties are active on the merchant markets for curing agents and formulated systems, where the parties' activities overlap.
- 139. As stated in paragraph 137, on the PEA market Huntsman's market share in 2007 amounted to [80-100%] in the EEA and [80-100%] worldwide while Hexion is not active in this market. Other market players are BASF ([5-10%] EEA and [10-15%] worldwide), Arch ([2-5%] EEA and [2-5%] worldwide) and Yangzhou Chenchua ([2-5%] EEA and [<2%])worldwide).
- 140. On the market for amine-based epoxy curing agents, the parties' joint market share would be [20-30%] in the EEA (Hexion [5-10%] and Huntsman [15-20%]) and [15-20%] worldwide (Hexion [5-10%] and Huntsman [10-15%]). Considering a possible slightly narrower market definition excluding pure amines used as curing agents<sup>48</sup>, the market shares would slightly increase to [20-30%] ([10-15%]+[15-20%]) in the EEA and [20-

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It should be noted that among these sub-segments of the EA market, some are not relevant because those types of EA are not used for the production of amine-based epoxy curing agents. Only diethylenetriamine, triethylenetetraamine, tetraethylenepentamine, EA E-100 and aminoethylpiperazine are used to make amine-based epoxy curing agents, while ethylenediamine and aminoethylethanolamine are not.

<sup>&</sup>lt;sup>48</sup> Sometimes pure amines are not transformed into curing agents but used as curing agents directly.

30%] ([10-15%]+[10-15%]) worldwide. Among a number of competitors, there are Air Products ([20-30%] EEA and [20-30%] worldwide), Cognis ([5-10%] EEA and [15-20%] worldwide) and Cardolite ([5-10%] EEA and [10-15%] worldwide).

- 141. On the markets for formulated systems, the combined market shares and the overlaps brought about by the transaction are much higher. Considering composites for wind energy applications, the parties would have a market share of [70-80%] (Hexion [30-40%] and Huntsman [30-40%]) in the EEA and of [70-80%] (Hexion [50-60%] and Huntsman [20-30%]) worldwide. Considering adhesives for wind energy applications, the parties would have a market share of [30-40%] (Hexion [20-30%] and Huntsman [15-20%]) in the EEA and of [70-80%] (Hexion [60-70%] and Huntsman [5-10%]) worldwide. Considering composites for aerospace applications, the parties would have a market share of [80-100%] (Hexion [50-60%] and Huntsman [30-40%]) in the EEA and [70-80%] (Hexion [30-40%] and Huntsman [40-50%]) worldwide.
- 142. The respondents to the market investigation noted in particular that the parties would be in the position to control the supply of PEA used as an input by their competitors on the two subsequent downstream layers of the supply chain (amine-based curing agents and formulated systems for wind energy applications). They could either raise PEA prices or discontinue supply, affecting prices and availability to their downstream competitors. This could be the result of a deliberate strategy to foreclose competitors or simply of an internal reorganisation and rationalisation of production, or an increase in parties' captive consumption after the merger.
- 143. In fact, the proposed transaction would reduce the number of producers of formulated systems for composites used in wind energy applications from four to three.<sup>49</sup> The merged entity would be the only player totally integrated, from upstream production of PEA via amine-based epoxy curing agents to downstream formulated systems for wind energy (composites and adhesives) and aerospace (composites) applications and with a significantly increased market size in the downstream markets post-transaction.
- 144. In view of the significant increase in market shares downstream (supported by the strong position of Huntsman upstream PEA market and a significant presence in the intermediate market for curing agents) and the fact that the downstream markets for formulated systems are growing markets, the merged entity might not only have the ability, but also new incentives (deriving from the merger) to engage in input foreclosure, preventing or hindering downstream competitors' access to PEA.<sup>50</sup>

#### **D.1.2.** Ethyleneamines (EA)

145. A reasoning similar to the one developed for PEA in Section D.1.1. above could apply to the vertical chain originating from EA.

These are Hexion, Huntsman, Dow and Gurit. At the worldwide level, Aditya Birla emerged as an additional player in 2007 (with a [5-10%] market share realised outside the EEA).

In contrast, customer foreclosure is unlikely to arise since Hexion does not appear to have market power downstream and since amine-based epoxy curing agents account for less than [40-50%] of the overall consumption of PEA.

146. However, in view of Huntsman's much weaker position upstream in the merchant market for EA<sup>51</sup>, the Commission considers that the transaction is not likely to significantly change the incentives of the combined entity to engage in a foreclosure strategy as compared to those of Huntsman prior to the transaction.

#### **D.1.3.** Conclusion on base amines

147. The merger raises concerns along the vertical chain from PEA, via amine-based epoxy curing agents, to formulated systems for wind energy (composites and adhesives) and aerospace (composites) applications. Similar possible concerns flowing from EA can reasonably be dismissed in view of the much lower upstream market shares involved.

#### D.2. Bis-F LER / Formulated systems using Bis-F LER,

- 148. As stated in previous sections (see for instance paragraphs 122 to 126), the transaction would lead to a significant reinforcement of Hexion's position in formulated systems segments using Bis-F LER, in particular in adhesives and composites used in wind energy applications, as well as in composites used in aerospace applications. At the same time, the merger would also increase Hexion's position in the upstream market for Bis-F-LER.
- 149. This increase brought by the merger at both levels of the supply chain has the potential to increase Hexion's incentive, post-transaction, to foreclose its downstream rivals' access to Bis-F LER it produces and sells. On this basis, the merger could raise vertical concerns.
- 150. However, as explained above in Section B.2 the indications obtained on the basis of market shares tend to overstate the competitive position of the parties on the upstream market for Bis-F LER. These reasons are (i) competition from blends containing Bis-F LER (actually pertaining to the same market), (ii) significant spare capacity of Bis-F LER (representing a large part of the current size of the merchant market for pure Bis-F LER) and (iii) technical alternatives to the use of Bis-F LER by using Bis-A LER.
- 151. For these reasons, even if the merger would possibly increase the incentives to adopt an input foreclosure strategy, the merged entity would not have the ability to conduct such a strategy. In other words, the same arguments which lead to dispel possible horizontal concerns in the upstream market for Bis-F LER also lead to dispel related possible vertical concerns.
- 152. It can therefore be concluded that no vertical concerns arise in this respect.

### <u>D.3 Epoxy novolac specialty resins (EBPAN and EOCN) / Formulated systems for electronic applications</u>

153. A possible concern regarding the vertical chain between epoxy novolac resins and formulated systems for electronic applications could arise only considering very narrow market definitions. Namely, this could possibly happen along the chains from EBPAN /

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Huntsman's market share does not exceed [20-30%] EEA and [30-40%] worldwide on any of the upstream markets.

EOCN to formulated systems for electronic applications for encapsulating and photo resist:

- Concerning EBPAN, even in the absence of a horizontal overlap upstream and in the presence of a minimal ([<2%]-[2-5%]) overlap downstream, the merger would have the effect of bringing together Hexion's strong position upstream ([80-100%] in the EEA and [60-70%] worldwide; Huntsman not active on the merchant market) with Huntsman's strong position downstream both in electronic encapsulating applications ([70-80%] in the EEA and [40-50%] worldwide; Hexion with [2-5%] in the EEA and [<2%] worldwide) and in electronic photo resist applications ([30-40%] in the EEA and only [5-10%] worldwide; Hexion not active).</p>
- Concerning EOCN, the merger would add to Huntsman's pre-existing strong position in the upstream EEA market ([80-100%]) and downstream (see previous point) some additional upstream market shares from Hexion (the remaining [2-5%] of the EEA sales).
- 154. These extreme scenarios present however a series of fallbacks. First of all, the merged company would not have the ability to adopt an input foreclosure strategy for at least the following reasons: (i) supply-side substitution upstream among different types of epoxy novolac resins<sup>52</sup>, and (ii) strong positions upstream arise especially (for EBPAN) or exclusively (EOCN) at the EEA level, where the EEA market represents just a minimal part of a worldwide market ([5-10%] for EBPAN and less than [<2%] for EOCN) with significant trade flows and low transport costs. Furthermore, with respect to Hexion's relatively strong position in the worldwide EBPAN market, the fact that Huntsman does not use EBPAN in its formulations for electronic applications would rule out in practice any risk of foreclosure.
- 155. For these reasons, and considering that no risk of foreclosure has been raised by the respondents to the market investigation, it can be concluded that no vertical concerns arise in this respect.

### <u>D.4 Glycidyl amine specialty resins (TGMDA and TGPAP) / Formulated systems</u> for aerospace applications

156. Possible vertical concerns were considered along the vertical supply chain going from the upstream markets for TGMDA and TGPAP (glycidyl amine specialty resins mostly used in aerospace applications) to the downstream market of formulated systems for composites used in aerospace applications.<sup>53</sup>

Different types of epoxy novolac resins (EPN, EOCN and EBPAN) each exhibit different performance characteristics, as a result of which there is relatively little demand-side substitution between them. These resins are used in applications (such as electronic encapsulating / photo resist) where the need for additional chemical resistance and/or thermal resistance justifies the additional cost relative to LER. However, supply-side substitution is extensive, as the production of different epoxy novolac resins (and different grades within each type) only requires minor adjustments to the recipe and can be implemented on the same equipment without modification. This would justify considering the broad market for epoxy novolac resins rather than the respective sub-segments.

<sup>53</sup> See footnote 30 above.

#### D.4.1. TGMDA glycidyl amine specialty resin

- 157. As stated above, the transaction leads to a significant reinforcement of the parties' position in the market for formulated systems for composites used in aerospace applications. This increase in market shares in the downstream market for formulated systems together with some reinforcement of the already high Huntsman' market shares in the upstream market for TGMDA could raise vertical concerns.
- 158. On the merchant market for TGMDA, the merged company would have [80-100%] (Hexion [5-10%] and Huntsman [80-100%]) at the EEA level and [80-100%] (Hexion [2-5%] and Huntsman [70-80%]) worldwide. Other competitors on the market are Atul ([2-5%] in the EEA and [2-5%] worldwide) and Sumitomo ([10-15%] worldwide, not selling in Europe).
- 159. On the market for formulated systems for composites used in aerospace applications, the combined market share would also be very high and the overlap would be much more significant. The parties would have [80-100%] (Hexion [50-60%] and Huntsman [30-40%]) in the EEA and [70-80%] (Hexion [30-40%] and Huntsman [40-50%]) worldwide.
- 160. Concerns were raised by respondents to the market investigation with respect to the possible negative vertical effect deriving from the removal of one competitor upstream. This could have an impact on the downstream market, because competition among formulators supplying manufacturers of aerospace applications takes place at the product development stage.<sup>54</sup> After qualification is awarded by the manufacturer, formulators are bound to a specific formulation and, in case of a shortage of one component (such as TGMDA) of their qualified formulated system, they cannot simply replace it with a substitute having comparable properties without incurring a lengthy and cost-intensive process of re-qualification. In other words, the fact that Hexion is currently the only alternative to Huntsman for TGMDA may induce the merged company to limit the access to TGMDA to competitors in the downstream market for formulated systems for aerospace composites.<sup>55</sup>
- 161. In view of the increase in market shares both upstream and downstream, and of the fact that the downstream markets for formulated systems are growing markets, the merged entity might not only have the ability (possibly existing also before the merger with Huntsman) but also new incentives (deriving from the merger) to engage in input foreclosure, preventing or hindering downstream competitors' access to TGMDA.

#### D.4.2. TGPAP glycidyl amine specialty resin

162. A reasoning similar to the one developed for TGMDA could apply to the vertical chain originating from TGPAP, where Huntsman has [80-100%] market share in the EEA and [80-100%] worldwide. Whereas Hexion is currently only a very marginal supplier of TGPAP ([<2%] market share at the worldwide level). As already discussed in section [the one on horizontal concerns], its TGPAP resin is qualified in a number of cases in addition

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Replies to Art 11 RFI to Customers, replies to Art 11 RFI to Competitors.

<sup>&</sup>lt;sup>55</sup> Confidential: Reply to Art 11 RFI to Competitors,.

- to Huntsman's resins (and in at least one case it is the only qualified alternative to Huntsman's products).
- 163. Concerns were raised by respondents to the market investigation with respect to the possible negative vertical effect deriving from the transaction. In fact, notwithstanding Hexion's much weaker position upstream in the merchant market for TGPAP, as compared to its position in the market for TGMDA, Hexion can be seen at least as a potential competitor in view of all those situations where its products are already qualified, and especially when they are the only *timely* alternative to Huntsman's products.
- 164. Therefore, the overall reasoning related to the vertical concerns expressed for TGMDA can be retained for TGPAP because the elimination of a potential competitor may, in conjunction with the increase in market shares (and related significant horizontal overlap) in the downstream (growing) market for formulated systems for composites used in aerospace applications, allow the merged entity to, not only have the ability (possibly existing also before the merger with Huntsman) but also new incentives deriving from the merger to engage in input foreclosure, preventing or hindering downstream competitors' access to TGPAP.

