EN

Case No IV/M.1381 - IMETAL / ENGLISH CHINA CLAYS

Only the English text is available and authentic.

REGULATION (EEC) No 4064/89
MERGER PROCEDURE

Article 6(2) NON-OPPOSITION
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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 26.04.1999

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PUBLIC VERSION

MERGER PROCEDURE

ARTICLE 6(1)(b) DECISION

To the notifying party

Dear Sirs,

Subject: Case No IV/M.1381 – Imetal / English China Clays
Notification of 25.01.99 pursuant to Article 4 of Council Regulation No 4064/89[1]

I. THE OPERATION AND THE PARTIES

1. On 25 January 1999, Imetal SA ("Imetal") notified the announcement of a public offer for the entire issued share capital of English China Clays PLC ("ECC"). The proposed concentration constitutes a take-over bid by Imetal for ECC under the UK Take-over Code. The public offer was announced on 11 January 1999. Imetal offered commitments intended to solve the competition problems raised by the proposed transaction on the markets of coating kaolin for paper applications and supply of fused silica on 16 February 1999. The notification was declared incomplete on 25 February 1999 because of the missing relevant information on the markets of kaolin for ceramics, which is vertically linked to the market for ceramic bodies, and that of supply of "refractory clays". Imetal has provided the further information required on 9 March 1999. Subsequently, on 30.3.1999 Imetal has further offered commitments intended to solve the competition problems raised by the proposed transaction on the market of supply of "refractory clays".

[1] OJ L 395, 30.12.1989 p. 1; corrigendum OJ L 257 of 21.9.1990, p. 13; Regulation as last amended by Regulation (EC) No 1310/97 (OJ L 180, 9. 7. 1997, p. 1, corrigendum OJ L 40, 13.2.1998, p. 17).

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2. Imetal is a French company listed on the Paris Stock Exchange and is the holding company for a group of companies with facilities in 100 locations in 16 countries world-wide. It operates in building materials, industrial minerals and metal processing. Imetal has its headquarters in France but operates primarily elsewhere in Europe and North America. Imetal is ultimately controlled by two groups: CNP (under the control of the Frère family) and Power Corporation of Canada (under the control of the Desmarais family).

3. ECC is an UK company listed on the London Stock Exchange. The principal activities of the EEC Group are focused on minerals and chemicals. The EEC Group produces mineral products (primarily kaolin and calcium carbonates) in the UK, the US, Continental Europe and other locations. Its speciality chemicals business produces water/surface treatment products and paper chemicals.

II COMMUNITY DIMENSION

4. The combined world-wide turnover of all the undertakings concerned exceeds 5.000 million EURO (Imetal alone having 7.347 million EURO). The Community-wide turnover of at least two of the undertakings concerned is more than 250 million EURO (Imetal: 679 million EURO, ECC: 350 million EURO). The undertakings concerned do not achieve more than two thirds of their turnover in one and the same Member State. Therefore, the operation has a Community dimension.

III THE RELEVANT MARKETS

A. Relevant product markets

5. The economic sectors involved in the concentration are **kaolin**, **ground calcium carbonate** ("**GCC**"), **fused silica**, **ceramic bodies**, **raw materials for ceramics** and **other clays for use in refractory applications**.

Kaolin

6. Kaolin, or china clay, is mined and then ground and refined into a variety of grades. Kaolin is mostly used in paper-making applications, in "speciality applications" (such as rubber, paints, plastics, adhesives and sealants), and in the ceramic industry (sanitary-ware, table-ware, tiles and fibreglass). Kaolin is also used in refractory applications, together with other types of clay.

(a) Supply of kaolin for paper applications

7. In paper-making applications, kaolin is used as a coating or filling pigment. In Europe, around 92% of all kaolin is used in paper coating and filling applications, with the remaining 8% being used in speciality applications.

8. Kaolin versus other white pigments

Paper applications constitute the major market for kaolin in Europe. Imetal claims that kaolin can be effectively substituted by other pigments for most of the end-use applications. These pigments, known as "white pigments", include ground calcium carbonate ("GCC"), precipitated calcium carbonate ("PCC"), magnesium silicate ("MS" or talc) and titanium dioxide ("TD"). In particular, Imetal has claimed that:

(a) Kaolin, PCC, GCC and MS can be used in the vast majority of paper filler and coating applications: the extent to which other white pigments are substitutable for kaolin tends to vary according to the application in question and the paper production process used. In recent years there has been a trend away from acid-based paper production techniques towards alkaline production processes for wood-free paper, which now represent half of all paper production and which permit the use of a number of white pigments This has considerably increased the scope for paper producers to substitute (wholly or partially) other white pigments for kaolin. (b) For a given application, kaolin, GCC and PCC are similar in price range. (c) Paper manufacturers are highly sophisticated in their raw material procurement and production techniques and adjust their requirements of the various pigment grades: such manufacturers do not face any material costs or obstacles in adjusting the relative proportions of pigments used. (d) In both filling and coating application the share of kaolin has declined significantly since 1980, with the use of alternative products (mainly GCC and PCC) expected to continue to increase. (e) From the supply point of view, there would be a realistic possibility of producers of kaolin for filling applications to switch to production of kaolin for coating applications and vice-versa.

9. The results of the Commission's market investigations are the following. It generally appears that kaolin has been increasingly substituted by GCC and PCC in the last 20 years, especially in Europe. This would be due both to the chemical attitude of other white pigments to substitute kaolin and to a generally lower price of GCC in particular when compared to the price of kaolin. However, this substitution is submitted to a number of constraints and, even in the most optimistic scenario, is not a perfect substitution. In addition, the market investigation has revealed that this substitution process is not in its increasing trend anymore, and that a *plateau*, if not already reached, is in the process of being reached. This conclusion appears to be particularly true for coating kaolin. From the technical point of view, the following considerations stand.

10. Within the paper industry, the extent to which other white pigments are substitutable for kaolin tends to vary according to the paper production process used and the type of paper to be produced. Traditionally, paper production has been acid-based. However, Imetal claims that currently most of the paper producers have switched to alkaline (or neutral) production processes, which allow a major substitution of kaolin by other white pigments. In addition to that, even with acid processes today it would be possible to substitute kaolin with other white pigments. The investigation carried out however shows that in a paper-machine that is running with an acid water system generally kaolin cannot be substituted with GCC and PCC. On the other hand, in a paper-machine that is running with a neutral water system, kaolin can be substituted with other white pigments like GCC and PCC. In addition to that, it is not entirely clear which is the proportion of paper manufacturers, which have already converted to a neutral system. Imetal claims that approximately half of all paper produced world-wide is now produced using the alkaline process. According to the information in possession of the Commission, there are still a number of paper producers in Europe using the acid process, and a change from acid to neutral water system would not be possible without substantial investments.

11. In addition to that, and besides the question of the paper production process used, it is clear, and Imetal does not contend the point, that kaolin offer certain specific advantages which cannot be provided by any substitute product. In particular, kaolin offers certain specific gloss, fibre coverage and printability qualities which are required by some paper grades. It is for example clear that lightweight coated paper (LWC) (which is used in

magazine paper) requires kaolin as a pigment and cannot be effectively produced by using in other white pigments. Around 20% of the total European consumption of paper is represented by LWC type of paper. Furthermore, it appears from the market investigation that a certain minimum part of china clay is always needed for any type of paper to be produced (around 20-30% in the coating pigment formulation).

12. As to prices, Imetal has stressed that for a given application, kaolin, GCC and PCC are similar in price range. It appears however that, despite a certain decrease in its price, coating kaolin tends to be more expensive than GCC (around 140 EURO/t in 1997 for coating kaolin, around 100 EURO/t in 1997 for GCC) and less expensive than PCC (around 200 EURO/t in 1997). Besides that, the market investigation generally reveals that the prices for the three products paid by customers vary to a certain degree according to the specific product bought.

13. On the basis of the above there are therefore a number of indications which point to the conclusion that kaolin can be identified as a separate product market.

Coating kaolin versus filling kaolin

14. As indicated above kaolin can be used in paper filling applications and paper coating applications. Therefore, within the paper-applications kaolin has two basic different applications. Within these two broad categories, kaolin typically has a number of different grades. The elements in our possession indicate that kaolin used as a filler is a basic type of kaolin, which needs basic processing to be produced. On the other hand, kaolin used as a coater is a much more value-added and refined product, for which further stages of processing are necessary. Prices of kaolin for filling applications and kaolin for coating applications differ substantially (average of around […]EURO/t for filler and […] EURO/t for coating). This major difference in price has also a major impact on the trade of these two different products. Whilst kaolin for filling applications is typically an European market and is not imported from outside Europe (given that its low price the incidence of transport costs would be too high and consequently imports are not profitable) kaolin for coating applications is a products which is traded world-wide and approximately 35% of European sales of kaolin in 1997 are represented by imports into Europe from USA and Brazil. In addition, it is clear that European producers of kaolin, with the exception of ECC, are basically active in kaolin for filling applications only, whilst only companies located in the US or Brazil are active on both types of kaolin and coating kaolin in particular. This is explained by the comparatively limited European kaolin reserves as well as by the higher European production costs. Kaolin in Europe is typically found under the ground and needs various degrees of processing, whilst kaolin in the US and Brazil can typically be found in the open air. In addition, production costs are lower in these last two countries.

