IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

FEDERAL TRADE COMMISSION
600 Pennsylvania Avenue, N.W.,
Washington, DC 20580,

Plaintiff,

v.

TRONOX LIMITED
263 Tresser Boulevard, Suite 1100
Stamford, CT 06901,

NATIONAL INDUSTRIALIZATION COMPANY
Building C3, Business Gate
Eastern Ring Road, Cordoba Area
Riyadh 11496, Kingdom of Saudi Arabia,

NATIONAL TITANIUM DIOXIDE COMPANY LIMITED
17th Floor, King Road Tower
King Abdulaziz Street, Beach District
Jeddah 21414, Kingdom of Saudi Arabia,

and

CRISTAL USA INC.,
6752 Baymeadow Drive
Glen Burnie, MD 21202,

Defendants.

Civil Action No. 1:18-cv-01622-TNM

ANSWER AND DEFENSES OF NATIONAL INDUSTRIALIZATION COMPANY, NATIONAL TITANIUM DIOXIDE COMPANY LIMITED, AND CRISTAL USA INC. TO PLAINTIFF'S COMPLAINT

Defendants National Industrialization Company, National Titanium Dioxide Company Limited, and Cristal USA Inc. (collectively, the "Cristal defendants"), by and through their

undersigned counsel, respond to the allegations of the Complaint as set forth below. Any allegation not specifically and expressly admitted is denied.

INTRODUCTION

To the extent the Complaint's introductory statement requires a response, the Cristal defendants deny the allegations therein. The Cristal defendants specifically deny that the transaction violates Section 5 of the Federal Trade Commission ("FTC") Act, 15 U.S.C. § 45, the Clayton Act, 15 U.S.C. § 18, or any other statute or provision of law.

The allegations in the Complaint are substantively identical to those in the FTC's administrative complaint dated December 5, 2017. Since that time, the parties have conducted extensive discovery and participated in a five-week trial before the FTC Administrative Law Judge ("ALJ"), and finished submitting evidence in that proceeding on June 22, 2018. As set forth below, the FTC's allegations are contradicted by extensive evidence presented in the proceeding before the ALJ. All record citations in the below responses are to trial testimony or trial exhibits from the FTC administrative proceeding before the ALJ.

NATURE OF THE CASE

1. The Cristal defendants aver that many of the allegations in Paragraph 1 of the Complaint are contradicted by the evidence presented at the FTC's administrative proceeding. To the extent Paragraph 1 alleges that there is a relevant geographic market consisting solely of "North America" or a relevant product market consisting solely of "chloride TiO2," the Cristal defendants deny the allegations in Paragraph 1. The evidence introduced at the administrative proceeding showed that Tronox Limited's ("Tronox") proposed acquisition of Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782) (Ex. A) (all references to "Tr." are included in Exhibit A), and that, as proven by the magnitude, elasticity, and variation

over time of global trade in TiO2, the co-movement of TiO2 prices across regions globally, and other economic data and evidence, the relevant geographic market in this case is global (Shehadeh, Tr. 3204-05). To the extent Paragraph 1 alleges that North America consists solely of the United States and Canada, to the exclusion of Mexico, the Cristal defendants deny this allegation (Shehadeh, Tr. 3261). The Cristal defendants further state that rutile TiO2 produced by the chloride process is reasonably substitutable with rutile TiO2 produced by the sulfate process for the vast majority of end-use applications (Stern, Tr. 3835; Shehadeh, Tr. 3319). Because the processes produce TiO2 that is reasonably substitutable, and in light of the "statistically and economically significant" co-movement of chloride-process and sulfate-process rutile TiO2 prices (Shehadeh, Tr. 3288), and other economic data and evidence, the relevant product market in this case includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3283-86). Moreover, after Tronox's acquisition of the Cristal defendants' TiO2 business, more than 36 major competitors will remain in the global TiO2 market.

The Cristal defendants admit that TiO2 is a chemical that is used as a pigment to provide white color and opacity for architectural paints, industrial and automotive coatings, plastics, and other products, and that TiO2 may be manufactured using either the chloride or sulfate processes. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 1.

2. The Cristal defendants deny the allegations in Paragraph 2 and aver that many of the allegations in Paragraph 2 are contradicted by the evidence presented at the FTC's administrative proceeding. To the extent Paragraph 2 purports to characterize a judicial opinion from the U.S. Court of Appeals for the Third Circuit—affirming summary judgment to defendants in a price-fixing case—as actual evidence in support of the FTC's claims in this case,

the selective quotations and allegations regarding the price-fixing litigation in *Valspar Corp. v. E.I. du Pont de Nemours & Co.*, Docket No. 16-1345 (3d Cir.), are inaccurate and misleading because the Third Circuit decision was on a motion for summary judgment and, as a result, the facts were "essentially undisputed" in the District Court (No. 16-1345 (slip op.), at *4 (Oct. 2, 2017)).

The Cristal defendants further aver that the FTC's selective quotations are inaccurate and misleading because the parties in that case did not address the question of whether the TiO2 industry was an oligopoly, and that question was also not presented to the District Court or Third Circuit for decision. The selective quotations and allegations in Paragraph 2 are further inaccurate, misleading, and irrelevant because the Third Circuit litigation involved different allegations brought by a different, private plaintiff in a different case; the litigation focused on the time period 2000-2013; and the litigation dealt with allegations of a hub-and-spoke pricing conspiracy focused on a service provided by the Titanium Dioxide Manufacturers Association, a service that is no longer offered by that Association. The Cristal defendants specifically deny that the Third Circuit found that the TiO2 industry is an "oligopoly" that is "dominated by a handful of firms" with "substantial barriers to entry."

The Cristal defendants also state that the TiO2 industry is fiercely competitive and that the Cristal defendants' TiO2 business competes with other TiO2 producers around the world. Moreover, the post-merger Herfindahl-Hirschman Index ("HHI"), an index that measures market concentration, is "below 1,500 and in fact below 1,300 by any measure" (Shehadeh, Tr. 3326), and according to the FTC and U.S. Department of Justice Horizontal Merger Guidelines ("Merger Guidelines"), these levels of concentration "are unlikely to raise the prospect of anticompetitive effects" (Shehadeh, Tr. 3325). Even these low levels of concentration and shares

post-merger "would overstate the competitive significance" of the transaction because "shares and concentration are a static measure of competition" in an industry noted for the "dynamic nature of competition" among TiO2 producers (Shehadeh, Tr. 3327-28).

To the extent Paragraph 2 alleges that there is a relevant geographic market consisting solely of "North America" or a relevant product market consisting solely of "chloride-process TiO2," the Cristal defendants deny the allegations in Paragraph 2. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market is global (Shehadeh, Tr. 3204-05), and that the relevant product market includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3204-05, 3283-86). To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 2.

3. The Cristal defendants deny the allegations in Paragraph 3 and aver that many of the allegations in Paragraph 3 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

Furthermore, evidence presented at the administrative proceeding showed that the transaction "decreases transparency in the market and increases the diversity of incentives" among TiO2 producers, which indicates that the transaction will not increase the likelihood of coordinated interaction among TiO2 producers post-merger (Shehadeh, Tr. 3409). Moreover,

there was also evidence presented at the administrative proceeding that showed that the TiO2 industry is "a very competitive industry" and includes "significant, large competitors that have very low cost basis," such as Chemours and Lomon Billions (Quinn, Tr. 2318-19).

To the extent Paragraph 3 alleges that there is a "North American chloride TiO2 market," the Cristal defendants deny the allegations in Paragraph 3. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market is global (Shehadeh, Tr. 3204-05), and that the relevant product market includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3204-05, 3283-86). Furthermore, the FTC's selective quotation of unidentified written material or communications in Paragraph 3, offered without context or associated testimony, is inaccurate and misleading as framed.

The Cristal defendants aver that they lack knowledge or information sufficient to respond to allegations in Paragraph 3 purporting to quote or characterize statements of Tronox. The Cristal defendants also aver that to the extent Paragraph 3 of the Complaint states legal conclusions, no response is required. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 3.

