



EUROPEAN COMMISSION
DG Competition

*Case M.8261 -
LANXESS /
CHEMTURA*

Only the English text is available and authentic.

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

Article 6(1)(b) NON-OPPOSITION
Date: 31/03/2017

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 Where possible the information omitted has been replaced by ranges of figures or a general description.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

To the notifying party:

**Subject: Case M.8261 – LANXESS / CHEMTURA
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004¹ and Article 57 of the Agreement on the European Economic Area²**

Dear Sir or Madam,

- (1) On 24 February 2017 the European Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004³ by which Lanxess AG ("Lanxess" or the "Notifying Party") acquires within the meaning of Article 3(1)(b) of the Merger Regulation control of the whole of Chemtura Corporation ("Chemtura", and together with Lanxess, the "Parties") by way of purchase of shares.

1. THE PARTIES AND THE OPERATION

- (2) Lanxess is a German corporation listed on the Frankfurt Stock Exchange and based in Cologne, Germany. The core business of Lanxess is the development, manufacturing and marketing of chemical components, specialty chemicals and plastics.

¹ OJ L 24, 29.1.2004, p. 1 (the 'Merger Regulation'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union (TFEU) has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

² OJ L 1, 3.1.1994, p. 3 (the 'EEA Agreement').

³ OJ L 24, 29.1.2004, p. 1 (the "Merger Regulation").

- (3) Chemtura is a public company listed on the New York Stock Exchange and Euronext Paris. Chemtura is a global developer, manufacturer, and marketer of engineered industrial specialty chemicals.
- (4) On 25 September 2016, Lanxess (through its wholly owned subsidiaries Lanxess Deutschland GmbH and Lanxess Additives Inc.) and Chemtura entered into an agreement and plan of merger whereby Lanxess Additives Inc. will be merged with, and into Chemtura. As a result of this, Chemtura will become a fully-owned subsidiary of Lanxess GmbH (the "Proposed Transaction").
- (5) Following completion of the Proposed Transaction, Chemtura will be solely controlled by Lanxess. The Proposed Transaction therefore constitutes a concentration pursuant to Article 3(1)(b) of the Merger Regulation.

2. EU DIMENSION

- (6) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million⁴ (EUR 8 043 million; for Lanxess: 6 473 million, for Chemtura: 1 570 million). Each of them has an EU-wide turnover in excess of EUR 250 million (for Lanxess: EUR [...], for Chemtura: EUR [...]), but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same Member State. The Proposed Transaction therefore has an EU dimension pursuant to Article 1(2) of the Merger Regulation.

3. MARKET DEFINITION

- (7) The Parties have horizontal overlaps with regard to: (i) lubricant additives; and (ii) flame retardants. There are also a number of vertical relationships, including: (i) lubricant additives; (ii) flame retardants; and (iii) trimethylolpropane.

3.1. Product market definition

3.1.1. Lubricant additives and finished lubricants

- (8) Lubricants are made from a combination of base oils and additives which are blended together to form finished lubricants. Lubricant additives are chemicals added to base oils that help the oil perform a specific lubricating function and are sold either in lubricant packages or as individual components.
- (9) In previous cases regarding lubricant additives, the Commission has distinguished between: (i) viscosity index improvers ("VI Improvers"); and (ii) detergent inhibitors ("DIs"), which are sold either as individual DI components or as DI packages containing a blend of different DI components.⁵
- (10) The Commission found that even though there is a certain degree of substitutability between VI improvers and DI packages in the production of oil lubricants, VI improvers and DI packages are both essential components of an oil lubricant, and

⁴ Turnover calculated in accordance with Article 5 of the Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C95, 16.4.2008, p. 1).

⁵ Case No. IV/M.1137, *Exxon / Shell*, paragraph 13. A DI package will typically include approximately 6 individual additive components, the most important being detergents, dispersants, corrosion inhibitors and antioxidants.

are not interchangeable.⁶ The Commission has also considered first, whether all DI packages constitute one product market and second, if there are separate product markets for the individual additive components.⁷

- (11) The Notifying Party submits that there are various different detergent inhibitor package components including: (i) detergents; (ii) dispersants; (iii) corrosion inhibitors; (iv) antioxidants; (v) anti-wear agents; (vi) extreme pressure agents; and (vii) friction modifiers.⁸ The products for which the Parties overlap are considered below.
- (12) *Detergents*: The Commission has previously considered that there could be a separate segment for detergents, as compared to dispersants, but left the product market definition open.⁹ The Commission has suggested a possible sub-segmentation of detergents based on the chemical group: (i) sulphonates; (ii) phenates; and (iii) salicylates; it however finally left open the product market definition. The Notifying Party considers that it is not necessary to sub-divide the market further.¹⁰
- (13) *Corrosion inhibitors*: The Commission has in the past considered corrosion inhibitors in relation to chemicals for certain applications, such as water treatment or coolants/antifreeze,¹¹ but it ultimately left the product market definition open. The Notifying Party submits that there is no need to sub-divide the market further as all corrosion inhibitors used in fuel and lubricant applications perform the same function.¹²
- (14) *Antioxidants*: The Commission has previously considered the market for polymer additives (which the Notifying Party considers to be comparable to the lubricant additive market), where it noted that there could be separate markets for: (i) primary antioxidants; and (ii) secondary antioxidants.¹³ The Notifying Party notes that there are two types of primary antioxidants according to chemical group: (i) amines; and (ii) phenolics.¹⁴
- (15) *Anti-wear agents*: The Commission has previously considered the market for anti-wear agents for lubricant additives and found that it was not necessary to sub-divide the market further.¹⁵ The Notifying Party also does not consider it necessary to sub-divide the market further, because anti-wear agents perform their function in the same way.¹⁶
- (16) *Extreme pressure agents*: The Commission has not previously considered the market for extreme pressure agents. The Notifying Party considers that there are

⁶ Case No. IV/M.1383 - *Exxon/Mobil*, Commission Decision of 29 September 1999, paragraph 11 and 286. Case No. COMP/M.7691 - *Apollo/OMG*, Commission decision of 24 September 2015 paragraphs 30–32.

