

***Case No COMP/M.3805 -  
CROMPTON / GREAT  
LAKES***

Only the English text is available and authentic.

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

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Article 6(1)(b) NON-OPPOSITION  
Date: 15/06/2005

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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 15.06.2005

SG-Greffe(2005) D/202661

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PUBLIC VERSION

MERGER PROCEDURE  
ARTICLE 6(1)(b) DECISION

to the notifying party

Dear Sir/Madam,

**Subject: Case No COMP/M.3805 – Crompton / Great Lakes  
Notification of 10.05.2005 pursuant to Article 4 of Council Regulation  
No 139/2004<sup>1</sup>**

1. On 10/05/2005, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 (“the EC Merger Regulation”), according to which the undertaking Crompton Corporation (“Crompton”, USA) acquires within the meaning of Article 3(1)(b) of the EC Merger Regulation control of the whole of the undertaking Great Lakes Chemical Corporation (“GLCC”, USA) by way of purchase of shares.
2. After examination of the notification, the Commission has concluded that the notified operation falls within the scope of the EC Merger Regulation and does not raise serious doubts as to its compatibility with the common market and with the functioning of the EEA Agreement.

## **I. THE PARTIES AND THE OPERATION**

3. Crompton is a US company active in the development, production and sale of polymers, polymer additives, crop protection products, refined hydrocarbon products and polymer processing equipment. These products are sold mainly to industrial customers in more than 120 countries.
4. GLCC is active in the development, production and sale of flame retardants, polymer additives, optical monomers, brominated performance products, fluorine chemicals,

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

desalination and industrial water treatments and consumer products such as household cleaning and pool care products.

5. Pursuant to an Agreement and Plan of Merger dated 8 March 2005, Crompton intends to acquire all of the issued and outstanding voting securities of GLCC. Therefore, the transaction will lead to Crompton acquiring sole control of GLCC and, hence, constitutes a concentration within the meaning of Article 3 (1) (b) of the EC Merger Regulation.
6. The transaction was also notified in the US to the Federal Trade Commission, which decided not to issue a Second Request, thus clearing the transaction.

## **II. COMMUNITY DIMENSION**

7. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 2,5 billion<sup>2</sup> (Crompton EUR 2,7 billion and GLCC EUR 1,3 billion). The combined aggregate turnover of the undertakings concerned is more than EUR 100 million in each of at least three Member States and, in each of these three Member States, the aggregate turnover of each of Crompton and GLCC is more than EUR 25 million [...]. The aggregate Community-wide turnover of each of Crompton and GLCC is more than EUR 100 million (Crompton EUR [...] million and GLCC EUR [...] million), and none of them achieves more than two-thirds of its aggregate Community-wide turnover in one and the same Member State. Therefore, the notified operation has a Community dimension.

## **III. COMPETITIVE ASSESSMENT**

8. Within the broad range of products in which the parties are active and that includes polymers, polymer additives (such as antioxidants, lubricants, plasticizers, other rubber and urethane additives, etc) and stabilisers, other specialty products, fire protection products, industrial water treatment products, optical monomers and other consumer products (such as pool, spa care and household cleaning products), the transaction will result in horizontal overlaps only in two groups of products, namely antioxidants and light stabilisers. The size of the organophosphites business (the only type of antioxidants materially affected by the transaction) accounts for a relatively low percentage ([...]) of the overall turnover of the parties, representing combined sales of around [...] tons. Light stabilisers is even a smaller business, with combined sales below [...] tons.

### **Relevant Product Markets**

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<sup>2</sup> Turnover calculated in accordance with Article 5(1) of the EC Merger Regulation and the Commission Notice on the calculation of turnover (OJ C66, 2.3.1998, p25).