4. The Cristal defendants deny the allegations in Paragraph 4 and aver that many of the allegations in Paragraph 4 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-

42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

Evidence presented at the administrative proceeding showed that the transaction "decreases transparency in the market and increases the diversity of incentives" among TiO2 producers, which indicates that the transaction will not increase the likelihood of coordinated interaction among TiO2 producers post-merger (Shehadeh, Tr. 3409). The Cristal defendants state that the FTC's selective quotation of unidentified written material or communications in Paragraph 4, offered without context or associated testimony, is inaccurate and misleading as framed.

The Cristal defendants aver that they otherwise lack knowledge or information to respond to the remaining allegations in Paragraph 4 of the Complaint. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 4. The Cristal defendants also aver that to the extent Paragraph 4 states legal conclusions, no response is required.

5. The Cristal defendants deny the allegations in Paragraph 5 and aver that many of the allegations in Paragraph 5 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants state that the TiO2 industry has seen "significant capacity additions year-in and year-out" by TiO2 producers "in order to serve new demand" in new and existing markets (Shehadeh, Tr. 3357-58). The Cristal defendants further state that the dynamic and competitive nature of the TiO2 industry is reflected in "new capacity expansions, new plants coming online, high-cost capacity being driven out of the market, and . . . dynamic competition" between TiO2 producers (Shehadeh, Tr. 3328). The Cristal defendants state that in recent years, Chinese TiO2 quality has markedly improved and the Chinese have made significant technological improvements, including developing chloride technology.

The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

The Cristal defendants aver that they lack knowledge or information sufficient to respond to allegations in Paragraph 5 purporting to quote or characterize statements of "Tronox and other market participants." The Cristal defendants also aver that to the extent Paragraph 5 of the Complaint states legal conclusions, no response is required. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 5.

6. The Cristal defendants deny the allegations in Paragraph 6 and aver that many of the allegations in Paragraph 6 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443). The Cristal defendants state that the efficiencies of the acquisition are both cognizable and merger-specific.

The Cristal defendants respond that to the extent Paragraph 6 of the Complaint states legal conclusions, no response is required. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 6.

7. The Cristal defendants admit on information and belief that only two FTC Commissioners, one no longer serving in that capacity, voted on December 5, 2017 to allow FTC staff to begin an administrative proceeding related to Tronox's acquisition of the Cristal defendants' TiO2 business, and that FTC staff commenced an administrative proceeding related to Tronox's acquisition of the Cristal defendants' TiO2 business on that date. The Cristal defendants aver that they otherwise lack knowledge or information to respond to the remaining allegations in Paragraph 7 of the Complaint. To the extent Paragraph 7 alleges that the Cristal defendants violated Section 7 of the Clayton Act, 15 U.S.C. § 18, Section 5 of the FTC Act, 15 U.S.C. § 45 or any other provision of law, the Cristal defendants deny these allegations. To the extent a further response is required, the Cristal defendants deny the allegations in Paragraph 7. The Cristal defendants also state that to the extent Paragraph 7 states legal conclusions, no response is required.

8. The Cristal defendants aver that to the extent Paragraph 8 of the Complaint states legal conclusions, no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 8 and state that ALJ Chappell has expressed beliefs to the contrary. At the December 20, 2017 scheduling hearing for the administrative proceeding, Judge Chappell stated on the record, "We were talking about how this case is going to proceed and why. It is true we could have a trial on the merits and we could start next week, but to work through the system, this takes months. Preliminary injunction, usually a week, maybe two, and you can have a ruling, and, you know, if there's an injunction, that could end it. So even though we could proceed headstrong and knock this thing out and even move the date up, it's just—it's still—it just takes so much more time for this system to work, not that one's right or wrong or one's better than the other, but the PI system is much more efficient to get to a conclusion of

whether some district court judge thinks that the merger should be blocked" (J. Chappell, Tr. 32, Dec. 20, 2017) (Ex. B). At the same hearing, again discussing scheduling, Judge Chappell stated, "But everybody involved in these proceedings knows that there's no way to get this through the system before the merger would be—the merger would be consummated. I mean, it just—it's impossible to have a trial, get a decision out. It's never going to happen. It's a worthy goal, but it's unrealistic" (J. Chappell, Tr. 77-78, Dec. 20, 2017) (Ex. B).

Judge Chappell put a finer point on these statements regarding the efficiency of a preliminary injunction process near the end of the administrative trial. During testimony on June 22, 2018, he said, "All right. Let me just talk about some timing. In the event anyone here would suffer from the delusion that this process would finish up much quicker than a preliminary injunction proceeding in federal court, let me disabuse you of that fantasy. The last two cases here, between the end of trial and my decision, about six months. In 1-800 Contacts, that decision was issued in [October 2017]. They haven't even had closing arguments yet on the appeal to the commission. And there's the pretty much automatic appeal of my decision to the commission. Once the commission gets a case, it's anybody's guess when you'll get a decision. I don't do preliminary injunctions downtown. I've done them in the past before I wore this robe, from your side and from this side, not this particular government entity but another one. And I know, because I had many cases with a parallel track, I know how fast that works. We're talking from the time you finish the injunction hearing, you have arguments, you have—it's expedited—sometimes a matter of weeks, no more than a couple of months, depending on the judge. There is no way that this process ends before a preliminary injunction proceeding would end in district court. ***And if anybody represents to a district court judge that this process will probably end***

sooner, I'd like somebody to report that to my office" (J. Chappell, Tr. 3810-11) (emphasis added).

JURISDICTION AND VENUE

9. The Cristal defendants aver that the allegations contained in Paragraph 9 state a legal conclusion to which no response is required. To the extent a response is required, the Cristal defendants admit on information and belief that the FTC purports to bring this civil action pursuant to Section 13(b) of the FTC Act, 15 U.S.C. § 53(b), and 28 U.S.C. §§ 1331, 1337, and 1345, and admit that the FTC is an agency of the United States. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 9.

10. The Cristal defendants aver that Paragraph 10 does not contain any allegations; accordingly, no response is required. To the extent Paragraph 10 alleges that the Cristal defendants violated any provisions of Section 13(b) of the FTC Act, 15 U.S.C. § 53(b), or any other provisions of law, the Cristal defendants deny these allegations. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 10.

11. The Cristal defendants state that Paragraph 11 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants do not have sufficient information to admit the allegations in Paragraph 11 as to Tronox. Furthermore, National Industrialization Company and the National Titanium Dioxide Company Limited deny the allegations in Paragraph 11 as to them. The Cristal defendants deny that they have violated these statutory provisions or otherwise engaged in unlawful activity. The Cristal defendants deny any remaining allegations in Paragraph 11.

12. The Cristal defendants aver that Paragraph 12 contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 12.

THE PARTIES AND THE PROPOSED ACQUISITION

13. To the extent Paragraph 13 alleges that the Cristal defendants violated Section 7 of the Clayton Act, 15 U.S.C. § 18, or Section 5 of the FTC Act, 15 U.S.C. § 45, or any other provision of law, the Cristal defendants deny the allegations in Paragraph 13. The Cristal defendants admit on information and belief the remaining allegations in Paragraph 13.

14. The Cristal defendants admit that Tronox mines titanium ore and other minerals, that Tronox manufactures and sells chloride TiO2 pigment, and that Tronox (or its affiliates) operates one TiO2 pigment manufacturing plant in Hamilton, Mississippi, as well as plants in Botlek, the Netherlands, and Kwinana, Australia. The Cristal defendants aver that they lack the knowledge or information to respond to the remainder of the allegations in Paragraph 14. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 14.

15. The Cristal defendants admit the allegations in the first two sentences of Paragraph 15 of the Complaint. The Cristal defendants admit that Cristal USA Inc. filed a Premerger Notification and Report Form with the FTC and the Department of Justice for the Acquisition and responded to the Request for Additional Information and Documentary Material from the FTC on behalf of TASNEE. The Cristal defendants deny the remaining allegations in Paragraph 15.

16. The Cristal defendants admit the first and eighth sentences of Paragraph 16 of the Complaint. The Cristal defendants admit that they have manufacturing plants around the world

and that they supply TiO2 to multinational and global customers, and sell feedstock. The Cristal defendants deny the remaining allegations in Paragraph 16.

