UNITED STATES OF AMERICA BEFORE THE FEDERAL TRADE COMMISSIO OFFICE OF ADMINISTRATIVE LAW JUDGES

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ORIGINAL

In the Matter of

Tronox Limited a corporation,

National Industrialization Company (TASNEE) a corporation,

National Titanium Dioxide Company Limited (Cristal) a corporation,

And

Cristal USA Inc. a corporation. Docket No. 9377

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INTRODUCTION

At the trial of this case, Complaint Counsel presented testimony from TiO2 customers and producers—including Respondents' own employees. We presented contemporaneous documents from Respondents' files. And we presented expert testimony based on Respondents' own data, documents, and testimony. All of that evidence was consistent in demonstrating that:

- North American customers have a strong preference for chloride TiO2 and are willing to pay substantially higher prices for it;
- 2. North American TiO2 customers are unable to defeat those higher prices by buying chloride TiO2 outside North American and bringing it home;
- 3. The merger will create the largest supplier of chloride TiO2 in North America, resulting in a significant increase in concentration. Indeed, the top two firms (Tronox and Chemours) will control almost 75% of the market;
- Tronox and Cristal have reduced output in the past, recognize that doing so results in higher prices for chloride TiO2, and will have even greater incentives to reduce output if they merge;
- 5. The merger will make it easier for the remaining TiO2 suppliers to tacitly coordinate in a market with a history of coordination;
- 6. Entry or expansion that would counteract the competitive harm is unlikely because of the time needed, expense, and significant barriers to entry; and
- 7. Any efficiencies from the merger are highly uncertain, and unlikely to benefit North

 American customers. Even Respondents' CEO acknowledges that any efficiencies from
 the merger will come in foreign markets.

This case goes to the heart of what Section 7 of the Clayton Act was intended to prohibit. The merger will result in a significant increase in concentration in a market with a history of anticompetitive conduct, making such conduct easier and more likely to harm customers in the future. Complaint Counsel's strong *prima facie* case established a presumption of anticompetitive effects, and then bolstered that presumption with additional evidence. By contrast, Respondents have relied on self-serving testimony from Tronox employees, and paid expert testimony that is inconsistent with the fact testimony and Respondents' own documents. This Court should block the proposed merger as unlawful under Section 7 of the Clayton Act and Section 5 of the FTC Act.

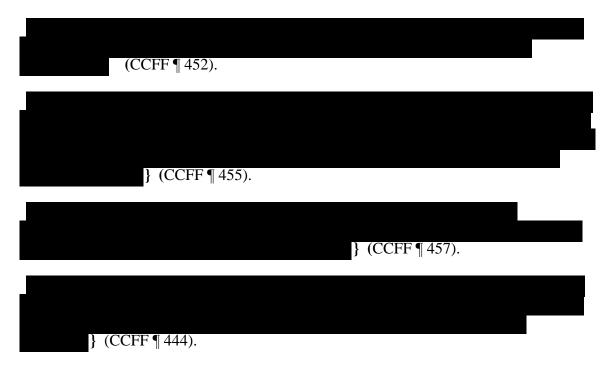
Indeed, the evidence showed that this merger will have direct, and predictable, anticompetitive effects. But the Court does not need to try to predict what will happen if this merger goes through; Tronox has already said what will happen: prices will go up. It said so directly to one of its customers, PPG. As PPG's witness Paul Malichky testified at trial, he met with two Tronox executives—John Romano and Ian Mouland—shortly after the merger was announced. Mr. Romano told him directly that Tronox planned to increase PPG's prices:

- Q. And what specifically did Mr. Romano tell you about what they were planning to do with price?
- A. They were planning on raising the Cristal price at PPG. After the -- and let me -- after the transaction is complete, obviously, but after the transaction, they were going to raise the Cristal price.
- Q. And did Mr. Romano explain why?
- A. We had a long conversation about that that day and we've had other conversations with him. And it relates to market discipline.

- Q. What do you mean by "market discipline"?
- A. Market discipline, as the way it was explained to me during that meeting and other meetings, is to be able to sell the product at a reasonable price and modulate production accordingly, and Cristal didn't have market discipline.
- Q. So what specifically did Mr. Romano tell you about Cristal's behavior in the market?
- A. He used words like "give it away." They were giving it away. He thought their price was too low in the market.¹

(CCFF ¶ 699 (Malichky, Tr. 280–81)). Notably, although both Mr. Romano and Mr. Mouland testified at trial, neither contradicted or rebutted any of Mr. Malichky's testimony about the meeting. (CCFF ¶ 712).

Moreover, Tronox's statements to PPG are consistent with Tronox's business strategy in general. Numerous Tronox documents show that Tronox *avoids* price competition with other TiO2 suppliers to prevent such competition from lowering prices in the market:



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 $^{^1}$ Mr. Malichky's testimony tracked a contemporaneous internal email that he sent to his supervisor at PPG. (CCFF \P 710).

This merger is consistent with that strategy. Indeed, Tronox is well aware that its acquisition of Cristal will reduce competition in the market—to the benefit of all TiO2 suppliers. Just after the acquisition was announced, Tom Casey and Peter Huntsman (the Chairman of Tronox competitor Venator) congratulated each other on the deal, noting that it would benefit not only Tronox, but all of the other TiO2 competitors as well. (CCFF ¶ 706).

Respondents cannot rebut Complaint Counsel's *prima facie* case. Instead, they primarily argue that the anticompetitive effects will be outweighed by efficiencies. But their claimed efficiencies are nothing more than self-serving statements and assumptions from Tronox executives. They do not document any alleged efficiencies with actual evidence. Nor can they show that any alleged efficiencies would benefit customers, and in particular *North American* customers. By their own admission, most of their alleged output improvements would occur at plants in Saudi Arabia that export little to North America. Even Tronox's CEO admits that few, if any, of Tronox's proposed efficiencies would flow to customers here: "[T]he synergies that are tied to a geographic location are the operational synergies . . . and I would agree with you that the overwhelming majority of those synergies are related to ex – you know, non-U.S. assets." (CCFF ¶ 1011). None of these alleged efficiencies can overcome the substantial likely anticompetitive harm from the merger.

Likewise, Respondents' argument that TiO2 producers based in China have the capability to offset the competitive harm from the Acquisition is contrary to the evidence. The evidence shows that Chinese TiO2 does not have a meaningful competitive presence in North America today, that there is very little chloride TiO2 produced in China, that China-based producers have struggled to operate chloride TiO2 facilities, that Chinese chloride TiO2 does not meet the quality standards of North American customers for most applications, and that North American

customers are unable to turn to TiO2 produced in China to defeat a price increase. Therefore, entry or expansion by Chinese TiO2 producers is unlikely to offset the competitive harm from the acquisition.

As a result, Complaint Counsel asks this Court for a ruling that the Proposed Acquisition, if consummated, would violate Section 5 of the FTC Act and Section 7 of the Clayton Act and for an Order requiring that Tronox and Cristal cease and desist from consummating the Proposed Acquisition.

ARGUMENT

On February 21, 2017, Tronox agreed to acquire Cristal from National Industrialization Company, Cristal's parent company in Saudi Arabia, in a transaction valued at \$2.3 billion.² The high market share and concentration levels establish the Acquisition as presumptively unlawful. *See United States v. Phila. Nat'l Bank*, 374 U.S. 321, 363 (1963); *In re Polypore Int'l, Inc.*, 150 FTC 586, *23 (2010); *see also FTC v. H.J. Heinz Co.*, 246 F.3d 708, 715 (D.C. Cir. 2001); *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 115 (D.D.C. 2016) (*Staples 2016*); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 52 (D.D.C. 2015). Complaint Counsel has presented evidence that the relevant market is primed for coordination, that the Acquisition makes coordination more likely, and that the Acquisition also increases Tronox's incentives to suppress output on its own, bolstering that presumption.

Section 7 of the Clayton Act prohibits mergers or acquisitions "the effect of [which] may be substantially to lessen competition, or to tend to create a monopoly" in "any line of commerce or . . . activity affecting commerce in any section of the country." 15 U.S.C. § 18. "As the statutory language suggests, Congress enacted Section 7 to curtail anticompetitive harm in its incipiency." *Polypore*, 150 FTC at *8 (citing *Chicago Bridge & Iron Co. v. FTC*, 534 F.3d 410,

² The consideration from Tronox includes cash of \$1.7 billion and a 24% interest in the combined company.

423 (5th Cir. 2008)). "Congress used the words 'may be substantially to lessen competition' . . . to indicate that its concern was with probabilities, not certainties." Heinz, 246 F.3d at 713 (quoting Brown Shoe Co. v. United States, 370 U.S. 294, 323 (1962)); Staples 2016, 190 F.

Supp. 3d at 115; see California v. Am. Stores, 495 U.S. 271, 284 (1990) ("Section 7 itself creates a relatively expansive definition of antitrust liability: To show that a merger is unlawful, a plaintiff need only prove that its effect 'may be substantially to lessen competition."). As a result, "certainty, even a high probability, need not be shown." FTC v. Elders Grain, Inc., 868 F.2d 901, 906 (7th Cir. 1989). Instead, an acquisition violates Section 7 if it "create[s] an appreciable danger of [collusive practices] in the future. A predictive judgment, necessarily probabilistic and judgmental rather than demonstrable, is called for." Heinz, 246 F.3d at 719 (quoting Hosp. Corp. of Am. v. FTC, 807 F.2d 1381, 1389 (7th Cir. 1986)) (second alteration in original). Where uncertainty exists as to the likelihood of harm, "doubts are to be resolved against the transaction." Elders Grain, 868 F.2d at 906; see Brown Shoe, 370 U.S. at 323.

Courts often analyze whether an acquisition creates a danger of anticompetitive consequences by determining "(1) the 'line of commerce' or product market in which to assess the transaction, (2) the 'section of the country' or geographic market in which to assess the transaction, and (3) the transaction's probable effect on competition in the product and geographic markets." *FTC v. Staples, Inc.*, 970 F. Supp. 1066, 1072 (D.D.C. 1997) (*Staples 1997*); *see Polypore*, 150 FTC at *9. Complaint Counsel may show "undue concentration in the market for a particular product in a particular geographic area." *FTC v. CCC Holdings Inc.*, 605 F. Supp. 2d 26, 36 (D.D.C. 2009) (quoting *United States v. Baker Hughes Inc.*, 908 F.2d 981, 982 (D.C. Cir. 1990)); *see also Staples 2016*, 190 F. Supp. 3d at 115; *Sysco*, 113 F. Supp. 3d at 23. Such a showing "entitles the government to a presumption that the merger will substantially

lessen competition." *Staples 2016*, 190 F. Supp. 3d at 115; *see Polypore*, 150 FTC at *9. The burden of production for rebutting that presumption then shifts to Respondents. *See Heinz*, 246 F.3d at 715. Because the Third Circuit's decision in *Valspar*³ and the Maryland District Court's decision in *In re Titanium Dioxide Antitrust Litigation*⁴ have already established that the market is prone to anticompetitive conduct, Respondents' burden is substantial. *See Elders Grain*, 868 F.2d. at 906 (explaining that a history of collusion makes an acquisition unlawful in absence of "special circumstances").

I. BACKGROUND

A. The Proposed Transaction and The Merging Parties

On February 21, 2017, Tronox announced a definitive agreement to acquire Cristal's titanium dioxide business for \$1.673 billion in cash plus Class A ordinary shares representing 24 percent ownership in Tronox post-transaction. (CCFF \P 2). The transaction, including equity, was valued at \$2.215 billion on February 17, 2017, the last trading day prior to the public announcement of the Proposed Transaction. (CCFF \P 3).

Tronox is a publicly traded company headquartered in Stamford, Connecticut. (CCFF ¶ 4). Tronox owns and operates three chloride TiO2 plants, which are located in Hamilton, Mississippi, Botlek, Netherlands, and Kwinana, Australia. (CCFF ¶ 5). In addition, Tronox owns and operates titanium feedstock mining and smelting assets to produce titanium slag in South Africa, as well as titanium feedstock mining assets and a titanium feedstock plant producing synthetic rutile in Chandala, Australia. (CCFF ¶¶ 6–7).

Three legal entities collectively comprise "Cristal." (CCFF ¶ 8). Cristal USA Inc. is a Delaware corporation and an indirectly owned subsidiary of Saudi Arabian companies The

³ Valspar Corp. v. E. I. Du Pont De Nemours & Co., 873 F.3d 185 (3d Cir. 2017).

⁴ In re Titanium Dioxide Antitrust Litig., 959 F. Supp. 2d 799 (D. Md. 2013).

National Industrialization Company ("Tasnee") and The National Titanium Dioxide Company. (CCFF ¶ 8). Cristal owns and operates five chloride TiO2 plants, two of which are located in Ashtabula, Ohio, one in Yanbu, Saudi Arabia, one in Stallingborough, United Kingdom, and one in Bunbury, Australia. (CCFF ¶ 9). Cristal owns and operates three sulfate TiO2 plants, located in Thann, France, Bahia, Brazil, and its Tikon plant located in China. (CCFF ¶ 10). Cristal also owns and operates titanium feedstock mining assets in Australia, formerly known as Bemax, and a titanium feedstock mining asset in Paraiba, Brazil. (CCFF ¶ 11–12). In addition, Cristal owns a titanium feedstock smelter in Jazan, Saudi Arabia {

{ (CCFF ¶ 13). Besides Tronox and Cristal, the only other producers of TiO2 in North America are Chemours, Venator and Kronos. (CCFF ¶ 376).

B. Titanium Dioxide (TiO2)

TiO2 is an essential pigment used to add whiteness, brightness, opacity, and durability to paints, industrial and automotive coatings, plastics, and other specialty products. (CCFF ¶ 14). The primary customers of TiO2 include paint and coatings manufacturers and plastic producers, who account for approximately 60% and 25% of the TiO2 consumed in North America, respectively. (CCFF ¶ 15). Paper and other specialty products, such as ink, food, cosmetics, and pharmaceuticals, use the remainder. (CCFF ¶ 15). For nearly all customers, there are no commercially reasonable substitutes for TiO2. (CCFF ¶ 16).

TiO2 is produced from titanium-containing ores through one of two manufacturing processes that extract TiO2 from ore: (1) the chloride process that uses chlorine; and (2) the sulfate process that uses sulfuric acid. (CCFF ¶ 17). The chloride process generally produces higher quality TiO2 with a bluer tint, compared to a yellower tint for TiO2 manufactured from

the sulfate process. (CCFF ¶ 18). Chloride TiO2 is more durable than sulfate TiO2. (CCFF ¶ 18). The vast majority of TiO2 sold to and consumed by North American customers is chloride TiO2.⁵ (CCFF ¶ 19). Virtually all of the TiO2 production capacity in North America is for chloride TiO2—the only sulfate TiO2 plant in North America is a small Kronos plant in Quebec that is co-located with a larger Kronos chloride plant. (CCFF ¶¶ 376, 379).

II. The Proposed Acquisition Is Presumptively Unlawful in a Market for Sales of Chloride TiO2 to North American Customers

Tronox's Proposed Acquisition of Cristal is presumptively unlawful. It would give the combined firm a market share of { } percent of sales of chloride TiO2 to customers in North America, and would result in just two firms (Tronox and Chemours) accounting for { } percent of sales of chloride TiO2 in North America, thereby substantially increasing market concentration in the sale and manufacture of chloride TiO2 to North American customers. (CCFF ¶ 391).

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⁵ TiO2 can also have two different crystal structures—rutile and anatase. (CCFF \P 20). Rutile TiO2 and anatase TiO2 have different physical characteristics and applications and are not substitutes for any use relevant to this matter. (CCFF \P 20).

A. The Relevant Market Is the Sale of Chloride TiO2 to North American Customers

A relevant market has two components, reflecting the different dimensions of where competition occurs: (1) the relevant product market and (2) the relevant geographic market. "The 'relevant product market' identifies the product and services with which the defendants' products compete," while "the 'relevant geographic market' identifies the geographic area in which the defendants compete in marketing their products or services." *CCC Holdings*, 605 F. Supp. 2d at 37.