### D.4.3. Conclusion on glycidyl amine specialty resins

165. The merger raises concerns along the vertical chain from TGMDA and TGPAP glycidyl amine specialty resins to formulated systems for composites used in aerospace applications.

### **D.5.** Conclusion on vertical concerns

- 166. Serious competition concerns arise on the following vertically affected markets:
  - Vertical supply chain from the production of PEA, to PEA-based epoxy curing agents, to formulated systems for (i) adhesives used in wind energy applications, (ii) composites used in wind energy applications and (iii) composites used in aerospace applications.
  - Vertical supply chain from the production of TGMDA and TGPAP glycidyl amine specialty resins, to formulated systems for composites used in aerospace applications.

### V. COMMITMENTS OFFERED BY HEXION

## A. DESCRIPTION OF THE PROPOSED COMMITMENTS

- 167. On 9 June 2008, the Apollo Group and Hexion submitted a commitment proposal which included the divestiture of the following assets (together hereinafter referred to as the "Divestment Business"):
  - All facilities belonging to Hexion's epoxy resin business at Duisburg, Germany ("Duisburg");
  - Hexion's facility at Stuttgart, Germany ("Stuttgart");

- Hexion's facility at Argo, USA ("Argo");
- Hexion's High Performance Resin Unit located at Norco, USA ("Norco"); and
- The research and development assets belonging to Hexion's epoxy resins business at Duisburg, Stuttgart and Houston.
- 168. The production capabilities of these facilities are as follows:
  - Duisburg has the capability to produce [Description of products manufactured at the Divestment Business];
  - Stuttgart focuses on the production of [Description of products manufactured at the Divestment Business];
  - Argo produces [Description of products manufactured at the Divestment Business]; and
  - Norco produces [Description of products manufactured at the Divestment Business];
- 169. The commitment proposal also includes the following agreements which will be entered into by Hexion at the discretion of the purchaser:
  - Long term supply agreements for [Description of products to be supplied by the Parties to the Divestment Business] (all with a term of [...] years and a right of the purchaser to terminate them any time on [...] months' notice) as well as for [Description of products to be supplied by the Parties to the Divestment Business]. The prices for all products will be [contract details] agreed between Hexion and the purchaser, subject to the approval of the Monitoring Trustee;
  - Transitional supply agreements for [Description of products to be supplied by the Parties to the Divestment Business] (all with a term of [...] year) as well as [Description of products to be supplied by the Parties to the Divestment Business] (with an initial term of [...] months, and extendable at the option of the Divestment Business if necessary to ensure a seamless transfer of production to the Divestment Business). The prices for all products will be [contract details] agreed between Hexion and the purchaser, subject to the approval of the Monitoring Trustee;
  - Transitional service agreements, including utility and waste management, technical services, maintenance operations, environmental protection, health and safety and site security;
  - A transitional agreement under which Hexion would maintain a separate [Divestment business information system] information system for the Divestment Business.
- 170. The following further agreements will be negotiated between Hexion and the purchaser with terms that are to be approved by the Monitoring Trustee:
  - Transitional supply agreements for the supply by the Divestment Business to Hexion of certain products;

- An agreement under which [Description of relationships between the Divested Business and the retained Hexion facilities] for a period of [...] months after closing;
- 171. The attached Schedules contain further details on the tangible and intangible assets, licenses, permits and authorisations, contracts, customers and personnel included into the Divestment Business.
- 172. These Schedules also contain a list of items not included into the Divestment Business, in particular
  - Any assets or employees belonging to Hexion's [Description of items not included in the Divestment Business] located at Duisburg;
  - Title to real property at Stuttgart, Norco and Argo;
  - Customer relationships, sales records and certain personnel relating to [Description of relationships between the Divested Business and the retained Hexion facilities];
  - The [Description of items not included in the Divestment Business] located at Argo;
     and
  - Any assets, employees or business related to the production of [Description of items not included in the Divestment Business], located in the "C" Unit at Norco.
- 173. Following a market test of the proposed commitments, the parties have on 23 June 2008 submitted improvements to the commitment proposal. These improvements concern the viability of the Divestment Business and are therefore described in section B.2 below.

### B. ASSESSMENT OF THE PROPOSED COMMITMENTS

### **B.1. Suitability for removing the serious doubts**

174. The remedy completely removes all horizontal overlaps with regard to glycidyl amines TGMDA, cycloaliphatic resins HHPA and tetra resin. It is therefore suitable to remove the serious doubts raised above.

Product/ Type	EEA			WW					
	Combined*	Overlap*	Divestiture	Combined*	Overlap*	Divestiture			
Glycidyl Amines - TGPAP	[80-100%]	[<2%]	[<2%]	[80-100%]	[<2%]	[<2%]			
Glycidyl Amines - TGMDA	[80-100%]	[5-10%]	[5-10%]	[80-100%]	[2-5%]	[2-5%]			
Cycloaliphatic Resins - HHPA	[70-80%]	[<2%]	[70-80%]	[80-100%]	[10-15%]	[10-15%]			
Tetra Resin	[80-100%]	[10-15%]	[80-100%]	[50-60%]	[<2%]	[50-60%]			

### (\*) Data before divestiture

175. The remedy also completely removes all horizontal overlaps in relation to the following formulated systems: adhesives for wind energy, composites commercial/military aerospace, composites recreation, electrical power and electrical

encapsulating. It is therefore suitable to remove the serious doubts raised above in relation to those formulated systems.

Product/ Type		EEA		WW			
	Combined*	Overlap*	Divestiture	Combined*	Overlap*	Divestiture	
Adhesives for wind energy	[30-40%]	[15-20%]	[20-30%]	[70-80%]	[5-10%]	[60-70%]	
Composites for commercial and military aerospace	[80-100%]	[30-40%]	[50-60%]	[70-80%]	[30-40%]	[30-40%]	
Composites for recreation	[80-100%]	[<2%]	[<2%]	[30-40%]	[<2%]	[<2%]	
Electrical power	[50-60%]	[10-15%]	[10-15%]	[40-50%]	[5-10%]	[5-10%]	
Electronics encapsulating	[70-80%]	[2-5%]	[2-5%]	[40-50%]	[<2%]	[<2%]	

<sup>(\*)</sup> Data before divestiture

176. Furthermore, with regard to formulated systems for composites used in wind energy applications, the remedy completely removes the overlap in the EEA. At worldwide level, the market shares pre-merger are Hexion [50-60%] and Huntsman [20-30%] while post-merger with the remedy the market shares will be [15-20%] for Hexion, [20-30%] for Huntsman and [30-40%] for the Divestment Business. As Hexion divests a market share ([30-40%]) which is larger than the market share of the acquired business ([20-30%]), the remedy is suitable to remove the serious doubts raised above in relation to formulated systems for composites used in wind energy applications.

Product/ Type	EEA			WW				
	Combined*	Overlap*	Divestiture	Combined*	Overlap*	Divestiture		
Composites for wind energy	[70-80%]	[30-40%]	[30-40%]	[70-80%]	[20-30%]	[30-40%]		

<sup>(\*)</sup> Data before divestiture

- 177. The remedy also removes all vertical concerns identified above.
- 178. As regards the vertical concern identified in relation to the vertical chain from PEA, via amine-based epoxy curing agents, to formulated systems for *wind adhesives* and *aerospace (composites)* applications, the removal of the horizontal overlap on the downstream markets for wind energy adhesives and aerospace composites applications will also remove any possible incentives that the merged entity may have, as compared to Huntsman's situation pre-merger, to enter into any foreclosure strategy.
- 179. As regards the vertical concern identified in relation to the vertical chain from PEA, via amine-based epoxy curing agents, to formulated systems for *wind energy composites*, the remedy leads, as mentioned above in paragraph 174, to the divestiture of the complete Hexion's market share at the EEA level and of 2/3 of Hexion's market share at the worldwide level. As the remedy therefore keeps almost entirely the *status quo* of the current market structure, it also removes any possible incentives that the merged entity

- may have, as compared to Huntsman's situation pre-merger, to engage in any foreclosure strategy.
- 180. Furthermore, the [Descriptions of products to be supplied by the Parties to the Divestment Business] offered by the parties to the Divestment Business will guarantee access of the Divestment Business to the raw materials necessary to produce amine-based epoxy curing agents.
- 181. As regards the vertical concern identified above relating to the vertical supply chain going from the upstream market for the glycidyl amine specialty resins TGMDA and TGPAP to the downstream market of formulated systems for composites used in aerospace applications, it should be recalled that the remedy completely removes the overlap in the specialty resins TGMDA and TGPAP as well as in aerospace composite applications. This also removes, as compared to Huntsman's situation pre-merger, any incentive the merged entity may have to engage in foreclosure.
- 182. It should finally be noted that the Divestment Business has been producing Bis-F LER until 2006, and it would be able within a reasonable period of time and with minor investment costs to re-start the production of Bis-F LER at a significant scale.
- 183. The proposed commitments are therefore suitable to remove all horizontal and vertical competition concerns raised by the proposed operation.

## **B.2. Viability**

184. Since the Divestment Business is not a stand-alone legal entity but forms part of Hexion, it has necessarily to be "carved out" of the remaining business. In such "carve-out" operations, it is of utmost importance for the viability of the transferred business that it has access to all inputs and other resources such as R&D, distribution networks etc. necessary for its independent operation.

### **B.2.1.** Up-front buyer

- 185. Since access to such inputs and resources depends to a large extent on the identity of the purchaser, the parties have proposed an up-front buyer solution. The parties commit to find a purchaser and to suspend the implementation of the notified transaction until a binding sale and purchase agreement has been reached with that purchaser and the Commission has approved both the purchaser and the terms of sale. In order to be approved by the Commission, it is necessary in particular that such a buyer has the financial resources, proven expertise and incentive to maintain and develop the Divestment Business as a viable and active competitive force in competition with the parties and other competitors.
- 186. The market test confirmed the necessity of such an up-front buyer solution since the respondents emphasised that the identity of the purchaser plays an important role for the viability of the Divestment Business. It was often expressed that such a purchaser should have experience in the chemical industry with its own R&D and distribution capabilities and its own access to epoxy resins and raw materials, preferably through vertical integration. No clear-cut picture emerged from the market test as to the question whether a separate sale of the various assets composing the Divestment Business to different purchasers would still preserve the viability of each business and restore effective

competition. It should be noted that only a relatively short time period is foreseen for Hexion to find such a buyer. If Hexion has not entered into a binding sale and purchase agreement at the end of that period, the Divestiture Trustee will be granted an exclusive mandate to sell the Divestment Business with the sale and purchase agreement being conditional upon the closing of the notified transaction.

## **B.2.2.** Transitory and long-term supply agreements

- 187. Furthermore, as the Divestment Business would need to rely on Hexion for a number of input materials at least for a transitory period, the parties have committed to enter into the aforementioned transitional and long-term agreements with the Divestment Business at the option of the purchaser, i.e.:
  - Long term supply agreements for [Descriptions of products to be supplied by the Parties to the Divestment Business] (all with a term of [...] years and a right of the purchaser to terminate them earlier on [...] months' notice) as well as [Descriptions of products to be supplied by the Parties to the Divestment Business]. The prices for all products will be [contract details] agreed between Hexion and the purchaser, subject to the approval of the Monitoring Trustee;
  - Transitional supply agreements for [Descriptions of products to be supplied by the Parties to the Divestment Business] (all with a term of [...] year) as well as [Descriptions of products to be supplied by the Parties to the Divestment Business] (with a term of [...] months, and extendable at the option of the Divestment Business if necessary to ensure a seamless transfer of production to the Divestment Business). The prices for all products will be [contract details] agreed between Hexion and the purchaser, subject to the approval of the Monitoring Trustee;
- 188. All products covered by the long-term supply agreements have been identified as essential input materials for the activity of the Divestment Business. The market test has generally confirmed that the Divestment Business' access to these products should be facilitated by long-term supply agreements and that a period of [...] years is sufficient to allow the Divestment Business to establish alternative sources of supply. Furthermore, in response to the concerns in the market that the Divestment Business should be granted access also to [Descriptions of products to be supplied by the Parties to the Divestment Business] under long-term supply agreements, Hexion has on 23 June 2008 improved its proposal, so as to include these products in the long-term supply agreements offered to the purchaser.
- 189. Similar considerations apply to the products covered by the transitional supply agreements, although the shorter duration of these agreements reflect the easier accessibility of these products on the market.