17. The Cristal defendants admit that Cristal USA Inc. is a Delaware corporation, that it operates TiO2 manufacturing facilities in Ashtabula, Ohio, which supply TiO2 to multinational and global customers, and that it operates a research facility in Glen Burnie, Maryland. The Cristal defendants state that the remaining allegations in Paragraph 17 of the Complaint are vague and ambiguous. To the extent that a further response is required, the Cristal defendants deny the remainder of the allegations in Paragraph 17.

18. The Cristal defendants admit that Tronox agreed on February 21, 2017 to acquire certain assets and entities related to the production and sale of TiO2 from the National Titanium Dioxide Company Limited and that consideration for this transaction was $1.673 billion in cash and Class A ordinary shares representing 24% ownership in pro forma Tronox. The Cristal defendants otherwise deny the allegations in Paragraph 18 of the Complaint.

19. The Cristal defendants admit that the European Commission ("EC") has conditionally approved Tronox's acquisition of the Cristal defendants' TiO2 business, subject to the condition that Tronox sells its global business in TiO2 pigment for paper laminate comprising the required technology and other intangibles to an experienced manufacturer with chloride-based production technology active in the European Economic Area. The Cristal defendants admit on information and belief that, upon meeting the condition, the EC would not prevent Tronox and the Cristal defendants from consummating the acquisition. The Cristal defendants further state that when it announced conditional clearance, the EC stated in its press release: "The Commission's investigation found no competition concerns regarding the following: titanium dioxide pigment for use in other products [besides ink], in particular paints

and plastics. The Commission found that there are many producers active in Europe and that customers can and do use a wider variety of titanium dioxide pigments, including those with sulfate-based production process" (Press Release, European Commission, *Mergers: Commission approves Tronox's acquisition of Cristal, subject to conditions*, July 4 2018, http://europa.eu/rapid/press-release_IP-18-4361_en.htm). To the extent that further response is required, the Cristal defendants deny the allegations in Paragraph 19.

20. To the extent that Paragraph 20 alleges that the Cristal defendants violated Section 7 of the Clayton Act, 15 U.S.C. § 18, or Section 5 of the FTC Act, 15 U.S.C. § 45, or any other provision of law, or that Tronox's acquisition of the Cristal defendants' TiO2 business would substantially lessen competition, the Cristal defendants deny the allegations in Paragraph 20. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443). The Cristal defendants admit on information and belief that only two FTC Commissioners, one no longer serving in that capacity, voted on December 5, 2017 to allow FTC staff to begin an administrative proceeding related to Tronox's acquisition of the Cristal defendants' TiO2 business, and that FTC staff commenced an administrative proceeding related to Tronox's acquisition of the Cristal defendants' TiO2 business on that date. The Cristal defendants also admit that they have participated, with Tronox, in a hearing before the FTC ALJ that began on May 18, 2018 and that will conclude at some point in 2019. The Cristal defendants also admit that the time for submitting evidence has

closed; however, the parties are actively engaged in post-trial briefing and the parties' closing arguments have not occurred. Finally, the Cristal defendants admit on information and belief that the ALJ may eventually issue an initial decision, which may be reviewed *de novo* by the Commission before the Commission issues a final order, and that the Commission's final order would be subject to review by a United States Court of Appeals. To the extent that a further response is required, the Cristal defendants deny the remaining allegations in Paragraph 20.

21. To the extent Paragraph 21 alleges that the acquisition would substantially lessen competition or that an injunction of the acquisition would promote the public interest, the Cristal defendants deny the allegations in Paragraph 21. To the extent that a further response is required, the Cristal defendants deny the allegations in Paragraph 21.

BACKGROUND – TITANIUM DIOXIDE

22. The Cristal defendants admit that TiO2 is a pigment that can be used to add whiteness, brightness, and opacity to paints, industrial and automotive coatings, plastics, paper and other products. The evidence presented at the administrative proceeding showed that TiO2 end-use applications are approximately 60 percent paint and coatings, approximately 25 percent plastics, approximately 10 percent paper, and the remainder other end uses (Mouland, Tr. 1211). The Cristal defendants deny the remainder of the allegations in Paragraph 22 of the Complaint, in particular, that there are no commercially reasonable substitutes for TiO2. The Cristal defendants state that coatings producers can reduce, and have reduced, the amount of TiO2 they use by substituting for TiO2 with extenders, like clay and resins.

23. The Cristal defendants admit the allegations in the first sentence of Paragraph 23 of the Complaint. The Cristal defendants deny the remainder of the allegations in Paragraph 23. The Cristal defendants further state that "80 percent of end applications are indifferent towards

chloride and sulfate, provided quality is the same" (Shehadeh, Tr. 3319) and that "[m]ost TiO2 customers do not have a preference for the process that produces the product they desire" (Shehadeh, Tr. 3311). The evidence presented at the administrative proceeding showed that the color and durability properties of TiO2 are primarily impacted by the finishing process, which is identical for chloride-process and sulfate-process TiO2, as opposed to the manufacturing process, i.e., chloride vs. sulfate process (Engle, Tr. 2444).

24. The Cristal defendants admit TiO2 can have a rutile or anatase crystal structure. The Cristal defendants further admit that rutile and anatase TiO2 can have different physical characteristics and applications. The Cristal defendants further state that both the chloride and sulfate process yield rutile TiO2, and the sulfate process additionally yields anatase TiO2. The Cristal defendants otherwise deny the allegations in Paragraph 24.

25. The Cristal defendants admit that TiO2 is generally delivered to customers by rail or truck. The Cristal defendants further admit that customers purchase TiO2 in either a slurry or bagged dry powder form, and that delivery of TiO2 in slurry form is generally more prevalent in North America than other parts of the world. The Cristal defendants further admit that slurry consists of TiO2 powder combined with water and other additives. The Cristal defendants deny the remaining allegations in Paragraph 25. The Cristal defendants further state that TiO2 slurry can be made with either chloride-process or sulfate-process TiO2; the only necessary ingredients for slurry are TiO2, water and a stir tank, and it can be produced using TiO2 from both processes (Stern, Tr. 3845-46). Moreover, the evidence presented at the administrative proceeding showed that only a third of the TiO2 consumed in North America is slurry TiO2 and slurry TiO2 is generally purchased by large paint and coatings companies (Stern, Tr. 3845).

MARKET PARTICIPANTS AND INDUSTRY DYNAMICS

26. On information and belief, the Cristal defendants admit that Tronox, Chemours, Kronos, Cristal, and Venator are among the many current manufacturers of TiO2 worldwide and that these manufacturers have plants located in North America that produce TiO2 using either the chloride or sulfate method. The Cristal defendants otherwise deny the allegations in Paragraph 26 of the Complaint and specifically deny the allegation that the TiO2 industry is an "oligopoly dominated by five major producers." To the extent Paragraph 26 alleges that there is a separate "North American TiO2 industry" or that it constitutes the relevant market for this case, these allegations in Paragraph 26 are specifically denied. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market is global (Shehadeh, Tr. 3204-05), and that the relevant product market includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3204-05, 3283-86).

The Cristal defendants further state that Lomon Billions, not mentioned in Paragraph 26, is the fourth largest TiO2 producer in the world by capacity, larger than Tronox. Moreover, there was also evidence introduced at the administrative proceeding that showed that the TiO2 industry is "a very competitive industry" and includes "significant, large competitors that have very low cost basis," such as Chemours and Lomon Billions (Quinn, Tr. 2318-19; Mouland Tr. 1207-09). The evidence presented at the administrative proceeding further showed that TiO2 producers compete with other producers throughout the world, including a number of mid-sized Chinese producers and regional producers in Eastern Europe, India, and Japan.

27. The Cristal defendants admit on information and belief that Chemours is the world's largest TiO2 producer. The Cristal defendants also admit on information and belief that

Chemours has the lowest-cost production in the industry (Stern, Tr. 3783). The Cristal defendants lack knowledge or information to respond to the remaining allegations in Paragraph 27. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 27.