15. On the basis of the above it appears therefore appropriate to further distinguish the market and consider kaolin for filling applications and kaolin for coating applications as two separate product markets.

16. The argument of Imetal relating to supply-side substitution in this context has to be rejected for the following reasons. The investigation made clear that a producer of filling kaolin would most likely find it very difficult to switch to production of coating kaolin. The question whether such a supplier would be able to switch his production depends not only on his technical know-how and his machinery equipment, but also to a very large extent on the technical composition of the crude material in his deposit. This

implies that in some situations it would be impossible to make a filler grade deposit ever acceptable for coating grades products. In those situations in which it might be technically possible to do enough additional processing to make the filler grade deposit acceptable for coating, it appears that the economics of the additional processing would make the product non-competitive to other coating kaolin products available on the market. These circumstances are also demonstrated by the fact that basically no European kaolin producer other than ECC and to a very minor extent the German AKW is active in coating kaolin, despite the high level of demand for this type of kaolin from the paper industry. On the other hand, even if it would be extremely simple for a producer of coating kaolin to switch to the production of filling kaolin, this would not seem to be a desirable alternative, because the resources of this producer are naturally to be deployed to produce higher added value coating kaolin. In this context, the most likely scenario appears to be the case of a producer of coating kaolin products who also has some production of filling kaolin, to the extent that its reserves contain some clays which are of a quality only adequate to make filler products.

(b) GCC

17. As indicated above, GCC stands for ground calcium carbonate, which is a white pigment mainly used in the production of paper. GCC is mined as a stone and then crushed until the particle size is suitable for the relevant application. In this way, GCC is refined into a variety of grades. As already mentioned, GCC is the main white pigment, which has increasingly substituted kaolin in paper-making applications in the past and this substitution process is most likely of reaching a plateau.

(c) Supply of kaolin for specialities applications

18. kaolin is also used in speciality applications, which include rubber, paints, plastics, adhesives and sealants. In Europe, kaolin used in speciality application represents 8% of the total European volume of the kaolin market. Customers for these applications are companies operating in the rubber and paint industries mainly. According to the market investigation, for these applications kaolin cannot generally be substituted by other materials. Kaolin for speciality applications consists of special grades which are not suitable for other applications. In addition, prices of kaolin suitable for these applications are generally higher than prices of even kaolin for coating applications within the paper industry. The market investigation has shown that the price of kaolin for speciality application is around […] EURO/t. As to supply-side substitution, the natural limitation represented by the extension of the reserves also limits a satisfactory supply-side substitutability. As a matter of fact, only non-European producers (with the exception of ECC and a minor presence of the German AKW) are active in Europe on this market (namely, Engelhard, Thiele). It is therefore concluded that kaolin for specialities applications does constitute a separate product market.

(d) Supply of Fused Silica

19. Fused silica is a high quality amorphous silica produced from high purity quartz/silica sands. The quartz/silica are fused in a battery of rapidly rotating fusion furnaces at temperatures in excess of 1760°C. The oval ingots resulting from this process are cooled and stripped of crust before entering the grinding/crushing and sizing system. Eventually, fused silica is bagged for delivery to customers.

20. Fused silica is supplied in a number of grades depending on the silica dioxide content, and is supplied in a wide range of sizes from coarse grains to fine powders. It has three main end-uses: refractories (refractory products for use in high temperature industrial processes -the steel industry is the largest purchaser of refractories-), semi-conductors as a filler in resins used to encapsulate semi-conductor chips) and investment castings (fused silica are used to produce ceramic shells into which molten metals are poured in order to produce a variety of products).

(e) Ceramic Bodies and Kaolin for Ceramics

21. Kaolin for ceramics (or ceramic grade kaolin) is china clay which is used in a variety of applications, including the production of table-ware, sanitary-ware, tiles and fibreglass. ECC produces kaolin for ceramics, whilst Imetal does not produce this type of kaolin. The bulk of the market is represented by sanitary-ware and table-ware.

22. Although kaolin for ceramics is sold in a number of different applications, Imetal claims that it is not appropriate to identify separate product markets depending on the end-use applications. This would be the case both for demand-side and supply-side considerations.

23. From the demand side, Imetal indicates that the same kaolin is used in a number of end-use applications, although it is recognised that certain qualities of kaolin are more suitable than others for certain applications. From the supply side point of view, Imetal indicates that in addition to the basic production process for kaolin for ceramics, all that is required in order to produce kaolin for ceramics is a magnet and a centrifuge. According to Imetal, given the lower quality and necessity of processing required for this type of kaolin, there would be a number of European and Eastern European companies which do compete effectively in all the end-use applications of ceramic kaolin.

24. The investigation carried out by the Commission leads to the following conclusions. From the demand-side point of view, it appears that the different end-use applications (sanitary-ware, table-ware, tiles, fibreglass) correspond to separate product markets.

25. Grades of kaolin are totally different from one end-use to another. In addition, it is clear that with some exception (like the case of[…]), generally customers differ depending on the end-use application. Finally, prices ranges applicable for each end-use applications are also different (for example, kaolin for sanitary-ware is sold in a price range […] EURO/t while kaolin for table-ware varies between […] EURO/t, and generally best qualities of kaolin for porcelain -which is in the high range of table-ware- is typically more expensive than kaolin for vitreous sanitary-ware -which is in the high range of sanitary-ware).

26. The investigation of the Commission has however shown a certain degree of supply-side substitutability, when considering the different end-use applications of kaolin for ceramics. As it has been noted for kaolin for paper applications, the nature and quality of the reserves determines the ability of a supplier to offer different grades of kaolin, also as far as kaolin for ceramics is concerned. On the other hand, it appears that the degree of qualitative gap between a kaolin for filling applications and kaolin for coating applications is much bigger than that existing between different types of kaolin for ceramics. In addition, the level of processing and know-how needed for a kaolin producer to offer a range of types of kaolin for ceramics is lower when compared to that required for kaolin for paper applications, and in particular kaolin for coating

applications. As a matter of fact, whilst there are a number of European kaolin producers able to produce most of the grades of kaolin for ceramics (ECC, AKW, Goonvean, Groupe Mineral Harwanne, Ecesa), basically only one European producer can offer both kaolin for filling applications and kaolin for coating applications (ECC), the other players being mainly present on filling kaolin only (AKW has a very minor presence on kaolin for coating applications).

27. In any event, for the purpose of this decision it is not necessary to take a definitive view on this issue, as the proposed operation will not strengthen or reinforce a dominant position irrespective of the precise product market definition adopted.

28. Ceramic bodies are ready-to-use pastes which are used in the production of ceramics. They comprise a number of raw materials (including inter alia kaolin, clays, bone ash, feldspar and silica) and are primarily used in the tableware industry. According to Imetal, even if both ECC and Imetal supply ceramic bodies and glazes for use by tableware producers in Europe, they are in fact active in separate product and geographic markets.

29. The European tableware industry would include two separate markets: porcelain tableware in Continental Europe and bone china and feldspar tableware in the UK. According to Imetal, the two products would constitute separate product markets both for demand and supply-side considerations.

30. From the demand point of view, Imetal claims that Continental manufacturers of tableware could not switch to purchasing ceramic bodies for bone china and feldspare earthenware. This would be because ceramic bodies for bone china and feldspar earthenware tableware cannot be used to produce the porcelain tableware demanded by Continental Europe consumers due to their different chemical composition and physical properties. Similarly, UK manufacturers could not switch to purchasing ceramic bodies for porcelain. This is because ceramic bodies for porcelain cannot be used to produce the bone china and feldspar earthenware demanded by UK consumers.

31. From the supply-side point of view, Imetal claims that it is inexistent given the completely different know-how needed for the two types of production which in turns require different research and development programmes. Moreover, suppliers of ceramic bodies require knowledge of their customers' specific production requirements, as these will differ as between UK tableware manufacturers and Continental European tableware manufacturers.