### **B.2.3.** Site-sharing in Duisburg

- 190. Further viability issues have arisen in relation to the fact that Hexion will retain its non-epoxy related business at Duisburg.
- 191. The Duisburg site is currently shared between several parties. The service company InfraTec Duisburg GmbH ("InfraTec") provides site-related services such as administration, security, energy, steam, water, waste water, and general logistics services

- to Rütgers Chemicals GmbH, Hexion, Rütgers Kureha Solvents GmbH and Bozetto GmbH on the Duisburg site. InfraTec is owned by Rütgers Chemicals GmbH ([...]) and Hexion ([...]).
- 192. In order to support the viability of the Divestment Business' Duisburg facility, Hexion offers to pass through the services it receives from InfraTec to the purchaser to the extent that they relate to the epoxy business, under a site services agreement at cost basis. Furthermore, subject to the right of first refusal of the other shareholder in InfraTec, Hexion offers to sell to the purchaser not later than [...] months from the effective date and at net book value including cash in hand the portion of its ownership interest in InfraTec that corresponds to the size of the Divestment Business relative to Hexion's retained business at the Duisburg site. Hexion commits to use best efforts to secure the consent of Rütgers Chemicals as the other shareholder in InfraTec to such sale.
- 193. In the course of the market test, concerns have been expressed that Hexion would have the ability to prevent expansion or upgrading of the Divestment Business' facility in Duisburg. Hexion has responded to such concerns by offering several new elements in its improved remedy of 23 June 2008:
  - Instead of a [...]-year lease agreement with a monthly rent of [contract details],
     Hexion will offer the purchaser the option to transfer to the purchaser the legal title in the Duisburg real estate against a consideration of [contract details];
  - In the event that Hexion is unable to secure the consent of the other shareholder in InfraTec to the sale of a portion of Hexion's ownership interest in InfraTec to the Purchaser within [...] months of closing, Hexion undertakes to offer [...] of its ownership interest to the purchaser, at net book value including cash in hand, subject to the rights of first refusal held by the other shareholder in InfraTec and on the condition that InfraTec will continue to provide services to the retained Hexion businesses at the Duisburg site on substantially the same terms as Hexion presently receives them. For the period from closing until such time as Hexion has transferred an interest in InfraTec in accordance with the foregoing, Hexion will enter into a transitional site services agreement with the Divestment Business under which it will pass through to the Divestment Business those services that the Divestment Business requires from InfraTec at cost.
  - Furthermore, the Monitoring Trustee or, in case the Monitoring Trustee will no longer be in office, a dispute resolution procedure will ensure that any unused land or facilities presently owned by Hexion at the Duisburg site is equitably allocated between the Divestment Business and Hexion, taking into consideration the expansion needs of the Divestment Business and Hexion's [Description of items not included in the Divestment Business].
- 194. These provisions are suitable to prevent Hexion from negatively affecting the procurement of on-site services by the Divestment Business' Duisburg facility and its ability to grow and upgrade on the Duisburg site.

### B.2.4. Transfer of know-how and brands

195. Hexion originally offered to transfer the necessary intellectual property related to specialty epoxy resins and formulated systems produced at the facilities of the Divestment

Business as well as a perpetual royalty-free license to use all Bakelite epoxy brands, trademarks and trade names currently owned by Hexion.

- 196. In response to concerns raised by the market test that the Divestment Business would have to share its know-how and brands with Hexion, the improved remedies clarify the following:
  - The purchaser will be granted a perpetual royalty-free exclusive license to use all Bakelite brands, trademarks and trade names in combination with epoxy resin products;
  - The necessary intellectual property related to specialty epoxy resins and formulated systems will be transferred on an exclusive basis where the products presently produced by the Divestment Business are not presently produced at facilities that will be retained by Hexion (see Appendix 1 to the Commitments for these products) and on a non-exclusive basis with regard to all products that are presently produced by the Divestment Business and at the facilities that will be retained by Hexion (see Appendix 2 to the Commitments for these products); and
  - In order to allow the Purchaser sufficient time to transition the Divestment Business to its own brands while maintaining the full goodwill associated with those products, at the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, [...] months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period.
- 197. The Divestment Business will therefore have the necessary know-how and brands to operate a viable activity on the market on a stand-alone basis.

## **B.3. Conclusion on the commitments**

198. The Commission therefore considers that the commitments are suitable and viable for remedying the serious doubts on the compatibility of the concentration with the common market and the EEA Agreement, which have been established in the previous sections of this Decision.

### C. CONDITIONS AND OBLIGATIONS

199. Under the first sentence of the second subparagraph of Article 6(2) of the Merger Regulation, the Commission may attach to its decision conditions and obligations intended to ensure that the undertakings concerned comply with the commitments they

have entered into vis-à-vis the Commission with a view to rendering the concentration compatible with the common market.

- 200. The fulfilment of the measure that gives rise to the structural change of the market is a condition, whereas the implementing steps which are necessary to achieve this result are generally obligations on the parties. Where a condition is not fulfilled, the Commission's decision declaring the concentration compatible with the common market no longer stands. Where the undertakings concerned commit a breach of an obligation, the Commission may revoke the clearance decision in accordance with Article 8(5) of the Merger Regulation. The undertakings concerned may also be subject to fines and periodic penalty payments under Articles 14(2) and 15(1) of the Merger Regulation.
- 201. In accordance with the basic distinction described above, the decision in this case is conditioned on the full compliance with Sections B H and J of the Commitments submitted by the notifying party.
- 202. The remaining requirements set out in the other Sections of the Commitments submitted by the notifying party are considered to constitute obligations.

#### VI. CONCLUSION

- 203. The Commission has concluded that the remedies submitted by the parties are sufficient to remove the serious doubts raised by the concentration. Accordingly, subject to the full compliance with the commitments submitted by the parties, 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) and Article 6(2) of the Merger Regulation.
- 204. The detailed text of the commitments is annexed to this decision as Annex 3. The full text of the annexed commitments forms an integral part to this decision.

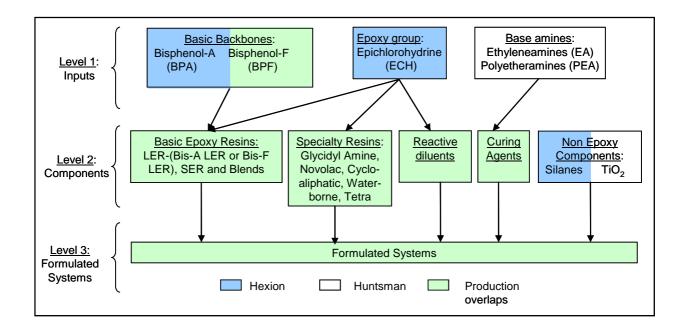
For the Commission, *signed*, Siim KALLAS
Vice-President of the Commission

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Annex 1
Epoxy Value Chain



## **Market Shares 2007**

		EEA			Worldwide			
<b>Product/</b> Type	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined		
Inputs	•	•			•			
BPA	[10-15%]	[<2%]	[10-15%]	[10-15%]	[<2%]	[10-15%]		
BPF	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]		
ECH	[<2%]	[<2%]	[<2%]	[2-5%]	[<2%]	[2-5%]		
Formaldehyde	[5-10%]	[<2%]	[5-10%]	**	**	**		
TPE	[80-100%]	[<2%]	[80-100%]	[60-70%]	[<2%]	[60-70%]		
Ethylenamines								
DETA	[<2%]	[15-20%]	[15-20%]	[<2%]	[30-40%]	[30-40%]		
TETA	[<2%]	[15-20%]	[15-20%]	[<2%]	[30-40%]	[30-40%]		
TEPA	[<2%]	[15-20%]	[15-20%]	[<2%]	[30-40%]	[30-40%]		
E-100	[<2%]	[15-20%]	[15-20%]	[<2%]	[30-40%]	[30-40%]		
AEP	[<2%]	[5-10%]	[5-10%]	[<2%]	[10-15%]	[10-15%]		
Polyetheramines	[<2%]	[80-100%]	[80-100%]	[<2%]	[80-100%]	[80-100%]		

		EEA			Worldwide		
Product/ Type	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined	
LER - All	[20-30%]	[5-10%]	[30-40%]	[15-20%]	[5-10%]	[20-30%]	
Bis-A	[20-30%]	[5-10%]	[30-40%]	[15-20%]	[2-5%]	[20-30%]	
Bis-F	[60-70%]	[15-20%]	[80-100%]	[40-50%]	[10-15%]	[50-60%]	
Blends	[20-30%]	[5-10%]	[30-40%]	[10-15%]	[5-10%]	[15-20%]	
SER							
SER - All	[10-15%]	[5-10%]	[20-30%]	[5-10%]	[5-10%]	[10-15%]	
Solid	[5-10%]	[5-10%]	[15-20%]	[5-10%]	[5-10%]	[10-15%]	
Solutions	[20-30%]	[2-5%]	[30-40%]	[20-30%]	[5-10%]	[30-40%]	
Specialty Resins	<u>I</u>	<u>I</u>	<u>I</u>	<u>I</u>	I	I	
Glycidyl Amines - All	[2-5%]	[80-100%]	[80-100%]	[2-5%]	[80-100%]	[80-100%]	
Glycidyl Amines -TGMDA	[5-10%]	[80-100%]	[80-100%]	[2-5%]	[70-80%]	[80-100%]	
Glycidyl Amines - TGPAP	[<2%]	[80-100%]	[80-100%]	[<2%]	[80-100%]	[80-100%]	
Cycloaliphatic Resins - All	[2-5%]	[<2%]	[2-5%]	[<2%]	[5-10%]	[5-10%]	
Cycloaliphatic Resins - HHPA	[70-80%]	[<2%]	[70-80%]	[10-15%]	[70-80%]	[80-100%]	
Cycloaliphatic Resins - Peracetic	[<2%]	[<2%]	[2-5%]	[<2%]	[<2%]	[2-5%]	
Epoxy Novolacs - All	[5-10%]	[20-30%]	[30-40%]	[5-10%]	[5-10%]	[10-15%]	
Epoxy Novolacs - EBPAN	[80-100%]	[<2%]	[80-100%]	[60-70%]	[<2%]	[60-70%]	
Epoxy Novolacs - EPN	[5-10%]	[15-20%]	[20-30%]	[2-5%]	[10-15%]	[15-20%]	
Epoxy Novolacs - EOCN	[2-5%]	[80-100%]	[80-100%]	[2-5%]	[2-5%]	[5-10%]	
LBR	[10-15%]	[<2%]	[10-15%]	[5-10%]	[<2%]	[5-10%]	
Tetra Resin - All	[10-15%]	[2-5%]	[15-20%]	[5-10%]	[<2%]	[10-15%]	
Tetra Resin - Glycidated TPE	[80-100%]	[10-15%]	[80-100%]	[50-60%]	[<2%]	[50-60%]	
Waterborne	[15-20%]	[2-5%]	[15-20%]	[30-40%]	[2-5%]	[30-40%]	
Reactive Diluents							
Glycidyl Esters	[80-100%]	[<2%]	[80-100%]	[80-100%]	[<2%]	[80-100%]	
Glycidyl Ethers - All	[5-10%]	[5-10%]	[15-20%]	[5-10%]	[5-10%]	[10-15%]	
Monofunctional Gl. Ethers - All	[10-15%]	[5-10%]	[15-20%]	[5-10%]	[5-10%]	[10-15%]	
Monofunctional Aliphatic Gl. Ethers	[5-10%]	[5-10%]	[10-15%]	[5-10%]	[5-10%]	[15-20%]	
Monofunctional Aromatic Gl. Ethers	[15-20%]	[2-5%]	[20-30%]	[10-15%]	[2-5%]	[10-15%]	
Multifunctional Aliphatic Gl. Ethers	[2-5%]	[10-15%]	[15-20%]	[5-10%]	[5-10%]	[10-15%]	
Reactive Diluents - All	[20-30%]	[5-10%]	[30-40%]	[15-20%]	[5-10%]	[20-30%]	
Curing Agents				•	•		
Amine Curing Agents - All	[5-10%]	[15-20%]	[20-30%]	[5-10%]	[10-15%]	[15-20%]	