Courts often rely on the principles expressed in the Federal Trade Commission and U.S. Department of Justice Horizontal Merger Guidelines ("Merger Guidelines") to define the market. E.g., Heinz, 246 F.3d at 716 n.9, 718; CCC Holdings, 605 F. Supp. 2d at 37. The Merger Guidelines define a relevant market in economic terms, by asking whether a monopolist of a particular group of products in a specified geography could profitably impose a "small but significant non-transitory increase in price" ("SSNIP")—typically five percent—over those products, or whether customers switching to alternative products or to product outside the geographic market would render such a price increase unprofitable. Merger Guidelines §§ 4.1.1, 4.1.2; see also CCC Holdings, 605 F. Supp. 2d at 38 n.12.7 Applied to the facts here, the "hypothetical monopolist test" asks whether a single firm controlling all sales of chloride TiO2 to North American customers could profitably raise prices by five to ten percent. As the record evidence shows, the answer is a resounding yes.

Consistent with the record described below, Complaint Counsel's economic expert, Dr. Nicholas Hill, conducted an empirical analysis and found that a hypothetical monopolist of all

⁶ "The Merger Guidelines are not binding, but the Court of Appeals and other courts have looked to them for guidance in previous merger cases." *Sysco*, 113 F. Supp. 3d at 38 (citing *Heinz*, 246 F.3d at 716 n.9).

⁷ Courts frequently use the hypothetical monopolist test in defining markets. *FTC v. Penn State Hershey Med. Ctr.*, 838 F.3d 327, 338 (3d Cir. 2016); *Staples 2016*, 190 F. Supp. 3d at 121-22; *Sysco*, 113 F. Supp. 3d at 33.

chloride TiO2 sales to customers in North America would find it profitable to impose a SSNIP.⁸ (CCFF ¶¶ 134–42, 323–29). This analysis, combined with documents and testimony described below and in Complaint Counsel's Proposed Findings of Fact, confirms that the sale of chloride TiO2 to North American customers is a properly defined relevant market.

1. The Relevant Product Market is Chloride TiO2

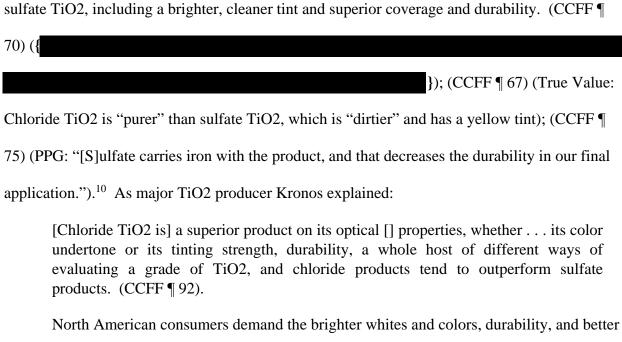
The relevant product market refers to the "product and services with which the defendants' products compete." *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 193 (D.D.C. 2017) (citation omitted), *aff'd*, 855 F.3d 345 (D.C. Cir. 2017). To determine the scope of the product market, courts examine "[w]hether goods are 'reasonable substitutes,'" which "depends on two factors: functional interchangeability and cross-elasticity of demand." *Sysco*, 113 F. Supp. at 25. Therefore, "a relevant market cannot meaningfully encompass [an] infinite range [of products]. The circle must be drawn narrowly to exclude any other product to which, within reasonable variations in price, only a limited number of buyers will turn." *Id.* at 26 (quoting *Times-Picayune Publ'g Co. v. United States*, 345 U.S. 594, 612 n.31 (1953)) (modifications in original). The key question for defining a product market is whether customers in North America would substitute sulfate TiO2 for chloride TiO2 in sufficient volumes to render a SSNIP unprofitable. *Merger Guidelines* § 4.1.1. The evidence shows that the answer to that question is clearly no.

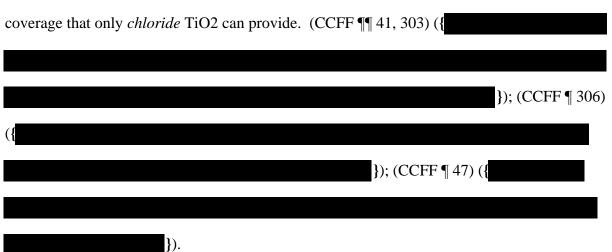
At trial, customers uniformly testified that sulfate TiO2 is not an effective substitute for chloride TiO2 in North America. Chloride TiO2 has distinct performance advantages over

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⁸ TiO2 has two distinct crystal forms, rutile and anatase. It is undisputed that anatase TiO2 is used in different products than rutile TiO2 and is not at issue in this case. (CCFF ¶¶ 20, 333–36).

⁹ Courts routinely rely upon the testimony of customers and other third-party market participants to gain an understanding of the market. *Staples 1997*, 190 F. Supp. at 100 (citing customer testimony as evidence of pricing); *Sysco*, 113 F. Supp. 3d at 32 (using customer testimony as evidence of the proper product market). Likewise, the *Merger Guidelines* also recognize the importance of customer testimony on a host of issues, including "their own





Due to chloride TiO2's superior performance characteristics and the demands of North American consumers, North American TiO2 customers—such as paint and coatings companies and plastics manufacturers—overwhelmingly buy chloride TiO2, and do not consider sulfate TiO2 to be suitable substitute. Sherwin-Williams, which manufactures both architectural and

purchasing behavior and choices," "how they would likely respond to a price increase," and "the relative attractiveness of different products and suppliers." *Merger Guidelines* § 2.2.2.

¹⁰ See also, e.g., (CCFF ¶¶ 18, 70) ({ (CCFF ¶ 74) (Kronos: sulfate TiO2 produces a yellowish undertone compared to chloride TiO2, which has "a brighter white to it"); (CCFF ¶ 75) (Sherwin-Williams: "[T]he chemistry of sulfate TiO2 may result in less coverage and less durability than chloride TiO2").

industrial coatings, testified that sulfate TiO2 is unsuitable for its products in North America because it does not result in consistent brightness of color or consistent whites, and that Sherwin-Williams has been "unwilling to compromise the quality of [its] goods" by using sulfate TiO2.

(CCFF ¶ 51).¹¹ Likewise, {

| (CCFF ¶¶ 57, 129). {
| (CCFF ¶¶ 70, 72, 130). Plastics |
| manufacturer Deceuninck North America ("DNA") testified that it has always used exclusively chloride TiO2 because purity and quality are of paramount importance in DNA's products.

(CCFF ¶ 48).¹²

Customers have investigated whether they could substitute sulfate TiO2 for chloride

TiO2, and found that they could not. At trial, {

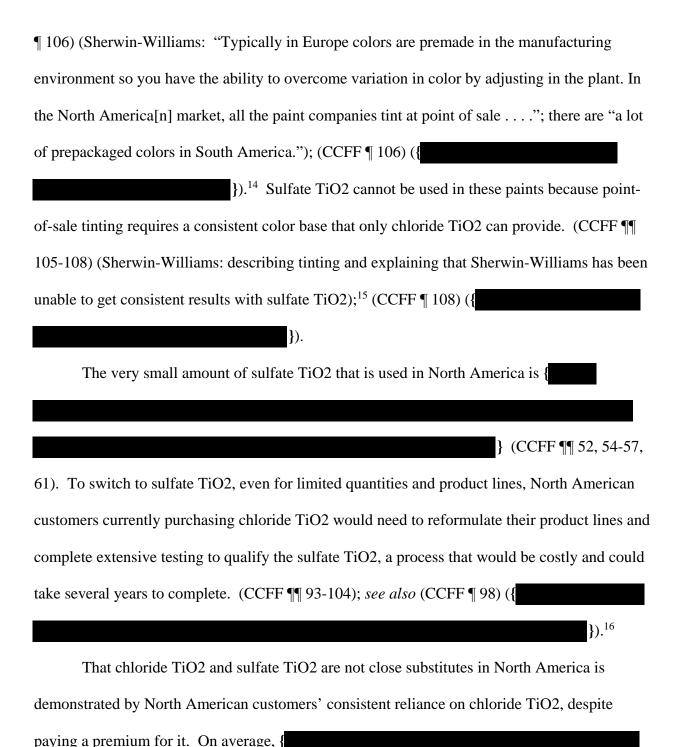
| (CCFF ¶ 53). {

| 34). | (CCFF ¶ 52).

Additionally, unlike in other parts of the world, the vast majority of the architectural paint sold in North America is tinted (*i.e.*, mixed into a specific color) at the point of sale. *See* (CCFF

¹¹ Sherwin-Williams further explained that in other regions of the world, where quality standards are different than in North America, sulfate TiO2 has been suitable for use in its products. (CCFF ¶ 51).

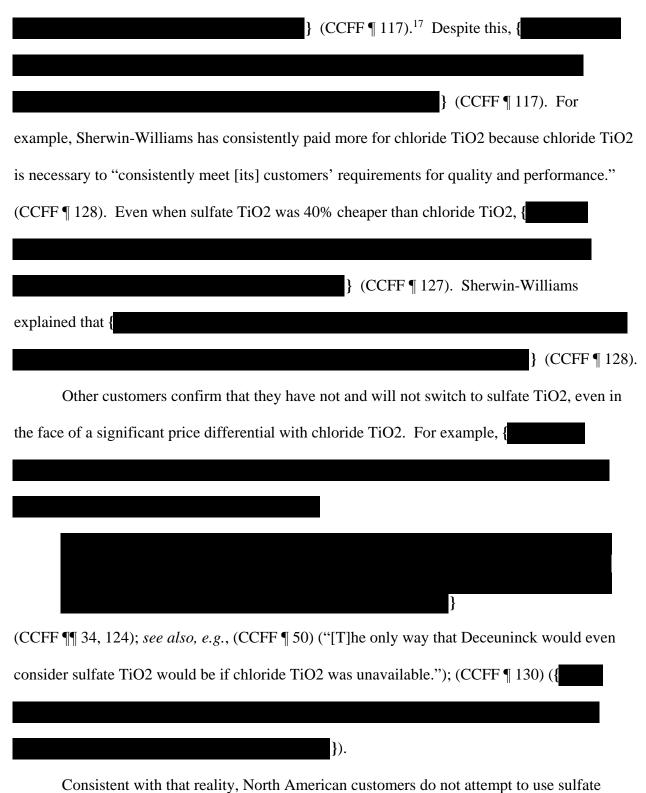
¹² See also, e.g., (CCFF ¶ 90) (
| 13 |
| (CCFF ¶ 87). |
| (CCFF ¶ 132).



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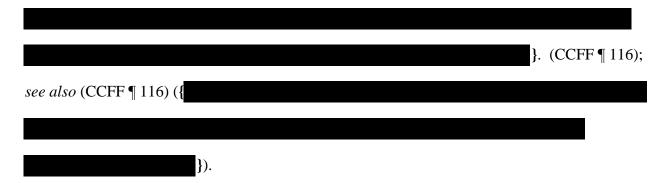
¹⁴ See (CCFF ¶ 105) (Masco: explaining tint system for Behr paints and noting that majority of paints Masco sells are tinted in-store).

¹⁵ See also (CCFF ¶ 108) (Sherwin-Williams: explaining that point-of-sale tinting requires chloride TiO2 in order "to achieve the color palette reliably that the customers expect, it has to be a bright white, a clean white product."). ¹⁶ See also (CCFF ¶ 94) (Kronos: testifying that it is "pretty rare" for customers to reformulate from chloride to sulfate TiO2, and that doing so "would entail a significant amount of work, a lot of trials, a complete reformulation of their product and grade ").



TiO2 prices as leverage to negotiate for better chloride TiO2 pricing. As {

 $^{^{17}}$ See also (CCFF ¶ 112) (Sherwin-Williams: chloride TiO2 was typically more expensive than sulfate TiO2 from 2012 to 2017, with sulfate TiO2 as much as 40% cheaper.).



Tronox itself acknowledges the advantages of chloride TiO2, the dominance of chloride TiO2 in the North American market, and that sulfate TiO2 is not a close substitute for chloride TiO2 in North America. A 2015 Tronox presentation states:



(CCFF \P 59). Tronox talking points for a 2014 presentation described the limited threat posed by sulfate TiO2: {

} (CCFF ¶ 32); see also (CCFF ¶ 119)

(stating during an investor call that major North American TiO2 customers' "ability to substitute sulfate for chloride . . . is limited by their need to maintain the quality levels of their own products."). Indeed, during a call with investors, Tronox's then-CEO rejected the idea that high chloride TiO2 prices had caused customers to switch to sulfate TiO2 in North America:

In various markets, the [] customers have responded to what happened on pricing a year ago in [] different ways. For example in the North American market, it was 95% or 98%, or some [] very, very high number chloride [.] [I] t remains, essentially the same [] number market share for chloride. That was true when prices were over []\$4,000 a ton, it is true now."

(CCFF ¶ 119 (Tronox Q4 2013 Earnings Call)). During a 2013 question and answer session with investors, Tronox reiterated that sulfate TiO2 was not a meaningful substitute for chloride TiO2 in North America:



(CCFF ¶ 120) (emphasis added).

Likewise, the other major producers also recognize the important differences between chloride and sulfate TiO2, and that customers in North America would not substitute between them in most applications. E.g., (CCFF ¶ 41) (Kronos: explaining that North American customers have an "overwhelming preference" for chloride TiO2 because it is needed to achieve the necessary product quality); (CCFF ¶ 113) ({ }

As all of the foregoing evidence makes clear, sulfate TiO2 is not a suitable substitute for chloride TiO2 for North American customers.

}).

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 $^{^{18}}$ At trial, Tronox's Vice President of Investor Relations testified that statements to investors are made on behalf of Tronox as a whole and that the company uses its best efforts to ensure that its statements to investors are accurate, complete, and not misleading. (CCFF ¶ 462).

2. The Relevant Geographic Market is North America

The Supreme Court has defined the relevant geographic market as the region "in which the seller operates, and to which the purchaser can practicably turn for supplies." *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 327 (1961); *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 49 (D.D.C. 1998) (citation omitted). The Court further elaborated in *United States v. Philadelphia National Bank* that the "proper question" is "not where the parties do business or even where they compete, but where, within the area of competitive overlap, the effect of the merger on competition will be direct and immediate." 374 U.S. at 357.

With those principles in mind, the Commission has held that where "suppliers can set prices based on customer location, and customers cannot avoid targeted price increases through arbitrage," the relevant geographic market may be defined around the locations of customers, not suppliers. *In re Polypore Int'l Inc.*, 150 FTC 586 at *16 (2010), *aff'd sub nom.*, *Polypore Int'l*, *Inc. v. FTC*, 686 F.3d 1208 (11th Cir. 2012) (applying *Merger Guidelines* § 4.2.2).

That is the case here. As in *Polypore*, TiO2 producers know their customers' locations, and take advantage of that by pricing regionally (*i.e.*, price discriminate). Moreover, a SSNIP by a hypothetical monopolist controlling all sales of chloride TiO2 to North American customers¹⁹ would not be defeated by those customers turning outside of North America, through arbitrage, to purchase chloride TiO2. (*See* CCFF ¶¶ 138, 139, 640).

i. TiO2 Suppliers Price Discriminate Based on Customer Location

For geographic price discrimination to be feasible, suppliers must be able to distinguish among customers based on customer location. *Merger Guidelines* § 3. Here, it is undisputed

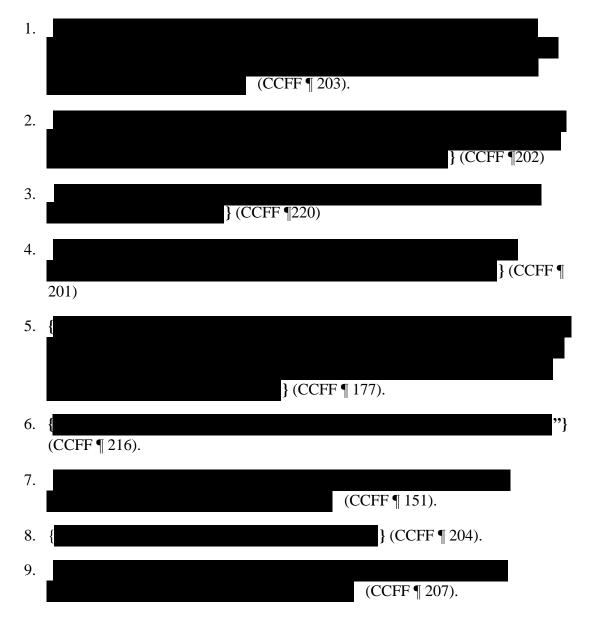
¹⁹ The North American market is defined as the United States and Canada. Market participants typically group Mexico in their Latin American markets, in part because TiO2 prices and purchasing decisions there are more similar to those in other Latin American countries than in the United States and Canada. *See*, *e.g.*, (CCFF ¶¶ 139-143). Significantly, TiO2 produced in Mexico at Chemours's Altamira facility, for example, that is sold to North American customers is included in the relevant market for market definition purposes.

that North American chloride TiO2 suppliers know the locations of their customers and, indeed, deliver TiO2 to them, typically pricing on a delivered basis. For example, paint maker Masco testified at trial that { }. (CCFF ¶ 167). Producers and other customers { }. *See*, *e.g.*, (CCFF ¶¶ 165-171). Chloride TiO2 producers then exploit their awareness of customer location to charge different prices to customers in different regions based on the market dynamics in each region a fact that industry participants broadly acknowledge. ²⁰ Ian Mouland, Tronox's vice president of sales for the Americas, testified at trial—under questioning from his own counsel—that prices among regions { "} to pricing across regions. (CCFF ¶ 151). He further acknowledged that pricing to multinational customers doing business in multiple regions { } (CCFF ¶ 200). John Romano, Tronox's Chief Commercial Officer, explained that { } (CCFF ¶¶ 151-54). Cristal similarly testified that TiO2 pricing is "driven by supply and demand dynamics in ... particular [geographic] regions."21 (CCFF ¶ 157) (Stoll Tr. 2044)). Both Tronox and Cristal also set See, e.g., (CCFF ¶¶ 113; 150-159). ²⁰ The ability to charge different prices in different geographic regions shows that suppliers are able to price

²⁰ The ability to charge different prices in different geographic regions shows that suppliers are able to price discriminate based on customer location. *Polypore*, 150 FTC at *16 & n.28.