32. The market investigation broadly confirms these contentions. It is therefore submitted that ceramic bodies for porcelain and ceramic bodies for bone china constitute two separate product markets. It has however to be stressed that for the purpose of assessing the vertical link arising from the proposed transaction with respect to ceramic bodies on the one hand and ceramic grade kaolin on the other hand, it is not necessary to take a definitive view on the issue, as the proposed operation will not create or strengthen a dominant position irrespective of the precise market definition adopted.

33. Other raw materials for ceramic applications include white firing clays (or ball clays), refined clays, feldspar, silica, grès de Thiviers. It appears that there is no overlap between the parties' activities for these products. In addition, as the ceramics market is analysed in this decision for the purpose of assessing the consequences of a vertical link created following the proposed operation, this area has not to be examined further, to the extent that it is not relevant for the assessment of this link. As a matter of fact, kaolin is a

major raw material for ceramic bodies, and other raw materials are used for this production to a very minor extent. Accordingly, these products will not be examined further.

(f) "Refractory Clays"

34. Widely, the category "refractory clays" includes a number of clays, like chamottes, fire clays and refractory grade kaolin. Generally, the higher the level of alumina, the more refractory the clay. The key attribute of these refractory clays is their resistance to heat. Imetal is active in refractory clays in Europe, in the US and in South Africa. ECC operates in kaolin-based refractory clays and in particular in a special clay called "molochite".

35. In its submissions, Imetal claims that given the very substantial differences in the attributes and prices of the different refractory clays, which dictate the suitability in many different fields of application in the various refractory industries, the refractory clays which are produced by both Imetal and ECC do not belong to the same relevant product market. In addition, Imetal stresses the absence or the very limited extent of supply-side substitutability for a number of these clays, because the chemical and physical properties of a supplier's reserves of refractory clays largely dictate the applications in relation to which it can compete. Also, Imetal indicates that customers' habit play an important role in their purchasing of refractory clays since they are generally used to a given mix of refractory raw materials which they are confident provides the final product with the required characteristics.

36. Imetal further indicates that there are three main end-applications for refractory clays: ordinary refractory applications (namely linings for bricks, and monolitichs) which would represent the bulk of the market, kiln furniture (refractory pieces which are used to stack, support, separate or protect ceramic components inside the kiln -such as roof tiles, sanitary-ware and table-ware) and investment casting (for example, golf club heads, handguns, propellers and aerospace parts). Refractory clays produced by Imetal would not directly compete with those of ECC, since they would be mainly used in ordinary refractory applications, while ECC's molochite would be mostly used in investment casting and kiln furniture.

37. As will be also indicated below, the market for refractory clays is not a transparent market, for which statistics are not available. Imetal has also indicated that this market is quite complex, it has provided only estimates and no information concerning competitors. In this context, the market investigation proves to be crucial. The Commission's investigation has shown that the market for refractory clays can basically be divided into lower quality refractory clays and higher quality refractory clays. Higher quality refractory clays are mostly sold within the investment casting industry and the kiln furniture industry.

38. Some of Imetal's production includes lower quality refractory clays, which are priced at a maximun of 150 $/t. Imetal is present in this lower end of the market through its RR40, RR35 and RR32 brand names (which are produced by Imetal's French subsidiary Damrec), its AGS clays (which are produced by the French company AGS-BMP, jointly controlled by Imetal and the Boisson and Sarrade-Loucheur families), and its "Mulcoa" brand name (which is an US production). It appears, as it is claimed by Imetal, that these clays are mostly used for "ordinary refractory applications", although there are certain amounts which are also sold to the investment casting and kiln furniture industries.

39. Higher quality clays are mostly used in the investment casting and kiln furniture industries. These clays have specific characteristics which cannot be provided by lower quality clays. These characteristics make of them an unique product. This is particularly the case for investment casting and kiln furniture applications, although they are to a minor extent also used in ordinary refractory applications. Clays belonging to this category present specific thermal expansion characteristics and high refractoriness. Imetal is present in this higher end of the market through its "Mulgrain" brand (which is price more than […]EURO/t), some grades of its "Mulcoa" brands (which are priced around […]EURO/t),"Cerametal" and some grades of AGS, sold by AGS-BMP. ECC's molochite is priced more than […] EURO/t and it is generally perceived as an unique product. Molochite is a kaolin-based clay which appears to be unique in terms of its chemical composition (namely its low iron content and no cristobalite) and its production process (Molochite is calcined for 60 hours in a tunnel kiln at more than 1500°).

41. The market investigation has clearly shown that molochite cannot be easily substituted by other clays, in particular by the kiln furniture industry. This is in view of its specific characteristics one the one hand and in view of customers' habit on the other hand, which play an important role in their purchasing of refractory clays in general and molochite in particular. Imetal has stressed that a change from molochite would require an extensive and expensive testing trial to be carried out. The investigation has however shown that, if there was a real necessity to switch away from molochite, the only hypothetical alternatives would be represented by Imetal's clays (in particular, Mulgrain or Cerametal for investment casting, Mulcoa for kiln furniture). Operators on the market have not indicated to the Commission the existence of any other possible altrenatives. Some have indicated that Mulcoa, Mulgrain or Cerametal would be either in limited actual competition with molochite or would constitute potential imperfect substitutes after due testing (which appears to be costly and time-consuming).

42. Producers of lower value refractory clays cannot access the market for higher value clays, to the extent that, as also Imetal indicates, there is very limited supply-side substitutability which is linked to the quality of the reserves. In addition, the investigation has shown that the market of higher value refractory clays is a very capital-intensive market, for which extensive investments are necessary in order to offer competitive clays.

43. For the purpose of this decision and in the light of the above it is concluded that two separate product markets can be identified, namely high value refractory clays for the investment casting industry on the one hand and high value refractory clays (which is just molochite) for the kiln furniture industry.

B. Relevant geographic markets

(a) Supply of kaolin for paper-applications

44. Imetal has first considered that the market for kaolin for paper applications is at least European in scope if not wider. In a second stage, Imetal has indicated that the market is limited to Europe. The reasons invoked for this last approach are that in order to compete in Europe, non-European producers need to establish distribution facilities in Europe. In addition, it is claimed that exports by European producers outside Europe are not generally viable.

Coating kaolin

45. It is however concluded that the market for coating kaolin isworld-wide in scope. This conclusion is undisputable for kaolin with coating applications and in general higher quality kaolin. The reasons are the following.

46. According to the figures in our possession, which have been provided by Imetal itself, imports of kaolin used in coating applications into Europe represented at least 35% of European sales of kaolin in 1997. These figures only relate to identified sources of supply, which most likely means that the level of imports is higher than 35%. In addition to that, Imetal has indicated that the level of import penetration for kaolin in Europe has increased between 1995 and 1997. In addition, it is believed that imports are expected to increase further as new kaolin production facilities have recently been established in Australia, the Ukraine and Uzbekistan.

47. The circumstance that distribution facilities would be needed to compete in Europe does not alter this conclusion, to the extent that these imports do effectively take place and are economically justified, given the substantial production cost advantage enjoyed by non-European producers and the availability of high quality kaolin which is not available in Europe.

48. It is therefore concluded that the geographic market for kaolin for coating applicationsis a world-wide market..

Filling kaolin

49. A different conclusion has to be reached for kaolin for filling applications, which, as indicated above, is a much lower quality product with a much lower price per tonne (around 30% difference). This type of kaolin is widely available in Europe and its by far lower cost does not render imports attractive (given the higher incidence of transport costs). Even assuming an increase of price of kaolin for filling applications in Europe, it is not considered realistic to assume a higher level of imports from the US, in particular on the basis of the substantially lower price of this type of kaolin and its large availability in Europe. The market investigation has widely confirmed this point.

(b) GCC

50. GCC is much heavier than kaolin and the market investigation has shown that it is traded within an area which is not in any event larger than Europe. The question whether the geographic market for GCC is narrower than Europe can be left open in this case, as the proposed operation does not create or strengthen a dominant position irrespective of the precise definition adopted.

(c) Supply of kaolin for specialities applications

51. The investigation carried out shows that kaolin generally suitable for these applications is generally high value kaolin which is mainly imported from outside Europe. It is therefore appropriate to take the same view taken for coating kaolin, that is that the market is larger than Europe and at least includes the US and Brazil.

(d) Supply of Fused Silica

52. The market for fused silica is global in scope. Companies active in this market make sales world-wide.

(e) Supply of Ceramic Bodies - Kaolin for ceramics

53. Imetal submits that ceramic bodies for the production of bone china and earthenware are essentially sold in the UK, while ceramic bodies for the production of Continental porcelain are basically only sold in the Continent. The market investigation broadly confirms this view, even if for the purpose of this decision is not necessary to take a definitive view on this question as the proposed operation does not create or strengthen a dominant position irrespective of the precise market definition adopted.