		EEA			Worldwide		
Product/ Type	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined	
Amine Blends/Adducts (excl. pure amines)	[10-15%]	[15-20%]	[20-30%]	[10-15%]	[10-15%]	[20-30%]	
PAA/AA	[<2%]	[15-20%]	[15-20%]	[2-5%]	[5-10%]	[10-15%]	
Anhydride	[2-5%]	[<2%]	[2-5%]	[<2%]	[<2%]	[2-5%]	
Phenolic	[5-10%]	[5-10%]	[15-20%]	[2-5%]	[2-5%]	[5-10%]	
Catalysts/Accelerators - All	[2-5%]	[5-10%]	[10-15%]	[2-5%]	[5-10%]	[5-10%]	
Heat cured	[5-10%]	[5-10%]	[10-15%]	[2-5%]	[2-5%]	[5-10%]	
Ambient cured	[<2%]	[10-15%]	[10-15%]	[<2%]	[5-10%]	[5-10%]	
[Hexion and Huntsman activity in DDS] - all applications	[<2%]	[60-70%]	[60-70%]	[<2%]	[20-30%]	[20-30%]	
Non-epoxy market							
Polyurethane amine catalysts	[10-15%]	[15-20%]	[20-30%]	[10-15%]	[10-15%]	[20-30%]	
OSB resins	[5-10%]	[15-20%]	[20-30%]	**	**	**	
Textile fibre sizing agents	[2-5%]	[5-10%]	[5-10%]	[2-5%]	[<2%]	[2-5%]	
Formulated Systems					<u> </u>		
Adhesives - All	[<2%]	[20-30%]	[20-30%]	[2-5%]	[10-15%]	[15-20%]	
Adhesives - Wind	[20-30%]	[15-20%]	[30-40%]	[60-70%]	[5-10%]	[70-80%]	
Adhesives - Aerospace	[<2%]	[5-10%]	[5-10%]	[<2%]	[5-10%]	[5-10%]	
Adhesives - Automotive	[<2%]	[10-15%]	[10-15%]	[<2%]	[2-5%]	[2-5%]	
Adhesives - DIY	[<2%]	[20-30%]	[20-30%]	[<2%]	[30-40%]	[30-40%]	
Adhesives - Electronic	[<2%]	[2-5%]	[2-5%]	[<2%]	[10-15%]	[10-15%]	
Adhesives - LNG	[<2%]	[80-100%]	[80-100%]	[<2%]	[80-100%]	[80-100%]	
Adhesives - General Industry	[<2%]	[30-40%]	[30-40%]	[<2%]	[15-20%]	[15-20%]	
Coatings - All (de minimis activities)	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	
Tooling - All	[<2%]	[20-30%]	[20-30%]	[<2%]	[30-40%]	[30-40%]	
Composites - All	[20-30%]	[20-30%]	[40-50%]	[20-30%]	[15-20%]	[40-50%]	
Composites - Commercial/Military Aerospace	[50-60%]	[30-40%]	[80-100%]	[30-40%]	[40-50%]	[70-80%]	
Composites - Recreational Aerospace	[80-100%]	[<2%]	[80-100%]	[80-100%]	[<2%]	[80-100%]	
Composites - Building & Construction	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	
Composites - Transportation	[<2%]	[40-50%]	[40-50%]	[<2%]	[20-30%]	[20-30%]	
Composites - General Industry	[20-30%]	[10-15%]	[30-40%]	[15-20%]	[10-15%]	[20-30%]	
Composites - Marine	[5-10%]	[<2%]	[5-10%]	[5-10%]	[<2%]	[5-10%]	
Composites - Wind	[30-40%]	[30-40%]	[70-80%]	[50-60%]	[20-30%]	[70-80%]	
Composites - Recreation	[<2%]	[80-100%]	[80-100%]	[<2%]	[30-40%]	[30-40%]	
Construction - All	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	
Construction - Adhesives	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	

	EEA			Worldwide			
Product/ Type	Hexion	Huntsman	Combined	Hexion	Huntsman	Combined	
Construction - Flooring	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	[<2%]	
Construction - General & Non Building	[2-5%]	[2-5%]	[5-10%]	[<2%]	[2-5%]	[2-5%]	
Electrical Power - All	[10-15%]	[40-50%]	[50-60%]	[5-10%]	[40-50%]	[40-50%]	
Electronic - All	[2-5%]	[40-50%]	[40-50%]	[<2%]	[15-20%]	[15-20%]	
Electronic - Encapsulating	[2-5%]	[70-80%]	[70-80%]	[<2%]	[40-50%]	[40-50%]	
Electronic - Photo Resist	[<2%]	[30-40%]	[30-40%]	[<2%]	[5-10%]	[5-10%]	
Electronic - Laminating	[<2%]	[5-10%]	[5-10%]	[<2%]	[5-10%]	[5-10%]	

<sup>(\*)</sup> Market shares calculated on the basis of the Form CO and data from the market investigation for Bis-F LER, based on volumes.

### Annex 2

### List of Abbreviations

DDS diaminodiphenylsulfone
EBPAN epoxy bisphenol-A novolac
EOCN epoxy ortho-cresol novolac
EPN epoxy phenol novolac

HHPA resins based on hexahydrophthalic anhydride

LBR low brominated resin OSB oriented strand board

PAA/AA polyaminoamine/polyamide and amidoamine (curing agents)

pMDI polymeric methylenediphenyldiisocanate tetra resin tetraphenolethane glycidyl ether resin TGMDA tetraglycidyl methylenedianiline TGMXDA tetraglycidyl meta-xylenedianiline TGPAP triglycidyl para-aminophenol

TPE tetraphenolethane

#### Annex 3

### By hand, e-mail and fax: 00 32 2 296 4301

European Commission – Merger Task Force DG Competition Rue Joseph II 70 Jozef-II straat B-1000 BRUSSELS

#### Case M.4835- Hexion/Huntsman

#### COMMITMENTS TO THE EUROPEAN COMMISSION

Pursuant to Article 6(2) of Council Regulation (EEC) No. 139/2004 as amended, Apollo Management LP, on behalf of the Apollo Group, and Hexion Specialty Chemicals, Inc. hereby provide the following Commitments in order to enable the European Commission to declare the acquisition by Hexion of Huntsman Corporation compatible with the common market and the EEA Agreement by its decision pursuant to Article 6(1)(b) of the Merger Regulation.

The Commitments shall take effect upon the date of adoption of the Decision.

This text shall be interpreted in the light of the Decision to the extent that the Commitments are attached as conditions and obligations, in the general framework of Community law, in particular in the light of the Merger Regulation, and by reference to the Commission Notice on remedies acceptable under Council Regulation (EEC) No 139/2004 and under Commission Regulation (EC) No 802/2004.

### **Section A. Definitions**

For the purpose of the Commitments, the following terms shall have the following meaning:

**Affiliated Undertakings**: undertakings controlled by the Parties and/or by the ultimate parents of the Parties, whereby the notion of control shall be interpreted pursuant to Article 3 Merger Regulation and in the light of the Commission's consolidated jurisdictional Notice under Council Regulation (EEC) No 139/2004.

**Apollo**: Apollo Management LP, on behalf of the Apollo Group.

**Assets**: items referred to under Paragraph 5 (a)-(c) herein.

**Bis-A LER:** The following Hexion grades of diglycidyl ether of bisphenol A: [...], in accordance with the specifications in Appendix 3.

**Bis-F LER:** The following Hexion grades of diglycidyl ether of bisphenol F: [...], in accordance with the specifications in Appendix 3.

**Cardura:** The following Hexion grade of glycidyl ester of versatic acid used as a reactive diluent: [...], in accordance with the specifications in Appendix 3.

**Closing**: the transfer of the legal title of the Divestment Business to the Purchaser.

**Common Products**: those products presently produced by the Divestment Business that are also presently produced at facilities that will be retained by Hexion, as listed in Appendix 2.

**Divestment Business:** the business or businesses that the Parties commit to divest, as defined in Section B and the Schedule hereto.

**Divestiture Trustee**: one or more natural or legal person(s), independent from the Parties, who is approved by the Commission and appointed by Hexion and who has received from Hexion the exclusive Trustee Mandate to sell the Divestment Business to a Purchaser at no minimum price.

**Effective Date**: the date of adoption of the Decision.

**Exclusive Products**: those products presently produced by the Divestment Business that are not presently produced at facilities that will be retained by Hexion, as listed in Appendix 1.

**First Divestiture Period**: the period of [...] months from the Effective Date.

**Hexion:** Hexion Specialty Chemicals, Inc., incorporated under the laws of New Jersey, USA, with its registered office at 180 East Broad Street, Columbus, OH 43215, USA, IRS Employer ID No. 13-0511250.

**Hold Separate Manager**: the person appointed by Hexion for the Divestment Business to manage the day-to-day business under the supervision of the Monitoring Trustee.

**Huntsman**: Huntsman Corporation, incorporated under the laws of Delaware, USA, with its registered office at 500 Huntsman Way, Salt Lake City, UT 84108, USA, IRS Employer ID No. 42-1648585.

**InfraTec**: a service company owned by Rütgers Chemicals GmbH and Hexion that provides site-related services to Rütgers Chemicals, Hexion, Rütgers Kureha Solvents GmbH and Bozetto GmbH on the Duisburg site. These services include, *inter alia*, administration, security, energy, steam, water, waste water, and general logistics services.

**Key Personnel**: all personnel necessary to maintain the viability and competitiveness of the Divestment Business, as listed in the Schedule.

**Long Term Supply Agreements:** the agreements identified in paragraphs 6 through 33.

**Merger Agreement**: the acquisition by Hexion of Huntsman.

Merger Regulation: Council Regulation (EC) No. 139/2004 as amended.

**Monitoring Trustee**: one or more natural or legal person(s), independent from the Parties, who is approved by the Commission and appointed by Hexion, and who has the duty to monitor Hexion's compliance with the conditions and obligations attached to the Decision.

**Parties**: Hexion and Apollo Management LP, on behalf of the Apollo Group.

**Personnel**: all personnel currently employed by, or attributable to, the Divestment Business, including Key Personnel, staff seconded to the Divestment Business, shared personnel and the additional personnel listed in the Schedule.

**Phenolic Composite Resins:** The following grades of phenolic resins produced by Hexion's phenolic resins business and historically sold by the Divestment Business for use in airplane interior parts: [...].

**Polyetheramine**: The following Huntsman grades of polyetheramines: [...].

**Purchaser**: the entity approved by the Commission as acquirer of the Divestment Business in accordance with the criteria set out in Section J.

**Purchaser Requirements**: the items referred to under Paragraph 55 herein.

**TPE**: The following Hexion grade of tetraphenolethane: [...], in accordance with the specifications in Appendix 3.

**Trustee(s)**: the Monitoring Trustee and/or the Divestiture Trustee.

**Trustee Divestiture Period**: the period of [...] months from the end of the First Divestiture Period.

#### **Section B. The Divestment Business**

### **Commitment to Divest**

- 1. In order to restore effective competition, Hexion commits to divest, or procure the divestiture of the Divestment Business by the end of the Trustee Divestiture Period as a going concern to a purchaser and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 56. To carry out the divestiture, Hexion commits to find a purchaser and to enter into a final binding sale and purchase agreement for the sale of the Divestment Business within the First Divestiture Period. If Hexion has not entered into such an agreement at the end of the First Divestiture Period, Hexion shall grant the Divestiture Trustee an exclusive mandate to sell the Divestment Business in accordance with the procedure described in paragraph 65 in the Trustee Divestiture Period. The proposed concentration shall not be implemented unless and until Hexion or the Divestiture Trustee has entered into a final binding sale and purchase agreement for the sale of the Divestment Business and the Commission has approved the purchaser and the terms of sale in accordance with paragraph 56. The closing of the proposed concentration shall take place concurrently with the Closing.
- 2. Hexion shall be deemed to have complied with this Commitment if, by the end of the Trustee Divestiture Period, Hexion has entered into a final binding sale and purchase agreement, if the Commission approves the Purchaser and the terms in accordance with the procedure described in paragraph 56 and if the closing of the sale of the Divestment Business takes place within a period not exceeding [...] months after the approval of the purchaser and the terms of sale by the Commission.
- 3. In order to maintain the structural effect of the Commitment, the Parties shall, for a period of 10 years after the Effective Date, not acquire direct or indirect influence over the whole or part of the Divestment Business, unless the Commission has previously found that the structure of the market has changed to such an extent that the absence of influence over the Divestment Business is no longer necessary to render the proposed concentration compatible with the common market.

### **Structure and Definition of the Divestment Business**

- 4. The Divestment Business consists of: (a) all facilities belonging to Hexion's epoxy resin business at Duisburg, Germany ("Duisburg"); (b) Hexion's facility at Stuttgart, Germany ("Stuttgart"); (c) Hexion's facility at Argo, Illinois ("Argo"); (d) Hexion's High Performance Resin Unit located at Norco, Louisiana ("Norco HPRU"); and (e) Hexion's epoxy applications development and formulating research and development facilities located at Houston, Texas ("Houston R&D") (hereinafter collectively referred to as the "Facilities").
- 5. The present legal and functional structure of the Divestment Business as operated to date is described in the Schedule. The Divestment Business, described in more detail in the Schedule and Annexes attached hereto, includes:
  - (a) all tangible and intangible assets (including intellectual property rights) which contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Business;
  - (b) all licences, permits and authorisations issued by any governmental organisation for

the benefit of the Divestment Business;

- (c) all contracts, leases, commitments and customer orders of the Divestment Business; all customer, credit and other records of the Divestment Business (items referred to under (a)- (a) hereinafter collectively referred to as "Assets");
- (d) the Personnel; and
- (e) the benefit, for a transitional period of up to [...] after Closing and on terms and conditions equivalent to those at present afforded to the Divestment Business, of all current arrangements under which Hexion or Affiliated Undertakings supply products or services to the Divestment Business, as detailed in the Schedule, unless otherwise agreed with the Purchaser.