28. The Cristal defendants admit on information and belief that Kronos and Venator are both TiO2 manufacturers with plants located in various locations around the world, including a joint venture in Louisiana. The Cristal defendants otherwise lack knowledge or information to respond to the allegations in Paragraph 28. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 28.

29. The Cristal defendants admit that they compete with a multitude of manufacturers of TiO2 worldwide, including Chinese manufacturers. The Cristal defendants also admit that over the last decade, TiO2 producers in China have increased their collective exports of TiO2, including to the United States. The Cristal defendants further admit that some Chinese manufacturers produce chloride TiO2 that is imported into the United States. The Cristal defendants deny the remainder of the allegations in Paragraph 29 of the Complaint, specifically that almost all Chinese TiO2 exported has been "lower quality sulfate TiO2," and also that "very little" Chinese TiO2 has been exported into North America. The Cristal defendants state that from 2010 to 2016, Chinese imports of TiO2 into North America increased by "approximately five times" as North American customers have increasingly made use of Chinese TiO2 product (Shehadeh, Tr. 3220-21). The Cristal defendants further state that Lomon Billions, on information and belief the largest Chinese TiO2 producer, is the fourth largest TiO2 producer in the world by capacity. The Cristal defendants also state that Chinese TiO2 quality has been rapidly improving over recent years (Stern, Tr. 3745).

30. Paragraph 30 purports to characterize judicial records and opinions, which speak for themselves. Therefore, no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 30.

The Cristal defendants state that the FTC's selective quotations from the price-fixing litigations, offered without context, are inaccurate and misleading in part because the Third Circuit decision was on a motion for summary judgment and the facts were "essentially undisputed" in the District Court, 873 F.3d at 190. The Cristal defendants further state that the FTC's selective quotations are inaccurate and misleading because in that case, the parties did not brief the question of whether the TiO2 industry was an oligopoly, and that question was also not presented to the District Court or Third Circuit for decision. The Cristal defendants additionally state that the selective quotations and allegations in Paragraph 30 regarding the price-fixing litigation in *In re Titanium Dioxide Antitrust Litigation*, 959 F. Supp. 2d 799 (D. Md. 2013), are inaccurate and misleading because the District Court of Maryland's decision was on a motion for summary judgment in which the District Court viewed "the facts and all reasonable inferences in the light most favorable to the [plaintiffs]," 959 F. Supp. 2d at 803. Furthermore, the selective quotations and allegations in Paragraph 30 are inaccurate, misleading, and irrelevant because the price-fixing litigations involved different allegations brought by different, private plaintiffs in different cases; the litigations focused on the time period 2000-2013; and the litigations dealt with allegations of a hub-and-spoke pricing conspiracy focused on a service provided by the Titanium Dioxide Manufacturers Association, a service that is no longer offered by that Association.

To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 30.

31. The Cristal defendants deny the allegations in Paragraph 31 and respond that many of the allegations in Paragraph 31 are contradicted by the evidence presented at the FTC's administrative proceeding. The evidence introduced at the administrative proceeding showed that TiO2 producers have incentive in most market conditions to run their plants at maximum capacity, or "flat-out," because the TiO2 industry is a high fixed-cost industry and there are significant "costs involved in curtailing capacity" at TiO2 plants, including substantial "opportunity costs" and "dislocation involving technology, workers and facilities" (Christian, Tr. 864-66). The Cristal defendants additionally state that the FTC's selective reference to unidentified written material or communications in Paragraph 31, offered without context, is inaccurate and misleading as framed. To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 31 of the Complaint.

32. The Cristal defendants deny the allegations contained in Paragraph 32 and respond that many of the allegations in Paragraph 32 are contradicted by the evidence presented at the FTC's administrative proceeding. The evidence presented at the administrative proceeding showed that, in 2015, Tronox temporarily shut down a line at its Hamilton, Mississippi facility due to a substantial reduction in demand and related economic considerations resulting from an industry-wide downturn.

The Cristal defendants cannot admit or deny facts pertaining to Chemours, a third party, but state that on information and belief, Chemours closed its Edge Moor plant in Delaware and shut down a production line at its New Johnsonville, Tennessee plant in or around 2015. The Cristal defendants further state on information and belief that, around the same time, Chemours increased its net TiO2 production as a result of its expansion of TiO2 production at its plant in Altamira, Mexico.

To the extent further response is required, the Cristal defendants deny the allegations in Paragraph 32.

PURPORTED RELEVANT MARKETS

33. The Cristal defendants aver that Paragraph 33 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 33 and respond that the allegations in Paragraph 33 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants specifically deny that there is a market for the "sale of chloride TiO2 to North American customers" or that it constitutes a relevant market. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market is global (Shehadeh, Tr. 3204-05), and that the relevant product market includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3204-05, 3283-86). The Cristal defendants further state that the application of the hypothetical monopolist test using critical loss analysis confirms that "the relevant market [is] broader than North America and, in fact, [is] global" as a result of the economic constraints created by international trade (Shehadeh, Tr. 3204-05). The Cristal defendants also state that the relevant product market is broader than the sale of chloride-produced TiO2 because customers have the incentive and ability to substitute between chloride- and sulfate-produced rutile TiO2 in response to relative price changes, and in fact do substitute between chloride- and sulfate-produced rutile TiO2 (Shehadeh, Tr. 3283-85).

A. Purported Relevant Product Markets

34. The Cristal defendants aver that Paragraph 34 of the Complaint contains a legal conclusion to which no response is required. To the extent a response is required, the Cristal

defendants deny the allegation in Paragraph 34 of the Complaint, and respond that the allegation in Paragraph 34 is contradicted by evidence presented at the FTC's administrative proceeding. The Cristal defendants specifically deny that there is a market for the "sale of chloride TiO2" or that it constitutes the "relevant product market." The Cristal defendants further state that as a result of the reasonably substitutable nature of chloride-process and sulfate-process rutile TiO2 for the vast majority of end-use applications (Stern, Tr. 3835), the "statistically and economically significant" co-movement of chloride-process and sulfate-process rutile TiO2 prices (Shehadeh, Tr. 3288), and other economic data and evidence, the relevant product market in this case is broader than just chloride-process TiO2, and instead includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3283-86). The Cristal defendants also state that "80 percent of end applications are indifferent towards chloride-process and sulfate-process TiO2, provided quality is the same" (Shehadeh, Tr. 3319), and that "[m]ost TiO2 customers do not have a preference for the process that produces the product they desire" (Shehadeh, Tr. 3311).

35. The Cristal defendants deny the allegations in Paragraph 35 and respond that the allegations in Paragraph 35 are contradicted by the evidence presented at the FTC's administrative proceeding. The evidence introduced at the administrative proceeding showed that customers can and do use extenders to reduce TiO2 usage without compromising quality. The Cristal defendants state that customers of TiO2 have also reformulated products to make them more efficient so that the products could use less TiO2.

36. The Cristal defendants deny the allegations in Paragraph 36 and respond that the allegations in Paragraph 36 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants aver that customers can and do use TiO2 manufactured via the sulfate process and TiO2 manufactured via the chloride process for the

same applications. The Cristal defendants state that "80 percent of end applications are indifferent towards chloride-process and sulfate-process, provided quality is the same" (Shehadeh, Tr. 3319), and that "[m]ost TiO2 customers do not have a preference for the process that produces the product they desire" (Shehadeh, Tr. 3311).

37. The Cristal defendants deny the allegations in Paragraph 37 and respond that the allegations in Paragraph 37 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants aver that customers can and do switch from TiO2 manufactured via the sulfate process and TiO2 manufactured via the chloride process. The Cristal defendants thus state that the relevant product market is broader than the sale of chloride-produced TiO2 because customers have the incentive and ability to substitute between chloride- and sulfate-produced rutile TiO2 in response to relative price changes, and in fact do substitute between chloride- and sulfate-produced rutile TiO2 (Shehadeh, Tr. 3283-85). The Cristal defendants further state that the reformulation process is not unique to the switching between sulfate-process and chloride-process grades; rather, it is required for any switching, including a switch from chloride to chloride grades (Vanderpool, Tr. 186).