²¹ In the price-fixing litigation, Cristal's former global accounts manager testified that { } (CCFF ¶ 225).

Examples of internal documents from Respondents, including many presented at trial, corroborate this testimony about differential regional pricing.

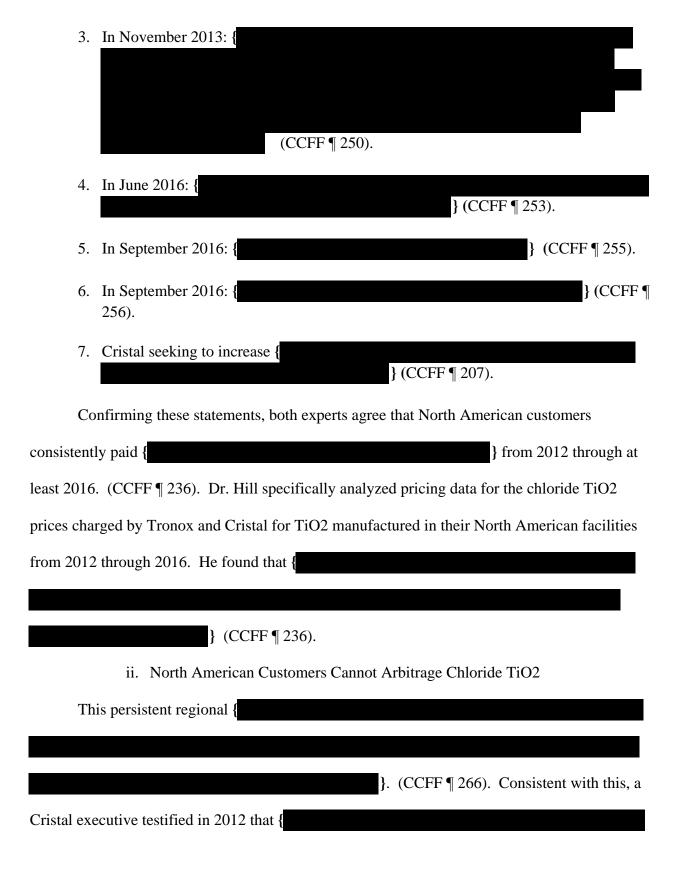


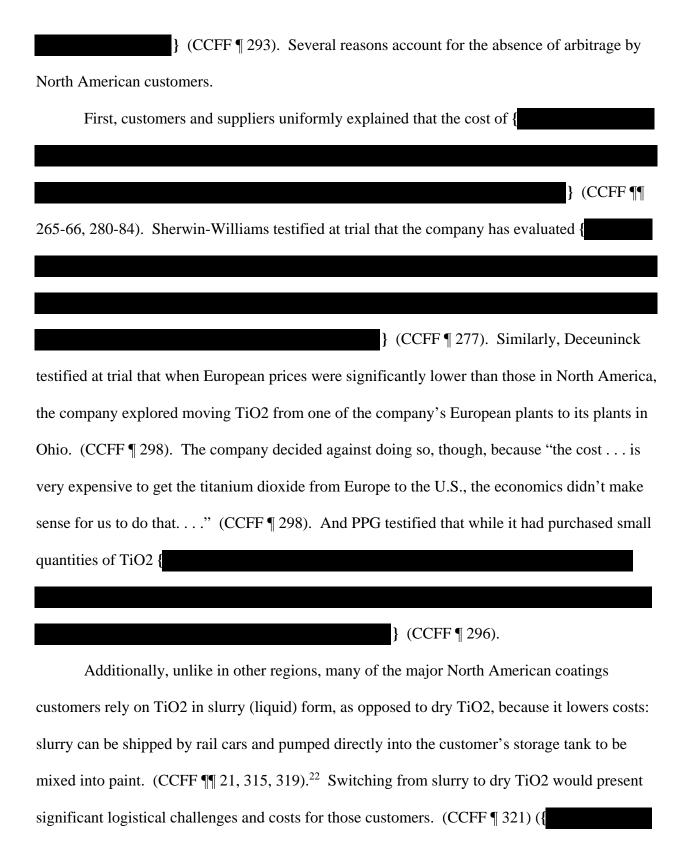
Consistent with Respondents' internal documents, Tronox's then-CEO Tom Casey told investors: "[A]re there different prices in the regional markets in which we do business? The answer to that question is yes. The European and Asian market prices and the Latin American market prices are relatively closely bunched, with the North American price staying somewhat higher." (CCFF ¶ 252). In another investor call, he commented that "[w]e do not see that exports

from China or from Europe are playing a material role in the competitive balance, particularly in the North American market." (CCFF \P 204). And in response to a query from an analyst about how North American prices compared to those elsewhere, he commented that "[o]ur view as I said . . . is that prices in Europe and in Asia were lower than prices in the United States and the other North American markets." (CCFF \P 257).

Although regional prices vary relative to one another, over a five-year period, TiO2 prices in North America remained significantly higher than those elsewhere in the world. (CCFF ¶¶ 239–58). Respondents have consistently recognized that fact:

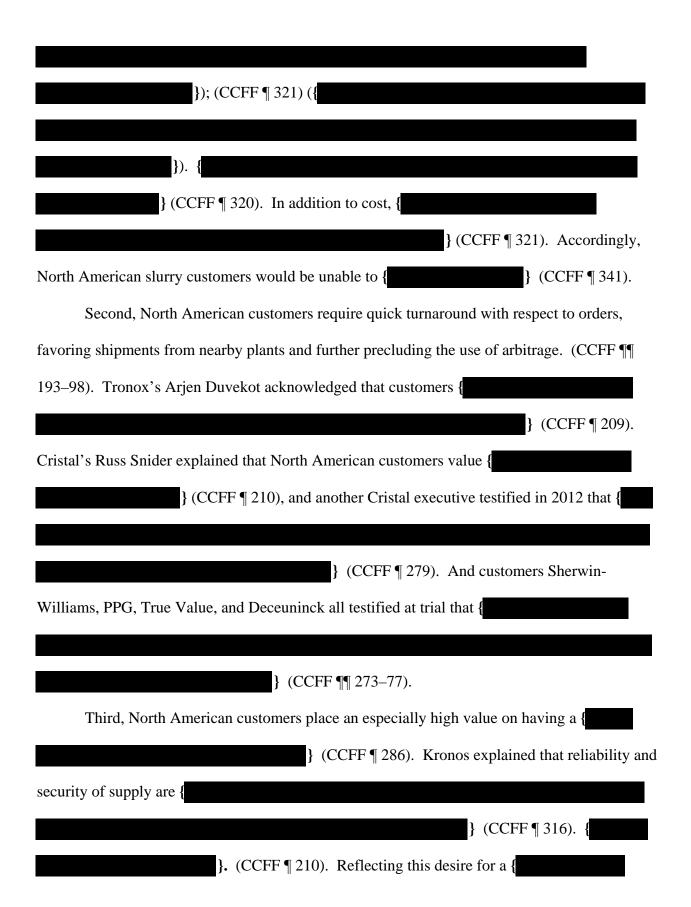
- 1. } (CCFF ¶ 248).
- 2. In March 2013: "Markets in North America are still under pressure to decline since they are so much higher than other regions of the world, however, we are trying to hold on to the current price levels." (CCFF ¶ 249).

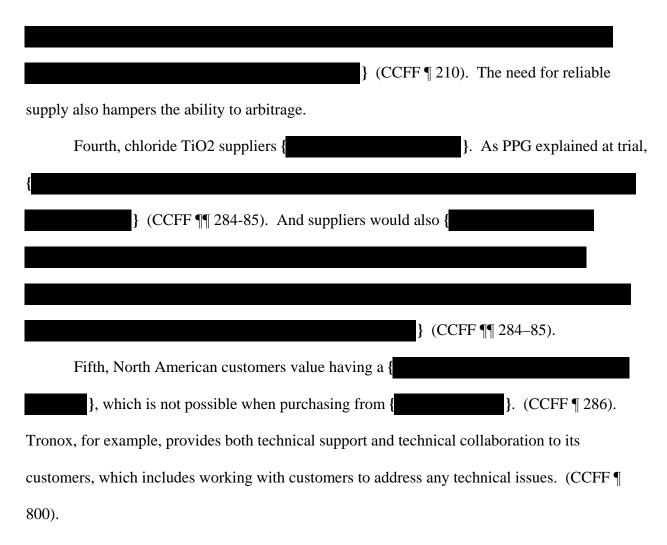




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(CCFF ¶¶ 22, 320–21).





Finally, as explained above, North American customers generally require high quality chloride TiO2, but the amount available outside North America is limited, further restricting the ability of North American customers to engage in arbitrage. (CCFF $\P\P$ 301–04).

The same analytical framework employed by Complaint Counsel to assess the scope of the geographic market was applied in the Initial Decision in *Polypore*. FTC Dkt. No. 9327, Initial Decision (FTC, Mar. 1, 2010). There, the Initial Decision (and subsequent decisions) defined a North American market based on customer location, as opposed to the global market urged by the Respondents. *Id.* at 239–43. That decision rested on evidence showing that Respondents were able to price discriminate based on customer location, and that North

American customers were unable to turn to foreign suppliers, for many of the same reasons North American customers cannot do so here, to defeat a discriminatory price increase through arbitrage. *Id.* The Commission affirmed, holding that where "customers cannot avoid targeted price increases through arbitrage, suppliers may be able to exercise market power over customers located in a particular geographic region, even if a price increase to customers located in other geographic regions would be unprofitable." *Polypore*, 150 FTC 586 at *16. The evidence supports a similar finding here.

When confronted with the real-world evidence and *Guidelines* analysis offered by Complaint Counsel, Respondents seek to conflate the issues. Respondents first point to trade flows (i.e., that TiO2 is shipped internationally) as evidence of a global chloride TiO2 market. Resps.' Pretrial Br. at 16–19. But the existence of international trade does not define an antitrust market. Antitrust markets are based on whether customers can substitute to avoid a SSNIP. On that question, consistent with *Merger Guidelines* § 4.2.2, Complaint Counsel's market already includes *all* sales of chloride TiO2 delivered to North American customers from suppliers located *anywhere* in the world. (CCFF ¶ 141). Imports account for only { }% of such sales, belying Respondents' contention that imports to North America are competitively significant.²³ (CCFF ¶ 141). And as discussed above, the significant and persistent gaps in price between

266, 635).

²³ Respondents also claim that imported TiO2 accounts for over 24% of North American sales, Resps.' Pretrial Br. at 17, but this figure includes anatase TiO2, which Respondents concede is not at issue in this case. Resps.' Pretrial Br. at 4, n.1. As Dr. Hill calculated, rutile TiO2 imports comprise about []% of North American consumption. (CCFF ¶ 141).

Moreover, as discussed further below, Dr. Hill assessed the responsiveness of both imports and exports (i.e., export repatriation) to chloride TiO2 price changes by analyzing past responses to price changes in North America. Consistent with the evidence of sustained pricing differences, he found {

} (CCFF ¶¶ 641–45, 667).

Second, Respondents claim that North American prices are "correlated" and "co-integrated" with global prices, i.e., that prices move together. Resps.' Pretrial Br. at 19-20. But again, the antitrust question—embodied in the hypothetical monopolist test—is whether customers change their purchases in response to price changes. Price movements say nothing about that. Indeed, based on price movements, the same co-integration analysis performed by Respondents' economic expert would show that propane and crude oil are in the same market, but that is clearly erroneous. (CCFF ¶ 359). And in any event, Tronox's Vice President of Sales for the Americas testified that prices among regions {

} to pricing.²⁴ (CCFF ¶ 151).

Finally, Respondents' contend that the FTC erred in applying the hypothetical monopolist test, by "giv[ing] the hypothetical monopolist control over supply both inside *and outside* the proposed relevant market." Resps.' Pre-trial Br. at 22 (emphasis in original). That is wrong. The *Merger Guidelines* specify that in a market based on the location of customers, as here, the hypothetical monopolist is defined as "the only present or future seller of the relevant product to customers in the region," and that all sales made to North American customers, "regardless of

}. (CCFF ¶¶ 172-198).

²⁴ Respondents also suggest that customers are able to leverage pricing in one geography to obtain better pricing elsewhere, Resps.' Pretrial Br. at 21, but ample evidence shows that even the largest North American customers pay

the location of the supplier making those sales" are attributed to the hypothetical monopolist.

Merger Guidelines § 4.2.2. That is what Complaint Counsel did. Thus, for example—and contrary to Respondents' suggestion—the Chemours plant in Mexico is not excluded from the market. Rather, any sales from the Chemours plant in Mexico to North American customers are properly captured in Complaint Counsel's relevant market. Respondents' incorrect argument is merely an effort to confuse the issue.

In sum, the North American market for the sale of chloride TiO2 presented by Complaint Counsel is wholly consistent with both the market reality of where the "effect of the merger on competition will be direct and immediate," and the *Merger Guidelines*. The global market Respondents urge is neither.

B. The Proposed Acquisition Is Presumptively Unlawful Because It Would Substantially Increase Concentration In The Relevant Market

Congress enacted the Clayton Act so that courts could prevent undue economic concentration *before* a dominant firm could use its market power to harm customers. *Brown Shoe*, 370 U.S. at 317–18; *see Phila. Nat'l Bank*, 374 U.S. at 363. In accordance with that statutory directive, courts have made clear that acquisitions that significantly increase economic concentration are presumptively unlawful:

[T]he government must show that the merger would produce 'a firm controlling an undue percentage share of the relevant market, and [would] result[] in a significant increase in the concentration of firms in that market.' Such a showing establishes a 'presumption' that the merger will substantially lessen competition. *Heinz*, 246 F.3d at 715 (citations omitted).

²⁵ Respondents assert that Complaint Counsel's approach could result in Sandusky, Ohio being a relevant geographic market. Resps.' Pretrial Brief at 22. However, they overlook that unlike the North American chloride customers at issue here, a customer in Sandusky likely could engage in arbitrage by purchasing the product in a nearby city like Cleveland and inexpensively and quickly delivering it to its plant in Sandusky. (CCFF ¶ 363).

²⁶ Phila. Nat'l Bank, 374 U.S. at 357.

To assess an acquisition's presumptive illegality, courts first consider Respondents' shares of the relevant market, and then employ a statistical measure of market concentration called the Herfindahl-Hirschman Index ("HHI"). *Heinz*, 256 F.3d at 716; *Sysco*, 113 F. Supp. 3d at 52. The HHI calculates market concentration by adding the squares of each market participant's individual market share. *See Staples 2016*, 190 F. Supp. 3d at 128; *Sysco*, 113 F. Supp. 3d at 52. "Sufficiently large HHI figures establish the FTC's prima facie case that a merger is anti-competitive." *Heinz*, 246 F.3d at 716; *see Staples 2016*, 190 F. Supp. 3d at 128; *Sysco*, 113 F. Supp. 3d at 52.