### **Section C: Long Term Supply Agreements**

6. In addition to the transitional provisions identified in paragraph 5(e), At the discretion of the Purchaser, Hexion will enter into the following Long Term Supply Agreements.

## [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 7. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 8. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 9. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 10. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 11. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.

12. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 13. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business]. (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 14. The price for [Description of products to be supplied by the Parties to the Divestment Business] delivered in the EU under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 15. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of services to be provided by the Parties to the Divestment Business]

- 16. Hexion will provide Purchaser with terminalling services from Hexion's existing [Description of services to be provided by the Parties to the Divestment Business] storage tank at Duisburg on industry standard terms to be negotiated with the Purchaser and approved by the Monitoring Trustee.
- 17. Purchaser may choose either to purchase [Description of products to be supplied to the Divestment Business] from third parties (provided it is in the same form as the [Description of products to be supplied to the Divestment Business] stored in the tank by Hexion) or from Hexion (subject to reasonable notice to ensure sufficient quantities are available to serve both parties' needs). In the event that the Purchaser chooses to purchase [Description of products to be supplied to the Divestment Business] from Hexion, the price will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 18. In the event that Purchaser's [Description of products to be supplied to the Divestment Business] requirements exceed Hexion's existing [Description of products to be supplied to the Divestment Business] storage capacity, taking into account the existing demand of Hexion's [Description of products manufactured by the Parties] business, Purchaser shall construct additional storage facilities at its expense. There is sufficient space on-site for Purchaser to do so.

# [Description of services to be provided by the Parties to the Divestment Business]

19. Hexion will provide Purchaser with terminalling services from Hexion's existing [Description of services to be provided by the Parties to the Divestment Business] storage tank at Duisburg on industry standard terms to be negotiated with the Purchaser and approved by the Monitoring Trustee.

- 20. Purchaser may choose either to purchase [Description of products to be supplied to the Divestment Business] from third parties (provided that it is at the same standard industry specification that Hexion uses for its purchases) or from Hexion (subject to reasonable notice to ensure sufficient quantities are available to serve both parties' needs). In the event that the Purchaser chooses to purchase [Description of products to be supplied to the Divestment Business] from Hexion, the price will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 21. In the event that Purchaser's [Description of products to be supplied to the Divestment Business] requirements exceed Hexion's existing [Description of products to be supplied to the Divestment Business] storage capacity, taking into account the existing demand of Hexion's [Description of products manufactured by the Parties] business, Purchaser shall construct additional storage facilities at its expense. There is sufficient space on-site for Purchaser to do so.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 22. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 23. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 24. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 25. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 26. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 27. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 28. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 29. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 30. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

# [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement

- 31. At the discretion of the Purchaser, Hexion will enter into an agreement for the supply of [Description of products to be supplied by the Parties to the Divestment Business] (the "[Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement"). In the first year of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement, Hexion will be required to supply up to [contract details] of the Divestiture Business's requirements for that year, and for each successive year of the contract up to [contract details].
- 32. The price for [Description of products to be supplied by the Parties to the Divestment Business] under the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 33. The term of the [Description of products to be supplied by the Parties to the Divestment Business] Supply Agreement shall be [contract details] years. The Purchaser shall have the right to terminate the respective agreement earlier on [contract details] months' notice.

## Section D: Duisburg Land Purchase Option

34. If required by the Purchaser, Hexion shall grant the Purchaser an irrevocable option exercisable within [contract details] days of Closing, to purchase the land presently owned by Hexion at the Duisburg site for [contract details]. Such option shall specify that the Purchaser shall lease to Hexion, on terms substantially similar to the terms contained in the lease agreed between Hexion and the Purchaser, *mutatis mutandis*, the land and facilities on which Hexion's retained businesses on the Duisburg site presently operate and any land allocated by the Monitoring Trustee to Hexion for expansion, subject to mutual easements and rights of access to ensure the unfettered operation of both the Divestment Business and Hexion's retained businesses on the Duisburg site.

#### **Section E. InfraTec Commitments**

- 35. Hexion will offer to sell to the Purchaser at net book value including cash in hand the portion of its ownership interest in InfraTec that corresponds to the size of the Divestment Business relative to Hexion's retained businesses at the Duisburg site, and will use best efforts to secure the consent of the other shareholder in InfraTec to such sale. Such ownership interest will be sufficient to ensure that the Purchaser holds more than [...]% of the voting rights in InfraTec.
- 36. In the event that Hexion is unable to secure the consent of the other shareholder in InfraTec to the sale of a portion of Hexion's ownership interest in InfraTec to the Purchaser within [...] months of Closing, Hexion will offer to sell [...] of its ownership interest to the Purchaser, at net book value including cash in hand, subject to the rights of first refusal held by the other shareholder in InfraTec and the condition that InfraTec will continue to provide services to the retained Hexion businesses at the Duisburg site on substantially the same terms as Hexion presently receives them.
- 37. For the period from Closing until such time as Hexion has transferred an interest in InfraTec in accordance with the foregoing, Hexion will enter into a transitional site services agreement with the Divestment Business under which it will pass through to the Divestment Business those services that the Divestment Business requires from InfraTec at cost.

### Section F. Transitional Trade Name License

38. In order to allow the Purchaser sufficient time to transition the Divestment Business to its own brands while maintaining the full goodwill associated with those products, at the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, [...] months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period.

### Section G. Transitional Supply Agreements

- 39. At the discretion of the Purchaser, Hexion will enter into transitional supply agreements for the supply of the Divestiture Business's requirements of the following products for the following periods (the "Hexion Transitional Supply Agreements"):
  - (a) [Description of products to be supplied by the Parties to the Divestment Business];
  - (b) [Description of products to be supplied by the Parties to the Divestment Business];
  - (c) [Description of products to be supplied by the Parties to the Divestment Business] extendable at the option of the Divestiture Business as necessary to ensure a seamless transfer of production to the Divestiture Business);
  - (d) [Description of products to be supplied by the Parties to the Divestment Business].

- 40. The prices for products supplied under Hexion Transitional Supply Agreements will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 41. Hexion and the Purchaser will negotiate transitional supply agreements for the supply by the Divested Business to Hexion of the products specified in Appendix 4 for the quantities and periods specified therein ("Divested Business Transitional Supply Agreements").
- 42. The prices for products supplied under Divested Business Transitional Supply Agreements will be [contract details] agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.
- 43. Hexion and the Purchaser will negotiate an agreement under which [Description of relationships between the Divested Business and the retained Hexion facilities.] for a period of [...] months after Closing [contract details] to be agreed between Hexion and the Purchaser, subject to the approval of the Monitoring Trustee.

#### Section H. Environmental Liabilities

44. Hexion shall pass on to the Purchaser the benefit of the indemnities that Rutgers Chemical is obligated to provide Hexion with respect to the Duisburg and Stuttgart sites and from Shell Chemical with respect to the Norco HPRU and Argo facilities. In addition, Hexion shall provide an indemnity for material contamination that may have occurred during its operation of the divestment facilities.

## **Section I. Related Commitments**

## Preservation of Viability, Marketability and Competitiveness

- 45. From the Effective Date until Closing, Hexion shall preserve the economic viability, marketability and competitiveness of the Divestment Business, in accordance with good business practice, and shall minimise as far as possible any risk of loss of competitive potential of the Divestment Business. In particular Hexion undertakes:
  - (a) not to carry out any act upon its own authority that might have a significant adverse impact on the value, management or competitiveness of the Divestment Business or that might alter the nature and scope of activity, or the industrial or commercial strategy or the investment policy of the Divestment Business;
  - (b) to make available sufficient resources for the development of the Divestment Business, on the basis and continuation of the existing business plans; and
  - (c) to take all reasonable steps, including appropriate incentive schemes (based on industry practice), to encourage all Key Personnel to remain with the Divestment Business.

## **Hold-Separate Obligations of Parties**

46. Hexion commits, as of the Effective Date to use reasonable best efforts to separate the Divestment Business from the businesses it is retaining and to ensure that Key Personnel of the Divestment Business – including the Hold Separate Manager – have no involvement in any business retained and vice versa. Hexion shall also ensure that the Personnel do not report to any individual(s) outside the Divestment Business. Hexion shall use reasonable best efforts to ensure that all administrative, financial, commercial and IT systems relating to the Divested Business's facilities at Argo, Duisburg, Norco HPRU and Houston R&D are

separated from Hexion on or before [...] 2008. Hexion shall submit to the Commission a timeline for separation of those functions as regards Stuttgart on or before the Effective Date. In the event that the Divestiture Business is sold prior to [...] 2008, Hexion will put in place such transitional services agreements as necessary to effect the transfer of the Divestiture Business as a viable business.

- 47. From the Effective Date until Closing, Hexion shall assist the Monitoring Trustee in ensuring that the Divestment Business is managed as a distinct and saleable entity separate from the businesses retained by the Parties. Hexion shall appoint as of the Effective Date a Hold Separate Manager who shall be responsible for the management of the Divestment Business, under the supervision of the Monitoring Trustee. The Hold Separate Manager shall manage the Divestment Business independently and in the best interest of the business with a view to ensuring its continued economic viability, marketability and competitiveness and its independence from the businesses retained by the Parties.
- 48. To ensure that the Divestment Business is held and managed as a separate entity, the Monitoring Trustee shall exercise Hexion's rights as owner of the Divestment Business (except for its rights for dividends that are due before Closing), with the aim of acting in the best interest of the business, determined on a stand-alone basis, as an independent financial investor, and with a view to fulfilling Hexion's obligations under the Commitments. Furthermore, the Monitoring Trustee shall have the power to replace members of the supervisory board or managing directors of the Divested Business who have been appointed on behalf of Hexion. Upon request of the Monitoring Trustee, Hexion shall resign as member of the boards or shall cause such members of the boards to resign.

## **Ring-Fencing**

49. Hexion shall implement all necessary measures to ensure that it does not after the Effective Date obtain any business secrets, know-how, commercial information, or any other information of a confidential or proprietary nature relating to the Divestment Business. In particular, the participation of the Divestment Business in a central information technology network shall be severed to the extent possible, without compromising the viability of the Divestment Business. Hexion may obtain information relating to the Divestment Business which is reasonably necessary for the divestiture of the Divestment Business or whose disclosure to Hexion is required by law.

### **Non-Solicitation Clause**

50. The Parties undertake, subject to customary limitations, not to solicit, and to procure that Affiliated Undertakings do not solicit, the Key Personnel transferred with the Divestment Business for a period of [...] years after Closing.

### **Non-Compete Obligation**

Hexion undertakes that it and its Affiliated Undertakings will not, as of the effective date and until the expiry of a period of [...] months after Closing, in relation to any product sold by the Divestment Business (as now carried on), canvass or solicit the custom of any person, firm or company who has within one year prior to Closing been a regular customer in relation to the Divestment Business, except insofar as that customer is an existing customer of Huntsman or a retained Hexion business for the same product.

### **Due Diligence**

- 52. In order to enable potential purchasers to carry out a reasonable due diligence of the Divestment Business, Hexion shall, subject to customary confidentiality assurances and dependent on the stage of the divestiture process:
  - a. provide to potential purchasers sufficient information as regards the Divestment Business;
  - b. provide to potential purchasers sufficient information relating to the Personnel and allow them reasonable access to the Personnel.

### Reporting

- Hexion shall submit written reports in English on potential purchasers of the Divestment Business and developments in the negotiations with such potential purchasers to the Commission and the Monitoring Trustee no later than 10 days after the end of every month following the Effective Date (or otherwise at the Commission's request).
- 54. The Parties shall inform the Commission and the Monitoring Trustee on the preparation of the data room documentation and the due diligence procedure and shall submit a copy of an information memorandum to the Commission and the Monitoring Trustee before sending the memorandum out to potential purchasers.

### Section J. The Purchaser

- 55. In order to ensure the immediate restoration of effective competition, the Purchaser, in order to be approved by the Commission, must:
  - (a) be independent of and unconnected to the Parties;
  - (b) have the financial resources, proven expertise and incentive to maintain and develop the Divestment Business as a viable and active competitive force in competition with the Parties and other competitors; and
  - (c) neither be likely to create, in the light of the information available to the Commission, *prima facie* competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed, and must, in particular, reasonably be expected to obtain all necessary approvals from the relevant regulatory authorities for the acquisition of the Divestment Business (the before-mentioned criteria for the purchaser hereafter the "*Purchaser Requirements*").
- 56. The final binding sale and purchase agreement shall be conditional on the Commission's approval and on the closing of the Merger Agreement. When Hexion has reached an agreement with a purchaser, it shall submit a fully documented and reasoned proposal, including a copy of the final agreement(s), to the Commission and the Monitoring Trustee. Hexion must be able to demonstrate to the Commission that the purchaser meets the Purchaser Requirements and that the Divestment Business is being sold in a manner consistent with the Commitments. For the approval, the Commission shall verify that the purchaser fulfils the Purchaser Requirements and that the Divestment Business is being sold in a manner consistent with the Commitments. The Commission may approve the sale of the Divestment Business without one or more Assets or parts of the Personnel, if this does not affect the viability and competitiveness of the Divestment Business after the sale, taking account of the proposed purchaser.