⁷ Case No IV/M.1137 - *Exxon/Shell*, Commission decision of 8 July 1998, paragraph 13.

⁸ Form CO, paragraph 55.

⁹ Case No IV/M.1137 - *Exxon/Shell*, Commission decision of 8 July 1998, paragraph 13.

¹⁰ Form CO, paragraphs 71-75. In addition to those previously identified by the Commission, the Notifying Party also identifies a fourth chemical group of detergent inhibitors: Carboxylates.

¹¹ Case No IV/M.1135 - *Elf/Texaco/Antifreeze JV*, Commission decision of 18 August 1998, paragraphs 11–12; Case COMP/M.5327 - *Ashland/Hercules*, Commission decision of 6 October 2008, paragraphs 38–40; Case No COMP/M.6388 - *Ecolab/Nalco Holding Company*, Commission decision of 8 November 2011, paragraphs 11–13.

¹² Form CO, paragraphs 76-79.

¹³ Case COMP/M.3805 - *Crompton/Great Lakes*, Commission decision of 15 June 2015, paragraph 9.

¹⁴ Form CO, paragraph 80.

¹⁵ Case COMP/M.5355 - *BASF/Ciba*, Commission decision of 12 March 2009, paragraphs 368–369.

¹⁶ Form CO, paragraph 85.

separate product markets for: (i) active extreme pressure agents, which includes: (a) sulphur based; (b) chlorine based; and (c) phosphorus based; and (ii) passive extreme pressure agents, which includes overbased calcium and sodium; but considers that it is not necessary to reach a conclusion on market definition as the Parties are active with regard to different products.¹⁷

- (17) *Friction modifiers*: The Commission has not previously considered the market for friction modifiers. The Notifying Party considers that friction modifiers, extreme pressure agents and anti-wear agents have similar functions of reducing friction and wear in areas of high load.¹⁸
- (18) Horizontally and vertically affected markets arise in relation to antioxidants and the sub-segment of aminic antioxidants which are therefore considered below in the competitive assessment.
- (19) For the purpose of the present decision, the exact product market definitions for lubricant additives can be left open, since the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market regardless of whether the market is considered to be all lubricant additives, broken down between VI Improvers and DIs or any individual DI package components.

3.1.2. *Chemical intermediates for the production of lubricant additives*

- (20) There are multiple chemical intermediates used in the production of lubricant additives. Aniline and diphenylamine ("DPA") are two such chemical intermediates, used as an input for aminic primary antioxidants and other lubricant additives. The Commission has not previously analysed the markets for aniline or DPA. The Notifying Party submits that the precise market definition can be left open in this case.¹⁹
- (21) Vertically affected markets arise in relation to antioxidants and the sub-segment of aminic antioxidants for which aniline and DPA are inputs and are therefore considered below in the competitive assessment.
- (22) For the purposes of the present decision, the exact product market definition for chemical intermediates, in particular aniline and DPA, can be left open since the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market, even on the narrowest possible market definition (i.e. aniline and DPA).

3.1.3. *Finished lubricants*

- (23) The Commission has previously considered finished lubricants separately from lubricant additives and indicated that they can be divided into mineral and synthetic lubricants, but it ultimately left the product market definition open.²⁰
- (24) Vertically affected markets arise in relation to antioxidants and the sub-segment of aminic antioxidants which are inputs for finished lubricants and are therefore considered below in the competitive assessment.

17 Form CO, paragraphs 86-88.

18 Form CO, paragraph 91.

19 Form CO, paragraph 178.

20 Case COMP/M.5927 - *BASF/Cognis*, Commission decision of 30 November 2010, paragraphs 54-58.

- (25) For the purposes of the present decision, the exact product market definition for finished lubricants can be left open since the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market under regardless of whether the market is further broken down between mineral and synthetic finished lubricants.

3.1.4. *Flame retardants*

- (26) Flame retardants are chemicals incorporated into a variety of manufactured materials to increase their resistance to ignition, or by acting to slow down combustion.
- (27) The Notifying Party submits that flame retardants should be sub-segmented according to the chemistry used, for example: (i) brominated; (ii) chlorinated; (iii) aluminium tri-hydroxide based; and (iv) phosphorus based. It argues that it would not be appropriate to sub-segment the market further based on end application, for example for use in: (i) PVC; (ii) polyamides; or (iii) polyurethane ("PU"); because the same type of flame retardants can be used for different applications and different types of flame retardants can be used for the same application.²¹
- (28) The Commission has previously noted that flame retardants can differ depending on the chemistry used or on the basis of the application but that manufacturers of flame retardants can use different inputs to achieve flame retardants with comparable characteristics.²² The Commission found that the market could potentially be sub-segmented by type but it ultimately left the market definition open, undertaking the assessment based on the market broken down by chemistry and end application.²³
- (29) The market investigation was inconclusive as to whether it would be appropriate to further segment the market according to chemistry used. The vast majority of respondents consider that flame retardants based on different chemistries can be used for the same end applications in some cases, but not all.²⁴
- (30) In turn, the market investigation was also inconclusive as to whether it could be appropriate to sub-segment either phosphorus or bromine based flame retardants according to end use. The vast majority of respondents consider that products based on a particular chemistry are partially interchangeable in that they can be used for some end-applications, but not all.²⁵ In particular, a slight majority consider that certain phosphorus based flame retardants are better suited for PVC applications²⁶ and the majority of respondents consider that certain phosphorus based flame retardants are better suited for PU applications.²⁷
- (31) A horizontally affected market arises in relation to bromine based flame retardants and a few market participants raised concerns regarding phosphorus based flame retardants which are therefore considered below in the competitive assessment.