38. The Cristal defendants aver that they lack knowledge or information sufficient to respond to allegations related to the quotations in Paragraph 38 of the Complaint attributed to "Tronox's then-CEO." To the extent a response is required, the Cristal defendants deny these allegations. The Cristal defendants deny the remaining allegations in Paragraph 38 of the Complaint and respond that these allegations are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants specifically deny that most North American customers have preferences for chloride-process TiO2, such that chloride-process and sulfate-process TiO2 are not reasonably interchangeable substitutes. The Cristal defendants state

that the relevant product market is broader than the sale of chloride-produced TiO2 because customers have the incentive and ability to substitute between chloride- and sulfate-produced rutile TiO2 in response to relative price changes, and in fact do substitute between chloride- and sulfate-produced rutile TiO2 (Shehadeh, Tr. 3283-85). The Cristal defendants further state that the co-movement of chloride-process and sulfate-process rutile TiO2 prices shows a "statistically and economically significant" relationship, demonstrating that the relevant market includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3289-90).

The Cristal defendants further state that the FTC's selective quotation of unidentified written material or communications in Paragraph 38, offered without context, is misleading as framed. The Cristal defendants additionally state that the FTC's selective quotation of unidentified communications ignores "the comparison to what the price of sulfate-produced titanium dioxide was at the time, and so this says nothing about changes in relative prices"; thus, it "would not be informative about the likelihood or actuality of substitution" (Shehadeh, Tr. 3293-95).

39. The Cristal defendants admit that TiO2 does have rutile or anatase crystal forms. The Cristal defendants also admit that rutile TiO2 can be produced using both the chloride and sulfate processes and that anatase TiO2 can be produced using only the sulfate process. The Cristal defendants deny the remainder of the allegations in Paragraph 39 of the Complaint. The Cristal defendants state that the relevant product market may be broader than rutile TiO2, but that the relevant product market includes all rutile TiO2, whether from the chloride process or sulfate process.

40. The Cristal defendants deny the allegations in Paragraph 40 of the Complaint and respond that the allegations in Paragraph 40 are contradicted by the evidence presented at the

FTC's administrative proceeding. The Cristal defendants specifically deny that there is a separate "North American rutile TiO2 market" or "North American chloride TiO2 market," and specifically deny that the Acquisition would have any harmful impact on competition however the market is defined. The Cristal defendants state that as a result of the reasonably substitutable nature of chloride-process and sulfate-process rutile TiO2 for the vast majority of end-use applications, the "statistically and economically significant" co-movement of chloride-process and sulfate-process rutile TiO2 prices (Shehadeh, Tr. 3288-89), and other economic data and evidence, the relevant product market in this case includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3283-86).

The Cristal defendants and Tronox have presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

B. Purported Relevant Geographic Market

41. The Cristal defendants aver that Paragraph 41 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 41, including that "the sale of the relevant products to North American customers" constitutes a relevant geographic market and respond that the allegations in Paragraph 41 are contradicted by the evidence presented at the FTC's administrative proceeding. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide

merger" (Hill, Tr. 1782), and that as a result of the magnitude, elasticity, and variation over time of global trade in TiO2, the co-movement of TiO2 prices across regions globally, and other economic data and evidence, the relevant geographic market in this case is global (Shehadeh, Tr. 3204-05). The Cristal defendants state that the application of the hypothetical monopolist test using critical loss analysis confirms that "the relevant market [is] broader than North America and, in fact, [is] global" as a result of the economic constraints created by international trade (Shehadeh, Tr. 3203-04).

42. The Cristal defendants deny the allegations in Paragraph 42 of the Complaint, to the extent they may relate to the Cristal defendants and imply that "North America" is a relevant geographic market. The Cristal defendants lack knowledge and information to respond to the remaining allegations in Paragraph 42 related to quotations attributed to Tronox. The Cristal defendants refer to and incorporate Tronox's answer to these allegations (ECF No. 41). To the extent they require a further response, the Cristal defendants deny the allegations in Paragraph 42.

43. The Cristal defendants deny the allegations in Paragraph 43 of the Complaint to the extent they relate to the Cristal defendants, except that the Cristal defendants admit that because of the fierce competition their TiO2 business faces all over the world for the sale and manufacture of TiO2, the Cristal defendants' TiO2 business tries to meet each of its customer's needs to the best of its ability regardless of where the customer is located. The Cristal defendants respond that many of the allegations in Paragraph 43 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants deny that most North American customers have preferences for chloride-process TiO2, such that chloride-process and sulfate-process TiO2 are not reasonably interchangeable substitutes. The Cristal defendants state

that "80 percent of end applications are indifferent towards chloride and sulfate, provided quality is the same" (Shehadeh, Tr. 3319) and that "[m]ost TiO2 customers do not have a preference for the process that produces the product they desire" (Shehadeh, Tr. 3311).

Moreover, the evidence introduced at the administrative proceeding showed that the color and durability properties of TiO2 are primarily impacted by the finishing process, which is identical for chloride-process and sulfate-process TiO2, as opposed to the manufacturing process, i.e., chloride vs. sulfate process (Engle, Tr. 2444). The Cristal defendants also state that the relevant product market is broader than the sale of chloride-produced TiO2 because customers have the incentive and ability to substitute between chloride- and sulfate-produced rutile TiO2 in response to relative price changes, and in fact do substitute between chloride- and sulfate-produced rutile TiO2 (Shehadeh, Tr. 3283-85).

The Cristal defendants also aver that the allegations in Paragraph 43 of the Complaint, to the extent they relate to the Cristal defendants, are vague and ambiguous and do not require a response. The Cristal defendants further aver that they lack knowledge and information to respond to the remaining allegations in Paragraph 43. To the extent they require a response, the Cristal defendants deny the remaining allegations in Paragraph 43. The Cristal defendants also aver that Paragraph 43 contains legal conclusions to which no response is required.

44. The Cristal defendants deny the allegations in Paragraph 44 of the Complaint and respond that the allegations in Paragraph 44 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants state that the FTC's artificially narrow definition of "arbitrage" is inconsistent with economic literature and industry realities, and improperly "restricts the scope of substitution and the scope of . . . arbitrage relative to what is

properly considered in the Merger Guidelines" (Shehadeh, Tr. 3260). The Cristal defendants further state that TiO2 end customers can and will switch to a producer with a different technology if the right arbitrage exists for the substitute product and the product is capable of meeting the customer's requirements (Shehadeh, Tr. 3535). The Cristal defendants also aver that import duties, shipping and handling costs, and other logistical challenges would not make arbitrage uneconomical or impractical.

MARKET STRUCTURE AND THE ACQUISITION'S PURPORTED PRESUMPTIVE ILLEGALITY

45. The Cristal defendants aver that Paragraph 45 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 45 and respond that the allegations in Paragraph 45 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants state that the post-merger HHI for the acquisition is "below 1,500 and in fact below 1,300 by any measure" (Shehadeh, Tr. 3326), and that according to the Merger Guidelines, these levels of concentration "are unlikely to raise the prospect of anticompetitive effects" (Shehadeh, Tr. 3325). Further, the share of Tronox after its acquisition of the Cristal defendants' TiO2 business and concentration overall "would be too low to be consistent with either unilateral or coordinated competitive effects in the properly defined relevant market" (Shehadeh, Tr. 3325). The Cristal defendants further state that even these low levels of concentration and shares post-merger "would overstate the competitive significance" of the transaction because "shares and concentration are a static measure of competition" in an industry noted for the "dynamic nature of competition" among TiO2 producers (Shehadeh, Tr. 3327-28). To the extent Paragraph 45 alleges that there are multiple "markets" for TiO2, as distinct from a single, global market for TiO2, the allegations are denied.

46. The Cristal defendants aver that Paragraph 46 of the Complaint contains legal conclusions and purported characterizations of the Merger Guidelines that speak for themselves, to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 46, except that they admit the second sentence of Paragraph 46.