### Section K. Trustee

## **I.** Appointment Procedure

- 57. Hexion shall appoint a Monitoring Trustee to carry out the functions specified in the Commitments for a Monitoring Trustee until the Closing. If Hexion has not entered into a binding sales and purchase agreement one month before the end of the First Divestiture Period or if the Commission has rejected a purchaser proposed by Hexion at that time or thereafter, Hexion shall appoint a Divestiture Trustee to carry out the functions specified in the Commitments for a Divestiture Trustee. The appointment of the Divestiture Trustee shall take effect upon the commencement of the Extended Divestment Period.
- 58. The Trustee shall be independent of the Parties, possess the necessary qualifications to carry out its mandate, for example as an investment bank or consultant or auditor, and shall neither have nor become exposed to a conflict of interest. The Trustee shall be remunerated by the Parties in a way that does not impede the independent and effective fulfilment of its mandate. In particular, where the remuneration package of a Divestiture Trustee includes a success premium linked to the final sale value of the Divestment Business, the fee shall also be linked to a divestiture within the Trustee Divestiture Period.

### **Proposal by the Parties**

- 59. One day after the Effective Date, Hexion shall submit a list of at least three different candidates whom Hexion proposes for appointment as the Monitoring Trustee to the Commission for approval. No later than one month before the end of the First Divestiture Period, Hexion shall submit a list of at least three different candidates whom Hexion proposes for appointment as Divestiture Trustee to the Commission for approval. The proposal shall contain sufficient information for the Commission to verify that the proposed Trustee fulfils the requirements set out in paragraph 58 and shall include:
  - (a) the full terms of the proposed mandate, which shall include all provisions necessary to enable the Trustee to fulfil its duties under these Commitments;
  - (b) the outline of a work plan which describes how the Trustee intends to carry out its assigned tasks; and
  - (c) an indication whether the proposed Trustee is to act as both Monitoring Trustee and Divestiture Trustee or whether different trustees are proposed for the two functions.

### Approval or Rejection by the Commission

60. The Commission shall have the discretion to approve or reject the proposed Trustee(s) and to approve the proposed mandate subject to any modifications it deems necessary for the Trustee to fulfil its obligations. If only one name is approved, Hexion shall appoint or cause to be appointed, the individual or institution concerned as Trustee, in accordance with the mandate approved by the Commission. If more than one name is approved, Hexion shall be free to choose the Trustee to be appointed from among the names approved. The Trustee shall be appointed within one week of the Commission's approval, in accordance with the mandate approved by the Commission.

## **New Proposal by the Parties**

61. If all the proposed Trustees are rejected, Hexion shall submit the names of at least two more individuals or institutions within one week of being informed of the rejection, in accordance with the requirements and the procedure set out in paragraphs 57 and 60.

### **Trustee Nominated by the Commission**

62. If all further proposed Trustees are rejected by the Commission, the Commission shall nominate a Trustee, whom Hexion shall appoint, or cause to be appointed, in accordance with a trustee mandate approved by the Commission.

### **II. Functions of the Trustee**

63. The Trustee shall assume its specified duties in order to ensure compliance with the Commitments. The Commission may, on its own initiative or at the request of the Trustee or Hexion, give any orders or instructions to the Trustee in order to ensure compliance with the conditions and obligations attached to the Decision.

## Duties and Obligations of the Monitoring Trustee

- 64. The Monitoring Trustee shall:
  - (a) propose in its first report to the Commission a detailed work plan describing how it intends to monitor compliance with the obligations and conditions attached to the Decision.
  - (b) oversee the on-going management of the Divestment Business with a view to ensuring its continued economic viability, marketability and competitiveness and monitor compliance by Hexion with the conditions and obligations attached to the Decision. To that end the Monitoring Trustee shall:
    - (i) monitor the preservation of the economic viability, marketability and competitiveness of the Divestment Business, and the keeping separate of the Divestment Business from the business retained by the Parties, in accordance with paragraphs 45 and 46 of the Commitments;
    - (ii) supervise the management of the Divestment Business as a distinct and saleable entity, in accordance with paragraph 47 of the Commitments;
    - (iii) in consultation with Hexion, (a) determine all necessary measures to ensure that Hexion does not after the effective date obtain any business secrets, know-how, commercial information, or any other information of a confidential or proprietary nature relating to the Divestment Business, in particular strive for the severing of the Divestment Business' participation in a central information technology network to the extent possible, without compromising the viability of the Divestment Business, and (b) decide whether such information may be disclosed to Hexion as the disclosure is reasonably necessary to allow Hexion to carry out the divestiture or as the disclosure is required by law; and
    - (iv) monitor the splitting of assets and the allocation of Personnel between the Divestment Business and Hexion or Affiliated Undertakings, ensuring, inter alia, for such time that the Monitoring Trustee is appointed that unused land or facilities presently owned by Hexion at the Duisburg site is equitably allocated between the Divestment Business and Hexion, taking into consideration the expansion needs of the Divestment Business and Hexion's phenolic resins and formaldehyde businesses (such allocation to be no less favourable to the Divestment Business than the present pro rata occupation of the production space presently held by Hexion at the Duisburg site);

- (c) assume the other functions assigned to the Monitoring Trustee under the conditions and obligations attached to the Decision;
- (d) propose to Hexion such measures as the Monitoring Trustee considers necessary to ensure Hexion's compliance with the conditions and obligations attached to the Decision, in particular the maintenance of the full economic viability, marketability or competitiveness of the Divestment Business, the holding separate of the Divestment Business and the non-disclosure of competitively sensitive information; review and assess potential purchasers as well as the progress of the divestiture process and verify that, dependent on the stage of the divestiture process, (i) potential purchasers receive sufficient information relating to the Divestment Business and the Personnel in particular by reviewing, if available, the data room documentation, the information memorandum and the due diligence process, and (ii) potential purchasers are granted reasonable access to the Personnel:
- (e) provide to the Commission, sending Hexion a non-confidential copy at the same time, a written report within 15 days after the end of every month. The report shall cover the operation and management of the Divestment Business so that the Commission can assess whether the business is held in a manner consistent with the Commitments and the progress of the divestiture process as well as potential purchasers. In addition to these reports, the Monitoring Trustee shall promptly report in writing to the Commission, sending Hexion a non-confidential copy at the same time, if it concludes on reasonable grounds that Hexion is failing to comply with these Commitments;
- (f) within one week after receipt of the documented proposal referred to in paragraph 56, submit to the Commission a reasoned opinion as to the suitability and independence of the proposed purchaser and the viability of the Divestment Business after the Sale and as to whether the Divestment Business is sold in a manner consistent with the conditions and obligations attached to the Decision, in particular, if relevant, whether the Sale of the Divestment Business without one or more Assets or not all of the Personnel affects the viability of the Divestment Business after the sale, taking account of the proposed purchaser.

## **Duties and Obligations of the Divestiture Trustee**

- 65. Within the Trustee Divestiture Period the Divestiture Trustee shall sell at no minimum price the Divestment Business to a purchaser, provided that the Commission has approved both the purchaser and the final binding sale and purchase agreement in accordance with the procedure and conditions laid down in paragraph 56. The binding sale and purchase agreement shall be conditional on the closing of the Merger Agreement, the closing of which shall occur concurrently with the Closing. The Divestiture Trustee shall include in the sale and purchase agreement such other terms and conditions as it considers appropriate for an expedient sale in the Trustee Divestiture Period. In particular, the Divestiture Trustee may include in the sale and purchase agreement such customary representations and warranties and indemnities as are reasonably required to effect the sale. The Divestiture Trustee shall protect the legitimate financial interests of Hexion, subject to the Parties' unconditional obligation to enter into a binding agreement to divest the Divestment Business at no minimum price in the Trustee Divestiture Period.
- 66. In the Trustee Divestiture Period (or otherwise at the Commission's request), the Divestiture Trustee shall provide the Commission with a comprehensive monthly report written in English on the progress of the divestiture process. Such reports shall be submitted within 15 days after the end of every month with a simultaneous copy to the Monitoring Trustee and a non-confidential copy to the Parties.

## **III. Duties and Obligations of the Parties**

- 67. Hexion shall provide and shall cause its advisors to provide the Trustee with all such cooperation, assistance and information as the Trustee may reasonably require to perform its tasks. The Trustee shall have full and complete access to any of Hexion's or the Divestment Business' books, records, documents, management or other personnel, facilities, sites and technical information necessary for fulfilling its duties under the Commitments and Hexion and the Divestment Business shall provide the Trustee upon request with copies of any document. Hexion and the Divestment Business shall make available to the Trustee one or more offices on their premises and shall be available for meetings in order to provide the Trustee with all information necessary for the performance of its tasks.
- 68. Hexion shall provide the Monitoring Trustee with all managerial and administrative support that it may reasonably request on behalf of the management of the Divestment Business. This shall include all administrative support functions relating to the Divestment Business which are currently carried out at headquarters level. Hexion shall provide and shall cause its advisors to provide the Monitoring Trustee, on request, with the information submitted to potential purchasers, in particular give the Monitoring Trustee access to the data room documentation and all other information granted to potential purchasers in the due diligence procedure. Hexion shall inform the Monitoring Trustee on possible purchasers, submit a list of potential purchasers, and keep the Monitoring Trustee informed of all developments in the divestiture process.
- 69. Hexion shall grant or procure Affiliated Undertakings to grant comprehensive powers of attorney, duly executed, to the Divestiture Trustee to effect the sale, the Closing and all actions and declarations which the Divestiture Trustee considers necessary or appropriate to achieve the sale and the Closing, including the appointment of advisors to assist with the sale process. Upon request of the Divestiture Trustee, Hexion shall cause the documents required for effecting the sale and the Closing to be duly executed.
- 70. Hexion shall indemnify the Trustee and its employees and agents (each an "Indemnified Party") and hold each Indemnified Party harmless against, and hereby agrees that an Indemnified Party shall have no liability to Hexion for any liabilities arising out of the performance of the Trustee's duties under the Commitments, except to the extent that such liabilities result from the wilful default, recklessness, gross negligence or bad faith of the Trustee, its employees, agents or advisors.
- 71. At the expense of Hexion, the Trustee may appoint advisors (in particular for corporate finance or legal advice), subject to Hexion's approval (this approval not to be unreasonably withheld or delayed) if the Trustee considers the appointment of such advisors necessary or appropriate for the performance of its duties and obligations under the Mandate, provided that any fees and other expenses incurred by the Trustee are reasonable. Should Hexion refuse to approve the advisors proposed by the Trustee the Commission may approve the appointment of such advisors instead, after having heard Hexion. Only the Trustee shall be entitled to issue instructions to the advisors. Paragraph 70 shall apply *mutatis mutandis*. In the Trustee Divestiture Period, the Divestiture Trustee may use advisors who served Hexion during the Divestiture Period if the Divestiture Trustee considers this in the best interest of an expedient sale.

### IV. Replacement, Discharge and Reappointment of the Trustee

- 72. If the Trustee ceases to perform its functions under the Commitments or for any other good cause, including the exposure of the Trustee to a conflict of interest:
  - (a) the Commission may, after hearing the Trustee, require Hexion to replace the Trustee; or

- (b) Hexion, with the prior approval of the Commission, may replace the Trustee.
- 73. If the Trustee is removed according to paragraph 72, the Trustee may be required to continue in its function until a new Trustee is in place to whom the Trustee has effected a full hand over of all relevant information. The new Trustee shall be appointed in accordance with the procedure referred to in paragraphs 57-62.
- 74. Beside the removal according to paragraph 72, the Trustee shall cease to act as Trustee only after the Commission has discharged it from its duties after all the Commitments with which the Trustee has been entrusted have been implemented. However, the Commission may at any time require the reappointment of the Monitoring Trustee if it subsequently appears that the relevant remedies might not have been fully and properly implemented.