## A. Antioxidants

9. Antioxidants are additives, used primarily in plastic resins, that protect polymers during production and processing as well as after the polymers have been incorporated in finished goods. They are sold mainly to producers of polyolefins (polypropylene and polyethylene), PVC, engineered thermoplastics, urethanes and rubber materials.
10. There are several types of antioxidants. “Primary” antioxidants (such as amines or phenolics) are used to protect polymers from degradation during the production and processing stages. “Secondary” antioxidants (such as organophosphites (“OPH”) or thioesters) are used to protect polymers from degradation once they are manufactured. Both types are used in a complementary manner so that they cannot be considered as competing products.
11. The only material overlap between the parties exists in OPH, which are “secondary” antioxidants, and, to a minor extent, for phenolics, a “primary” antioxidant.

### Liquid OPH vs. solid OPH

12. OPH can be either liquid or solid. The parties state that there are a number of factors indicating that liquid and solid OPH constitute separate relevant product markets. Firstly, their inter-substitutability is very limited. Over the past decade polyolefin producers (which can use both liquid and solid OPH) have mostly moved from liquid to solid OPH as a result of increasing regulatory curtailment of the use of liquid OPH due to environmental and health concerns. However while liquid OPH have been displaced by solid OPH where possible, they continue to be used in the production of certain PVC stabiliser packages or elastomers, for which liquid OPH is very well-suited. Secondly, polyolefin producers are generally reluctant to switch from liquid to solid OPH (or vice-versa) as it would require changes in the resin’s formulation and re-qualifications with the customers. Furthermore, there are considerable price differences (the most common solid OPH grade “168” is sold at approximately [...] €/kg, while the liquid OPH grade “TNPP” is sold at [...] €/kg), and although these differences are normally compensated by the fact that smaller quantities of solid OPH are required for an equivalent amount of resin, the parties are of the opinion that any switch between them would be unlikely, even if prices were to differ by 20-25%.
13. On the supply side, the parties state that a producer of liquid OPH could convert its production lines for the production of solid OPH within one year and at a cost of EUR [...] million. However, the market investigation indicates that the timeframe might be higher (up to 12 months for technical/commercial steps and other 12 to 18 months for establishing the production) and that the investment needed could be even higher (EUR [...] million).. A supply-side switch would be easier from solid to liquid OPH, but the parties recognise that this switch (solid to liquid) is also unlikely given that liquid OPH are lower-valued products and also as demand for liquid OPH is likely drop further given the environmental and health concerns surrounding nonylphenol, one of the key raw materials for their production.
14. The market investigation has widely supported the parties’ arguments, confirming that solid OPH and liquid OPH constitute separate relevant product markets.

15. On the other hand, for the reasons set out below, the parties consider that a further sub-segmentation according to the different grades within each group of OPH would not be appropriate.

#### Liquid OPH

16. Liquid OPH include tris-4-nonylphenyl phosphite (“TNPP”), triphenyl phosphite (“TPP”) and liquid esters.
17. The parties consider that, within liquid OPH, customers can chose any of the grades as all have the same applications<sup>3</sup>, and that all producers compete with each other to qualify for the production of a resin. The issues associated with the choice of one liquid versus another are so subjective that the parties have no effective means of discriminating between customers who would accept a price increase from those who would change to a competing product. The parties also mention the past practice of the Commission<sup>4</sup>, where a distinction according to the function of additives has been considered. The parties also submit that producers of liquid OPH can readily switch production between the various grades in a single production line: pipes and tanks require no cleaning and the same equipment is used, changes being done within one day and at negligible cost.
18. The market investigation however has not confirmed the parties view with respect to the customers’ ability to choose freely between the different grades. When developing a new grade, most customers state that they chose the grade of liquid OPH according to the characteristics and performance to be achieved in the final product. Customers have also submitted that changes between the various grades of liquid OPH would require reformulation, testing and re-qualification processes, rendering the substitution difficult.
19. With respect to the supply-side substitutability, the market investigation has given some indications supporting the parties’ view that TNPP, TPP or liquid esters can be produced in the same reactors, although this substitutability can be restricted due to the necessary investments and to the need of handling hazardous substances (such as phosphorus trichloride or  $PCl_3$ ).
20. In any case, the question whether liquid OPH constitute a single relevant product market or whether each grade constitute a separate relevant product market can be left open since the final assessment does not change under any alternative.