21 Form CO, paragraphs 127-136.

22 Case COMP/M.7393 - *Albemarle/Rockwood*, Commission decision of 13 November 2016, paragraphs 72–73.

23 Case COMP/M.7393 - *Albemarle/Rockwood*, Commission decision of 13 November 2016, paragraphs 67–86

24 See responses to: question 6 of questionnaire 1 to competitors; and question 5 of questionnaire 2 to customers.

25 See responses to: question 7 of questionnaire 1 to competitors; and question 6 of questionnaire 2 to customers.

26 See responses to: question 8 of questionnaire 1 to competitors; and question 7 of questionnaire 2 to customers.

27 See responses to: question 9 of questionnaire 1 to competitors; and question 8 of questionnaire 2 to customers.

- (32) For the purpose of the present decision, the exact scope of the product market definition for flame retardants and its sub-segments therein can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise, regardless of whether the market is considered to be broken down according to chemistry or further broken down by end application.

3.1.5. Elemental bromine as an input into flame retardants

- (33) Elemental bromine is an input for brominated flame retardants. The Commission has not previously considered the market for elemental bromine. The Notifying Party considers the market to be all elemental bromine.²⁸
- (34) A horizontally affected market arises in relation to bromine based flame retardants for which elemental bromine is an input and therefore considered below in the competitive assessment.
- (35) For the purpose of the present decision, the exact scope of the product market definition for elemental bromine can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise even under the narrowest possible market definition (that is elemental bromine).

3.1.6. Trimethylolpropane

- (36) Trimethylolpropane ("TMP") is a polyhydric alcohol that serves, inter alia, as an input into trimethylolpropane branched hydroxyl terminated saturated polyester and it is, thus, a common building block in the polymer industry. Chemtura uses TMP for the production of: (i) resins; (ii) PU-hardeners; and (iii) lubricant products; although it also has other uses.²⁹
- (37) The Commission has previously considered whether TMP is part of an overall market for polyhydric alcohols or forms a separate product market but has left the product market definition open.³⁰ It has never considered further segmenting the market for TMP.
- (38) The Notifying Party considers that TMP is substitutable with other polyhydric alcohols therefore that the relevant market should be defined as including all polyhydric alcohols. Moreover, the Notifying Party submits that it supplies one grade of TMP for all applications.³¹
- (39) A vertically affected market arises in relation to the supply of TMP therefore this market which is therefore considered below in the competitive assessment.
- (40) For the purpose of the present decision, the exact scope of the product market definition for the supply of TMP can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise even under the narrowest possible market definition (that is TMP).

28 Form CO, paragraph 195.

29 Form CO, paragraphs 205-206.

30 Case COMP/M.4957 - *Perstorp Holding/Solvay Interlox*, Commission decision of 10 January 2008, paragraph 16; Case COMP/M.6778 - *Advent International Corporation/Cytec's Resin Business*, Commission decision of 6 February 2013, paragraphs 31-34.

31 Form CO, paragraph 210.

3.1.7. *Resins and Polyurethane hardeners*

- (41) Resins are intermediate ingredients used in the production of coatings, paints and inks.³² The Commission has previously considered a distinction based on the delivery technology for the end product, such as: (i) liquid resins; (ii) specialty liquid resins; (iii) radiation-curable resins; and (iv) powder coating resins. These categories could be further segmented based on their chemistry (for example, based on acrylics, alkyds, epoxies, PUDs, which could in turn be water-borne or solvent-borne), but the Commission ultimately left the product market definition open.³³
- (42) Polyurethane ("PU") hardeners are one possible application of TMP, which is used to modify polyurethane systems where the polyurethane component acts as a hardener, for example, in the coating industry.³⁴ The Commission has not previously considered the market for PU hardeners.
- (43) A vertically affected market arises in relation to the supply of TMP which is an input for resins and PU hardeners and therefore considered below in the competitive assessment.
- (44) However, for the purpose of the present decision, the exact scope of the product market definition for resins and PU hardeners can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise regardless of whether the market for PU hardeners is sub-divided further or not.

3.2. **Geographic market definition**

3.2.1. *Lubricant additives*

- (45) The Commission has previously considered the market for lubricant additives to be at least EEA-wide in scope, and possibly worldwide.³⁵ The Notifying Party considers the market to be global in scope, as: (i) manufacturers offer the same products under the same brands to all their customers across the borders of the EEA countries; (ii) transportation costs are low; (iii) technical requirements and language differences do not have any impact, or have a minimal impact on cross-border trade; and (iv) prices are broadly similar across all EEA countries.³⁶
- (46) The market investigation has not been conclusive on whether the relevant geographic market should be defined at EEA or worldwide level.
- (47) For the purpose of the present decision, the exact scope of the geographic market for lubricant additives and its possible sub-segments can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise regardless of whether the market is considered to be worldwide or EEA.