47. The Cristal defendants aver that Paragraph 47 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 47 and respond that the allegations in Paragraph 47 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants state that the post-merger HHI for the acquisition is "below 1,500 and in fact below 1,300 by any measure" (Shehadeh, Tr. 3326), and that according to the Merger Guidelines, these levels of concentration "are unlikely to raise the prospect of anticompetitive effects" (Shehadeh, Tr. 3325). Further, the post-merger firm and concentration overall "would be too low to be consistent with either unilateral or coordinated competitive effects in the properly defined relevant market" (Shehadeh, Tr. 3325). The Cristal defendants further state that even these low levels of concentration and shares post-merger "would overstate the competitive significance" of the transaction because "shares and concentration are a static measure of competition" in an industry noted for the "dynamic nature of competition" among TiO2 producers (Shehadeh, Tr. 3327-28).

To the extent Paragraph 47 alleges that the relevant antitrust market is "the market for the sale of chloride TiO2 to North American customers," the Cristal defendants deny the allegations in Paragraph 47 and state that the evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business

is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market in this case is global (Shehadeh, Tr. 3204-05), and that the relevant product market in this case includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3283-86). The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

48. The Cristal defendants aver that Paragraph 48 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 48 and respond that the allegations in Paragraph 48 are contradicted by the evidence presented at the FTC's administrative proceeding, as shown by the Cristal defendants' answers to Paragraphs 45 and 47 of the Complaint.

49. The Cristal defendants aver that Paragraph 49 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 49 and respond that the allegations in Paragraph 49 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants state that according to the Merger Guidelines, the levels of concentration resulting from the acquisition "are unlikely to raise the prospect of anticompetitive effects" (Shehadeh, Tr. 3325). The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed that the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2)

and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

PURPORTED ANTICOMPETITIVE EFFECTS

A. The Acquisition Would Purportedly Increase the Likelihood of Anticompetitive Coordination

50. The Cristal defendants deny the allegations in Paragraph 50 and respond that the allegations in Paragraph 50 are contradicted by the evidence presented at the FTC's administrative proceeding. To the extent Paragraph 50 purports to characterize a judicial opinion from the U.S. Court of Appeals for the Third Circuit, the opinion speaks for itself and no response is required. The Cristal defendants specifically deny that the Third Circuit found that the TiO2 industry is "primed for anticompetitive interdependence." The selective quotations and allegations in Paragraph 50 regarding the price-fixing litigation in *Valspar Corp. v. E. I. du Pont de Nemours & Co.*, Docket No. 16-1345 (3d Cir.), are inaccurate and misleading because the Third Circuit decision was on a motion for summary judgment and, as a result, the facts were "essentially undisputed" in the District Court (No. 16-1345 (slip op.), at *4 (Oct. 2, 2017)). The Cristal defendants further aver that the FTC's selective quotations are inaccurate and misleading because in that case, the parties did not address the question of whether the TiO2 industry was an oligopoly, and that question was also not presented to the District Court or Third Circuit for decision.

To the extent that Paragraph 50 purports to characterize a judicial decision from the U.S. District Court for the District of Maryland, the decision speaks for itself and no response is required. The Cristal defendants specifically deny that the District of Maryland found that the TiO2 industry is "a text book example of an industry susceptible to efforts to maintain

supracompetitive prices." The Cristal defendants further state that the selective quotations and allegations in Paragraph 50 regarding the price-fixing litigation in *In re Titanium Dioxide Antitrust Litigation*, 959 F. Supp. 2d 799 (D. Md. 2013), are inaccurate and misleading because the District Court of Maryland's decision was on a motion for summary judgment in which the District Court viewed "the facts and all reasonable inferences in the light most favorable to the [plaintiffs]," 959 F. Supp. 2d at 803, and because the question of whether the TiO2 industry was "a text book example of an industry susceptible to efforts to maintain supracompetitive prices" was not presented to the District Court for a decision on the merits. The Cristal defendants additionally respond that the selective quotations and allegations in Paragraph 50 are inaccurate, misleading, and irrelevant because the price-fixing litigations involved different allegations brought by different, private plaintiffs in different cases; the litigations focused on the time period 2000-2013; and the litigations dealt with allegations of a hub-and-spoke pricing conspiracy focused on a service provided by the Titanium Dioxide Manufacturers Association, a service that is no longer offered by that Association.

51. The Cristal defendants deny the allegations in Paragraph 51 of the Complaint and respond that many of the allegations in Paragraph 51 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants specifically deny that the relevant market for TiO2 is limited to "the sale of chloride TiO2 to North American customers." The Cristal defendants state that diversity of incentives between TiO2 producers "frustrates the ability of rivals to reach terms of agreement, to monitor terms of agreement and ultimately to enforce the terms of the agreement to punish, which are the requirements for sustaining tacit coordination" (Shehadeh, Tr. 3410). Evidence introduced at the administrative proceeding showed that the transaction "decreases transparency in the market and increases the diversity of

incentives" among TiO2 producers, which indicates that the transaction will not increase the likelihood of coordinated interaction among TiO2 producers post-merger (Shehadeh, Tr. 3409).

52. To the extent that Paragraph 52 purports to characterize actions by or knowledge of the Cristal defendants or their affiliates, the Cristal defendants deny the allegations in Paragraph 52 of the Complaint and respond that many of the allegations in Paragraph 52 are contradicted by evidence presented at the FTC's administrative proceeding. To the extent Paragraph 52 alleges that the Cristal defendants coordinate with competitors to influence TiO2 prices, the Cristal defendants specifically deny these allegations. The Cristal defendants state that the TiO2 industry is fiercely competitive and that the Cristal defendants' TiO2 business competes with a multitude of TiO2 producers across the globe. The Cristal defendants admit that in the very competitive TiO2 industry, the Cristal defendants' TiO2 business tracks publicly available information and information provided by its customers to stay competitive in the conduct of its business, and that the business receives data and information from independent consulting firms such as TZ Minerals International Pty. Ltd. ("TZMI").

The Cristal defendants otherwise lack knowledge or information to respond to the allegations in Paragraph 52. To the extent that a response is required, the Cristal defendants deny the allegations in Paragraph 52.

53. To the extent that Paragraph 53 purports to characterize the actions or knowledge of the Cristal defendants or their affiliates, the Cristal defendants admit that certain contracts by their affiliates contain "meet or release" clauses and that they issue non-public pricing letters. The Cristal defendants deny the remainder of the allegations in Paragraph 53 of the Complaint to the extent that they purport to characterize the actions or knowledge of the Cristal defendants or their affiliates and respond that many of the allegations in Paragraph 53 are contradicted by the

evidence presented at the FTC's administrative proceeding. As noted in their answer to Paragraph 52, the TiO2 industry is fiercely competitive and the Cristal defendants' TiO2 business competes with a multitude of TiO2 producers across the globe. The Cristal defendants lack knowledge or information to respond to the allegations in Paragraph 53 of the Complaint that purport to characterize actions or knowledge of other entities. To the extent that a response is required, the Cristal defendants deny the remainder of the allegations in Paragraph 53 of the Complaint.

54. The Cristal defendants admit that the National Titanium Dioxide Company Limited is not a publicly traded company. The Cristal defendants deny the remainder of the allegations in Paragraph 54 of the Complaint, specifically the allegation that a publicly traded company's purchase of a privately owned company is anti-competitive or enhances the likelihood of coordination. The evidence introduced at the administrative proceeding showed that that there is significant diversity of incentives between TiO2 producers, and that this diversity of incentives "frustrates the ability of rivals to reach terms of agreement, to monitor terms of agreement and ultimately to enforce the terms of the agreement to punish, which are the requirements for sustaining tacit coordination" (Shehadeh, Tr. 3410). The evidence introduced at the administrative proceeding also showed that the transaction "decreases transparency in the market and increases the diversity of incentives" among TiO2 producers, which indicates that the transaction will not increase the likelihood of coordinated interaction among TiO2 producers post-merger (Shehadeh, Tr. 3409).