## Section L. Dispute Resolution

- 75. Following the expiry of the appointment of the Monitoring Trustee, should a dispute arise between Hexion and the Purchaser regarding the allocation between Hexion and the Divestment Business of unused land or facilities at Duisburg, such dispute shall be submitted to a fast track resolution procedure (the "Fast Track Resolution Procedure").
- 76. The Fast Track Resolution Procedure will operate as follows:
  - (i) The party who seeks to initiate the Procedure (the "Initiating Party") shall notify the other party (the "Other Party") of its request and specify the reasons why it believes that a failure by the Other Party to meet such request would be inconsistent with these Commitments.
  - (ii) The Purchaser and Hexion (including the relevant Affiliated Undertaking) shall use their best efforts to resolve all differences of opinion and to settle all disputes that may arise through co-operation and consultation within a reasonable period of time not to exceed fifteen (15) calendar days.
  - (iii) Should the Purchaser and Hexion fail to resolve their differences of opinion through co-operation and consultation, the Initiating Party shall within seven (7) days initiate an arbitration process.
  - (iv) To initiate the arbitration process, the Initiating Party shall give written notice to the Other Party nominating an arbitrator and stating the specific nature of the claim, the factual basis of its position and the relief requested. In such case, the Other Party shall appoint another arbitrator within fourteen (14) calendar days after receipt of the written notice. The arbitrators so appointed shall appoint a third arbitrator to be president of the arbitration tribunal within seven (7) calendar days after both arbitrators have been nominated. If the arbitrators nominated by the Purchaser and Hexion cannot agree on the nomination of a third arbitrator, they shall request that the London Court of International Arbitration appoint the third arbitrator.
  - (v) Any of the arbitrators will be entitled to request any relevant information from the Purchaser or Hexion. The arbitrators shall agree in writing to keep any confidential information and business secrets disclosed to them in confidence. Throughout these Commitments the standards attributed to confidential information and business secrets are those as set out in accordance with European Community law.
  - (vi) The burden of proof in any dispute governed by this Section L shall be as follows:(i) the Initiating Party must produce evidence of a prima facie case, and (ii) if the Initiating Party produces evidence of a prima facie case, the arbitrators must find in

favour of the Initiating Party unless the Other Party can produce evidence to the contrary.

- (vii) The arbitration procedure shall follow the Rules of the London Court of International Arbitration. The arbitration shall be conducted in London. The language of the arbitration shall be English. In the event of disagreement between the parties to the arbitration regarding the interpretation of the Commitments, the arbitrators shall inform the Commission and may seek the Commission's interpretation of the Commitments before finding in favour of any party to the arbitration. The Commission may, at any time, issue a submission during the arbitration procedure
- (viii) The arbitration award shall, in addition to dealing with the merits of the claim, impose the fees and costs of the prevailing party upon the party that is unsuccessful.
- (ix) Decisions of the arbitrators shall be final and binding on all persons submitting to arbitration.
- (x) Nothing in the above-described arbitration procedure shall affect the powers of the Commission to take decisions in relation to the Commitments in accordance with its powers under the Merger Regulation and the EC Treaty
- 77. The parties shall report to the Commission any matters which the Commission reasonably requests in order to determine whether the parties have complied with the present Commitments with regard to dispute resolution. Any such report shall be sent to the Commission within fifteen (15) working days from the date the Commission makes a request.

#### **Section M. The Review Clause**

- 78. The Commission may, where appropriate, in response to a request from Hexion showing good cause and accompanied by a report from the Monitoring Trustee:
  - (a) Grant an extension of the time periods foreseen in the Commitments, or
  - (b) Waive, modify or substitute, in exceptional circumstances, one or more of the undertakings in these Commitments.

Where Hexion seeks an extension of a time period, it shall submit a request to the Commission no later than one month before the expiry of that period, showing good cause. Only in exceptional circumstances shall Hexion be entitled to request an extension within the last month of any period.

	duly authorised for and on behalf of Hexion Specialt	y Chemicals,
Inc. and Apollo Management LP.		

#### **SCHEDULE**

- 1 The Divestment Business as operated to date has the following legal and functional structure:
  - The Divestment Business comprises the tangible and intangible assets and associated employees of the Facilities. The Facilities are presently held by various wholly-owned Hexion subsidiaries and organized under Hexion's Epoxy and Coatings Resins Division. Relevant organizational charts for the Facilities are attached hereto as **Annex A**.
- 2 Following paragraph 4 of these Commitments, the Divestment Business, which is described in detail in **Annex B**, includes, but is not limited to:
  - (a) the following main tangible assets:
    - (i) all manufacturing assets at the Facilities related to the production of epoxy resins, modifiers, reactive diluents and curing agents, as well as mixing and compounding equipment and high volume blending equipment used to make epoxy resin blends and formulated systems, as well as assets related thereto such as pipes, tank farms, and control centers:
    - (ii) the research and development assets belonging to Hexion's epoxy resins business at Duisburg, including laboratories, testing equipment and pilot production equipment; and
    - (iii) the research and development assets belonging to Hexion's epoxy resins business at Houston R&D, including laboratories, testing equipment and pilot production equipment; and
    - (iv) the research and development assets belonging to Hexion's epoxy resins business at Stuttgart, including laboratories and testing equipment.
    - (v) inventory pertaining to the Divestment Business located at the Facilities.
  - (b) the following main intangible assets:
    - (i) the necessary intellectual property related to specialty epoxy resins and formulated systems produced at the Facilities, including patents, know-how, recipes, and process instructions for all products presently or historically produced at the Facilities, including but not limited to bisphenol-F and diglycidyl ether of bisphenol-F,
      - (A) on an exclusive basis for all Exclusive Products, and
      - (B) on a non-exclusive basis for all Common Products; and
    - (ii) a perpetual royalty-free exclusive license to use all Bakelite brands, trademarks and trade names currently owned by Hexion, including "Bakelite Epoxy," "Ruetapox," and "Ruetadur" in combination with epoxy resin products; and
    - (iii) at the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be

prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, [...] months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period.

- (c) the following main licences, permits and authorisations:
  - (i) all licenses, permits and authorisations, regardless of issuer, currently in effect and maintained by Hexion or the Facilities to the extent that such documents are necessary to the operation of the Divestment Business.
- (d) the following main contracts, agreements, leases, commitments and understandings:
  - (i) to the extent applicable, and where permitted under the terms of the existing contracts and agreements, Hexion will transfer, assign or grant to the Divestment Business contracts, agreements, leases, commitments and understandings related to the production and/or sale of specialty epoxy resins and formulated systems by the Facilities, including:
    - (A) customer contracts;
    - (B) supply contracts, either with third parties or, as necessary, Hexion,
    - (C) services contracts, either with third parties or, as necessary, Hexion, and
    - (D) real property leases.
- (e) the following customer, credit and other records:
  - (i) records currently maintained by the Facilities, whether in hard copy or electronic form, both current and historic, including:
    - (A) customer records;
    - (B) sales records;
    - (C) financial records;
    - (D) purchasing records;
    - (E) maintenance records; and
    - (F) personnel records.
- (f) the following Personnel:

Subject to their employment rights under the Transfer of Undertakings Directive and other applicable employment laws, the Divestment Business will include personnel necessary for the ongoing viability of the business, including management and staff, production and operations employees, technical, sales, marketing and service personnel.

- (g) the following Key Personnel:
  - [...]
  - [...]

- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- (h) the arrangements for the supply with the following products or services by Hexion or Affiliated Undertakings for a transitional period of up to [...] months after Closing:
  - (i) Hexion will offer the Purchaser of the Divestment Business the option of entering into:
    - (A) transitional services agreements, including utility and waste management, technical services, maintenance operations, environmental protection, health and safety and site security, on terms to be determined between the Parties and the Purchaser; and
    - (B) a transitional agreement under which Hexion would maintain a separate [Hexion information system] information system ("IS") for the Divestment Business; and
    - (C) transitional supply or off-take contracts for basic epoxy inputs, such as those listed in paragraph of the 39 Commitments.
- (i) at the discretion of the Purchaser, some or all of the the Long Term Supply Agreements.
- 3 The Divestment Business shall not include:
  - (i) any other Hexion assets or personnel *etc.*, at other locations, except for certain customer contracts and relationships in the United States that will be transferred to the Divestment

### Business:

- (ii) any part of the assets belonging to Hexion's [Description of items not included in the Divestment Business] and [Description of items not included in the Divestment Business] business located at Duisburg, or employees employed thereat;
- (iii) title to real property at Duisburg (unless the Purchaser exercises its purchase option under paragraph 34 of the Commitments), Stuttgart, Norco or Argo;
- (iv) customer relationships, sales records and certain personnel relating to [Description of relationships between the Divested Business and the retained Hexion facilities].
- (v) the [Description of items not included in the Divestment Business] business located Argo; or
- (vi) any part of the assets or business related to the production of [Description of items not included in the Divestment Business], located in the "C Unit" at Norco, or employees employed thereat.

Annex A – Organizational Charts for the Facilities

[Divestment business facilities organizational charts]

## Annex B – Description of the Facilities

The Divestment Business is a well-established manufacturer of specialty epoxy resins and additives including reactive diluents, curing agents and formulated systems serving a wide range of specialized industrial and consumer end-markets, with production facilities in Duisburg, Stuttgart, Argo, and Norco and R&D facilities in Duisburg, Stuttgart and Houston. In 2007, it had third-party sales of approximately €[...]. The majority of the Divestment Business' sales are derived from specialty epoxy resins and formulated systems. The Divestment Business has a broad portfolio of products, including a complete range of high value-added epoxy products, including glycidyl amines, epoxy novolacs, cycloaliphatic resins, reactive diluents and curing agents, as well as formulated systems designed to meet specific customer requirements. These products are often critical components used in highly technical and high performance applications. The Divestment Business' products have applications in attractive growing markets such as composites and adhesives for aerospace and wind energy markets, electrical castings used in power generation and distribution, materials for automotive and construction applications, and electrical laminates for printed circuit boards.

The Divestment Business includes productions, service and technical expertise that can serve the following segments:

- Adhesives;
- Civil Engineering/Construction;
- Coatings;
- Composites;
- Electrical Power; and
- Electronics.

The Divestment Business comprises all of the Facilities' specialty epoxy resin and formulated systems assets, including:

- The epoxy manufacturing assets, which includes reactors for producing epoxy resins, modifiers, reactive diluents and curing agents, mixing and compounding equipment and high volume blending equipment used to make epoxy blends and formulated systems, as well as related tank farms and storage vessels;
- The specialty epoxy and formulations-related R&D facilities at Duisburg, Stuttgart and Houston R&D;
- The necessary intellectual property, including know-how, recipes, process instructions, and patents, if any, relating to all epoxy products presently or historically produced at the Facilities (except for the limited exception discussed below);
- Epoxy customer relationships, including, where they exist, contracts (except for the limited exception discussed below);
- The relevant epoxy sales and marketing assets;
- Inventories (epoxy and epoxy raw materials);
- Other contracts necessary for the Divestment Business; and
- A perpetual royalty-free exclusive license to use all Bakelite brands, trademarks and trade names currently owned by Hexion, including "Bakelite Epoxy," "Ruetapox," and "Ruetadur" in combination with epoxy resin products; and
- At the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the

Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, [...] months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period.

### Legal Structure

The Divestiture Business presently forms part of Hexion's Epoxy and Coatings Resins Division, the assets of which are held by various Hexion subsidiaries. Hexion envisages that the sale would be structured as an asset sale. The Purchaser will determine where to locate the seat of the business.

#### Plants and Facilities:

### **Duisburg**

Duisburg is one of the largest specialty epoxy manufacturing sites in the world. It has the capability to produce the following products: [Description of products manufactured at the Divestment Business]

- [...];
- [...];
- [...];
- [...];
- [...];
- [...];
- [...];
- [...]
- [...]
- [...].

The industrial area of the site, which sits in the middle of the Rhine chemical corridor, is approximately [...]m², with approximately [...]m² available for future use. The Duisburg facility is located on an inland port on the Rhine-Herne waterway. The site provides access to Highways A3 and A42, and there is a railway connection on site. It has its own fire brigade and its incident management is in compliance with the Seveso II Directive. The epoxy facility includes a steam supply on site.

Duisburg includes [Divestment business facilities description].

Duisburg currently employs [Description of Duisburg personnel] broken down into the following categories /Description of Duisburg personnel structure/.

- [...]
- [...]

- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]

[...]

Duisburg has extensive specialty epoxy and formulations-related R&D facilities [Description of Duisburg epoxy R&D facilities]

- [...].
- [...].
- [...].
- [...].
- [...].
- [...].

### **Stuttgart**

The Stuttgart facility ("Stuttgart") is located in Stuttgart, Germany, in the south of Germany. Stuttgart was founded by Martin G. Scheufler, a formulator of specialty epoxy resins, in 1978. It was bought by Bakelite in 2001 and was merged into Hexion Specialty Chemicals in 2005. Stuttgart focuses on the production of [Description of products manufactured at the Divestment Business and its position in wind energy products].