An acquisition is presumptively anticompetitive if it increases the HHI by more than 200 points and results in a "highly concentrated market" with a post-acquisition HHI exceeding 2,500. *See Staples 2016*, 190 F. Supp. 3d at 128; *Sysco*, 113 F. Supp. 3d at 52-53; *see also Merger Guidelines* § 5.3. This transaction would *triple* the increase that renders an acquisition presumptively unlawful. Post-merger, the combined firm would have a market share of { } % of North American sales of chloride TiO2, and the acquisition would increase the HHI by over 700 points, to a level of over 3000.²⁷ (CCFF ¶¶ 391, 393).

These market share statistics demonstrate this Acquisition is presumptively anticompetitive. *See Staples 2016*, 190 F. Supp. 3d at 128; *Sysco*, 113 F. Supp. 3d at 52-53; *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 28 (D.D.C. 2017). "The presumption can only be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power." *Merger Guidelines* §5.3. Courts consistently enjoin transactions with high changes in concentration, like this Acquisition. *E.g.*, *Heinz*, 246 F.3d at 716 (HHI increase of 510 "creates, by a wide margin, a presumption that the merger will lessen competition.").

 $^{^{27}}$ The transaction also is presumptively unlawful in the market for sales of rutile TiO2 to North American customers. (CCFF \P 397).

C. The Documented History of Coordination in the TiO2 Industry Strengthens the Presumption

There can be little doubt that the decisions in the two civil price fixing cases, *Valspar* and *In re Titanium Dioxide*, increase competitive concerns in this case.²⁸ *See Horizontal Merger Guidelines* §7.2. Indeed, as the Seventh Circuit has observed: "The theory of competition and monopoly that has been used to give concrete meaning to Section 7 teaches that an acquisition which reduces the number of significant sellers in a market already highly concentrated and prone to collusion by reason of its history and circumstances is unlawful *in the absence of special circumstances*." *Elders Grain*, 868 F. 2d. at 906 (emphasis added).

The factual records described by the two courts—and the record developed by Complaint Counsel in this case—make apparent that the North American market for chloride TiO2 is "prone to collusion," In *Valspar*, the U.S. Court of Appeals for the Third Circuit, while upholding summary judgment because Valspar had not shown overt price fixing by TiO2 producers, highlighted the oligopolistic market conditions in TiO2: "There is little doubt that this highly concentrated market for a commodity-like product with no viable substitutes and substantial barriers to entry was conducive to price fixing." *Valspar*, 873 F.3d at 197. In *In re*

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²⁸ Valspar Corp. v. E. I. Du Pont De Nemours & Co., 873 F.3d 185 (3d Cir. 2017); In re Titanium Dioxide Antitrust Litig., 959 F. Supp. 2d 799 (D. Md. 2013). Cristal was named as a Defendant in In re Titanium Dioxide and in the original Valspar complaint. Tronox, which had been in bankruptcy due to environmental liabilities for a portion of the class period, was not a Defendant, but was named as a co-conspirator.

²⁹ Respondents complain that Complaint Counsel's references to these decisions are somehow unfair or inappropriate because the Courts were addressing motions for summary judgment. (Williams, Tr. 136–37). Complaint Counsel has only referenced events that cannot be disputed: that competitive conditions in TiO2 were of a character that spurred civil allegations of price fixing in two different jurisdictions, that the District Court in Maryland concluded that evidence in support of those allegations would be sufficient to infer a price-fixing conspiracy, and that the District Court in Delaware and Third Circuit Court of Appeals decided that summary judgment was appropriate specifically because the evidence tended to show strong "anticompetitive interdependence" rather than overt collusion. *Valspar*, 873 F. 3d at 197 ("There is no dispute that the market was primed for anticompetitive interdependence and that it operated in that manner. Valspar's expert evidence confirming these facts mastered the obvious.").

³⁰ The District Court in Delaware had referenced evidence of interdependent or collusive interactions among TiO2 producers. *Valspar Corp. v. E. I. Du Pont De Nemours & Co.*, 152 F. Supp. 3d 234, 250 (D. Del. 2016) (referring to DuPont's "business decisions": "It appears that, in making those decisions, DuPont and the other defendants undertook actions that could plausibly be interpreted as 'collusive.'"); *id.* at 253 ("The evidence cited by Valspar

Titanium Dioxide, the District Court reached a different result and concluded that the plaintiffs had provided enough evidence to support their allegations of a TiO2 price fixing conspiracy. In re Titanium Dioxide, 959 F. Supp. 2d at 830 ("[T]his Court finds that the Plaintiffs put forward sufficient evidence tending to exclude the possibility of independent action."); see Merger Guidelines §7.2 ("The agencies presume that market conditions are conducive to coordinated interaction if firms representing a substantial share in the relevant market appear to have previously engaged in express collusion.") (emphasis added).

The two decisions therefore build on the inferences to be drawn from the market share statistics that the Section 7 coordination concerns are particularly strong in this case. *Heinz*, 246 F.3d at 715 ("Merger law rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and achieve profits above competitive levels.") (internal quotation marks and citations omitted). In fact, it is precisely the "anticompetitive interdependence" described in *Valspar* that is "feared by antitrust policy even more than express collusion, for tacit coordination, even when observed, cannot easily be controlled directly by the antitrust laws. '*It is a central object of merger policy to obstruct the creation or reinforcement by merger of such oligopolistic market structures in which tacit coordination can occur.*" *Heinz*, 246 F.3d at 725 (emphasis added) (quoting 4 Phillip E. Areeda, Herbert Hovenkamp & John L. Solow, Antitrust Law ¶ 901b2, at 9 (rev. ed. 1998)).

Respondents have advocated that, because part of the conduct in these cases involved the participation of TiO2 producers in an information sharing program that no longer exists, the competitive conditions are so different that they make the two price fixing cases unimportant.

demonstrates that the titanium dioxide industry is an oligopoly. That oligopoly may well have caused substantial anticompetitive harm to Valspar.").

Williams, Tr. 138–39. This narrow interpretation of the two price fixing cases is belied by the fact that in both cases, the Courts cited to a wide variety of evidence that was suggestive of conspiracy (*In re Titanium Dioxide*), or "anticompetitive interdependence" (*Valspar*). *See In re Titanium Dioxide*, 959 F. Supp. 2d at 812 (*citing* PX 219 (Kronos e-mail noting that it "appears we and our competitors are prepared to reduce production rather than chase phantom volume"); *Valspar*, 873 F.3d at 199–200 ("Valspar also emphasizes a selection of internal e-mails sent by the various competitors. For example, a DuPont e-mail advocated for a price modification "[o]nly if you are not undercutting a Kronos price increase!" Valspar Br. 9. . . These e-mails are helpful to Valspar, but only superficially. They may raise some suspicion insofar as they indicate that something anticompetitive is afoot."). Complaint Counsel has introduced a similar array of evidence of interdependence. (*See, e.g,* CCFF ¶ 451) ({

}); (CCFF ¶ 452) ({
})

Further, although the TDMA program that Respondents alluded to may no longer exist, the types of detailed pricing and other competitive information that TiO2 producers today regularly provide in quarterly earnings conference calls and other presentations, evidence that was not even in the record in the earlier cases, raises additional concern about coordination in TiO2. See In re Delta/AirTran Baggage Fee Antitrust Litigation, 733 F. Supp. 2d 1348, 1360 (N.D. Ga. 2010) ("Plaintiffs need not allege the existence of collusive communications in "smoke-filled rooms" in order to state a § 1 Sherman Act claim. Rather, such collusive communications can be based upon circumstantial evidence and can occur in speeches at industry conferences, announcements of future prices, statements on earnings calls, and in other

public ways."). *See* (CCFF ¶ 472 (Tronox CEO at 3Q 2015 earnings call: "And the question is, when will [the prices] turn? We're addressing that by managing our production so that inventories get reduced to normal or below normal levels. And when that happens, prices will rise. We -- from what we see with Chemours and Huntsman and presumably others as well, they're doing the same thing. We see them acting in the same way."); CCFF ¶ 466 (discussing Chemours earnings conference call relating to expected "cadence" of TiO2 price increases through the year, and testimony of John Romano describing the information from this earnings call to be a {

}; CCFF ¶ 467 (Huntsman presentation at Goldman Sachs Basic Materials Conference) ("Well, there's the April 1 effective price increase. It was roughly \$235 a ton, nominated. And we have communicated and signaled that we would expect the realization on that price would be on the upper end of what we've been realizing over the last 3 or 4 quarters. That is closer to 2/3, 70% realization.")). In fact, TiO2 producers view the increasing market transparency, including through the Proposed Acquisition, as a positive development for competitive conditions in TiO2. (CCFF ¶¶ 537–44).

III. Evidence of Likely Harm Bolsters the Presumption

Instead of the "special circumstances" required by *Elders Grain*, there is extensive evidence that the Acquisition would likely result in harm to competition by making coordination between the remaining competitors—Chemours, Kronos and Venator—more likely, and by increasing Tronox's ability and incentive to unilaterally curtail output in order to raise prices or prevent them from falling.³¹ This "additional proof that the merger would harm competition" further strengthens the presumption, thus increasing the burden Respondents must shoulder on

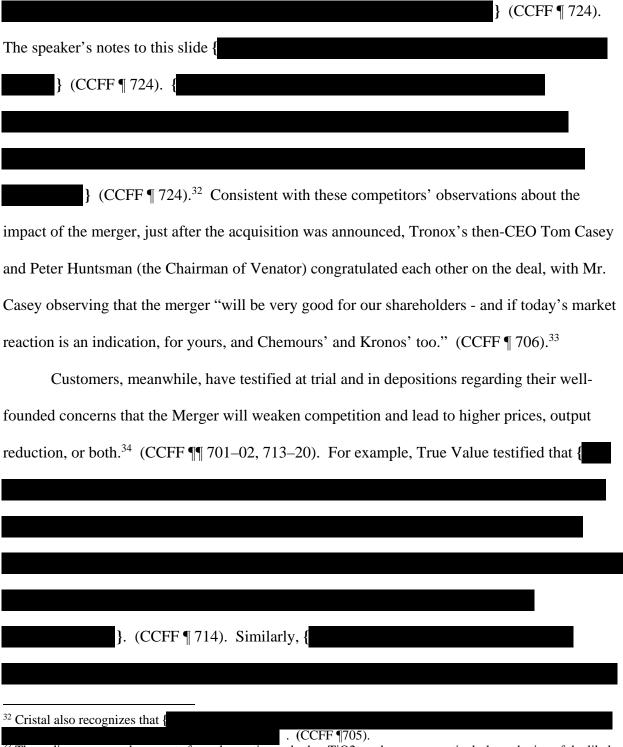
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³¹ See Staples 1997, 970 F. Supp. at 1082-83 n.14 ("[W]hen the Court discusses 'raising' prices it is also with respect to raising prices with respect to where prices would have been absent the merger, not actually an increase from present price levels.").

rebuttal. *Sysco*, 113 F. Supp. 3d at 71–72; *see id*. at 72 ("The more compelling the [FTC's] *prima facie* case, the more evidence the defendant must present to rebut [the presumption] successfully." (quoting *Baker Hughes*, 908 F.2d at 991)).

In this case, there is direct evidence that the Merger is likely to lead to anticompetitive effects. The Court need not guess whether Tronox intends to raise prices after the Merger; Tronox has explicitly stated that it intends to do so. At trial, PPG, one of Tronox and Cristal's largest customers, testified that Tronox executives John Romano and Ian Mouland told PPG that Tronox would raise prices post-Merger. (CCFF ¶ 708). Mr. Romano explained to PPG that "Cristal's price is too low in the market," that Cristal "give[s] [TiO2] away," and that Cristal lacks "market discipline." (CCFF ¶¶ 699, 709–10). That testimony was unrebutted at trial, even though both Tronox executives testified as live witnesses. (CCFF ¶ 712). Consistent with Tronox's statements to PPG, Mr. Mouland previously wrote in an internal Tronox email that he was {

} (CCFF ¶ 707).



³³ The ordinary course documents from the parties and other TiO2 producers are particularly probative of the likely anticompetitive effects of the Proposed Acquisition. *See Cardinal Health*, 12 F. Supp. 2d at 63-64 (citing documents that discuss more "orderly" and "rational" pricing after merger, and reductions in "excess capacity"). ³⁴ Customer testimony can be highly probative of the likely effects of the Proposed Acquisition. *See Merger Guidelines*, §2.2.2 (customer testimony); *Staples 1997*, 190 F. Supp. 3d at 100 (crediting fact witness testimony that they would lose "tremendous leverage" as a result of merger as evidence that "strengthens [FTC's] claim that harm will result in the form of loss of competition"); *Anthem*, 236 F. Supp. 3d 171 at 221 (crediting testimony of customers that "[t]he more vendors we have, the more competitive . . . the responses are going to be").

{CCFF ¶ 715). This evidence, as well as the extensive evidence described below, both strengthens the presumption that the Acquisition will lead to anticompetitive effects and serves as direct evidence of likely effects.

A. The Proposed Acquisition Would Increase the Likelihood of Coordination in an Already Vulnerable Market

"Merger law rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and achieve profits above competitive levels." *Heinz*, 246 F.3d at 715 (internal quotation marks omitted); *accord CCC Holdings*, 605 F. Supp. 2d at 60; *United States v. H&R Block*, 833 F. Supp. 2d 36, 77 (D.D.C. 2011). "[A]bsent extraordinary circumstances, a merger that results in an increase in concentration above certain levels raise[s] a likelihood of 'interdependent anticompetitive conduct." *CCC Holdings*, 605 F. Supp. 2d at 60 (citation and internal quotation marks omitted) (quoting *United States v. General Dynamics Corp.*, 415 U.S. 486, 497 (1974)). Because Complaint Counsel has established a *prima facie* case, Respondents bear the burden of "produc[ing] evidence of 'structural market barriers to collusion' specific to this industry that would defeat the 'ordinary presumption of collusion' that attaches to a merger in a highly concentrated market." *H&R Block*, 833 F. Supp 2d. at 77 (quoting *Heinz*, 246 F.3d at 725); *accord CCC Holdings*, 605. F. Supp. 2d at 60.

"[C]oordinated interaction involves a range of conduct, including unspoken understandings about *how* firms will compete or refrain from competing." *H&R* Block, 833 F. Supp. 2d at 77 (citing *Merger Guidelines* § 7). Thus, coordination includes not only unlawful collusion, but also lawful tacit coordination or parallel accommodating conduct. *Merger*

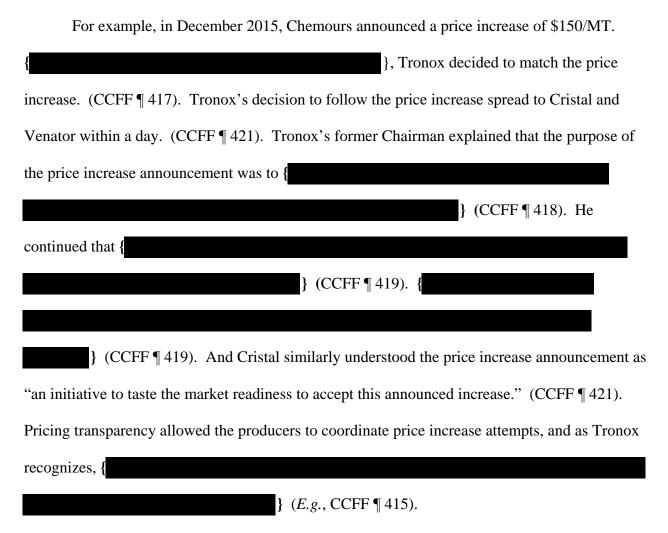
Guidelines § 7 ("Coordinated interaction includes conduct not otherwise condemned by the antitrust laws").³⁵ Under the Clayton Act's incipiency standard, Complaint Counsel need not show how "coordination likely would take place." *Merger Guidelines* § 7.

The *Merger Guidelines* outline six areas of inquiry, each of which can support the likelihood that a market is vulnerable to coordination: (1) there is a mutual awareness among firms of their shared interest (interdependence), (2) the number of firms in the market is small, (3) the products in the market are homogenous, (4) firms can and do monitor one another's behavior (transparency), (5) the price elasticity of demand is low, and/or (6) there is a past history of actual or attempted coordination among firms. (CCFF ¶ 401); *Merger Guidelines* § 7.2.

Before trial, another court had already observed "the market for titanium dioxide is an oligopoly. Titanium dioxide is a commodity-like product with no substitutes, the market is dominated by a handful of firms, and there are substantial barriers to entry." *Valspar*, 873 F.3d at 190. The evidence in this case bore that out. Indeed, the Acquisition would leave Tronox and Chemours in control of { } % of North American sales, and over { } % of North American capacity. (CCFF ¶ 391). Such a merger is likely to cause anticompetitive effects. As one court explained, "With only two dominant firms left in the market, the incentives to preserve market shares would be even greater, and the costs of price cutting riskier, as an attempt by either firm to undercut the other may result in a debilitating race to the bottom." *CCC Holdings*, 605 F. Supp. 2d at 67.