32 Case COMP/M.8019 – *Advent International / Nuplex Industries*, Commission decision of 1 September 2016, paragraph 12.

33 Case COMP/M.3060 – *UCB / Solutia*, Commission decision of 31 January 2003, paragraphs 7 and 8; Case COMP/M.6178 – *Arkema / Total's Resin Division*, paragraphs 11–22; Case COMP/M.8019 – *Advent International / Nuplex Industries*, Commission decision of 1 September 2016, paragraph 31.

34 Notifying Party's reply to the Commission's request for information of 23 November 2016, paragraph 46.

35 Case No. IV/M.1383 - *Exxon/Mobil*, Commission Decision of 29 September 1999, paragraph 331; Case No IV/M.1137 - *Exxon/Shell*, Commission decision of 8 July 1998, paragraphs 17-18

36 Form CO, paragraph 96.

3.2.2. *Flame retardants*

- (48) The Commission has previously considered that the relevant market in relation to flame retardants is likely to be at least EEA-wide, and possibly worldwide.³⁷ The Notifying Party considers the market to be global in scope given that companies source their requirements worldwide. The majority of respondents to the market investigation stated that they source/buy flame retardants on an EEA-wide or worldwide basis.³⁸
- (49) The market investigation has not been conclusive on whether the relevant geographic market should be defined at EEA or worldwide level.
- (50) For the purpose of the present decision, the exact scope of the geographic market for flame retardants and its possible sub-segments can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise regardless of whether the market is considered to be worldwide or EEA.

3.2.3. *Trimethylolpropane*

- (51) The Commission has previously left open whether the market for polyhydric alcohols (including TMP) should be EEA- or worldwide.³⁹ The Notifying Party submits that the relevant market should be defined as global in scope because of the worldwide flow of TMP products from and to all regions, and the modest transportation costs.⁴⁰
- (52) The market investigation has not been conclusive on whether the relevant geographic market should be defined at EEA or worldwide level.
- (53) For the purpose of the present decision, the exact scope of the geographic market for TMP can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise regardless of whether the market is considered to be worldwide or EEA.

3.2.4. *Other product markets upstream or downstream of lubricant additives, flame retardants and TMP: supply of finished lubricants, aniline and DPA, elemental bromine, resins, and PU hardeners*

- (54) In relation to finished lubricants, the Commission has in the past considered the geographic scope of the market for automotive and industrial lubricants to be at least national and probably EEA-wide in scope, but it ultimately left the geographic market definition open.⁴¹
- (55) The Commission has not previously analysed the geographic market definition for chemical intermediates aniline and DPA.

37 Case COMP/M.7393 - *Albemarle/Rockwood*, Commission decision of 13 November 2016, paragraphs 78-80.

38 See responses to: question 11 of questionnaire 1 to competitors; and question 10 of questionnaire 2 to customers.

39 Case COMP/M.4957 - *Perstorp Holding/Solvay Interlox*, Commission decision of 10 January 2008, paragraph 26; Case COMP/M.6778 - *Advent International Corporation/Cytec's Resin Business*, Commission decision of 6 February 2013, paragraph 109.

40 Form CO, paragraph 211.

41 Case COMP/M.1891 - *BP Amoco/Castrol*, Commission decision of 18 May 2000, paragraphs 18-22; Case COMP/M.5927 - *BASF/Cognis*, Commission decision of 30 November 2010, paragraphs 59 and 62.

- (56) The Commission has not previously considered the market for elemental bromine. The Notifying Party considers the market for elemental bromine to be worldwide.⁴²
- (57) In relation to resins, the Commission has in the past left the geographic market definition open, although the market investigation in *Advent International / Duplex Industries* revealed that market participants considered the geographic scope to be EEA-wide rather than global.⁴³
- (58) The Commission has not previously analysed the geographic market definition for PU-hardeners.
- (59) For the purpose of the present decision, the exact scope of the geographic markets for the supply of finished lubricants, chemical intermediates (DPA and aniline), elemental bromine, resins, and PU hardeners can be left open, since no serious doubts as to the compatibility of the Proposed Transaction with the internal market arise regardless of whether the market is considered to be worldwide or EEA.

4. COMPETITIVE ASSESSMENT

4.1. Introduction

- (60) The Parties' activities result in the following affected markets:
- a. Horizontally affected markets: (i) antioxidants and the sub-segment of aminic antioxidants; and (ii) flame retardants (both brominated and phosphorus-based and potentially some segments therein).
 - b. Vertically affected markets: (i) lubricant additives (involving markets both upstream and downstream); (ii) flame retardants (and the upstream supply of bromine); and (iii) trimethylolpropane (and the downstream production of certain chemicals).
- (61) No evidence on the Commission's file suggests the existence of conglomerate effects in relation to the merged entity's portfolio of products post-transaction. The merged entity would remain a mid-sized chemicals company only present in some of the many product markets in the chemical sector and would remain relatively small in relation to the largest players in diversified and specialised chemicals, such as BASF, Bayer or Dow Chemical.

4.2. Horizontal assessment

4.2.1. Lubricant additives

- (62) When considering the market for all lubricant additive components, there is no affected market as the Parties have a combined 2015 market share in the EEA of [5-10]% by value and [5-10]% by volume and [0-5]% by value and [0-5]% by volume at the worldwide level.⁴⁴ Of the various of DI package components, the

42 Form CO, paragraph 195.

43 Case COMP/M.8019 – *Advent International / Nuplex Industries*, Commission decision of 1 September 2016, paragraphs 34-38.