In 2007, Stuttgart sold [...] kT of material [description of products], with revenues with third-party sales of approximately € [...].

Stuttgart currently has approximately [...] employees, broken down into the following categories: [Description of Stuttgart personnel structure]

- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]

[Description of Stuttgart production facilities]

#### Argo

The Argo facility produces [Description of products manufactured at the Divestment Business]. It is the premier epoxy resin blending and advancement facility in the U.S. It is located approximately 15 miles southwest of Chicago, and the site provides access to significant railroad capacity and an extensive utility infrastructure. [Divestment business facilities and products description] Argo manufactures [Description of products manufactured at the Divestment Business]

Argo currently has [...] employees, broken down into the following categories: [Description of Argo personnel structure]

- [...];
- [...];
- [...];
- [...].

[Description of relationships between the Divested Business and the retained Hexion facilities]

[Description of relationships between the Divested Business and the retained Hexion facilities]

## Norco HPRU

Norco HPRU produces the following products: [Description of products manufactured at the Divestment Business]

- •[...];
- •[...];
- •[...];
- •[...];
- •[...];
- **●**[...].

Norco HPRU is located on the Mississippi River approximately 20 miles west of New Orleans. The site provides access to significant railroad capacity and an extensive utility infrastructure, including sources of natural gas and significant steam capacity. [Divestment business facilities description].

[Divestment business facilities description]

[Divestment business facilities description]

Norco HPRU currently has [...] employees and [...] contractors, broken down into the following categories: [Description of Norco personnel structure]

## [Category]

- [...]
- [...];

[Category]

- [...];
- [...];
- [...]

## Houston R&D

The Houston R&D facility is the focal point for Hexion's specialty epoxy resin and formulations-related R&D activities in the U.S. The technical team in Houston has been responsible for numerous innovative applications and resin characteristics such as improved electrical laminate thermal stability for lead-free solder applications, modifiers for epoxy adhesives and coatings and tackifiers for aerospace prepregs.

## Key Personnel

Hexion believes that the following positions constitute "key" personnel:

- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]

List and description of the products manufactured or services provided, in particular their technical and other characteristics, the brands involved, the turnover generated with each of these products or services, and any innovations or new products or services planned.

[Description of products manufactured at the Divestment Business]

- [...]
- [...]

- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]
- [...]

Description of the level on which the essential functions of the business to be divested are operated if they are not operated on the level of the business to be divested itself, including such functions as R&D, production, marketing & sales, logistics, relations with customers, relations with suppliers, IT systems, etc.

The Divestment Business will operate all of its essential functions itself, but has the option of entering into certain transitional or shared services agreements as discussed above.

Description of the links between the business to be divested and other undertakings controlled by the notifying parties (irrespective of the direction of the link), such as

#### Supply, production, distribution, service or other contracts

As part of a larger company, Hexion currently provides the Business certain corporate support services that would need to be replaced by the Buyer post-Transaction following a [...]-month transition period. These services include general ledger accounting, accounts receivable and accounts payable. Hexion will provide these services to the Buyer at cost for a period of [...] months to ensure a smooth transition of the Business to the Buyer. All corporate services, such as legal, corporate finance, treasury and tax will be discontinued at Closing, at which time the Buyer should assume all such functions.

At the discretion of the Purchaser, Hexion will enter into long-term supply agreements [contract details] for [Description of products to be supplied by the Parties to the Divestment Business], and terminalling/supply agreements for [Description of services to be provided by the Parties to the Divestment Business].

Also at the discretion of the Purchaser, Hexion will enter into transitional supply agreements for the supply of the Divestiture Business's requirements of the following products for the following periods (the "Hexion Transitional Supply Agreements"):

- [Description of products to be supplied by the Parties to the Divestment Business];
- [Description of products to be supplied by the Parties to the Divestment Business];
- [Description of products to be supplied by the Parties to the Divestment Business];

• [Description of products to be supplied by the Parties to the Divestment Business].

Hexion will also require transitional supply agreements ranging between [...] and [...] months in relation to [Description of products to be supplied by the Parties to the Divestment Business] in order to avoid supply disruptions to customers of other Hexion facilities.

### Shared tangible or intangible assets

Hexion will continue to operate its [Description of items not included in the Divestment Business] business at Duisburg and the "C Unit" at Norco. There would be limited direct sharing of assets or facilities. At present, site infrastructure services at both Duisburg and Norco are provided by third parties.

InfraTec Duisburg GmbH is a service company owned by Rütgers Chemicals GmbH (formerly Rütgers Chemicals AG") ([...]) and Hexion ([...]%) and providing site-related services to [...] on the Duisburg site. These services include, *inter alia*, administration, security, energy, steam, water, waste water, and general logistics services. [...], Hexion and InfraTec have executed a tripartite agreement governing the various services and the allocation of costs among the parties. Hexion will offer to sell to the Purchaser at net book value including cash in hand the portion of its ownership interest in InfraTec that corresponds to the size of the Divestment Business relative to Hexion's retained businesses at the Duisburg site, and will use best efforts to secure the consent of the other shareholder in InfraTec to such sale. Such ownership interest will be sufficient to ensure that the Purchaser holds more than [...] of the voting rights in InfraTec.

In the event that Hexion is unable to secure the consent of the other shareholder in InfraTec to the sale of a portion of Hexion's ownership interest in InfraTec to the Purchaser within [...] months of Closing, Hexion will offer to sell [...] of its ownership interest to the Purchaser, at net book value including cash in hand, subject to the rights of first refusal held by the other shareholder in InfraTec and the condition that InfraTec will continue to provide services to the retained Hexion businesses at the Duisburg site on substantially the same terms as Hexion presently receives them. For the period from Closing until such time as Hexion has transferred an interest in InfraTec in accordance with the foregoing, Hexion will enter into a transitional site services agreement with the Divestment Business under which it will pass through to the Divestment Business those services that the Divestment Business requires from InfraTec at cost.

Shell currently provides various site infrastructure services to Hexion at Norco HPRU, and the Purchaser may enter into a similar contract with Shell. Finally, while the Argo site is shared with other parties, each business on the site operates independently with minimal overlap in assets, shared services or utilities.

With respect to intellectual property, brands, and marks, Hexion's rights to use the Bakelite brands cover two sets of products: epoxy resins and phenolic resins. These two sets of products have different applications and customer bases. Hexion proposes to license its rights to the Bakelite brands, with respect to epoxy resin products, but to retain its rights with respect to phenolic resins, which the Divestiture Business does not produce and does not need in order to be able to compete vigorously as a producer of epoxy resin product. Hexion's retention of the right to use the Bakelite brands for its phenolic resins business will in no way affect the viability of the overall Divestiture Business.

In order to allow the Purchaser sufficient time to transition the Divestment Business to its own brands while maintaining the full goodwill associated with those products, at the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed

to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, 12 months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period.

## Shared or seconded personnel;

Hexion does not envisage any shared or seconded personnel beyond at most a transitional period to ensure a smooth handover.

## Shared IT systems or other systems; and

The Business currently operates on an [Divestment business information system], information system ("IS"). Hexion will offer the Purchaser the option of entering into a transitional agreement under which Hexion would maintain a separate [Divestment business information system] information system ("IS") for the Divestment Business. The Divestiture Business's IS divestiture plan will include a newly created and separately managed [Divestment business information system] that will be maintained throughout the transition period, as agreed to by the parties, then will be ultimately severed or cloned for the Buyer (at the Buyer's expense). Based upon preliminary estimates, management believes that a one-time expense of approximately [...] million will be required for initial implementation costs to transition EP to a separate [Divestment business information system] at Closing. This cost continues to be evaluated. These systems are designed to replace the functions that Hexion's IS department currently provides the Business. In this way, most of the IS needs of a business unit can be met as they were pre-divestiture.

#### Shared customers.

Hexion will undertake that it and its Affiliated Undertakings will not, as of the effective date and until the expiry of a period of [...] months after Closing, in relation to any product sold by the Divestment Business (as now carried on), canvass or solicit the custom of any person, firm or company who has within one year prior to Closing been a regular customer in relation to the Divestment Business, except insofar as that customer is an existing customer of Huntsman or a retained Hexion business for the same product.

[Description of how Hexion and the Divestment Business will supply a specific sutomer].

General description of all relevant tangible and intangible assets used and/or owned by the business to be divested, including, in any case, IP rights and brands.

As discussed above, the Divestment Business will include:

- (i) the epoxy manufacturing assets at the Facilities, including reactors for producing specialty epoxy resins, modifiers, reactive diluents and curing agents, as well as mixing and compounding equipment and high volume blending equipment used to make epoxy blends and formulated systems, as well as assets related thereto such as tank farms, and control centres;
- (ii) the specialty epoxy and formulations-related R&D facilities at Duisburg, Stuttgart and Houston R&D, including laboratories, testing equipment and pilot plants;

- (iii) inventory pertaining to the Divestment Business located at the Facilities;
- (iv) the necessary intellectual property related to specialty epoxy resins and formulated systems produced at the Facilities, including patents, know-how, recipes, and process instructions for all products presently or historically produced at the Facilities, including but not limited bisphenol-F and diglycidyl ether of bisphenol-F;
- (v) a perpetual royalty-free exclusive license to use all Bakelite brands, trademarks and trade names currently owned by Hexion, including "Bakelite Epoxy," "Ruetapox," and "Ruetadur" in combination with epoxy resin products;
- (vi) at the option of the Purchaser, Hexion will grant the Purchaser the exclusive right to use the Hexion trade names such as 'ECOCRYL', 'EPIKOTE', 'EPIKURE', 'EPON', 'EPONOL', and 'HELOXY' that are presently used in combination with either the Exclusive Products or the Common Products for a period of up to [...] months from Closing (the "License Period"), subject to the proviso that Hexion will be allowed to use those trade names with respect to the Common Products for a period of [...] days after Closing to allow it to transition to new brands and clear its stocks. Hexion will be prohibited from using the above-referenced trade names in combination with those same products for a further [...] months after the License Period, or, in the event that the Purchaser does not require the right to use those trade names, [...] months after Closing (the "Black-Out Period"). Hexion will be free to use the Hexion trade names in combination with any epoxy resin product after the Black-Out Period;
- (vii) licenses, permits and authorisations, regardless of issuer, currently in effect and maintained by Hexion or the Facilities to the extent that such documents are necessary to the operation of the Divestment Business:
- (viii) to the extent applicable, and where permitted under the terms of the existing contracts and agreements, Hexion will transfer, assign or grant to the Divestment Business contracts, agreements, leases, commitments and understandings related to the production and/or sale of specialty epoxy resins and formulated systems by the Facilities;
- (ix) records currently maintained by the Facilities, whether in hard copy or electronic form, both current and historic, that relate to the Divestment Business:
- (x) subject to their employment rights under the Transfer of Undertakings Directive and other applicable employment laws, the Divestment Business will include personnel necessary for the ongoing viability of the business, including management and staff, production and operations employees, technical, sales, marketing and service personnel;
- (xi) the arrangements for the supply of products or services by Hexion or Affiliated Undertakings to the Divestment Business for a transitional periods ranging from [...]months after Closing; and
- (xii) the arrangements for the supply of products or services by the Divestment Business to Hexion or Affiliated Undertakings for transitional periods of between [...] months after Closing.

Please note that as regards (xi) above (*i.e.*, the supply agreements referenced in 2(h)(C) of the Schedule to the Proposed Commitments), these supply agreement are for commodities that are readily available from third parties and which do not relate to shared inputs at the Duisburg site, and are therefore not treated as Long Term Supply Agreements.

Submit an organisational chart identifying the number of personnel currently working in each of the functions of the business to be divested and a list of those employees who are indispensable for the operation of the business to be divested, describing their functions.

*See* Annex A to the Proposed Commitments. Hexion has implemented a retention bonus scheme to incentivise employees of the Divested Business to remain with the business. [Hexion retention bonus scheme description].

Description of changes, having occurred in the last two years, in the organisation of the business to be divested or in the links with other undertakings controlled by the notifying parties.

[Divestment Business facilities description].

Description of any areas where the business to be divested as set out in the commitments offered differs from the nature and scope of the business as currently operated.

[Description of how Hexion and the Divestment Business will supply a specific customer].

# $Annex\ C-16\ April\ 2008\ Hexion\ Board\ Presentation\ re\ Retention\ Bonus\ Scheme$

[Hexion presentation re retention bonus scheme]

# **Annex D – Model Retention Bonus Letter**

[Hexion model retention bonus letter]

**Appendix 1: List of Exclusive Product Codes** 

[List of exclusive product codes]

# **Appendix 2: List of Common Product Material Codes**

[List of common product material codes]

# **Appendix 3: Long Term Supply Agreement Product Specifications**

[Long term supply agreement product specifications]

## **Appendix 4 – Divested Business Transitional Supply Agreements**

[Divested business transitional supply agreements]