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³⁵ Respondents' arguments that Complaint Counsel must show an "agreement" that is "enforced" ignores the range of otherwise lawful (but anticompetitive) conduct that is condemned by the Clayton Act's incipiency standard, including conduct that is "individually rational . . . but nevertheless emboldens price increases and weakens competitive incentives to reduce prices or offer customers better terms." *Merger Guidelines* § 7. Complaint Counsel need not show that the transaction will result in an illegal cartel.



The *Valspar* court further acknowledged this competitive dynamic:

DuPont does not claim that the competitors' numerous parallel price increases were discrete events – nor could it do so with a straight face. But it doesn't need to. The theory of interdependence recognizes that price movement in an oligopoly will be just that: *inter*dependent. And that phenomenon frequently will lead to successive price increases, because oligopolists may "conclude that the industry as a whole would be better off by raising prices." *Valspar*, 873 F.3d at 195.

As shown at trial, the producers have the opportunity to learn much about their competitors through public statements in earnings calls, investor presentations, trade data, industry conferences, meetings with ratings agencies, and other public forums that reveal key competitive information about pricing, inventories, and production levels, all of which lays the groundwork for successful coordination. (CCFF ¶¶ 462–65). In fact, PPG's Paul Malichky

testified that the level of detail in this industry's earnings calls is "very unique," { $(CCFF \P 462).$ In only one earnings call, Tronox was able to convey to its competitors that it was reducing inventory levels, cutting production, and working to reduce feedstock production, all in the service of raising prices:

Industry supply and demand will return to balance. The obvious question is, when? And I can't tell you that because I can't speak for the industry as a whole. However, I can tell you that we are reducing our inventory, freeing up working capital, generating cash, and accelerating the return to supply-demand balance.

From their public announcements, we believe others at both the feedstock and the pigment levels are doing the same thing. So, we're optimistic about the return to a more normal market conditions in TiO2. (CCFF \P 472 (Tronox Q3 2015 Earnings Call)).

[W]e're addressing when the prices turn. So we've addressed the cash spending while the prices are down. And then the question is, when will they turn? We're addressing that by managing our production, so that inventories get reduced to normal or below normal levels. And when that happens, prices will rise.

We -- from what we see with Chemours and Huntsman and presumably the others as well, they're doing the same thing. We see them acting in the same way." (CCFF ¶ 472 (Tronox Q3 2015 Earnings Call)).

This type of information can facilitate coordination, by increasing the predictability of Tronox's competitive initiatives and responses for competitors. (CCFF ¶ 463). In fact, shortly after Tronox's Q3 2015 earnings call detailing its decision to idle capacity at its North American chloride TiO2 plant,³⁶ Chemours announced its own decision to curtail chloride TiO2 production. In response to that news, Tronox's CEO exclaimed: "It's good that they can follow the leader!" (CCFF ¶ 430). And although Tronox's counsel told the Court in opening statements

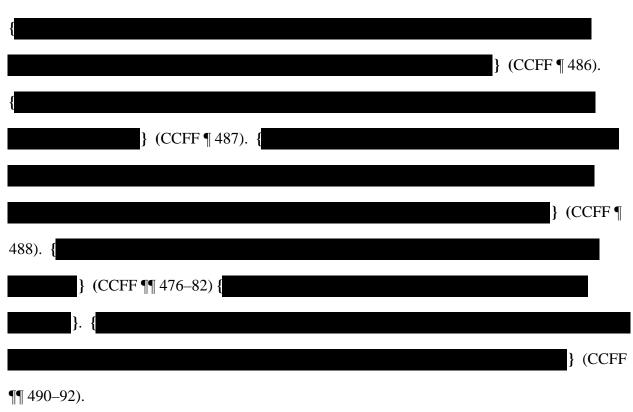
Call)).

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³⁶ Tronox provided extraordinarily detailed information to the public, and therefore competitors, about its output in its Q2 2015 earnings call: "Production has been suspended at one of our six processing lines in Hamilton and one of our four processing lines at Kwinana, both of which are pigment plants. Together, these processing line curtailments represent approximately 15% of total pigment production." (CCFF ¶ 496 (Tronox Q2 2015 Earnings

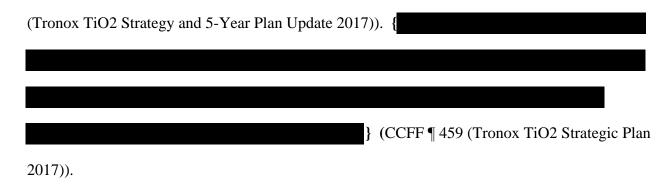
that the evidence would show this statement was a "joke," Respondents introduced no such evidence. Williams, Tr. 100.

The sales forces of both Tronox and Cristal are adept at gathering information from customers and other sources about the actions of their competitors. (*E.g.*, CCFF $\P\P$ 476–92).

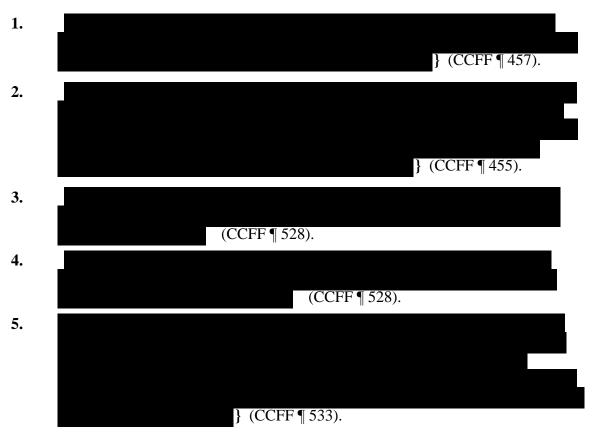


The market also demonstrates the oligopolistic interdependence that the *Valspar* and *In re*Titanium Dioxide courts have cited. Tronox sales executive Arjen Duvekot drafted a presentation that explained the {

 $^{^{37}}$ John Romano's testimony corroborated this description of the market. (CCFF $\P\P$ 414–15).



Consistent with its overall emphasis on not undercutting competitors, Tronox opted to avoid such competition at every turn, even where it has product available to sell to its customers.



Tronox's former CEO plainly (and publicly) summarized their approach: "As you saw, we have not gained market share by trying to reduce price. We don't think that's the appropriate strategy going forward" (CCFF \P 433). And Tronox has publicly recognized coordinated actions taken with its competitors to reduce output and maintain prices:

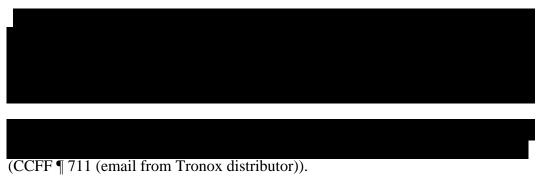
"I can tell you that I thought last year Huntsman, I believe Cristal, Chemours, and we all lowered our plant utilization rates, and we all talked about declining inventories

which we had set as a goal. That is that we wanted to reduce inventories. Clearly, the way that one reduces inventories is one reduces production and continues to maintain sales, which is what we all tried to do." (CCFF \P 474).

Cristal has often shared Tronox's approach toward oligopolistic pricing, explaining in 2011, as demand in North American began to weaken, that "[t]he 'Evil Sin' would be to attempt to lower prices to take market share as markets weaken. We Must Hold Price!" (CCFF ¶ 438).



But Cristal also has departed from an accommodative strategy, causing disruption and forcing Tronox to respond to aggressive moves:



Removing Cristal as a competitor will eliminate opportunities for it to compete aggressively and to disrupt Tronox's strategy of pricing discipline and avoiding driving down price. That alone provides a "credible basis on which to conclude that the merger may enhance [the market's] vulnerability to coordination." *See Merger Guidelines* § 7.1. Fundamentally, Tronox has adopted a strategy that is consistent with facilitating coordination among its rivals. (*E.g.*, CCFF ¶ 527–28). And customers feel the effects of that strategy, highlighting the difficulty of getting supply in this industry. (CCFF ¶ 556). The Acquisition would place even more capacity under its purview and eliminate a rival that, at times, has refused to cooperate. And it would eliminate a competitor for whom customers "might turn for succor if the other sellers tried to jack prices above the competitive level." *Elders Grain*, 868 F.2d at 907.

Additionally, the Acquisition will likely increase transparency in the market. Cristal is the only major producer that is not a publicly-traded company. As explained above, public engagement with investors and traders—by design—increases transparency into the strategies and actions of the other major producers. (CCFF ¶ 539, 544). The Acquisition would result in Tronox making public disclosures about Cristal's competitive activities that Cristal does not make today. *See* (CCFF ¶ 539, 544).

Respondents' assertion that the industry faces "fierce competition" is both factually wrong and misses the point. The existence of competition is not a defense to an otherwise anticompetitive merger. Indeed, Complaint Counsel is seeking to block the proposed merger precisely to ensure that any competition that does exist is not diminished. *See CCC Holdings*, 605 F. Supp. 2d at 34-35 (enjoining merger to preserve the existing "vigorous" competition in the market); *H&R Block*, 833 F. Supp. 2d at 77 (that there will be ongoing competition postmerger "is not necessarily inconsistent with some coordination"); *Cardinal Health*, 12 F. Supp.

2d at 65 (enjoining merger to preserve vigorous competition: "Over the past ten years, fierce competition among the four Defendants has led to falling prices.").

In any case, the TiO2 industry is not "fiercely competitive;" it is an oligopoly characterized by "anticompetitive interdependence." *Valspar*, 873 F.3d at 197. As set forth in Complaint Counsel's Proposed Findings of Facts, voluminous evidence shows that the industry is far from "fiercely competitive." (*E.g.*, CCFF § V.A.i.b.). Respondents' self-serving testimony from their own executives on this point should be given little weight. *In re The B.F. Goodrich Co.*, 1988 WL 1025464, at *94 (F.T.C. Mar. 15, 1988) ("Given the interest of industry participants in establishing that their industry is highly competitive, this sort of generalized testimony is not particularly probative."). Moreover, customers have described a market in which parallel price increases are common, in which supply is tight, and in which they have had to accept a series of price increases. (CCFF ¶ 638–39).

B. The Merger Would Increase Tronox's Incentive and Ability to Reduce Output Unilaterally

In addition to increasing the likelihood of coordination, the Merger will increase

Tronox's incentive and ability to reduce its TiO2 output. The price implications of these output reductions are clear: Respondents and other North American TiO2 producers consistently credit industry output reductions—by outright facility closures, temporary shutdowns, or slowdowns—with contributing to higher chloride TiO2 prices. This impact is not surprising given the basic principles of the chloride TiO2 market, where price is driven by supply and demand. (CCFF ¶¶ 558-62). As PPG described at trial, {

} (CCFF ¶ 557).

As the *Merger Guidelines* recognize, "[i]n markets involving relatively undifferentiated products," a merged firm may "find it profitable unilaterally to suppress output and elevate the market price. A firm may leave capacity idle, refrain from building or obtaining capacity that would have been obtained absent the merger, or eliminate preexisting production capabilities." *Merger Guidelines* § 6.3. This is because the "merger may provide the merged firm a larger base of sales on which to benefit from the resulting price rise, or it may eliminate a competitor that otherwise could have expanded its output in response to the price rise." *Id.* The intuition underlying the former principle is that the larger a firm's market share, the greater benefit it receives from the higher prices resulting from the output reduction, increasing the firm's incentives to do so.³⁸ (CCFF ¶ 562-64).

1. North American TiO2 Producers Already Have a History of Reducing Output to Support Pricing and Those Incentives Will Grow With the Merger

Tronox's history of curtailing North American production and taking capacity offline to support higher North American chloride TiO2 pricing is well documented. In 2009, Tronox closed its chloride TiO2 facility in Savannah, Georgia, {

(CCFF ¶ 590). Following the shutdown, {

(CCFF ¶ 591). Indeed, the closure of Tronox's Savannah facility

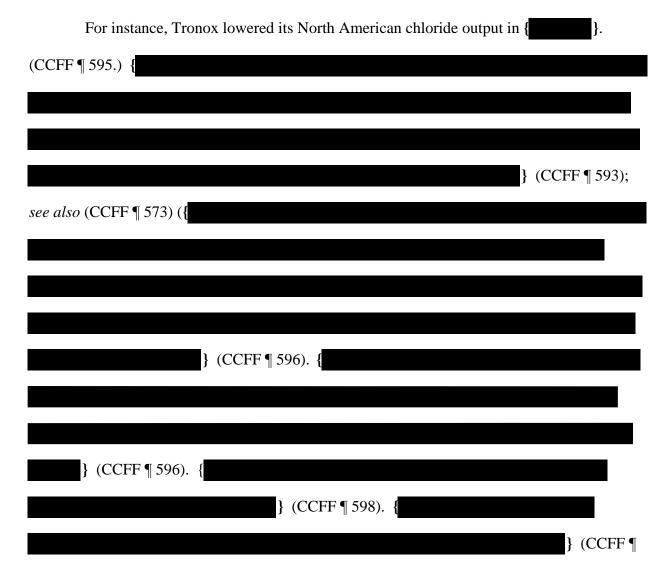
Merger Guidelines § 6.3. All of those factors would be met here. (CCFF ¶¶ 562-67.) For example, in {

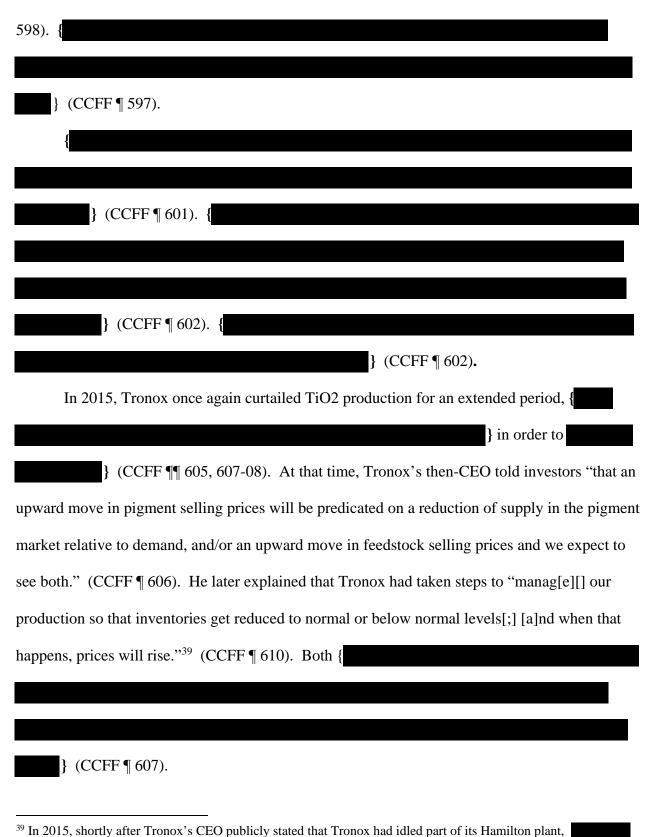
³⁸ The *Merger Guidelines* further recognize that unilateral output suppression is more likely when: "(1) the merged firm's market share is relatively high; (2) the share of the merged firm's output already committed for sale at prices unaffected by the output suppression is relatively low; (3) the margin on the suppressed output is relatively low; (4) the supply responses of rivals are relatively small; and (5) the market elasticity of demand is relatively low."

⁽CCFF ¶ 564). Short-term pricing would allow North American TiO2 sellers to adjust prices upward in response to reduced output. (CCFF ¶ 564). Additionally, North American customer demand for chloride TiO2 is highly inelastic, meaning that customers would not substitute away from chloride TiO2 if prices were to rise. (CCFF ¶ 567). As discussed below, the supply response from the remaining North American chloride TiO2 suppliers is also likely to be small. (CCFF ¶ 566, 636-57).

was part of a larger reduction in industry capacity around that time that industry insiders credit with leading to significant price increases over the next several years. (CCFF ¶¶ 431, 592, 621).

Since Tronox closed the Savannah plant, Respondents have at various times reduced production at their remaining TiO2 plants with the objective of increasing TiO2 prices. Complaint Counsel has identified no fewer than nine periods over the past six and a half years when Respondents produced well below their North American capacity for at least three consecutive months. (CCFF ¶¶ 595, 601, 605, 625). The following examples of prior output curtailments reveal both the intentions behind and results of several of those recent reductions.