54. As to kaolin for ceramics, Imetal indicates that kaolin for ceramics consumed within Europe is mainly produced in Western + Eastern Europe. In addition, Imetal estimates that imports of kaolin for ceramics into Western + Eastern Europe from outside Europe would represent less than 5% of consumption. For the purpose of this decision it is not necessary to decide whether the geographic market includes Eastern Europe, as the proposed operation does not lead to the creation or strengthening of a dominant position even if the market was to be limited to Western Europe.

(f) "Refractory Clays"

55. As indicated above, the market investigation has indicated the existence of basically two categories of "refractory clays": high value refractory clays and low value refractory clays. High value refractory clays are in particular used in investment casting and kiln furniture, lower value clays are particularly used in ordinary refractory applications. Imetal claims that the supply of refractory clays for ordinary refractory applications is a world-wide market, due to the very substantial imports of refractory clays which are made into Europe (Imetal estimates these imports equivalent to 50% of European consumption). On the other hand, Imetal indicates that the supply of refractory clays for investment casting and for kiln furniture applications is a European market, as imports into the EEA are very limited.

56. Imetal's contentions are to be rejected for the following reasons. It should be noted in this respect that high value clays are indeed more likely to be traded world-wide than lower value clays, in particular given their much higher cost which diminishes the importance of transport costs. It is therefore concluded that the market for higher value refractory clays is world-wide in scope. As concerns lower value clays, for the purposes of this decision it is not necessary to decide the precise extent of the relevant geographic market as the proposed operation does not create or strengthen a dominant position irrespective of the precise definition adopted.

IV. ASSESSMENT

(a) Kaolin for paper applications

Kaolin for filling applications

57. In relation to the market for filling kaolin for paper applications, which geographically appears to be European in scope, there are no adverse effects on competition resulting from the operation since only ECC is active in Europe (54%),

while Imetal neither has kaolin reserves in Europe nor does it import to Europe from the USA or Brazil due to the high transport costs as opposed to the low value of the product.

Therefore, the proposed operation does not create or strengthen a dominant position with reference to this market.

Kaolin for coating applications – GCC

58. Conversely, in the market for kaolin for coating applications, which is viewed as worldwide, the operation gives rise to a significant concentration. More specifically, the proposed operation would result in the first operator at the world-wide level (ECC: around 33% world-wide market share) combining with the third operator at the world-wide level (Imetal: around 12% world-wide market share). The combined market share of the parties would be of around 45%, with the second operator, namely Enghelard, having less than half of the merging entity's market share(18%).

59. The table below shows the parties and their competitors' market share of coating kaolin at worldwide level and at European level.

Suppliers– coating kaolin	world-wide sales by volume	Europe
ECC	[30% - 40%]	[30% - 40%]
Imetal (USA and Brazil)	[10% - 20%]	[0% - 10%]
Merged Entity	[40% - 50%]	[40% - 50%]
Engelhard	[10% - 20%]	[10% - 20%]
Huber	[10% - 20%]	[0% - 10%]
Cadam	[0% - 10%]	[10% - 20%]
Thiele	[0% - 10%]	[0% - 10%]

60. As a result of the merger, ECC leadership in coating kaolin will be reinforced by Imetal significant position in this segment. In particular, beside the considerable market share increase, the merging entity will greatly increase its kaolin production capacities. In addition to that, it should be noted that Imetal sells its coating kaolin in Europe through Euroclay, a joint venture owned by Imetal and AKW, the latter being a significant kaolin supplier active in Europe. Such a link may constitute an additional source of competition concern. In any event, Imetal maintain in the notification that it is in the process of eliminating the link existing with AKW within Euroclay, and has undertaken to complete that process (see annex). As a consequence, this issue will not be discussed further in the decision.

61. The notifying party contend that notwithstanding the significance of the market shares, the merging entity will not be able to exploit such a market power given the

strong competitive constraint exerted by the presence of other white pigments which have proved to be, over the last years, valid substitutes of kaolin.

62. The table below shows the parties and their competitors' market share of GCC (which is the closest substitute of kaolin for coating) at worldwide level (North America, Western Europe and Asia) and at European level.

Suppliers of GCC	Worldwide	Europe
ECC	[10% - 20%]	[10% - 20%]
Imetal	[0% - 10%]	
Merged entity	[10% - 20%]	[10% - 20%]
Omya	[40% - 50%]	[50% - 60%]
Huber	[0% - 10%]	[0% - 10%]

63. While it is undisputed that over the last years GCC sales have strongly increased to the detriment of kaolin sales (52% of white pigments usage for paper coating in 1997 is constitued by GCC and only 42% by kaolin), currently there are indications that the demand for coating kaolin may be no more elastic vis-à-vis other white pigments. In this respect, all paper manufacturers have made clear in their responses that in the mix prepared to manufacture the paper, they need a substantial percentage of kaolin which is simply not substitutable. In sum, the investigation has shown that the process of substitution between kaolin and other white pigments has by large alredy occurred. This process is in particular perceived by the industry as approaching, in a due course, a ceiling beyond which no further substitution between kaolin and white pigments will be envisageable. In the light of the above, the competitive constraint exerted by white pigments over coating kaolinis limited. In any event, account should also be taken of the fact that ECC is the second largest GCC manufacturer in Europe and worldwide, behind Omya, and also Imetal is a medium size player at worldwide level in GCC.

64. The notifying party also claims that kaolin supply for paper application remains a competitive market due to strong buying power of the demand, which is represented by the highly concentrated paper industry. In this respect, it should be noted that despite the presence of a demand endowed with considerable buying power, it is a fact that following the merger the new entity will become for any customer needing large quantities of coating kaolin an inevitable partner.

65. In the light of all of the above considerations, it follows that the present transaction will give rise to serious competitive concerns in the sector of kaolin for coating applications. In particular, the operation is likely to give rise to a strengthening of a dominant position as a result of which effective competition would be significantly impeded in the common market. The question of the overlap in GCC is not dealt with in this decision, to the extent that the proposed commitment of Imetal to withdraw from AGS-BMP (which is considered below) to solve the competition

problems raised by the proposed operation in the supply of refractory clays automatically eliminates any overlap as to GCC.

(b) Kaolin for speciality applications

66. In relation to kaolin for speciality applications, the impact of the operation is less significant. The table below shows the parties and their competitors' market share of kaolin for speciality applications at worldwide level (North America, Western Europe and Asia) and at European level in 1997.

Suppliers – kaolin for speciality applications	Worldwide
ECC	[10% - 20%]
Imetal	[0% - 10%]
Merged entity	[20% - 30%]
Engelhard	[10% - 20%]
Huber	[0% - 10%]

Taking the markets as worldwide, the new entity will reach a combined market share of around [20% - 30%]. The presence of other competitors, in particular Engelhard and Huber, should secure a sufficient degree of competition on the market. This view has been also endorsed by most customers which have raised no concerns in connection with the present operation. Finally, it is worth mentioning that the remedies proposed by the parties to remove the competition concerns identified in the kaolin for coating application, notably the divestiture of a production plant, will inevitably have a substantial impact also in the segment of kaolin for speciality applications given that the same plant manufactures both types of kaolin. In the light of the above, the proposed operation will not create or strengthen a dominant position in the segment of kaolin for speciality applications.

(c) Fused Silica

67. With respect to fused silica, the transaction gives rise to a very significant overlap in so far as both Imetal and ECC are active on such a market. According to the figures provided by Imetal, the worldwide combined market share of the parties should reach approximately [40% - 50%] (Imetal [30% - 40%] and ECC [10% - 20%]). Moreover, according to the information provided directly by ECC in response to a request of information under article 11 of the Merger Regulation, the parties' combined market shares would be even considerably higher. More specifically, in investment casting they would have a combined market share of around [90% - 100%] in the USA and [80% - 90%] in Europe, thus approaching a monopoly situation. The only competitors left will be few players, most of which manufacture fused silica for their own in-house consumption (Denka, Tatsumori, Vesuvius). By acquiring ECC Imetal will therefore strengthen its dominant position in the market of fused silica at world-wide level.

(d) Ceramic Bodies - Kaolin for Ceramics

68. The operation will result in a vertical integration in so far as Imetal will acquire ECC ceramic kaolin business (Imetal does not manufacture kaolin for ceramics in Europe) while being active, through its subsidiary, in the downstream market of ceramic bodies for tableware. As a consequence, it should be assessed whether adverse competitive effects may arise from the operation. In particular, there are two questions which are relevant for the assessment of the proposed operation as regards the areas of kaolin for ceramics and its vertically related market of ceramic bodies. First, it should be assessed whether by virtue of the market power held in the upstream market of supply of ceramic kaolin, the merged undertaking would be in a position to discriminate its customers in order to favour its downstream subsidiary so to acquire or strengthen a dominant position in the supply of ceramic bodies. Second, it should be assessed whether by virtue of its position in the downstream market of ceramic bodies, in particular in its position of purchaser of kaolin for ceramics, the merged undertaking would be in a position to foreclose a substantial part of the market to competing independent suppliers of ceramic kaolin.