#### Solid OPH

21. Solid OPH include various grades such as Tris 2,4-di-butylphenyl phosphite (“168”), Bis 2,4-di-butylphenyl pentaerythritol diphosphite (“626”), “P-EPQ” or “9228”. The “168” product accounts for around 75% of all solid OPH sold in the EEA, “626” accounts for 3-5% and the other grades account for the remainder.

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<sup>3</sup> The parties mention one exception with respect to the general rule that all liquid OPH serve for the same applications, and it is the production of polyolefin which requires either TNPP or a solid grade.

<sup>4</sup> Case M. 310 – Harrisons & Crosfield/Akzo, and case M.1467 – Rohm And Haas/Morton.

22. The parties consider that all solid OPH perform the same essential function which is to protect polymers from oxidation and that there is considerable substitutability between the various grades. Every grade offers a somewhat different set of price/performance characteristics. For example, “168” is considered as a commodity and can be used in almost all applications, while other grades can deliver different performances in terms of colour, melting or hydrolytic stability. The parties submit that customers consider all grades and their price/performance trade-offs to decide which one to use, and that this competition between grades is further promoted by the fact that customers are reducing the number of polymers they produce, looking for grades with a general range of performance characteristics, which favours the substitution towards “168” from other more costly and specialised grades. [...].
23. With respect to the supply-side substitutability, the parties submit that any company producing any of the various grades can produce the other grades as the production process is the same. For example, a producer of “168” could readily begin producing “626” with an investment of around [150.000-200.000] € and in a period of, at most, six months. Following such an investment, switches between the various grades can be done easily.
24. The market investigation has not confirmed the parties view with respect to the demand-side substitutability. Specifically, the customers responding to the investigation have not provided support for the parties’ arguments as to the customers’ ability to choose freely between the different grades. Instead, most customers state that they chose the grade of solid OPH according to the characteristics and performance to be achieved in the final product. Customers have also submitted that changes between the various grades of solid OPH would require reformulation, testing and re-qualification processes, rendering the substitution difficult.
25. On the other hand, however, the market investigation has confirmed the parties’ views regarding supply-side substitutability. As such, producers of “626” can switch production easily, in the short term and at negligible cost to “168”. For example, GLCC and other producers such as Jinhai, Kolon, Ciba and Songwon either currently produce both grades on single production lines or have migrated from “168” to “626” and are able to switch production easily. Switching can be done in 2-3 days at the most and the sole cost of switching is the cleaning of pipes. It has also been confirmed that, producers who currently produce only “168” could start producing “626” with a relatively low investment.
26. With respect to “P-EPQ” and “9228”, the situation is similar, at least with respect to switching production from these grades to “626”. “9228” is a patented product, so unlicensed producers cannot start producing it, but “9228” producers could easily start producing “626”, and the same occurs with respect to “P-EPQ”.
27. Regarding other grades such as 641 or W618 produced by Crompton, they are also produced on lines which can be switched to produce any of the grades described above easily and in the short term.
28. In the light of the arguments stated above with respect to the high degree of supply-side substitutability, and in particular from the various solid OPH grades towards “626” (which is the only solid OPH grade where the parties’ activities overlap), it

appears that for the purposes of this decision, the relevant product market should be defined as that of solid OPH.

### Phenolics

29. Phenolics are the most widely used primary antioxidant in the plastics industry. There are various grades, such as 2,6-Di-*t*-butyl-4-methylphenol (“BHT”), “1010” or “1076”<sup>5</sup>. For the purposes of this decision, the question whether phenolics constitute a single relevant product market or whether each grade constitute a separate relevant product market can be left open since the final assessment does not change under any alternative.