44 The Parties' overlap is limited to certain DI package components; Chemtura does not produce or market VI Improvers therefore there is no overlap for these lubricant additive package components. When considering the market for all DI

Parties overlap with regard to the following products: (i) detergents (specifically sulphonate detergents); (ii) corrosion inhibitors; (iii) antioxidants (specifically primary antioxidants, both amines and phenolics); (iv) anti-wear agents; (v) extreme pressure agents (specifically passive extreme pressure agents); and (vi) friction modifiers. Of these overlaps, only antioxidants and the sub-segment of aminic antioxidants give rise to affected markets.

4.2.1.1. The Notifying Party's view

- (63) The Notifying Party states that Lanxess' activities with regard to antioxidants, including aminic antioxidants are minimal in the EEA. With regard to aminic antioxidants specifically, the Notifying Party submits that it is not a significant player as simply acts as a reseller for [...] of its sales of aminic antioxidants in 2015.⁴⁵ Furthermore, the Notifying Party submits that a number of competitors will remain post-transaction.⁴⁶

4.2.1.2. Commission's assessment

- (64) In relation to antioxidants, in 2015 the Parties had a combined market share in the EEA of [10-20]% by value (Lanxess: [0-5]%; Chemtura: [10-20]%; HHI Δ [0-100]) and [10-20]% by volume (Lanxess: [0-5]%; Chemtura: [10-20]%; HHI Δ [0-100]). At the worldwide level, the Parties have a combined market share of [10-20]% by value (Lanxess: [0-5]%; Chemtura: [10-20]%; HHI Δ [0-100]) and [20-30]% by volume (Lanxess: [0-5]%; Chemtura: [20-30]%; HHI Δ [0-100]). Therefore, there would be an affected market only when measured by volume at the worldwide level but the HHI delta is less than 150.
- (65) With regard to the sub-segment of aminic primary antioxidants, in 2015 the Parties had a combined market share in the EEA of [20-30]% by value (Lanxess: [0-5]%; Chemtura: [20-30]%; HHI Δ [100-150]) and [30-40]% by volume (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]). Worldwide, the combined market share is [30-40]% by value (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]) and [40-50]% by volume (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]).
- (66) The Commission considers that for the reasons set out below, the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market with respect to the supply of antioxidants and aminic antioxidants in particular.
- (67) First, there is a very limited merger specific increment given Lanxess' marginal presence (less than [0-5]% and Δ 150 HHI increment in all instances, both for antioxidants and aminic antioxidants).
- (68) Second, a number of other competitors will remain post-transaction, in particular BASF with a 25 – 30% market share both in the EEA, and worldwide, in addition to a number of other players including Albemarle (0-5% market share in aminic

package components, again there is no affected market as the Parties have a combined 2015 market share in the EEA of [5-10]% by value and [5-10]% by volume and [0-5] by value and [0-5] by volume at the worldwide level.

45 Form CO, paragraphs 104 and 108. Lanxess' own production of aminic anti-oxidants was [...] in 2015, accounting for [...] of its total sales.

46 Form CO, pages 56-58.

antioxidants by value in the EEA and worldwide), Lubrizol (0-5%), Afton (0-5%) and Infineum (0-5%).

- (69) Third, Lanxess only manufactures [...] of the aminic primary antioxidants that it sells, acting as a distributor for the remaining [...].
- (70) The Commission further notes that the market investigation did not raise concerns with regard to the existence of merger-specific coordinated effects in the markets for antioxidants and aminic antioxidants, in which the increment brought about by the Proposed Transaction is very small, as noted in paragraph (66).

4.2.2. *Flame retardants*

- (71) When considering the overall market for flame retardants, the Parties would have a limited market share both in terms of value ([10-20]% in the EEA, [5-10]% worldwide) and volume ([5-10]% in the EEA, [0-5]% worldwide). When the market is broken down by chemistry, an affected market arises in relation to brominated flame retardants.

4.2.2.1. Brominated flame retardants

(a) The Notifying Party's view

- (72) The Notifying Party submits that the Parties' combined market shares for brominated flame retardants would be limited post-transaction (below 30% in volume in the EEA) and the increment would be de minimis (below [0-5]%).⁴⁷ Strong, vertically integrated, well-financed competitors, such as Albemarle and ICL would remain active in the market and barriers to entry are low (e.g. no regulatory barriers, most products have run out of patent protection).⁴⁸ Furthermore, the Proposed Transaction would not reduce the number of vertically integrated competitors, [...].⁴⁹ Customers, in the Notifying Party's view, are sophisticated and exert bargaining power.⁵⁰

(b) Commission's assessment

- (73) For brominated flame retardants, the Parties have a combined 2015 market share in the EEA of [30-40]% by value (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ[0-100]) and [20-30]% by volume (Lanxess: [0-5]%; Chemtura: [20-30]%; HHI Δ[0-100]). Worldwide, the combined market share is [30-40]% by value (Lanxess: [0-5]%; Chemtura: [20-30]%; HHI Δ[0-100]) and [10-20]% by volume (Lanxess: [0-5]%; Chemtura: [10-20]%; HHI Δ[0-100]).⁵¹
- (74) The Commission considers that for the reasons set out below, the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market with respect to brominated flame retardants.