69. As to the first problem, the Commission concludes that the proposed operation will not lead to a situation in which the new entity would be in a position to discriminate against other suppliers of ceramic bodies essentially for the following reasons. It seems clear that there are a number of companies which operate on the market of kaolin for ceramics in Europe. There are also suppliers of this kind in Eastern Europe, but this circumstance is not considered essential for the purpose of this decision. This is partly due to the fact that kaolin for ceramics is of a less refined nature that other types of kaolin, and kaolin for coating applications within the paper industry in particular. ECC, although enjoying a relatively strong market position, faces competition from companies also present in kaolin for paper applications, like Goonvean and AKW, and from companies which appear to be more specialised in kaolin for ceramic applications, like Groupe Mineral Harwanne in France and Ecesa in Spain. All these companies enjoy of good market positions in Europe and are all present in all market segments. In addition, it appears that a substantial number of purchasers already buy kaolin for ceramics from a number of suppliers. This possibility of multi-sourcing constitues an indication that the new entity will not be in a position to discriminate against other suppliers of ceramic bodies.

70. As to the second problem, the Commission concludes that it is not likely that the new entity will be in a position to foreclose the market of the supply of ceramic grade kaolin. Whilst Imetal and ECC both purchase ceramic grade kaolin for their ceramic bodies businesses, ECC purchases only […] tonnes of kaolin for ceramics per annum. Accordingly, the merged undertaking's share of consumption of European ceramic grade kaolin would increase by around […] (which is […] tonnes / a total estimated European market of […] tonnes) to less than […] ([…] tonnes being the kaolin requirements of Imetal, […] those of ECC / a total estimated European market of […] tonnes). Imetal currently buys a total of around […] tonnes of ceramic grade kaolin, with around […] tons bought from kaolin suppliers other than ECC. Accordingly, even assuming that the merged undertaking were to cease to acquire any of its supplies of ceramic grade kaolin from independent suppliers, it is unlikely that the viability of independent suppliers of ceramic grade kaolin would be prejudiced as a consequence.

(e) Refractory Clays"

71. In the refractory clays area, the proposed transaction appears to raise concerns with regard to: *i)* the horizontal overlap in high value refractory clays used in the investment castings; *ii)* the vertical effect resulting from the operation in the kiln furniture industry.

i) Horizontal Overlap

72. As to the horizontal overlap, the operation will have a significant impact in one of the two segments in which high value refractory clays are used, namely the investment castings. The investigation has shown that Imetal has a very strong position world-wide in this segment. In particular, as indicated above, Imetal manufactures, through its US subsidiary C-E Minerals, two types of high value refractory clays, namely *mulgrain and mulcoa.* Especially the former is generally used in the investment castings industry. These products are both traded worldwide, and in particular imported into Europe, given their significant economic value (*mulgrain* best grade costs around […] US dollars, while *mulcoa* best grade costs around […] US dollars). In addition, the French company AGS-BMP, which is jointly controlled by Imetal, also manufactures another type of high value refractory clay essentially used in the investment castings industry, namely *cerametal.* With the proposed transaction, Imetal will gain ECC's special refractory clay named *molochite*. In particular, ECC is the only supplier of this unique special high value refractory clay, used for both investment castings and kiln furniture applications.

73. The investigation has shown that the above mentioned high value refractory clays are viewed by customers as the only alternatives, though imperfect, among each other, with respect in particular to the investment castings uses. More specifically, the investment casting industry has indicated *molochite, cerametal* and *mulgrain* as somehow performing similar functions, at least for some applications. By contrast, the investigation has revealed that the kiln furniture industry is almost entirely dependent upon the molochite as far as refractory clays are concerned, and the degree of substitutability with other high value refractory clays is extremely limited, if not purely absent.

74. In the light of the above it follows that the horizontal overlap resulting from the operation involves exclusively the investment castings high value refractory clays.

75. During the investigation the notifying party has been unable to provide data relating to the total sales of the market for high value refractory clays, nor it has submitted its estimates of these figures. As to its own sales in the EEA, in the segment of investment castings Imetal's *mulgrain* imports into Europe are around […] tonnes, ECC's *molochite* sales in Europe amount to […] tonnes, while AGS's *cerametal* sales in Europe are around […] tonnes. In the kiln furniture segment ECC's *molochite* sales in Europe amount to […] tonnes, while CE Minerals' *mulcoa* imports into Europe are […] tonnes.

76. With respect to other competitors, the notifying party named in the notification a number of operators allegedly active in this market, such as some Brazilian kaolin suppliers, some Chinese suppliers, some German suppliers and some Eastern European suppliers. However, no precise estimate of their sales in Europe was provided. Imetal was also unable to provide contact details for its competitors in this market, with one

exception. In its investigation, the Commission could not identify these alleged competitors. In addition, customers interviewed by the Commission sistematically pointed to Imetal subsidiaries (C-E and AGS), and ECC as the only suppliers of refractory clays in the investment castings and kiln furniture in Europe. More importantly, most of them expressed strong concerns in relation to the present operation. In particular they feared that as a result of ECC acquisition, Imetal would be able to monopolize the market of the high value refractory clays, adding to its products EEC's molochite, which is perceived as a quite unique product.

77. In the light of the above, the Commission has concluded that the acquisition of ECC by Imetal raises serious competition concerns with respect to the horizontal overlap resulting from the operation in the high value refractory clays segment for investment casting.

ii) Vertical Aspects

78. As to the vertical aspects arising from the operation, it should be noted that on one hand Imetal is active in the downstream market of the kiln furniture industry through its wholly owned subsidiaries RC2 France and RC2 Spain. On the other hand the kiln furniture industry is heavily dependent upon *molochite*, which is only supplied by ECC. In particular, as already indicated above, *molochite* is unanimously considered by the industry as an essential and rather unique clay, which in most cases cannot be replaced by other refractory clays. This product is in addition extensively used by the kiln furniture suppliers. They estimate that molochite represents on average […] of the material content of the finished products by value. As a result of the transaction, Imetal will own a monopoly supply of a critical raw material for all kiln furniture manufacturers, while being simultaneously active as a competitor in this industry. In this context, all kiln furniture manufacturers interviewed by the Commission feared that following the proposed concentration, the merging entity would be in a position to discriminate them when supplying molochite, in particular by charging higher prices. An increase in molochite selling price would then allow the merging entity to become more competitive in the downstream market, basically reducing kiln furniture manufacturers' competitive strengths. The possibility that Imetal would try such a strategy is perceived by the kiln furniture industry as a quite likely event in the light of the fact that molochite selling prices have remained over the time quite low if compared with other refractory clays.

79. In the light of the above the Commission considers that the proposed operation threatens to create or strengthen a dominant position with respect to the vertical integration arising from the acquisition of ECC by Imetal. Following the merger, Imetal would gain a monopoly power in the supply of molochite which is an essential and unique row material used in the kiln furniture industry. Imetal simultaneous presence in this industry as a competitor would put it in a position to be able to raise molochite prices to the detriment of the other kiln furniture manufacturers.

V. PROPOSED MODIFICATIONS TO THE ORIGINAL CONCENTRATION - ASSESSMENT

80. To remove the various competition concerns raised by the operation, Imetal has submitted undertakings to the Commission. The text of these undertakings is annexed.

(a) Kaolin for Paper Applications

81. Given the considerations set out above relating to this market, Imetal has proposed to divest a coating kaolin plant located in the United States. The Commission considers that in order to constitute an adequate remedy to the competition problems identified, Imetal must sell a plant having a minimum of 750.000 tons of annual capacity. The plant's product mix must be characterised by a high proportion of high-value grades, so that the plant has a significant proportion of export sales and can thus be considered to be active on the worldwide market. In addition, Imetal has offered the divestiture of two calciners, which are used to produce a special type of coating kaolin. These calciners are to be sold to an independent competitor and have a combined capacity of 70.000 tonnes. The Commission understands that a similar requirement will be made by the US Department of Justice. For the precise identification of the kaolin plant as well as the calciners to be divested the Commission is content to accept the plant and the calciners named in the consent decree which will be stipulated between Imetal and the DOJ, so long as the criteria set out above are met. In the event that Imetal fails to reach agreement with the DOJ in the form of a consent decree, the Commission will consider that the plant to be divested is the Sandersville #1 plant, which is currently owned by ECC. As to the calciners to be divested, they will be identified by Imetal subject to the approval of the Commission.