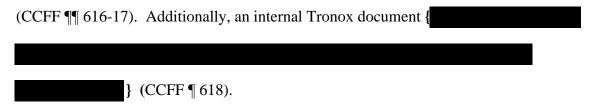
^{} (}CCFF ¶ 430). Tronox cheered these developments as "Good news!" with Tronox's CEO remarking, "[i]t's good [Chemours] can follow the leader!" (CCFF ¶¶ 430, 585).

In early 2016, when a distributor conveyed concerns regarding supply shortages for some
Tronox chloride TiO2 grades, a Tronox sales executive explained that {
} (CCFF ¶ 611). The Tronox executive further
explained that {
} (CCFF ¶ 611).
Following the 2015 output reduction, Tronox reiterated its commitment to managing
production volumes:
• "We believe that a very disciplined approach to production, to managing supply relative to demand, is what has facilitated the recovery in our markets and we intend to continue to be disciplined about that. So we don't intend to bring back the full production instantaneously simply because we could see the very first signs of price recovery." (CCFF ¶ 473).
• (CCFF ¶ 576).
• (CCFF ¶ 613).
In 2017, after announcing the Cristal acquisition, Tronox once again reaffirmed its
commitment to a strategy of matching production to demand and to market discipline, {
(CCFF ¶ 614).
} (CCFF ¶ 615) ({

}).

That practice is likely to increase with the merger. During an investor call following the deal announcement, Tronox's former CEO responded to a question about how the acquisition would affect Tronox's approach to supply discipline and pricing:

I think we have tried to be economically rational over these last several years. If there was surplus supply in the market, we slowed down our production, and we did that with respect to pigment. We also did it with respect to mineral sands. You remember over the last couple of years that we shut down about 75,000 tons of pigment production when we felt that all we were doing was adding supply to inventory levels. And we shut down two of our four slag furnaces.



Cristal has likewise recognized that reducing output leads to higher prices. After closing its Hawkins Point plant in 2009, Cristal considered reopening the plant when prices rose dramatically in 2011 and 2012. (CCFF ¶ 622). However, Cristal decided against doing so because "the only certain factor is that the markets will remain tighter with greater pricing power the longer we leave [Hawkins Point] down." (CCFF ¶ 622.) A 2016 Cristal presentation observed that {

| (CCFF ¶ 628). In fact, Cristal acknowledges that {

The other North American TiO2 producers also recognize the connection between reduced output and higher pricing. In a recent investor presentation, Kronos observed that

industry "structural improvements" drove a \$250 million increase in EBITDA and that "baseline TiO2 capacity has been permanently reduced with limited near-term ability to increase capacity." (CCFF ¶ 583). Chemours, meanwhile, has told its investors that it will "vary [its] production in line with customer demand" and operate "at lower levels of output when customer needs . . . warrant that we adjust our production." (CCFF ¶ 584).

2. Sound Economic Models Also Predict that the Merged Firm Will Reduce Output

Respondents' recent actions show that they have reduced output in the past, that they understand that reducing output increases TiO2 prices, and that they can reduce output again—particularly after the merger—when they will have an even greater ability and incentive to do so. To corroborate this evidence, Dr. Hill employed two economic models commonly applied to commodity markets to test whether withholding output would be profitable for the merged firm, and if it would result in customer harm. (CCFF ¶¶ 658-59). As Dr. Hill testified, the models answered both questions with a resounding yes. (CCFF ¶ 659).

Dr. Hill's first model, the Capacity Closure Model ("CCM"), incorporated Respondents' actual cost data for reducing output as well as measures of likely responses to that reduction, and found that it would be profitable for the merged firm to curtail output through a number of different scenarios involving idling at the merged firm's North American plants. (CCFF ¶ 668). To ensure accuracy, Dr. Hill relied on Respondents' own documents and data, including various internal calculations of the costs of reducing output, to capture the costs of actually doing so. (CCFF ¶ 665). The scale of the predicted capacity cuts, including the most profitable scenario, is on par with the combined output reduction taken by the Respondents during prior periods of lowered production. (CCFF ¶ 669).

Dr. Hill also considered whether various potential responses to the output withdrawal would render the output reduction unprofitable. (CCFF ¶ 666). He examined whether customers would switch from chloride TiO2 to another product (elasticity of demand), or if a response from rivals (i.e., increased output, imports, or redirect exports) would render the merged firms' output reduction unprofitable. (CCFF ¶ 666). To determine these responses, Dr. Hill analyzed real-world evidence and data of how North American customers and producers have responded to chloride TiO2 price changes in the past. (CCFF ¶ 667). Dr. Hill then incorporated those responses into his model, and found them insufficient to render an output reduction by the merged firm unprofitable. (CCFF ¶ 667-68). Dr. Hill also checked whether the CCM predicted that the stand-alone firms would have an incentive to reduce output using the same data, and found that they did not, confirming that the merger increases the incentives to withhold output. (CCFF ¶ 670).

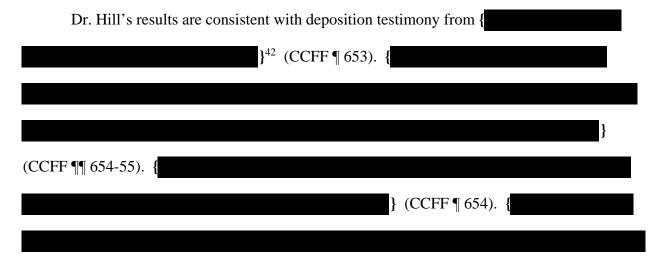
The second model Dr. Hill used, the Cournot Model, also predicts that the merger would result in higher chloride TiO2 pricing in North America. (CCFF ¶ 684). The Cournot model is the "standard framework" for analyzing potential harm in commodity markets. (CCFF ¶ 681). While similar to CCM because it examines whether the merger increases incentives to reduce output, Cournot differs, for example, because it allows "unbridled" rival responses to an output reduction, unlike CCM, which instead relies on evidence of historical responses. (CCFF ¶ 682). The fact that two different models each find that the Merger would cause significant anticompetitive effects confirms the robustness of the result and shows that the prediction is not dependent on the specific model being used. (CCFF ¶ 683).

3. Respondents' Criticisms of the Unilateral Effects Evidence Are Unavailing

Respondents raise a number of criticisms of Complaint Counsel's evidence of likely unilateral anticompetitive effects, but none have merit. Respondents criticize the evidence of past output reductions by claiming that they have only ever reduced output as a matter of "last resort" under the most dire financial circumstances and never with any intention of raising prices. Resps.' Pretrial Br. at 47-49. But that misses the point. Respondents' past output reductions show that they can and do reduce output when they choose to, and understand its impact on price. And that past practice supports the likelihood that they will reduce output again after the merger—when they will have an even greater incentive to do so—because the merger will make reducing output even more profitable. (CCFF ¶¶ 560–61).

 it." (CCFF ¶ 594).

Respondents also attack Dr. Hill's CCM. ⁴⁰ First, they criticize the CCM for underestimating potential rival responses to the merged firm's output reduction, Resps.' Pretrial Br. at 45-46, but they ignore that Dr. Hill analyzed real-world evidence and data to determine likely rival responses to chloride TiO2 price increases in North America, incorporated them into his model, and found them insufficient to render an output reduction by the merged firm unprofitable. ⁴¹ (CCFF ¶ 667-68). As discussed above, Dr. Hill did not "assume," for example, that redirected exports to North America would not defeat a price increase. Rather, he analyzed historical data showing that North American producers had not redirected exports back to North America in the past, even when North American chloride TiO2 prices were significantly higher than they are today (or would be with a 10% price hike). (CCFF ¶¶ 643-44, 652-57).



⁴⁰ Respondents mischaracterize Dr. Hill's corrections to the CCM. While they claim that the corrected simulation "fundamentally differs from Dr. Hill's original simulation," Resps.' Pretrial Brief at 46, as Dr. Hill testified,

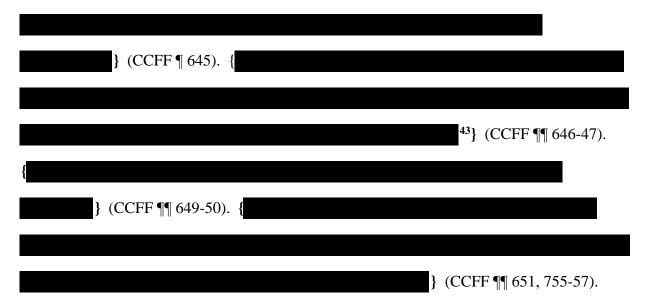
[{]CCFF ¶ 671).

41 Notably, Dr. Hill's other oligopoly model, Cournot, allows for "unbridled' rival responses but yet still predicts significant harm from this merger. CCFF ¶ 682.

} (CCFF ¶ 656).

Similarly, Dr. Hill did not incorporate an increase in North American domestic production of chloride TiO2 into his model, beyond the growth in demand, because the record evidence shows it is unlikely to occur in response to any of the predicted output reduction scenarios. { $\{CCFF \P 637-39\}$. Additionally, any plant expansion would be expensive and time-consuming (well beyond the one-year time-frame contemplated by the model). (CCFF ¶ 667, 737, 739-40). Debottlenecking efforts, meanwhile, have typically not increased capacity beyond the rate of demand growth already factored into the model and, in any event, have been largely exhausted. See (CCFF ¶¶ 667, 738). { $\{$ (CCFF ¶¶ 636, 735-36). There is no evidence of any large-scale output expansions by North American producers even in response to the price increases in 2012, when North American chloride TiO2 prices exceeded \$4,000 per ton, well above the price increase predicted by the CCM. (CCFF ¶ 729.) Given these facts, it is not surprising that Respondents cannot point to any evidence showing that North American TiO2 producers have increased output in response to output restrictions undertaken by another North American TiO2 producer.

When the evidence did show a potential response to the output reduction, Dr. Hill did incorporate it into his model. For example, Dr. Hill included an import response to the output reduction, albeit a small one, because the real-world evidence and import data indicated only limited import responses in the past. (CCFF ¶ 642). {



Significantly, North America's extended run of higher prices only ended in 2017 when supply disruptions hit both Europe (Pori fire) and Asia (rising demand and feedstock costs along with environmental shutdowns), not as a result of expanded output, higher imports, or repatriated product responding to higher North American prices. (CCFF ¶¶ 631-33, 771-74, 779-781). Further, that European TiO2 prices rose so dramatically following the (incidental) loss of output in Europe also shows the impact that an output withholding can have on TiO2 prices in the affected region (as well as the absence of a mitigating response). (CCFF ¶¶ 632-35).

While Dr. Hill's quantitative assessments of how rivals would respond to changes in the merged firm's output match the views expressed by market participants as well as the data, Respondents present estimates of their own that purportedly predict more aggressive responses by North American importers and exporters. Those measures, however, are belied by the qualitative and quantitative evidence discussed above showing sustained regional pricing differences not mitigated by rival responses. They are also technically unsound. (CCFF ¶¶ 671-

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 $^{^{43}}$ Respondents point to a handful of internal documents, primarily from early 2015, expressing prospective concern that foreign producers might increase imports in response to higher North American prices. Resps.' Pretrial Br. at 20, 23. However, those fears were not realized. As Tronox's CEO explained to investors in late 2015, "[w]e do not see that exports from China or from Europe are playing a material role in the competitive balance, particularly in the North American market." (CCFF ¶ 396).

78). First, Respondents' expert, Dr. Ramsey Shehadeh, attempted to calculate his own import elasticity of rutile TiO2, 44 but his measure suffers from a multicollinearity problem, rendering its results unreliable. (CCFF ¶ 672). Dr. Shehadeh also limited the time-frame he considered (2011-2015) without justification, excluding both earlier and later periods. (CCFF ¶ 672). When each of these problematic choices is addressed, Dr. Shehadeh's estimates are similar to Dr. Hill's. (CCFF ¶ 672). Dr. Shehadeh also cites elasticity estimates from two academic papers that he claims show strong import and export responses to North American price changes. (CCFF ¶ 673, 675). But Dr. Shehadeh misconstrues the nature of each estimate, and neither addresses how the overall quantity of North American rutile TiO2 imports or exports would respond to price changes in North America. (CCFF ¶¶ 673, 675). In light of these errors, Respondents' elasticity estimates should be disregarded.

Next, Respondents claim that only a "small" rival response is necessary to defeat price increases predicted by the CCM. Resps.' Pretrial Br. at 45. Respondents, however, once again ignore that Dr. Hill analyzed real-world historical data of rival responses, incorporated that reality into his model, and found that the output reduction would be profitable. (CCFF ¶ 667-69.) {

(CCFF ¶ 679). And that figure likely understates the real scope of the required response.

(CCFF ¶ 679).

⁴⁴ Dr. Shehadeh never provides an import or export elasticity measure for chloride TiO2.

⁴⁵ In its pretrial brief, Respondents claim that

} (CCFF ¶¶ 689-90).

 $\$ (CCFF \P 679). This is hardly the "small" change Respondents imply.

Finally, Respondents assert that the CCM failed to predict Chemours's behavior—i.e., that Chemours currently sells more TiO2 than predicted when Dr. Shehadeh re-ran the CCM to assess Chemours' likely behavior. Resps.' Pretrial Br. at 46 & n.180. However, Respondents omit that {

(CCFF ¶ 678). {

Respondents' criticisms of Dr. Hill's Cournot model are equally unavailing.

Respondents argue that the Cournot model is inappropriate because it suggests the merger may be unprofitable, but that is because, among other reasons, they mistakenly focus on variable profits, not total profits. (CCFF ¶ 694). Respondents also note that the Cournot model predicts at least some harm even for a merger in an unconcentrated market. (CCFF ¶ 686). Not only is Cournot considered a standard oligopoly model despite that potential outcome, but the relevant question is not the prediction of harm itself, but its magnitude. (CCFF ¶ 686). Here, Dr. Hill's Cournot model predicts a substantial price increase from the merger—over eight percent. (CCFF ¶ 686). While Cournot may technically predict a price increase from a merger in an unconcentrated industry, the measure would be dramatically smaller. Respondents further argue that the Cournot model implies that large chloride TiO2 suppliers have unrealistically low costs. (CCFF ¶ 689). However, the {

Dr. Shehadeh also purports to "fix" Dr. Hill's Cournot model by applying a framework from an unpublished working paper (Greenfield et al.). (CCFF ¶ 691). Dr. Shehadeh claims those "fixes" cause the price effect predicted by Cournot to disappear. (CCFF ¶ 691). Dr. Shehadeh's reliance on the Greenfield et al. approach is unwarranted here. Greenfield et al. were responding to a quirk in the California refinery market where the standard Cournot model predicted marginal costs below that of one of the inputs to the finished product, an implausible result. (CCFF ¶ 691). No such issues arise here—the margins predicted by the Cournot model are similar to those actually observed in the TiO2 market—obviating the need to apply the Greenfield et al. approach. (CCFF ¶ 691). Moreover, despite Dr. Shehadeh's claims to the contrary, it was not the Greenfield et al. "fixes" he used that reduced the predicted price effect. (CCFF ¶ 691-92). Rather, it was Dr. Shehadeh's imposition of an inappropriately low margin, contrary to the factual evidence, that alters the Cournot model's result. (CCFF ¶ 693).

As shown above, the evidence in this case demonstrates that Respondents already recognize the benefits of unilaterally reducing output and that their incentives to do so will increase with the Merger. Respondents' efforts to show otherwise are unavailing. Thus, the Merger will likely result in unilateral harm.

IV. Respondents Did Not Rebut The Strong Presumption Of Illegality

With the presumption of illegality firmly established, the burden shifts to Respondents to rebut the presumption by "produc[ing] evidence that 'shows that the market-share statistics [give] an inaccurate account of the [acquisition's] probable effects on competition' in the relevant market." *Heinz*, 246 F.3d at 715 (quoting *United States v. Citizens & S. Nat'l Bank*, 422 U.S. 86, 120 (1975)); *Staples 2016*, 190 F. Supp. 3d at 115; *Sysco*, 113 F. Supp. 3d at 23.⁴⁶

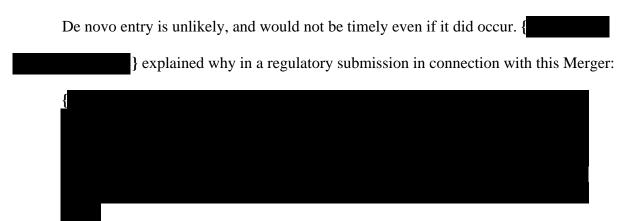
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⁴⁶ Although the burden of production shifts to Respondents, the burden of persuasion remains at all times with the FTC. *Staples 2016*, 190 F. Supp. 3d at 116.