47 Form CO, paragraph 145.

48 Form CO, paragraph 146-147.

49 Form CO, paragraphs 148 and 149 and footnotes 59 and 60. According to the Notifying Party, Chemtura purchases flame retardants from [...] and sourced [...] of bromine from its own brines and [...] from third parties (including in the form of derivatives). Regarding bromine for all uses (including conversion to derivatives), Chemtura sourced [...].

50 Form CO, paragraph 150.

51 Form CO, pages 83 and 84.

- (75) First, the Parties' combined market shares are limited (below [30-40]% under any measure) and there is a very limited merger specific increment because of Lanxess' marginal presence (less than [0-5]% and HHI Δ 150 in all instances) in the supply of brominated flame retardants.
- (76) Second, Albemarle (EEA: [10-20]%, by volume) and Israel Chemical Limited ("ICL") (EEA: [20-30]% by volume) which are both backwardly integrated in the market for the supply of bromine will both remain larger than the merged entity. The vast majority of respondents to the market investigation confirmed that a sufficient number of competitors will remain on the market post-transaction.⁵²
- (77) Third, while Albemarle, ICL and Chemtura are each backwardly integrated in the market for the supply of bromine, Chemtura sources [20-30]% of its bromine requirements from [...]. [...]. Therefore, the number of vertically integrated suppliers will not change post-transaction and the merged entity will remain constrained in relation to part of its supply of bromine.
- (78) The Commission further notes that the market investigation did not raise concerns with regard to the existence of merger-specific coordinated effects in the market for brominated flame retardants, in which the increment brought about by the Proposed Transaction is very small, as noted in paragraph (74). Moreover, as noted in paragraph (76), the number of vertically integrated players in relation to the supply of elemental bromine would remain the same post-Transaction.

4.2.2.2. Phosphorus based flame retardants

(a) The Notifying Party's view

- (79) With regard to the overall market for phosphorus-based flame retardants, the Notifying Party submits that the Parties' combined market shares do not result in an affected market.⁵³ It further notes that Chemtura has [...] and market shares may therefore [...].⁵⁴
- (80) The Notifying Party submits that flame retardants are not specifically formulated for a single application⁵⁵ and has limited visibility on the products' final use.⁵⁶ It has nevertheless provided sales data broken down by customers' likely final use of phosphorus based flame retardants, which show that the Parties' sales of phosphorus-based flame retardants are rather complementary in terms of application, with Chemtura focusing on PVC use and Lanxess on PU.⁵⁷

(b) Commission's assessment

- (81) On a potential market for all phosphorus flame retardants, no affected market arises as the Parties have a combined market share in the EEA of [10-20]% by volume (Lanxess: [10-20]%; Chemtura: [0-5]%; HHI Δ [0-100]) and [5-10]% worldwide (Lanxess: [5-10]%; and Chemtura: [0-5]%; HHI Δ [0-100]). The Parties' combined market share by value is [10-20]% in the EEA (Lanxess: [10-20]%; Chemtura: [0-

52 See responses to: question 13 of questionnaire 1 to competitors; and question 12 of questionnaire 2 to customers.

53 Form CO, paragraph 138.

54 Form CO, paragraph 139.

55 Form CO, paragraph 127.

56 Form, CO, paragraphs 128-130.

57 Form CO, paragraphs 132-133 and Annex 7.

5]%; HHI Δ[0-100]) and [5-10]% worldwide (Lanxess: [5-10]%; Chemtura: [0-5]%; HHI Δ[0-100]).⁵⁸

- (82) A few market participants raised concerns that the increased consolidation may result in increased prices in the market for phosphorus based flame retardants.⁵⁹
- (83) The Commission however considers that for the reasons set out below, the Proposed Transaction does not raise serious doubts as to its compatibility with the internal market with respect to phosphorus-based flame retardants.
- (84) First, a number of strong competitors will remain in the market post-transaction. In particular ICL which will remain a larger player than the merged entity in the EEA post-transaction ([20-30]% by volume) and Rokita with a [10-20]% market share (by volume) in the EEA. The Parties submit that in the EEA, [30-40]% of the market is made up by "Others" but have been unable to break this down further. The market investigation indicates that there are a number of other European players active in the market (such as Clariant and Italmatch) with a large portion of market respondents identifying Chinese players as being amongst the top 5 suppliers in the EEA (such as Yoke and its Dutch subsidiary Shekoy chemicals, Zhejiang Wansheng, and Futong). Only a very small minority of the respondents to the market investigation considered both Lanxess and Chemtura as being in the top five strongest players in the market for phosphorus based flame retardants.⁶⁰
- (85) Second, sales data submitted by the Parties suggests that when considering phosphorus based flame retardants segmented according to end application, the Parties' sales are relatively complementary, as [50-60]% of Chemtura's sales by value of phosphorus-based flame retardants in the EEA are for use in PVC applications ([5-10]% for PU and [40-50]% undetermined, which means that it was not possible to clearly allocate the products for use in PVC or PU applications) while Lanxess' sales of phosphorus-based flame retardants are predominantly for PU ([60-70]%, as opposed to [10-20]% for PVC and [20-30]% undetermined).⁶¹ Furthermore, some customers indicated that they use some of the "undetermined" products for PVC applications, which confirms the view that the Parties' products are complementary (i.e. it is likely that the proportion of Chemtura's phosphorus-based flame retardants used for PVC applications exceeds 50%).⁶²
- (86) Third, the vast majority of respondents to the market investigation consider that the Proposed Transaction will have either a positive or neutral effect on the competitive situation of their company for flame retardants.⁶³ With regard to phosphorus based flame retardants specifically, the majority consider that the Proposed Transaction will have either a positive or neutral effect with regard to prices, innovation, quality or other conditions of competition.⁶⁴ In addition, each of those players which considered that there could be concerns identified other

58 Form CO, pages 83-84.

59 See responses to: questions 13 and 14 of questionnaire 2 to customers.

60 See responses to: question 12 of questionnaire 1 to competitors; and question 11 of questionnaire 2 to customers.

61 Commission's analysis of Annex 7 to the Form CO. If the worldwide sales are considered, the data are as follows: Chemtura – [0-5]% for PU, [20-30]% for PVC, [60-70]% undetermined; Lanxess – [50-60]% for PU, [5-10]% for PVC, [40-50]% undetermined.