82. This remedy is considered sufficient to remove the competition concerns raised by the transaction with respect to coating kaolin. The divestment of a minimum of 750.000 tonnes kaolin capacity together with a minimum of 70.000 tonnes of calcined clay capacity would diminish to an appreciable extent the increment in the merged entity's share of kaolin sales world-wide and therefore also in Europe resulting from Imetal's acquisition of ECC.

(b) Supply of Fused Silica

83. Given the very high market shares resulting from the proposed transaction and the market structure which will be created with the operation, Imetal has offered the Commission to divest ECC's fused silica business presently carried out in the US. This business would represent the whole of ECC's activities in fused silica. As this undertaking eliminates any overlap as a result of the proposed operation with respect to fused silica, it is considered appropriate to remedy any competition concerns in this sector. The precise terms of Imetal's offer, upon which this Commission's decision is conditional, are set out in the annex.

(c) Supply of Refractory Clays

84. As indicated above, the proposed operation would result in a major overlap in the sector of high value refractory clays for the investment casting industry. In particular, the merged entity would hold Mulgrain (through its US subsidiary CE Minerals) , Cerametal (though its joint control in the French company AGS-BMP) and Molochite (ECC's special clay), which are basically the only high value clays available for the investment casting industry in general and in Europe in particular.

85. In this context, Imetal has offered its complete withdrawal from AGS-BMP, at the terms and conditions as set out in the annex . This proposal is considered as sufficient to remove the competitive concerns raised by the operation, as it would in particular

eliminate the overlap between cerametal and molochite, which are generally perceived as substitutes by the investment casting industry.

(d) Supply of Molochite to the Kiln Furniture Industry

86. As to the vertical concern raised by the operation, […]. […], within a period of three months from the date of adoption of this decision, Imetal is entitled to propose an […] undertaking, which would present the same guarantees of structural solutions of the competition problems which are raised by the transaction. The Commission will then at that time decide whether the […] solution which Imetal would propose would be sufficient to remove the competition concerns identified with respect to the vertical link under consideration. Following this analysis, the Commission will decide which is the undertaking which will be more suitable to eliminate the competition concerns at stake. The other terms and conditions of this undertaking are set out in the annex .

VI. CONCLUSION

87. For the above reasons, and subject to the full compliance with the commitments made by Imetal, the Commission decides not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EEC) No. 4064/89.

For the Commission,

Annex : undertakings

23 April 1999

The Commission of the European Communities
Directorate General IV - Competition
The Merger Task Force
Rue de la Loi 200
1049 Brussels

For the attention of Alexander Schaub Esq.

Dear Sirs,

Case IV/M.1381 - Imetal/English China Clays

The undertakings set out in this letter are given by Imetal SA to the Commission of the European Communities pursuant to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings (as amended) in the context of the public offer by Imetal for the whole of the issued share capital of English China Clays plc which was initially notified to the EC Commission on 25 January 1999.

1. DEFINITIONS

1.1. In these undertakings, the following abbreviations, words and expressions shall have the following meanings, unless the context otherwise requires:

"**AGS-BMP**" means AGS-BMP SA and Groupe AGS-BMP

"**AKW**" means Amberger Kaolinwerke Eduard Kick GmbH & Co. KG.

The "**Business**" shall have the meaning set out in paragraph 4.1.

The "**Calcining Business**" means a plant or plants with two calciners suitable for producing calcined kaolin sold to the paper industry with a combined capacity of at least 70,000 tonnes of calcined kaolin per year.

The "**call option**" means the right held by Imetal to require AKW to sell its shares in RCC to Imetal in accordance with the terms and conditions of the call option agreement.

The "**call option agreement**" means the agreement dated 30 December 1998 between Imetal and AKW pursuant to which, *inter alia*, AKW granted to Imetal a call option over the whole of the shares currently held by AKW in RCC.

The "**call option shares**" means the RCC shares to be acquired by Imetal pursuant to the exercise of the call option.

The "**Commission**" means the Commission of the European Communities.

"**DBK**" means Imetal's wholly owned subsidiary, DBK Minerals, Inc.

The **"DBK Kaolin Business"** means the kaolin business which is presently carried out in Dry Branch, Georgia, United States at Imetal's Dry Branch kaolin plant with a hydrous kaolin production capacity of […] and a kaolin coating production capacity of […].

The **"Divestment"** shall have the meaning set out in paragraph 4.1.

The "**Divestment trustee"** shall have the meaning set out in paragraph 4.3.

"DoJ" means the United States Department of Justice.

"ECC" means English China Clays plc.

"Euroclay" means the Dutch company Euroclay Handelmaatschapij BV, which is owned as to […] by Imetal (through the intermediary of DBK) and as to […] by AKW.

The **"first Divestment time limit"** shall have the meaning set out in paragraph 4.3.

The **"first Refractory Clays time limit"** shall have the meaning set out in paragraph 5.3.

The **"Fused Silica Business"** means the fused silica business which is presently carried out in Tennessee, United States by ECC's wholly owned subsidiary, Minco Acquisition Corp.

"Imetal" means Imetal SA.

"Kiln furniture" means the refractory pieces which are used to stack, support, separate or protect ceramic components (such as roof tiles, sanitaryware and tableware) during the firing process.

The **"Molochite business"** means ECC's business of production and supply of refractory clays under the Molochite trademark.

The **"Offer"** means the public offer by Imetal for the whole of the issued share capital of ECC.

The **"ownership link"** means any connection of Imetal with the Refractory Clays Business involving the ownership of shares or equivalent instruments or assets, including any contractual rights relating to the conduct or governance of the Refractory Clays Business.

The **"proposal period**" shall have the meaning set out in paragraph 9.1.

The **"proposed concentration"** means the Offer which was the subject of an initial notification to the Commission on 25 January 1999 pursuant to the requirements of Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings (as amended).

[…]

"RCC" means the Brazilian company Rio Capim Caulim SA which is owned as to […] by Imetal (through the intermediary of DBK), as to […] by AKW and as to the remainder by two minority shareholders.

The **"Refractory Clays Business"** means the refractory clays business of AGS-BMP which supplies, refractory products under, inter alia, the following brand names: AGS, CERAMETAL and ARTAL from locations at Clérac and Oriolles in France.

The **"Refractory Clays trustee"** shall have the meaning set out in paragraph 5.3.

The **"Retained Calcining Businesses"** shall mean those calcining businesses currently owned by Imetal and ECC which are not required to be divested pursuant to the provisions of these undertakings.

The **"Retained Kaolin Businesses"** shall mean those kaolin businesses currently owned by Imetal and ECC which are not required to be divested pursuant to the provisions of these undertakings (which, if the Sandersville #1 Business is to be divested, shall include the Sandersville #2 Business and the DBK Kaolin Business).

The **"Sandersville #1 Business"** means the hydrous kaolin business which is presently carried out in Atlanta, Georgia, United States at ECC's Sandersville #1 plant, with a hydrous kaolin production capacity of […] and a kaolin coating production capacity of […].

The **"second Divestment time limit"** shall have the meaning set out in paragraph 4.3.

The **"second Refractory Clays time limit"** shall have the meaning set out in paragraph 5.3.

The **"starting date"** shall have the meaning set out in paragraph 9.1.

The **"Teco fused silica business"** means the fused silica business presently carried out in Tennessee, United States by Imetal's wholly owned subsidiary, Tennessee Electro Minerals, Inc.

"Tonnes" means metric tonnes

The **"US investigation"** means the currently ongoing merger control investigation (DOJ File No. 60-1453-0005) into the proposed concentration by the DoJ, pursuant to the provisions of the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (as amended).

The **"US investigation consent decree"** means the consent decree setting out the terms and conditions agreed between the DoJ and Imetal subject to which the DoJ shall grant clearance to the proposed concentration.

2. DIVESTMENT OF THE FUSED SILICA BUSINESS OF MINCO

2.1. Imetal undertakes to divest the Fused Silica Business as a viable business, on the following basis:

2.1.1. Imetal shall, with effect from […], use its best efforts to arrange the sale of the Fused Silica Business including the transfer (or licensing) of such assets and intellectual property rights and the assignment of such contractual rights and obligations as are sufficient for the Fused Silica Business to be a viable business. The sale shall be conducted either by Imetal or by a trustee pursuant to the provisions of paragraph 4 below.

2.1.2. Imetal shall establish and sell the Fused Silica Business as a separate business entity and shall operate it in a manner which enables it to maintain its viability, marketability and value pending its sale and final disposal.

2.1.3. Prior to the sale of the Fused Silica Business, Imetal shall hold separate the Fused Silica Business from the Teco fused silica business. Pending the sale of the Fused Silica Business, no structural changes to the Fused Silica Business shall be undertaken other than those necessary to render the Fused Silica Business a viable business until two weeks after Imetal shall have informed the Commission of any such proposed change and the Commission shall not have opposed such change in writing.