55. The Cristal defendants deny the allegations in Paragraph 55 to the extent they purport to apply to the Cristal defendants or their affiliates and respond that many of the allegations in Paragraph 55 are contradicted by the evidence presented at the FTC's

administrative proceeding. The evidence introduced at the administrative proceeding showed that there is significant diversity of incentives between TiO2 producers, and that this diversity of incentives "frustrates the ability of rivals to reach terms of agreement, to monitor terms of agreement and ultimately to enforce the terms of the agreement to punish, which are the requirements for sustaining tacit coordination" (Shehadeh, Tr. 3410). The evidence introduced at the administrative proceeding also showed that the transaction "decreases transparency in the market and increases the diversity of incentives" among TiO2 producers, which indicates that the transaction will not increase the likelihood of coordinated interaction among TiO2 producers post-merger (Shehadeh, Tr. 3409). The Cristal defendants specifically deny that the TiO2 industry is an "oligopolistic market environment" and that TiO2 producers "recognize their mutual interdependence and aligned incentives." The Cristal defendants also aver that there is no history of coordinated interaction among TiO2 producers. Indeed, the historical data on pricing and input costs introduced at the administrative hearing are inconsistent with coordination and in fact, to the contrary, reflect competition among TiO2 producers. Moreover, the FTC's selective quotation of unidentified written material or communications in Paragraph 55, offered without context or associated testimony, is inaccurate and misleading as framed. The Cristal defendants further aver that they lack knowledge or information to respond to the remaining allegations in Paragraph 55. To the extent they require a response, the Cristal defendants deny the remaining allegations in Paragraph 55.

56. The Cristal defendants deny the allegations in Paragraph 56 and respond that many of the allegations in Paragraph 56 are contradicted by the evidence presented at the FTC's administrative proceeding. The Cristal defendants respond that they set different prices for different TiO2 customers based on negotiations with each individual customer and that

individual contracts between TiO2 producers and their customers are individualized, complex, and confidential, such that price increase announcements provide insufficient insight into the actual price negotiation process between competing TiO2 producers and their customers. The Cristal defendants otherwise deny the allegations in Paragraph 56 of the Complaint.

57. The Cristal defendants aver that they lack knowledge or information sufficient to respond to allegations related to the quotations in Paragraph 57 of the Complaint attributed to Tronox personnel. To the extent a response is required, the Cristal defendants deny these allegations. The Cristal defendants otherwise deny the allegations in Paragraph 57, and specifically deny that the Cristal defendants' TiO2 business engages in "parallel accommodating conduct" involving competitors. The Cristal defendants state that the TiO2 industry is fiercely competitive and that the Cristal defendants' TiO2 business competes vigorously with other TiO2 producers around the world for customers' business.

To the extent Paragraph 57 alleges that there is a "North American chloride TiO2 market," the Cristal defendants deny the allegations in Paragraph 57. The evidence introduced at the administrative proceeding showed that Tronox's proposed acquisition of the Cristal defendants' TiO2 business is a "worldwide merger" (Hill, Tr. 1782), that the relevant geographic market in this case is global (Shehadeh, Tr. 3204-05), and that the relevant product market in this case includes both chloride-process and sulfate-process rutile TiO2 (Shehadeh, Tr. 3283-86).

B. The Acquisition Would Purportedly Increase Tronox's Incentive and Ability to Curtail Output

58. The Cristal defendants lack knowledge and information sufficient to respond to the allegations in Paragraph 58 of the Complaint. To the extent a response is required, the Cristal defendants deny these allegations, and specifically deny that the transaction will increase Tronox's incentive or ability to decrease or restrict output. The Cristal defendants and Tronox

presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

59. The Cristal defendants lack knowledge and information sufficient to respond to the allegations in Paragraph 59 of the Complaint. To the extent a response is required, the Cristal defendants deny these allegations.

60. The Cristal defendants deny the allegations in Paragraph 60 of the Complaint as they may apply to the Cristal defendants. The Cristal defendants also aver that they lack knowledge or information sufficient to respond to the remaining allegations in Paragraph 60. To the extent a response is required, the Cristal defendants deny these allegations.

The Cristal defendants state the relevant market in this case is global, in part because of "global trade and global trade patterns" (i.e., the magnitude of global trade, the elasticity of global trade, and the variation in global trade over time) (Shehadeh, Tr. 3204-05). The evidence introduced at the administrative proceeding showed that total exports of TiO2 from North America are "around 600 to 700,000 kilotons per year" (Shehadeh, Tr. 3214). The evidence introduced at the administrative proceeding further showed that total imports of TiO2 into North America are "around 150 to 200,000 kilotons per year" (Shehadeh, Tr. 3214).

61. The Cristal defendants deny the allegations in Paragraph 61 of the Complaint, specifically that the relevant market for TiO2 is limited to North America, which the FTC defines as excluding Mexico, and respond that many of the allegations in Paragraph 61 are contradicted by the evidence at the FTC's administrative proceeding. The Cristal defendants

state that after Tronox's acquisition of the Cristal defendants' TiO2 business, more than 36 major competitors will remain in the global TiO2 market. The evidence introduced at the administrative proceeding showed that the combined firm does not present prospects for likely unilateral anticompetitive effects (Shehadeh, Tr. 3329).

62. The Cristal defendants aver that Paragraph 62 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 62 and respond that many of the allegations in Paragraph 62 are contradicted by the evidence at the FTC's administrative proceeding. The Cristal defendants state that "the combined share of the postmerger Tronox and concentration overall would be too low to be consistent with either unilateral or coordinated competitive effects in the properly defined relevant market" (Shehadeh, Tr. 3325). The Cristal defendants further state that the market for TiO2 is global and includes TiO2 produced using both the chloride and sulfate processes. The Cristal defendants state that after Tronox's acquisition of the Cristal defendants' TiO2 business, more than 36 major competitors will remain in the global TiO2 market.

PURPORTED LACK OF COUNTERVAILING FACTORS

63. The Cristal defendants deny the allegations in Paragraph 63 of the Complaint and respond that many of the allegations in Paragraph 63 are contradicted by the evidence at the FTC's administrative proceeding. The Cristal defendants aver that the TiO2 industry is characterized by the "dynamic nature of competition in demand for and supply of titanium dioxide," and that this dynamic nature is evident in "new capacity expansions, new plants coming online, high-cost capacity being driven out of the market, and . . . dynamic competition" between TiO2 producers (Shehadeh, Tr. 3327-28). Lomon Billions, the fourth largest TiO2

producer in the world by capacity, announced plans to expand its chloride-process capacity, and announced that it is building an additional 200,000 tons per year of capacity during the year 2019 (Stern, Tr. 3781). The Cristal defendants further respond that Chinese TiO2 quality has been rapidly improving over recent years (Stern, Tr. 3745).

64. The Cristal defendants deny the allegations in Paragraph 64 of the Complaint and respond that many of the allegations in Paragraph 64 are contradicted by the evidence in the FTC's administrative proceeding. The Cristal defendants state that any alleged "barriers to entry" are inconsistent with the "significant capacity additions year-in and year-out" undertaken by TiO2 producers "in order to serve new demand." (Shehadeh, Tr. 3357-58). The Cristal defendants further state that the dynamic nature of the TiO2 industry is evident in "new capacity expansions, new plants coming online, high-cost capacity being driven out of the market, and . . . dynamic competition" between TiO2 producers (Shehadeh, Tr. 3328). The Cristal defendants further respond that in recent years, Chinese TiO2 quality has markedly improved, and the Chinese have made significant technological improvements, including developing and improving their chloride-process technology. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

65. The Cristal defendants deny the allegations in Paragraph 65 to the extent they apply to the Cristal defendants. The Cristal defendants also aver that they lack knowledge or information to respond to the remaining allegations in Paragraph 65 to the extent that they apply

to other firms. To the extent they require a response, the Cristal defendants deny the remaining allegations in Paragraph 65, and specifically deny that Chinese TiO2 manufacturers do not represent a significant, and growing, competitive threat in the United States and worldwide, and respond that many of the allegations in Paragraph 65 are contradicted by the evidence in the FTC's administrative proceeding. The Cristal defendants state that Chinese imports of TiO2 into North America have increased by "approximately five times" between 2010 and 2016 (Shehadeh, Tr. 3220-21). The Cristal defendants further state that these imports of TiO2 into North America from China represent a "relatively small portion of total exports from China," meaning that there is even more "potential that's out there for that substitution by North American customers to alternative sources of supply" (Shehadeh, Tr. 3224-25). Additionally, the evidence introduced at the administrative proceeding showed that customers in North America have begun to use Chinese product to lower their costs; particularly, as the quality of the TiO2 produced in China has increased, customers have increased the amount of Chinese TiO2 they are purchasing (Turgeon, Tr. 2670).