62 See responses to: question 4 of questionnaire 2 to customers.

63 See responses to: question 14 of questionnaire 1 to competitors; and question 13 of questionnaire 2 to customers.

64 See responses to: question 14 of questionnaire 2 to customers.

competitors in the market including Ferro, ICL and Chinese players and/or stated that they purchased on a worldwide basis.

4.3. Vertical assessment

(87) The Parties' activities result in multiple vertical relationships, some of which result in affected markets, as set out below in Sections 4.3.1 to 4.3.4.

4.3.1. *The production and supply of aniline and DPA as chemical intermediates for lubricants (upstream), and the production and supply of aminic primary antioxidants (downstream)*

(88) Chemtura is active in the production of aniline and DPA which it incorporates into aminic primary antioxidants and sells on the merchant market (aniline is a raw material for DPA). In the EEA, Lanxess purchases aniline for the production of its aminic primary antioxidants.⁶⁵

4.3.1.1. The Notifying Party's view

(89) The Notifying Party submits that, based on Chemtura's very small share in the production of aniline and DPA and the Parties' limited market shares in the downstream production of aminic antioxidants the Proposed Transaction does not give rise to competition concerns.⁶⁶

4.3.1.2. Commission's assessment

(90) With regard to the upstream market, Chemtura has a worldwide market share for the supply of aniline of [0-5]% both by value and volume and has confirmed that its market share is well below 10% in the EEA.

(91) As explained above in Section 4.2.1, in the downstream market for aminic primary antioxidants, the merged entity will have a combined share in the EEA of [20-30]% by value (Lanxess: [0-5]%; Chemtura: [20-30]%; HHI Δ [100-150]) and [30-40]% by volume (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]). Worldwide, the combined market share is [30-40]% by value (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]) and [40-50]% by volume (Lanxess: [0-5]%; Chemtura: [30-40]%; HHI Δ [0-100]).

(92) The Commission considers, first, that the structure of demand will not change considerably post-transaction as Lanxess is only a minor player with regard to aminic primary antioxidants. Second, Chemtura has a very limited market position with regard to the supply of aniline. Third, aminic primary antioxidants is just one limited use of aniline.⁶⁷

(93) Based on the above and the available evidence, the Commission concludes that the Proposed Transaction would not raise serious doubts as to its compatibility with the internal market due to input or customer foreclosure of competitors in relation to the production and supply of aniline and DPA as chemical intermediates for

65 Form CO, paragraphs 176-180 and footnotes 82 and 83. Lanxess does not purchase any DPA for the manufacture of additives in the EEA, and only very limited amounts in China.

66 Form CO, paragraphs 178 to 180.

67 The Parties estimate that the proportion of aniline used as an input for the production of aminic antioxidants lubricant additives is below 1%.

lubricants (upstream), and the production and supply of aminic primary antioxidants (downstream).

4.3.2. *The production of aminic primary antioxidants (upstream) and the supply of DI lubricant additive packages and finished lubricants (downstream).*

- (94) As described in Section 4.2.1 above, Lanxess and Chemtura are both active with regard to the sale of lubricant additives. Both also purchase certain lubricant additives on the merchant market: Lanxess for incorporation into its DI packages⁶⁸ and Chemtura into finished lubricants.⁶⁹ Two pairs of vertically affect markets therefore arise with regard to the upstream supply of aminic primary antioxidants⁷⁰ and (i) the downstream production of lubricant additive DI packages, and (ii) the downstream production of finished lubricants.

4.3.2.1. The Notifying Party's view

- (95) According to the Notifying Party, the Proposed Transaction does not result in any vertically affected market in relation to the upstream supply of lubricant additives or the overall supply of antioxidants.⁷¹

4.3.2.1. Commission's assessment

- (96) The Commission notes that vertically affected markets only arise to the extent that the sub-segment of aminic antioxidants is considered a relevant product market and agrees with the Notifying Party that no vertically affected market would arise in relation to the wider market for antioxidants.
- (97) As detailed above at paragraph (63), the Parties' combined market share in the upstream market for the supply of aminic primary antioxidants in the EEA is [20-30]% by value and [30-40]% by volume, with a limited increment (Lanxess currently only has a market share of [0-5]% by value and [0-5]% by volume).
- (98) Downstream, the Notifying Party has confirmed that: (i) on all plausible markets for lubricant additive packages which incorporate a lubricant additive sold by Chemtura (or substitutes of), Lanxess has a market share of <30% by value and volume in the EEA and worldwide; and (ii) on all plausible markets for finished lubricants, Chemtura has a market share of <30% by value and volume in the EEA and worldwide.⁷²
- (99) Chemtura currently purchases small amounts of additives from Lanxess (including antioxidants), for an overall value of less than EUR [...] in 2015 for use in some of its finished lubricants, in addition to purchases of other additives in the merchant market.
- (100) The Commission considers, first, that no competition concerns are likely to arise with regard to the supply of aminic primary antioxidants for the reasons set out above at paragraphs (64)-(67), in particular due to the limited merger specific

68 Chemtura is not active with regard to the production and sale of DI packages.

69 Lanxess is not active with regard to the production and sale of finished lubricants.

70 No vertically affected markets arise with regard to the overall production of antioxidants as the Parties' combined market share is below 30%.