2.1.4. As soon as practicable, and in any event not later than 1 month of the date of closing of the Offer, Imetal will appoint an independent trustee, such as an investment bank or firm of accountants, subject to the approval of the Commission (such approval not to be unreasonably withheld). The trustee will review the Fused Silica Business, and ensure that the Fused Silica Business is being continued by Imetal on a viable, on-going basis, and that no measures are taken by Imetal which have material adverse effects on the viability of the Fused Silica Business.

2.1.5. Prior to the sale of the Fused Silica Business, Imetal shall ensure that the Fused Silica Business is managed separately from the Teco fused silica business, with separate management. Imetal shall not appoint or second any employees from the Teco fused silica business to the management of the Fused Silica Business or vice versa.

2.1.6. Imetal shall take all reasonable steps to ensure that no business secrets are transferred from the Fused Silica Business to the Teco fused silica business, or vice versa. *However, pending the divestment, Imetal may receive on a regular basis from both the Fused Silica Business and the Teco fused silica business aggregate financial information necessary to allow it to prepare consolidated financial reports, tax reports and personnel reports on a divisional basis.*

2.1.7. Imetal recognises that for a proposed purchaser of the Fused Silica Business to be unobjectionable to the Commission, it must be a viable purchaser unconnected to Imetal and possessing the financial resources and expertise to enable it to maintain and develop the Fused Silica Business in active competition to the Teco fused silica business and other competitors.

3. DIVESTMENT OF THE SANDERSVILLE #1 BUSINESS OR ANOTHER KAOLIN BUSINESS

3.1. Imetal undertakes to divest the Sandersville #1 Business as a viable business, on the following basis:

3.1.1. Imetal shall, with effect from […], use its best efforts to arrange the sale of the Sandersville #1 Business including the transfer (or licensing) of such assets and intellectual property rights and the assignment of such contractual rights and obligations as are

sufficient for the Sandersville #1 Business to be a viable business. The sale shall be conducted either by Imetal or by a trustee pursuant to the provisions of paragraph 4 below.

3.1.2. Imetal shall arrange for the Sandersville #1 Business to be established as a separate business at the date of its divestment and shall operate it in a manner which enables it to maintain its viability, marketability and value pending its sale and final disposal so that it shall, at the date of its divestment, constitute a viable business.

3.1.3. As soon as practicable, and in any event not later than 1 month of the date of closing of the Offer, Imetal will appoint an independent trustee, such as an investment bank or firm of accountants, subject to the approval of the Commission (such approval not to be unreasonably withheld). The trustee will review the Sandersville #1Business, and ensure that the Sandersville #1Business is being continued by Imetal on a viable, on-going basis, and that no measures are taken by Imetal which have material adverse effects on the viability of the Sandersville #1 Business.

3.1.4. Pending the sale of the Sandersville #1 Business, no structural changes to the Sandersville #1 Business shall be undertaken other than those necessary to render the Sandersville #1 Business a viable business until two weeks after Imetal shall have informed the Commission of any such proposed change and the Commission shall not have opposed such change in writing.

3.1.5. Imetal recognises that for a proposed purchaser of the Sandersville #1 Business to be unobjectionable to the Commission, it must be a viable purchaser unconnected to Imetal and possessing the financial resources and expertise to enable it to maintain and develop the Sandersville #1 Business in active competition to the Retained Kaolin Businesses and other competitors.

3.2. In the event that the implementation of the US investigation consent decree ultimately results in the DBK Kaolin Business being divested by Imetal in lieu of the Sandersville #1 Business, then Imetal undertakes to divest the DBK Kaolin Business in lieu of the divestment of the Sandersville #1 Business.

3.3. In the event that the DBK Kaolin Business is to be divested, the provisions of these undertakings shall apply *mutatis mutandis* as if the references to the Sandersville #1 Business were references to the DBK Kaolin Business and the references in these undertakings to the Retained Kaolin Businesses shall be interpreted as referring to the kaolin businesses currently owned by Imetal and ECC which are not to be divested.

4. MECHANICS OF THE DIVESTMENTS OF THE FUSED SILICA BUSINESS, THE SANDERSVILLE #1 BUSINESS, THE CALCINING BUSINESS […]

4.1. Imetal undertakes that it will arrange for the divestment of the Fused Silica Business, the Sandersville #1 Business, the Calcining Business […] in accordance with the provisions set out in this paragraph 4. For the avoidance of doubt, these provisions shall apply equally and separately to each of the divestments and accordingly "the Divestment" **when used in this paragraph 4 shall mean either the divestment of the Fused Silica Business, the divestment of the Sandersville #1 Business, the divestment of the Calcining Business […], as appropriate in the circumstances. The** "Business" **shall mean either the Fused Silica Business, or the Sandersville #1 Business, or the Calcining Business […] as appropriate in the circumstances. Each of the appointments which**

are provided for in these undertakings may be made either jointly either after closing of the Offer or separately for the various divestments and the termination of ownership links.

4.2. As soon as reasonably practicable after […], Imetal shall submit to the Commission a list of three nominations of accountancy firms or investment banks. If within 20 working days of receipt of such list, the Commission has not informed Imetal in writing to the contrary, the Commission shall be deemed to have no objection to any of the nominations. One such approved nominee shall be appointed as an independent expert. Such expert shall, if the Commission so requests, report to the Commission and Imetal on whether Imetal is complying with the provisions of paragraph 2.1(b) (in relation to the Fused Silica Business), or paragraph 3.1(b) (in relation to the Sandersville #1 Business), or paragraph 6.1(b) (in relation to the Calcining Business), […] as appropriate.

4.3. If Imetal has not entered into a binding agreement for the Divestment within either

4.3.1. […] (as regards the divestment of the Fused Silica Business); or

4.3.2. […] (as regards the divestment of the Sandersville #1 Business); or

4.3.3. […] (as regards the divestment of the Calcining Business); or

4.3.4. […]

The […] in (a), (b), and (c) above can be extended by up to […] with the prior approval of the Commission.

(and **"the first Divestment time limit"** shall mean the time limit in sub-paragraph (a), (b), (c) or (d), as appropriate), Imetal shall appoint, subject to the approval of the Commission (such approval not to be unreasonably withheld), a trustee in relation to the Business (such trustee may be the independent expert appointed in accordance with paragraph 4.2 above) (**"the Divestment trustee"**). The terms of the Divestment trustee's appointment shall be such that the Divestment trustee shall use his best endeavours to sell the Business at the best possible price, within either

4.3.5. […] (as regards the divestment of the Fused Silica Business); or

4.3.6. […] (as regards the divestment of the Sandersville #1 Business); or

4.3.7. […] (as regards the divestment of the Calcining Business); or

4.3.8. […].

(and **"the second Divestment time limit"** shall mean the time limit in sub-paragraph (e), (f), (g) or (h), as appropriate).

4.4. Imetal shall notify the Commission in writing of the identity of the proposed purchaser(s) of the Business. If within 20 working days of receipt of such notice, the Commission has not informed Imetal in writing to the contrary, the Commission shall be deemed to have no objection to the proposed purchaser(s). In the event that there is

more than one prospective purchaser to whom the Commission has no objection, Imetal shall be free to select the offer of its choice.

5. TERMINATION OF IMETAL'S OWNERSHIP LINK WITH THE REFRACTORY CLAYS BUSINESS

5.1. **Imetal undertakes that with effect from the date of closing of the Offer, it will use its best efforts to arrange for the termination of its ownership link with the Refractory Clays Business in accordance with the provisions set out in this paragraph 5.**

5.2. **Prior to the termination of its ownership link with the Refractory Clays Business, Imetal shall exercise its rights in AGS-BMP only to protect the value of its investment in AGS-BMP, and only through an independent director appointed from an accountancy firm or investment bank in accordance with the provisions of paragraph 5.4 below.**

5.3. **If Imetal has not entered into a binding agreement for the termination of its ownership link with the Refractory Clays Business within […] (**"the first Refractory Clays time limit"**), Imetal shall appoint a trustee in relation to its interest in the Refractory Clays Business approved in accordance with paragraph 5.4 below (**"the Refractory Clays trustee"**). The terms of the Refractory Clays trustee's appointment shall be such that the Refractory Clays trustee shall use his best endeavours to arrange for the termination of Imetal's ownership link with the Refractory Clays Business and on such other terms as may be agreed between Imetal and the Commission, […] (**"the second Refractory Clays time limit"**).**