66. The Cristal defendants deny the allegations in Paragraph 66 to the extent they apply to the Cristal defendants and respond that many of the allegations in Paragraph 66 are contradicted by the evidence in the FTC's administrative proceeding. In particular, customers in North America have started increasing their use of Chinese-made TiO2. The Cristal defendants also aver that they lack knowledge or information to respond to the remaining allegations in Paragraph 66 to the extent that they apply to other firms. To the extent they require a response, the Cristal defendants deny the remaining allegations in Paragraph 66, and specifically deny that Chinese TiO2 exports are unlikely to increase substantially for the foreseeable future. The evidence introduced at the administrative proceeding showed that Chinese sales of North

American rutile TiO2 were approximately 8% in 2016 even though Chinese producers had not yet established North American production facilities. The evidence also showed that Chinese imports of TiO2 into North America have increased by "approximately five times" between 2010 and 2016 (Shehadeh, Tr. 3220-21). Additionally, the evidence demonstrated that customers in North America have begun to use Chinese product to lower their costs; particularly, as the quality of the TiO2 produced in China has increased, customers have increased the amount of Chinese TiO2 they are purchasing (Turgeon, Tr. 2670).

67. The Cristal defendants deny the allegations in Paragraph 67 and respond that many of the allegations in Paragraph 67 are contradicted by the record evidence in the FTC's administrative proceeding. The Cristal defendants specifically deny that they cannot show cognizable efficiencies sufficient to rebut the FTC's evidence. The Cristal defendants and Tronox presented substantial, credible evidence at the administrative proceeding that showed the transaction is pro-competitive and "will lead to significant output-enhancing efficiencies" at both the pigment level (i.e., production of TiO2) and at the feedstock level, as well as "significant cost reductions" (Shehadeh, Tr. 3441-42), and that the output-enhancing efficiencies of this transaction will have a "direct effect" in terms of "customer[] benefit" (Shehadeh, Tr. 3443).

The evidence introduced at the administrative proceeding showed that Tronox publicly communicated to the market a realization of $100 million of EBITDA synergies by the end of year one, and $200 million by the end of year three after the close of the acquisition (Mancini, Tr. 2800). The Cristal defendants and Tronox, working with outside third parties like KPMG, have continued to perform confirmatory due diligence to pressure test these synergies and the evidence introduced at the administrative proceeding showed there is a "strong level of confidence that . . . Tronox could deliver these estimated synergies" (Mancini, Tr. 2802); indeed,

the evidence showed that confirmatory due diligence and pressure testing indicated that Tronox will very likely exceed the publicly communicated synergy numbers, in particular with respect to output expansions at Yanbu and Jazan (Mancini, Tr. 2795).

LIKELIHOOD OF SUCCESS ON THE MERITS, BALANCE OF EQUITIES, AND NEED FOR RELIEF

68. The Cristal defendants aver that Paragraph 68 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 68.

69. The Cristal defendants aver that Paragraph 69 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 69.

The Cristal defendants specifically deny that the relevant market is the "North American chloride TiO2 market" or the "North American rutile TiO2 market," which the FTC defines geographically to exclude Mexico. The Cristal defendants also deny that the acquisition will have anti-competitive effects in the market even as defined by the FTC because the evidence introduced at the administrative proceeding shows the objective of the acquisition is to increase the production of lower-cost TiO2 sold in the global market.

The Cristal defendants also specifically deny that substantial and effective entry or expansion in these markets would not offset anticompetitive effects because the evidence presented at the administrative proceeding showed the acquisition will not have anticompetitive effects. Moreover, the Cristal defendants respond that the FTC's allegations ignore the current state of competition in the market for TiO2, including fierce competition among producers, and the significant and increasing impact of low-cost Chinese competition.

The Cristal defendants deny that the efficiencies asserted by the defendants are insufficient to offset anticompetitive effects because the evidence presented at the administrative proceeding showed the acquisition will not have anticompetitive effects. Moreover, the Cristal defendants respond that the evidence presented at the administrative proceeding showed the acquisition will increase the production of TiO2 pigment and the production of TiO2 feedstock in the global market, lower Tronox's costs in producing TiO2 pigment, and generate hundreds of millions of dollars in cost-saving efficiencies over three years (Mancini, Tr. 2769-71, 2800).

70. The Cristal defendants aver that Paragraph 70 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 70. The Cristal defendants specifically deny that the acquisition is unlawful, that preliminary relief is warranted or necessary, and that substantial harm to competition would occur in the absence of any such relief. The Cristal defendants further state the FTC unreasonably delayed in bringing this request for the injunction, which the FTC now argues is necessary for maintaining the status quo. Because the acquisition contemplates the transfer of physical assets, including production plants and facilities, the FTC is incorrect that re-establishing the status quo ante would be difficult if not impossible. The allegations in Paragraph 70 also ignore that a "Circuit Court has never hesitated to unwind an unblocked merger if the law and facts warrant doing so . . . ." *United States v. AT&T Inc., et al.*, No. 17-2511-RJL (June 12, 2018), slip op. at 170.

71. The Cristal defendants aver that Paragraph 71 of the Complaint contains legal conclusions to which no response is required. To the extent a response is required, the Cristal defendants deny the allegations in Paragraph 71, specifically that any such requested relief is warranted, necessary, or in the public interest.

AFFIRMATIVE AND OTHER DEFENSES

The Cristal defendants assert the following defenses, without assuming the burden of proof on such defenses that would otherwise rest with the FTC:

1. The Complaint fails to state a claim upon which relief can be granted.

2. The relief sought is contrary to the public interest.

3. Plaintiff has unreasonably delayed its request for an injunction.

4. The Complaint fails to allege a plausible relevant product market.

5. The Complaint fails to allege a plausible relevant geographic market.

6. The Complaint fails to allege undue share in the relevant market.

7. The Complaint fails to allege any plausible harm to competition.

8. The Complaint fails to allege any plausible harm to any consumers.

9. The Complaint fails to allege any plausible harm to consumer welfare, and, in any event, the alleged harm to consumer welfare fails because the acquisition will result in output-enhancing synergies, which will benefit consumers.

10. New entry, expansion, and re-positioning by competitors can be timely, likely, and sufficient, such that it will ensure there will be no harm to competition or to consumer welfare.

11. Any attempt to increase price above a competitive level would be met with competition, eliminating any such price increase.

12. The combination of Tronox and the Cristal defendants' TiO2 businesses will be pro-competitive. The merger will result in substantial, cognizable, merger-specific efficiencies, cost savings, innovation, and other pro-competitive effects that will directly benefit consumers. These benefits greatly outweigh any and all purported anticompetitive effects.

13. Plaintiff has in its conduct of this investigation and lawsuit acted in a manner contrary to the Constitution of the United States, federal statutes, federal regulations, and/or the public interest.

14. The relief sought would violate defendants' constitutional right to due process.

15. The relief sought would contravene the federal Appointments Clause.

16. The relief sought would be arbitrary and capricious under the Administrative Procedure Act.

17. The Cristal defendants reserve the right to assert any other defenses as they become known to them.

PRAYER FOR RELIEF

WHEREFORE, having fully answered the Complaint, the Cristal defendants respectfully request that the Court: (1) deny the FTC's contemplated relief; (2) dismiss the Complaint in its entirety with prejudice; (3) award the Cristal defendants their costs of suit, including expert's fees and reasonable attorneys' fees, as may be allowed by law; and (4) award such other or further relief as the Court may deem just and proper.

Dated: July 19, 2018

Respectfully submitted,

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