71 Form CO, paragraphs 184 and 188.

72 Form CO, paragraphs 184 and 188.

increment and the presence of other competitors. Second, none of the Parties has a significant market share in the downstream markets for the supply of lubricant DI packages and finished lubricants.

(101) Based on the above and the available evidence, the Commission concludes that the Proposed Transaction would not raise serious doubts as to its compatibility with the internal market due to input or customer foreclosure of competitors in relation to the production of aminic primary antioxidants (upstream) and the supply of lubricant additive DI packages and finished lubricants (downstream).

4.3.3. *The production of TMP (upstream) and the supply of resins, PU-hardeners, and lubricants (downstream)*

(102) Lanxess produces TMP which it both incorporates into its lubricants, and sells on the merchant market. Chemtura purchases all of its TMP requirements from Lanxess which it uses in the production of: (i) resins; (ii) PU-hardeners; and (iii) lubricants.⁷³

4.3.3.1. The Notifying Party's view

(103) The Notifying Party submits that the supply of TMP into the downstream production of (i) resins, (ii) PU-hardeners and (iii) lubricants would only amount to a vertically affected market for the narrower segment of TMP, and that only for the EEA. It further states that Chemtura already sources all of its limited TMP requirements from Lanxess, which represents a very small (less than [0-5]%) of Lanxess' sales of TMP. Furthermore, Chemtura's market shares in the related downstream are in any event below 30%.⁷⁴

4.3.3.2. Commission's assessment

(104) Based on the narrowest market definition (i.e. just TMP), in 2015 Lanxess had a share of supply in the EEA of [30-40]% by value and by volume. At a worldwide level, it had a market share of [20-30]% by value and [20-30]% by volume.⁷⁵

(105) Chemtura acquired [...] tonnes (EUR [...] by value) of TMP in the EEA in 2015 which accounts for less than [...]% of Lanxess' TMP sales. Downstream, Chemtura has confirmed that it has a market share of well below 30% for each of the products for which it uses TMP as an input i.e. (i) resins; (ii) PU-hardeners; and (iii) lubricants.⁷⁶

(106) The Commission considers that, first, Chemtura acquires very limited amounts of TMP. Second, Chemtura already sources 100% of its TMP from Lanxess meaning that the Proposed Transaction will not result in a significant change to the current supply structure. Third, the Parties' shares in the downstream production of (i) resins, (ii) PU-hardeners, and (iii) lubricants, that use TMP are well below 30% both globally and the EEA.⁷⁷

73 Form CO, paragraphs 205-209.

74 Form CO, paragraphs 208-209 and 213-215.

75 Form CO, page 108.

76 Form CO, paragraph 208. For completeness, please note that Lanxess' estimated share in the only downstream segment for products that use TMP as an input [...] is well below 30% both worldwide and in the EEA.

77 Form CO, paragraph 209.

(107) Based on the above and the available evidence, the Commission concludes that the Proposed Transaction would not raise serious doubts as to its compatibility with the internal market due to input or customer foreclosure of competitors in relation to the production of TMP (upstream) and the supply of resins, PU-hardeners, and lubricants (downstream).

4.3.4. *The supply of elemental bromine as an input for brominated flame retardants*

(108) The Proposed Transaction results in a vertically affected market with regard to the upstream supply of bromine, where Chemtura is active, and the downstream market of brominated flame retardants, where the Parties' combined market share is higher than 30% for brominated flame retardants

4.3.4.1. The Notifying Party's view

(109) The Notifying Party submits that its arguments in relation to the downstream market for brominated flame retardants, referred to in Section 4.2.2.1 also hold for this vertical relationship.⁷⁸ In addition, it submits that Chemtura's market share for the supply of elemental bromine is limited ([10-20]% in the EEA and [10-20]% worldwide in 2015). Moreover, it submits that Lanxess currently [...], which would not change post-transaction.⁷⁹

4.3.4.2. Commission's assessment

(110) The Commission does not consider that the Proposed Transaction will lead to input or customer foreclosure with regard to the supply of bromine for the production of brominated flame retardants. First, Chemtura's market share in the supply of bromine is low ([10-20]% in the EEA and [10-20]% worldwide). Second, Lanxess' requirements of bromine are low as its current presence in the production of brominated flame retardants is very limited and [...]. Third, as discussed in Section 4.2.2.1, the Proposed Transaction results in a very small increment in the downstream market for brominated flame retardants, strong competitors will remain active on the market post-transaction and the merged entity will be constrained in the purchase of part of its inputs.

(111) Based on the above and the available evidence, the Commission concludes that the Proposed Transaction would not raise serious doubts as to its compatibility with the internal market due to input or customer foreclosure of competitors in relation to the production of bromine (upstream) and the supply brominated flame retardants (downstream).

⁷⁸ Form CO, paragraph 193.

⁷⁹ Form CO, paragraphs 194-197.

5. CONCLUSION

- (1) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)

Neven MIMICA

Member of the Commission