### **B. Light stabilisers**

30. Light stabilisers are polymer additives which are used to inhibit chemical reactions that otherwise would degrade plastics when they are exposed to ultraviolet radiation. The parties’ activities overlap in three categories of light stabilisers, namely Hindered Amine Light Stabilisers (“HALS”), Benzotriazoles and Benzophenones. Given that the overlap produced by the transaction in these products is minimal, the question whether light stabilisers constitute a single relevant product market or whether each category constitute a separate relevant product market can be left open since the final assessment does not change under any alternative.

### **Relevant Geographic Markets**

#### **A. Antioxidants**

31. The parties consider that the relevant geographic market for all organophosphites is at least EEA-wide, which is in line with previous decisions of the Commission<sup>6</sup> in which polymer additives were considered, and probably world-wide.
32. Organophosphites are traded across the EEA by companies operating only one or two plants in the EEA. Furthermore, many companies present in the EEA have their production plants located in the US, Korea, China, Taiwan and Japan. Crompton is supplying both liquid and solid organophosphites into the EEA from its plants in the US and Dover, a strong competitor in liquid OPH in the EEA, does the same.
33. The market investigation has confirmed that companies from Asia and US have entered in the EEA, obtaining relatively high market shares in a few years and exerting a strong competitive pressure. The customers have confirmed that, in case of price increases, they would consider other alternatives outside the EEA, pointing toward a world-wide market.
34. With respect to phenolics, the situation is very much the same, with many producers with production plants located in Asia being active in the EEA: Asahi Denka Co. (Japan), Everspring Chemical Co. (Taiwan), Johoku Chemical Co. (Japan), Jinhai Albemarle Chemical & Industry Co (China) or Songwon (Korea).

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<sup>5</sup> These are the product designations given by the market leader Ciba.

<sup>6</sup> Case M. 310 – Harrisons & Crosfield/Akzo, and case M.1467 – Rohm And Haas/Morton.

35. Therefore, for the purposes of this decision, the relevant geographic market can be defined as at least EEA-wide.

### **B. Light stabilisers**

36. As is the case for OPH, light stabilisers are traded across the EEA by companies operating only one or two plants in the EEA, and therefore the relevant geographic market can be defined as at least EEA-wide.

### **Assessment**

#### **A. Antioxidants**

##### *Liquid OPH*

37. In liquid OPH the operation would combine Crompton's [40-50]% market share with the [0-10]% market share of Great Lakes, thus creating a combined market share of [50-60]%. The main competitors are Dover Chemical Corporation [30-40]%, Akzo Nobel through its subsidiary Akcros Chemical [0-10]% and United Phosphorus Ltd. of India [0-10]%. The table below shows the market shares' evolution over the last years.

<b>Company</b>	<b>Market share (%)</b>		
	<b>2002</b>	<b>2003</b>	<b>2004</b>
Crompton	[40-50]	[40-50]	[40-50]
GLCC	[0-10]	[0-10]	[0-10]
<u>Combined</u>	<u>[50-60]</u>	<u>[50-60]</u>	<u>[50-60]</u>
Dover	[0-10]	[10-20]	[30-40]
Akcros Chem.	[0-10]	[0-10]	[0-10]
United Phosphorus Limited	[0-10]	[0-10]	[0-10]
Atofina	[30-40]	[10-20]	[0-10]
Others	[0-10]	[0-10]	[0-10]
<u>Total</u>	<u>100</u>	<u>100</u>	<u>100</u>

Source: Crompton and GLCC estimates and sales data.

38. Despite the relatively high market share that the merged entity will have after the merger, the market is highly competitive, with companies from US and Asia exerting an increasing competitive pressure on the EEA. Thus, it is to be noted that whilst Atofina, with a [30-40]% market share in 2002 has in the meantime exited the market, Dover (US) was able to raise its market share from [0-10]% in 2002 to [30-40]% in 2004, and United Phosphorus Limited (India) entered the market and increased its market share from [0-10]% to [0-10]% in 2004. Furthermore, there are



other potential suppliers, such as Ciba and Clariant (both of which have strong positions in the solid OPH markets), and several Asian producers. The market investigation has confirmed that, although product testing and re-qualifications with customers have to be carried out in some cases, many respondent consider Asian producers as credible alternatives and others are already either importing from or approving some of these suppliers (such as Songwon, Ma Kuang or Kolon among others).