Here, Respondents carry a heavy burden given the strength of the *prima facie* case. *See Staples* 2016, 190 F. Supp. 3d at 115 ("The more compelling the prima facie case, the more evidence the defendants must present to rebut it successfully." (*quoting Baker Hughes*, 902 F.2d at 991)). As shown *supra*, significant evidence of competitive harm corroborates the presumption. Respondents were unable to rebut the presumption, as neither the possibility of entry or expansion, nor any claimed efficiencies, can redeem the Acquisition.

A. Entry and Expansion Would Not Be Timely, Likely, and Sufficient

"Defendants carry the burden of showing that the entry or expansion of competitors will be 'timely, likely and sufficient in its magnitude, character, and scope to deter or counteract the competitive effects of concern." *Staples 2016*, 190 F. Supp. 3d at 133 (citation omitted); *see also Sysco*, 113 F. Supp. 3d at 80; *CCC* Holdings, 605 F. Supp. 2d at 47. Respondents could not meet this burden here.



(CCFF ¶ 731). Even assuming an entrant could overcome these significant barriers, Tronox has estimated that building a new chloride TiO2 plant would {

(CCFF ¶ 739); *see also* (CCFF ¶ 739 (PX1636 at 001 (email from Romano to Arndt) ("Four years for a greenfield plant would be aggressive. . . Total time line would be 54 months or 4.5 years if everything went according to plan (aggressive).")). Cristal estimated at least {

} to construct a new chloride plant in a submission to the FTC. (CCFF \P 740). Thus, entry would not be timely.

Respondents argued at trial that producers based in China have the capability to offset the competitive harms of the Acquisition. But the record evidence shows that it is highly unlikely that Chinese producers will expand their sales in North America to deter or counteract the competitive harm resulting from the loss of Cristal as an independent competitor.

Today, TiO2 from Chinese producers is not a meaningful competitive constraint in North America, where it is used primarily in low-end applications. *See, e.g.*, (CCFF ¶ 745 (PX9001 at 009 (Tronox Q3 2016 Earnings Call) ("So the question for us is, do we confront China-produced supply in the market as a competitive alternative to our supply. And as I've said, we don't. . . . [T]he kind of customers that will buy our high-quality pigments are not simultaneously looking at for the same supply need Chinese product.")); (CCFF ¶ 745 (PX9006 at 6 (Tronox Q2 2015 Earnings Call) ("We do not see that exports from China or from Europe are playing a material role in the competitive balance in the North American market.")); (CCFF ¶ 745 {

745 {

The vast majority of

production in China is sulfate TiO2. (CCFF \P 808). As described above, North American chloride TiO2 customers would not meaningfully switch to sulfate TiO2 if faced with a SSNIP. *See supra* at Section II.A.1.

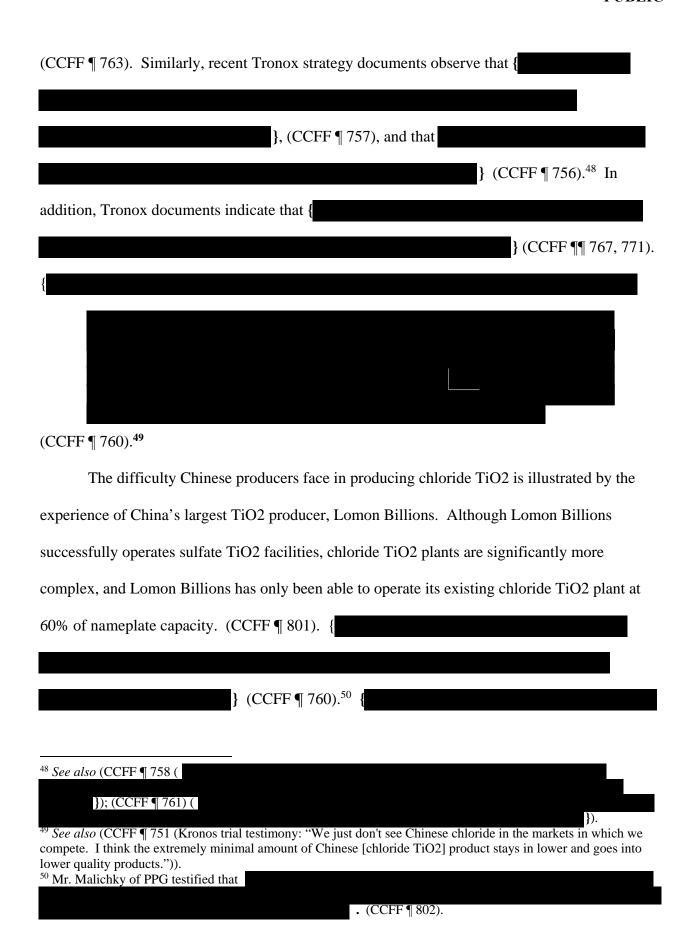
Although several firms in China have begun manufacturing chloride TiO2, Chinese chloride does not have any meaningful impact in the North American market. Imports of

As Respondents themselves recognize in their public statements and internal documents, Chinese producers of chloride TiO2 are, at best, still years away from being able to produce substantial quantities of chloride TiO2 that are commercially suitable and cost competitive in North America. For example, in response to a { } { } from the German competition authority, Cristal described {

}

⁻

⁴⁷ See also (CCFF ¶ 743) ("In addition, running TiO2 plants is a capital-intensive undertaking that requires mastery of complex, proprietary technology, and which remains a major hurdle particularly for the chloride process production plants.").



(CCFF ¶ 762).

Respondents have pointed to Lomon Billions' publicly announced plans to build additional chloride TiO2 capacity over the next few years. Resps.' Pre-Trial Br. at 43; (CCFF ¶ 794). Given its struggle to operate its existing chloride capacity, it is highly speculative that Lomon Billions will successfully bring new capacity online in that timeframe. *See* (CCFF ¶ 806) (Romano testimony that it takes about 4.5 years to build a greenfield TiO2 plant); (CCFF ¶ 760) ({

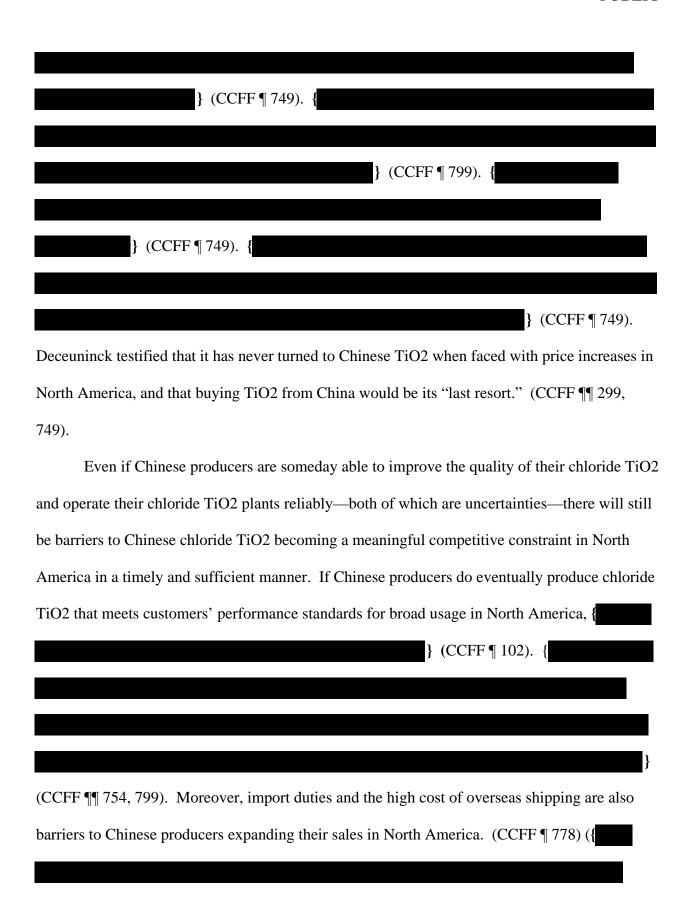
CCFF ¶ 803). Moreover, as Tronox's CEO recently explained to investors, even if Lomon Billions is able to expand its chloride capacity, that expansion is unlikely to have any impact because it will be absorbed by rising demand. (CCFF ¶ 795) ("I think we're seeing all the incremental expansion over the next 18 to 24 months, will really kind of just be soaked up by the incremental global growth. So we don't see that, that incremental expansion will significantly change the current dynamics."); *see also* (CCFF ¶ 796) (Dr. Hill testifying that the Lomon Billions expansion, if it were to occur, "will likely be absorbed by growth in demand in the Asia-

Furthermore, North American customers testified at trial that Chinese chloride TiO2, including from Lomon Billions, could not be used to defeat a price increase.

additional demand.").

Pacific region."); (CCFF ¶ 796) (even accounting for the announced Billions expansion, "[t]he

capacity changes from 2019-2022 are expected to net far less supply than is required to meet the



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}); (CCFF ¶ 778) ({
}).<sup>51</sup>
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Finally, given recent reductions in Chinese TiO2 production capacity and increasing demand for TiO2 within China, it is uncertain whether there will be any Chinese TiO2 available for export to North America in the years to come. Over the past several years, many of the older TiO2 plants in China have closed due to high cost positions, government initiatives to address pollution, and limited availability of feedstocks, and more are projected to close. *See* (CCFF ¶ 779 (PX9001 at 006 (Tronox Q3 2016 Earnings Call)) (observing that net Chinese production was down in 2015 and would be down again in 2016 and 2017).⁵² At the same time, demand for chloride and sulfate TiO2 within China has continued to increase at a higher rate than in other regions. (CCFF ¶ 777); *see also* (CCFF ¶ 775) (domestic demand for Chinese chloride TiO2 is growing faster than supply). This has resulted in tight supply, increased prices,⁵³ and reduced availability of Chinese TiO2 for exporting. *See* (CCFF ¶ 779) ({

}). Indeed,

Tronox itself projects that Chinese production will be unable to keep up with increasing Chinese demand, causing more Chinese TiO2 to stay in its domestic market:

⁵¹

⁵¹ The major producers also recognize the advantages of prioritizing their own local customers. *See, e.g.*, (CCFF \P 209) ({

^{}); (}CCFF ¶ 209) (

^{}); (}CCFF ¶ 282) ({

⁵² See also (CCFF ¶ 779) (Cristal reporting 10-15 plants idled, some expected to remain closed, and others expected to close due to environmental issues); (CCFF ¶ 799) (

In a May 2017 investor call, Tronox executives estimated that prices for Chinese TiO2 had increased by 45% for export sales since the start of 2016 alone. (CCFF \P 784).

As demand grows domestically, more and more supply will go into the domestic market, which means less will be available for the export market, and Chinese share in the global market we think is going to decline over the next several years."

(CCFF ¶ 780 (PX9001 at 009 (Tronox Q3 2016 Earnings Call)); see also (CCFF ¶ 780 (Tronox

Presentation)) ({ Given that Chinese TiO2 producers have thus far failed to establish themselves as a "material competitive presence in the U.S, either in terms of volume or in terms of price," (CCFF ¶ 745), and given the significant barriers preventing them from becoming such a presence, Respondents cannot carry their burden of "showing that the entry or expansion of competitors will be 'timely, likely and sufficient in its magnitude, character, and scope to deter or counteract the competitive effects of concern." Staples 2016, 190 F. Supp. 3d at 133 (citation omitted). 55 } are uncertain whether Indeed, { Chinese TiO2 producers will ever be a meaningful competitive presence in North America, and agree that if this were to happen, it would take years. (CCFF ¶ 762) });⁵⁶ see Staples 2016,

⁵⁴ See also, e.g., (CCFF ¶ 776 (TZMI presentation)) (Chinese "capacity changes from 2018-2021 are expected to net far less supply than is required to meet the additional demand.").

⁵⁵ Respondents claim that Chinese TiO2 compensated for the supply shortfalls in Europe following the fire at Venator's Pori, Finland sulfate TiO2 plant. Resps.' Br. at 23-24. But Chinese *sulfate* TiO2 merely replaced European *sulfate* TiO2—and did so only at a much higher price, resulting in European prices that rose dramatically more than those in North America. (CCFF ¶¶ 631-35, 812). This does not suggest that Chinese suppliers are in any position to "rapidly" enter the North American market for chloride TiO2 or discipline a North American price increase resulting from the merger. *See* (CCFF ¶ 799).

⁵⁶ E.g., (CCFF ¶ 762) (}); (CCFF

190 F. Supp. 3d at 134, 136 (finding that the evidence "does not support the conclusion that Amazon Business will be in a position to restore competition lost by the proposed merger within three years," and that it would be sheer speculation to conclude otherwise); *United States. v. BazaarVoice, Inc.*, No. 13-00133, 2014 U.S. Dist. LEXIS 3284, at *248 (N.D. Cal. Jan. 8, 2014) ("While a few companies have entered the market recently, their entry is of such a minimal scale that it is not close today, and is unlikely to be close in the next two years, to replacing PowerReviews.").

B. Respondents Have Failed to Demonstrate Their Efficiencies Claims

Respondents have the burden to present evidence sufficient to permit an independent party to "verify by reasonable means the likelihood and magnitude of each asserted efficiency, how and when each would be achieved (and any costs of doing so), how each would enhance the merged firm's ability and incentive to compete, and why each would be merger-specific."

Merger Guidelines § 10. Respondents have failed to do so, and their claimed efficiencies must be rejected.

1. The Legal Standard to Demonstrate Cognizable Efficiencies is High

A "rigorous standard . . . applies to efficiencies, which must be merger specific, verifiable, and must not arise from any anticompetitive reduction in output or service." *FTC v. Penn State Hershey Med. Ctr.*, 838 F.3d 327, 347 (3d. Cir. 2016). Under this standard, "the court must undertake a rigorous analysis of the kinds of efficiencies being urged by the parties in order to ensure that those 'efficiencies' represent more than mere speculation and promises about



post-merger behavior." *Heinz*, 246 F.3d at 721; *CCC Holdings*, 605 F. Supp. 2d at 72–73; *H&R Block*, 833 F. Supp. 2d at 89 (D.D.C. 2011) (quoting *Merger Guidelines* § 10).

In fact, when there are "high market concentration levels," like those presented by the Proposed Acquisition, the law requires "proof of extraordinary efficiencies." *Heinz*, 246 F.3d at 720; *CCC Holdings, Inc.*, 605 F. Supp. 2d at 72. Indeed, no court has ever permitted an otherwise unlawful transaction to proceed as a result of claimed efficiencies. *See Heinz*, 246 F.3d at 720–21; *Sysco*, 113 F. Supp. 3d at 82 ("The court is not aware of any case, and Defendants have cited none, where the merging parties have successfully rebutted the government's *prima facie* case on the strength of the efficiencies."); *CCC Holdings*, 605 F. Supp. 2d at 72.

The burden of providing evidence of cognizable efficiencies lies squarely upon Respondents' shoulders. *See United States v. Anthem Inc.*, 855 F.3d 345, 364 (2017) (noting that the defendant "has the burden of showing what portion of the claimed efficiencies will result from the merger itself); *Sysco*, 113 F. Supp. at 82; *Staples 2016*, 190 F. Supp. 3d at 137–38 n.15 ("Defendants bear the burden of showing that . . . their claimed efficiencies are: (1) merger specific; and (2) reasonably verifiable by an independent party." (citing *H&R Block*, 833 F. Supp. 2d at 89)); *FTC v. Univ. Health Inc.*, 938 F.2d 1026, 1223 (11th Cir. 1991) (holding that "a defendant who seeks to overcome a presumption that a proposed acquisition would substantially lessen competition must demonstrate that the intended acquisition would result in significant economies and that these economies ultimately would benefit competition, and hence, consumers").

"In order to be cognizable, the efficiencies must, first, offset the anticompetitive concerns in highly concentrated markets. Second, the efficiencies must be 'merger specific,' –

meaning, 'they must be efficiencies that cannot be achieved by either company alone.' Third, the efficiencies 'must be verifiable, not speculative,'; they 'must be shown in what economists label 'real' terms. Finally, the efficiencies must not arise from anticompetitive reduction in output or service." *Penn State Hershey*, 838 F.3d at 348-49 (quoting *St. Alphonsus Med. Ctr.—Nampa Inc. v. St. Luke's Health Sys.*, *Ltd.*, 778 F.3d 775, 790 (9th Cir. 2015), *Heinz*, 246 F.3d at 722, and *Univ. Health*, 938 F.2d at 1223) (citing *Merger Guidelines* § 10).