5.4. **As soon as reasonably practicable after the date of closing of the Offer, Imetal shall submit to the Commission a list of three nominations of accountancy firms or investment banks to act as the Refractory Clays trustee in relation to the procedures set out at paragraphs 5.2 and 5.3 above. If within 20 working days of receipt of such list, the Commission has not informed Imetal in writing to the contrary, the Commission shall be deemed to have no objection to any of the nominations.**

5.5. **If the Refractory Clays trustee has not arranged for the termination of Imetal's ownership link with the Refractory Clays Business in accordance with paragraph 5.3 above by the end of the second Refractory Clays time limit for reasons of force majeure, the Refractory Clays trustee shall arrange for the termination of Imetal's ownership link with the Refractory Clays Business within such further period as shall be agreed with the Commission.**

5.6. **Imetal recognises that for the sale of the Refractory Clays Business to be acceptable to the Commission, it must be to the existing controlling shareholders of AGS-BMP or to a third party purchaser independent of Imetal and ECC, which would result in AGS-BMP continuing to be a viable competitor in the refractory clays market.**

5.7. **Imetal shall notify the Commission in writing of the proposed purchaser(s) of the Refractory Clays Business. If within 20 working days of receipt of such notice, the Commission has not informed Imetal to the contrary, the Commission shall be deemed to have no objection to the proposed purchaser(s). In the event that there is more than one prospective purchaser to whom the Commission has no objection, Imetal shall be free to select the offer of its choice.**

6. DIVESTMENT OF THE CALCINING BUSINESS

6.1. Imetal undertakes to divest the Calcining Business as a viable business on the following basis:

6.1.1. Imetal shall, with effect from […], arrange for the sale of the Calcining Business including the transfer (or licensing) of such assets and intellectual property rights and the assignment of such contractual rights and obligations as are sufficient for the Calcining Business to be a viable business. The sale shall be conducted either by Imetal or by a trustee pursuant to the provisions of paragraph 4 above.

6.1.2. Prior to the sale of the Calcining Business, Imetal shall operate the Calcining Business in a manner which enables it to maintain its viability, marketability and value pending its potential sale and final disposal.

6.1.3. As soon as practicable, and in any event not later than 1 month of the date of closing of the Offer, Imetal will appoint an independent trustee, such as an investment bank or firm of accountants, subject to the approval of the Commission (such approval not to be unreasonably withheld). The trustee will review the Calcining Business, and ensure that the Calcining Business is being continued by Imetal on a viable, on-going basis, and that no measures are taken by Imetal which have material adverse effects on the viability of the Calcining Business.

6.1.4. Prior to the sale of the Calcining Business, no structural changes to the Calcining Business shall be undertaken other than those necessary to maintain the Calcining Business as a viable business until two weeks after Imetal shall have informed the Commission of any such proposed changes and the Commission shall not have opposed such change in writing.

6.1.5. Prior to the sale of the Calcining Business, Imetal shall ensure that the Calcining Business is managed separately from the Retained Calcining Businesses, with separate management.

6.1.6. Imetal recognises that for a proposed purchaser of the Calcining Business to be unobjectionable to the Commission, it must be a viable purchaser unconnected to Imetal and possessing the financial resources and expertise to enable it to maintain and develop the Calcining Business as a viable competitor.

7. EXERCISE OF THE CALL OPTION IN RELATION TO RCC

7.1. Imetal undertakes that within […], it shall exercise the call option and thereby purchase the whole of AKW's shareholding in RCC.

7.2. Imetal shall provide the Commission with a copy of the notice informing AKW that it wishes to exercise the call option. Imetal shall inform the Commission in writing as soon as reasonably practicable once the transfer of the call option shares has been effected and shall provide the Commission with a copy of the share transfer document and evidence of the payment of any stamp duty or equivalent transfer tax or of any other action, if any, which is required by law in order that the share transfer takes full legal effect.

8. WINDING DOWN THE DISTRIBUTION, SALES AND MARKETING ACTIVITIES OF EUROCLAY AND LINKS WITH AKW

8.1. **Imetal undertakes that upon the exercise of the call option, it shall procure that DBK shall give notice to terminate any distribution, sales or marketing agreements which it has entered into with Euroclay (unless Imetal has acquired the whole of AKW's shareholding in Euroclay) or AKW and shall take all such steps as it may be obliged to take pursuant to the provisions of such agreements, so that as soon as reasonably practicable in accordance with the termination provisions of such agreements, DBK shall have no further distribution, sales or marketing links with Euroclay (unless Imetal has acquired the whole of AKW's shareholding in Euroclay) or AKW provided that any existing contracts between Euroclay or AKW and its customers shall continue until their expiry through effluxion of time.**

8.2. **Imetal undertakes that upon the exercise of the call option, it shall procure that RCC shall give notice to terminate any distribution, sales or marketing agreements which it has entered into (directly or indirectly) with Euroclay (unless Imetal has acquired the whole of AKW's shareholding in Euroclay) or AKW and shall take all such steps as it may be obliged to take pursuant to the provisions of such agreements, so that as soon as reasonably practicable in accordance with the termination provisions of such agreements, RCC shall have no further distribution, sales or marketing links with Euroclay (unless Imetal has acquired the whole of AKW's shareholding in Euroclay) or AKW, provided that any existing contracts between Euroclay and its customers shall continue until their expiry through effluxion of time.**

8.3. **Imetal undertakes to use its best endeavours to procure that Euroclay does not enter into any new contractual commitments with AKW and, unless Imetal has acquired the whole of AKW's shareholding in Euroclay, with third parties relating to the distribution, sale or marketing of kaolin after the date of termination of the agreements between Euroclay and DBK and RCC respectively, in accordance with the provisions of paragraphs 8.1 and 8.2 above. Imetal also undertakes to use its best endeavours to procure that as soon as reasonably practicable thereafter, Euroclay gives notice to terminate and take all such steps as it may be obliged to take pursuant to the provisions of any agency agreements and any other commercial arrangements which it has entered into with AKW and, unless Imetal has acquired the whole of AKW's shareholding in Euroclay, any party relating to the distribution, sale or marketing of kaolin.**

8.4. **On the basis that Imetal does not have legal or *de facto* control of Euroclay and is therefore restricted in the extent to which it can procure any specific action on the part of Euroclay, and unless Imetal has acquired the whole of AKW's shareholding in Euroclay, Imetal undertakes to report to the Commission […] on the extent to which Euroclay continues to have outstanding contractual obligations with third parties relating to the distribution, sale or marketing of kaolin. Following delivery of the report to the Commission, Imetal shall consult with the Commission as to whether these undertakings should be varied or amended to address any outstanding concerns which the Commission may have at that time concerning the effect of Euroclay's distribution, sales and marketing activities on competition in the EC market for the supply of kaolin.**

8.5. Imetal undertakes that upon the exercise of the call option it shall:

(i) either purchase the whole of AKW's shareholding in Euroclay;

(ii) or enter into negotiations with AKW with the purpose of ensuring that […] either Imetal or AKW shall have acquired all of the shares of Euroclay or that Euroclay shall have been wound up.

Imetal shall inform the Commission in writing as soon as reasonably practicable once the transfer of Euroclay shares or the winding-up of Euroclay has been effected, and shall provide the Commission with a copy of the share transfer or winding-up documents and evidence of the payment of any stamp duty or equivalent transfer or winding-up tax or of any other action, if any, which is required by law in order that the share transfer or winding-up takes full legal effect.

8.6. Imetal undertakes that as soon as reasonably practicable following the date of closing of the Offer, it shall give notice to terminate any agreements which it (or any entity under its control) has entered into with AKW relating to the distribution, sales or marketing in the European Union of kaolin for paper and specialties applications and shall take all such steps as it may be obliged to take pursuant to the provisions of such agreements, so that as soon as reasonably practicable in accordance with the termination provisions of such agreements, it shall have no further distribution, sales or marketing link with AKW in the European Union relating to kaolin for paper and specialties applications.

9. MOLOCHITE FOR KILN FURNITURE

9.1. […]

9.2. […]

[Imetal has proposed adequate solutions to the issues raised by the supply of Molochite for kiln furniture to meet the Commission's concerns through structural remedies (either a divestiture or an alternative solution equally satisfactory to be agreed with the Commission).]

General

9.3. In the event that there is any inconsistency between the terms of these undertakings and the US investigation consent decree, Imetal shall as soon as reasonably practicable consult with the Commission and, as the case may be, the DoJ, in order to agree a resolution to the conflict between these undertakings and the US investigation consent decree.

9.4. For the avoidance of doubt, these undertakings shall lapse and cease to have any legal effect in the event that the proposed concentration is not completed. In such circumstances, the appointment of any independent expert or trustee appointed pursuant to the provisions of these undertakings shall be deemed to be automatically revoked.

Yours faithfully,

Patrick Kron
Chief Executive Officer
For and on behalf of Imetal SA