39. At grade level, the only overlap between the parties occurs for TNPP. The combined entity would have a market share of [60-70]% ([50-60]% for Crompton and [10-20]% for GLCC). However, for TNPP the situation is the same as for liquid OPH in general, with new entrants over the last years from US and Asia and other potential entrants which constrain any anti-competitive effect. Other competitors are Dover ([10-20]%), United Phosphorus Limited ([10-20]%), Clariant ([0-10]%) and Ciba ([0-10]%). It is worthwhile noting that Clariant and Ciba re-sell TNPP, which is a clear indication that Asian producers can and do enter the EEA either by their own (United Phosphorus Limited) or via third parties.
40. The investigation has confirmed that, for TNPP in particular, these other alternatives are credible, as the few respondents who had some concerns about the transaction with respect to TNPP, recognised that they either could turn to or are already importing from other producers outside the EEA
41. In the light of the above, and despite the relatively high market share that the merged entity will have after the transaction, the market appears to evolve in a competitive manner, with new entries that have gained important market shares over the last years. There also appears to be other credible potential entrants. Overall, it can therefore be concluded that the transaction will not significantly impede effective competition in the common market either by creating or reinforcing a dominant position or by any other means.

Solid OPH

42. In solid organophosphites, the merged entity would have a [40-50]% market share. However, the increment is very limited ([0-10]%) due to the limited activities of Crompton in this market, and Ciba would remain market leader with [40-50]% market share. Another significant competitor is Clariant, with [0-10]% market share. The table below shows the market shares' evolution over the last years.

Company	Market share (%)		
	2002	2003	2004
GLCC	[40-50]	[40-50]	[40-50]
Crompton	[0-10]	[0-10]	[0-10]
<u>Combined</u>	[40-50]	[40-50]	[40-50]
Ciba	[40-50]	[40-50]	[40-50]
Clariant	[0-10]	[0-10]	[0-10]

Others	[0-10]	[0-10]	[0-10]
<u>Total</u>	<u>100</u>	<u>100</u>	<u>100</u>

Source: Crompton estimates.

43. From the data above, the two market leaders have lost almost [0-10]% market share in 3 years, which means that, despite the high market shares, the market remains competitive with new entry being possible. As for liquid OPH, the potential for imports from Asian producers in particular has been confirmed by the market investigation. Although some customers have indicated that the approval and re-qualification steps can take some time, many are already either importing or in the approval process. Some of these alternatives are companies such as Asahi Denka (Japan), Chang Chiang Plastics (Taixwan), Songwon (Korea), Everspring (Taiwan) or High Polymer Laboratory (India).
44. In the light of the above and of the limited overlap between the parties, it can be concluded that the transaction does not give rise to competitive concerns with respect to solid OPH.

#### Phenolics

45. In phenolics, the merged entity would have an EEA-wide market share of around [30-40]%, however, the real overlap is *de minimis*, since Crompton market share is well below [0-10]% either for the market comprising all phenolics or for each individual grade. Therefore, the transaction does not give rise to competitive concerns with respect to phenolics.

#### **B. Light stabilisers**

46. In light stabilisers the overall combined EEA-wide market share of the parties is about [10-20]% (Great Lakes [10-20]%, Crompton less than [0-10]%). If the different types of light stabilisers were to constitute separate product markets, only two minor overlaps would exist in HALS (Great Lakes [20-30]%, Crompton below [0-10]%) and benzophenones (Great Lakes [10-20]%, Crompton [0-10]%). Given the current position of Great Lakes in these markets and the *de minimis* overlap, it can be concluded that the transaction does not give rise to competition concerns with respect to light stabilisers.

### **VI. CONCLUSION**

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

For the Commission  
(signed)  
Neelie KROES  
Member of the Commission