Respondents must prove "merger-specificity and verifiability" of all claimed efficiencies. *Anthem*, 855 F.3d at 364; *see also Heinz*, 246 F.3d at 722.

i. Verifiability

To be verifiable, the claimed efficiencies require "clear evidence showing that the merger will result in efficiencies that will offset the anticompetitive effects and ultimately benefit consumers." *Penn State Hershey*, 838 F.3d 327 at 350. Respondents presented several of their own employees in an attempt to present evidence of verifiability. However, under the law, Respondents cannot merely rely upon "managers experiential judgment." *H&R Block*, 833 F. Supp. 2d at 91. 57 "While reliance on the estimation and judgment of experienced executives about costs may be perfectly sensible as a business matter, the lack of a verifiable method of factual analysis resulting in the cost estimates renders them not cognizable by the Court." *H&R Block*, 833 F. Supp. 2d at 91. If the business judgment of experienced managers were sufficient, "the efficiencies defense might well swallow the whole of Section 7 of the Clayton Act because management would be able to present large efficiencies based on its own judgment and the Court would be hard pressed to find otherwise." *H&R Block*, 833 F. Supp. 2d at 91. As Dr. Zmijewski, Complaint Counsel's expert, explained at trial, in order to verify business judgment,

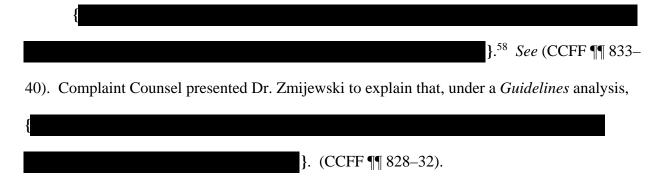
 $^{^{57}}$ Business judgment is "a business person's opinion based on their business experience," including education and knowledge basis. CCFF \P 937 (Dr. Zmijewski).

the business judgment must have foundation on documents and analysis, so an independent party can trace through to the foundational documents. (CCFF \P 937). Verification of business judgment requires a factual foundation to support the numbers provided by business executives. (CCFF \P 937).

ii. Merger Specificity

"[T]he alleged efficiencies must be 'merger-specific' to be cognizable as a defense. That is, they must be efficiencies that cannot be achieved by either company alone because, if they can, the merger's asserted benefits can be achieved without the concomitant loss of a competitor." *Heinz*, 246 F.3d at 721-22 (internal citations omitted). Merger specificity requires *more than* reliance upon ordinary due diligence conducted by the merging firms. *Sysco*, 113 F. Supp. 3d at 83 (faulting Defendants' expert for failing to conduct "any independent analysis of the [third party due diligence] estimate to determine which savings, if any, can be achieved without the merger"). Third party firms performing due diligence in deal making are not hired "to identify merger-specific savings for antitrust purposes." *Sysco*, 113 F. Supp. 3d at 83.

2. Respondents' Experts Fail to Conduct a *Guidelines* Analysis



Respondents seek to rely upon a due diligence analysis from KPMG, a consulting firm hired during the deal-making, as an independent source of validation of its efficiencies.

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⁵⁸ Respondents did not call their third expert, Mr. Basil Imburgia, to testify. As a result, the Court should disregard Mr. Imburgia's report. In any event, Mr. Imburgia did not conduct a *Guidelines* analysis in his report and presented no opinions in his report that the claimed efficiencies were verifiable or merger specific. (CCFF ¶ 837–39).

Williams, Tr. 133–34. But KPMG merely received estimates for all of the operational efficiencies from Tronox's managers and did nothing to verify the numbers. (CCFF ¶ 841). KPMG's report contained a disclaimer that they "have not otherwise verified the information" and laid out a number of "assumptions" taken from Tronox's management, such as assuming that Tronox will be able to run Cristal's Saudi Arabian assets. (CCFF ¶ 827, 858–59 (related to Yanbu), 908 (related to Jazan)); see also (CCFF ¶ 936, 946, 954–55, 958–59, 963–64, 968–69, 982, 985–87). This is not the independent analysis required under the Merger Guidelines. See H&R Block, 833 F. Supp. 2d at 89. Nor is it an analysis of merger–specificity and cognizability under the Merger Guidelines. (CCFF ¶ 841); see also Sysco, 113 F. Supp. 3d at 83 (finding that third party's ordinary due diligence analysis was not sufficient under antitrust efficiencies standard).

3. Respondents' Claimed Efficiencies Are Not Cognizable

In addition to specific claims, Respondents provide generalized arguments that they will increase TiO2 output through various methods. Resps.' Pre-trial Br. at 34–36. For instance, several of Respondents' claimed efficiencies are based upon the notion that increased vertical integration will lead to greater TiO2 output. But Tronox—which is already vertically integrated—has repeatedly *rejected* plans to expand production. (CCFF ¶¶ 994–1002); *see also* (CCFF ¶¶ 1003-08).⁵⁹

Respondents asserted a number of various efficiencies that primarily fall into three basic categories: (1) alleged expansion of TiO2 production at Cristal's TiO2 manufacturing facility in Yanbu, Saudi Arabia; (2) alleged expansion of feedstock at Cristal's high-grade feedstock

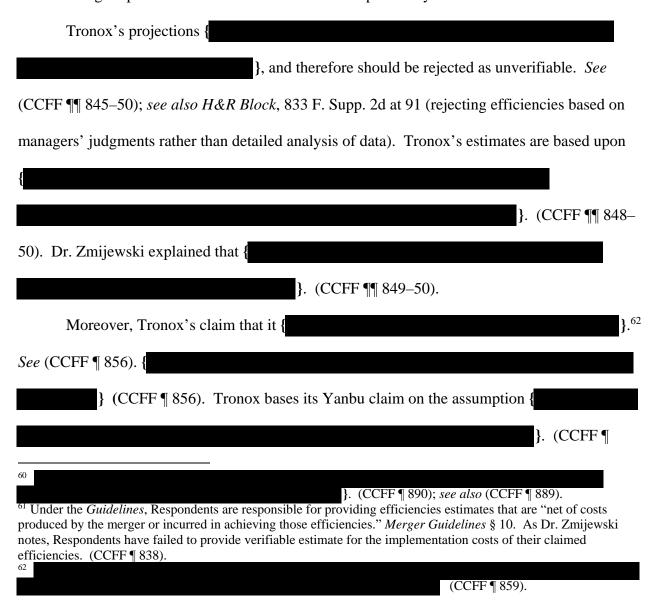
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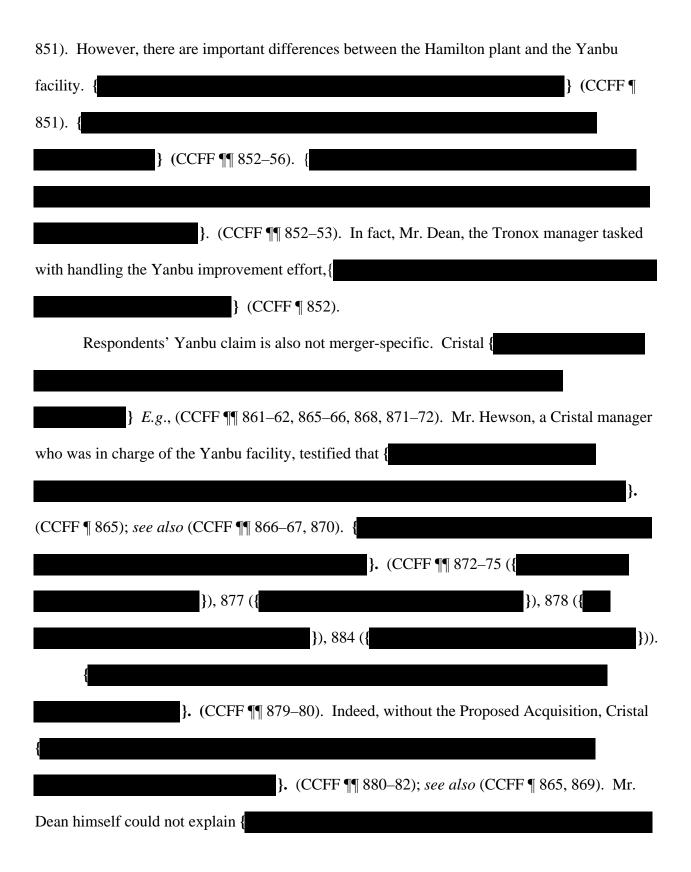
⁵⁹ The advantages claimed by Respondents as associated with vertical integration are not merger-specific. Tronox acknowledges that it has options absent the merger to take advantage of vertical integration and expand output. (CCFF ¶ 1009–10).

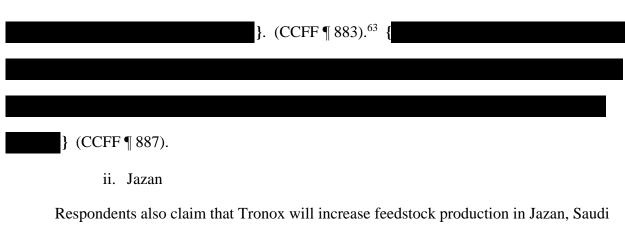
facility in Jazan, Saudi Arabia;⁶⁰ and (3) alleged cost savings. None of Respondents' claimed efficiencies are verifiable and merger-specific. In addition, Respondents have failed to show that the claimed efficiencies will benefit North American customers.⁶¹

i. Yanbu

Respondents claim that the merger will increase chloride TiO2 production at Cristal's plant in Yanbu, Saudi Arabia, by resolving operational issues at the plant. *See* (CCFF ¶¶ 842–44). This claim is not verifiable because it relies upon business judgment and is speculative, and it is not merger-specific because it fails to consider steps already available to Cristal.







Respondents also claim that Tronox will increase feedstock production in Jazan, Saudi Arabia. *See* (CCFF ¶ 888). This claim is not verifiable, as evidenced that the fact that Tronox would not agree to purchase the facility outright, and is not merger-specific, given that Cristal has other third parties with whom it can partner.

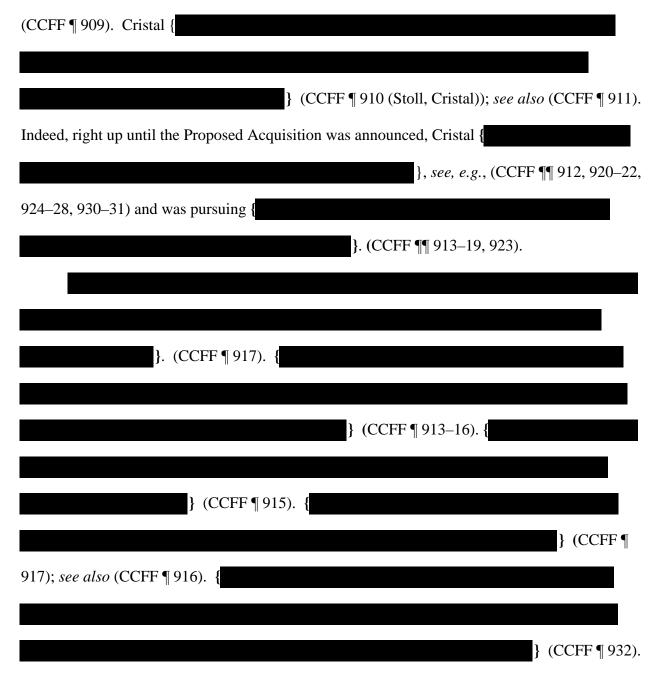
To start, Respondents' Jazan claim is rife with uncertainty, and thus is speculative and unverifiable. Respondents have only agreed to an Option Agreement, which provides { } within a five year timeframe. (CCFF ¶ 893) ({ }); see St. Alphonsus, 778 F.3d at 790 ("Claimed efficiencies must be verifiable, not merely speculative.") (citation omitted). Tronox's CEO testified that even if the Proposed Acquisition were consummated, there is "no certainty" that Tronox ultimately will purchase

Tronox's confident projections about Jazan are belied by the steps it has taken to insulate itself from risk if it were unable to fix the facility. This uncertainty surrounding whether the Jazan facility can be fixed {

Jazan. (CCFF ¶ 900).

63 (CCFF ¶¶ 876, 886); see also (CCFF ¶ 885).

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} (CCFF ¶ 898). {
     } (CCFF ¶ 899). {
                                                                           } (CCFF ¶¶
894, 896–97, 899). Therefore, despite its confident pronouncements, it is clear from Tronox's
own behavior that fixing the Jazan facility is a highly uncertain proposition. (CCFF ¶ 901)
As Dr. Zmijewski pointed out, {
                                               } (CCFF ¶ 902).
      Tronox's own documents also reflect uncertainty about whether it will be able to fix the
Jazan facility. {
              { (CCFF ¶ 903). Mr. Van Niekerk, the Tronox manager with
responsibility for the Jazan claim, explained {
              }. (CCFF ¶ 904).<sup>64</sup>
   .} (CCFF ¶ 904).<sup>65</sup>
      The Jazan claim is also not merger specific. A potential future acquisition of the Jazan
facility by Tronox is likely not the only way the Jazan facility could become operational. See
<sup>64</sup> Similar to the assumptions made with the Yanbu claim, Tronox assumes {
                                                        }. (CCFF ¶ 905). However,
                                      } (CCFF ¶ 905); see also (CCFF ¶ 906).
<sup>65</sup> In fact, the location of the facility itself – near the Yemen border – can create challenges. (CCFF ¶ 907).
                                                              }).
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In addition to the issues above, it is important to note that Respondents are making the extraordinary argument that the Court should credit efficiencies related to an asset that is not even part of this proposed transaction, and that may never be acquired. *See* (CCFF ¶ 891–93, 900). Respondents have failed to identify any case that has credited efficiencies generated not by the transaction in question, but by some *separate* acquisition of assets. To the contrary, courts

that have considered an efficiencies defense presume that the claims relate to efficiencies generated by the acquisition in question. *See, e.g., Penn State Hershey*, 838 F.3d at 347 (efficiencies defense entails a showing by defendants that "the anticompetitive effects of the merger will be offset by extraordinary efficiencies *resulting from the merger*") (citation omitted and emphasis added); *St. Alphonsus*, 778 F.3d at 790 (efficiencies defense entails a showing by defendants that "the *proposed merger* will create a more efficient combined entity and thus increase competition") (emphasis added); *Univ. Health*, 938 F.2d at 1222-23 (efficiencies defense requires a showing that "the *intended merger* would create significant efficiencies in the relevant market") (emphasis added). The Merger Guidelines presume the same—considering "efficiencies *generated through* a merger" in evaluating the effects of the merger in question.

*Merger Guidelines § 10 (emphasis added). This provides an independent reason the Jazan claim should be rejected.

iii. Cost Savings

Third, Respondents allege a number of cost saving efficiencies relating to optimizing various operations and processes.⁶⁶ Dr. Zmijewski has reviewed the claimed cost saving efficiencies and concluded that {

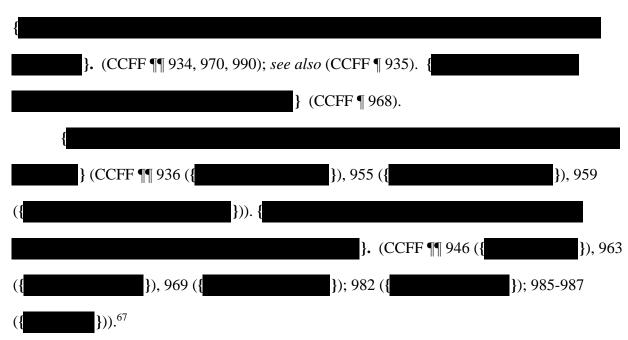
} (CCFF ¶¶ 831–32, 938–40, 942–44, 947–48, 956, 960, 967, 971, 974, 977, 980, 983, 989). Dr.

Zmijewski's opinions analyzing these claimed cost savings efficiencies under the Merger

Guidelines framework went unrebutted at trial.

⁶⁶ Respondents present a handful of efficiencies that they describe as output efficiencies: { $(CCFF \P 933, 941, 945)$. The analysis for these efficiencies is the same as the cost savings claims.

Respondents offered only self-serving testimony from Tronox's executives, but mere estimation and judgment by Respondents' executives are insufficient to establish cognizable efficiencies. *H&R Block*, 833 F. Supp. 2d at 91; *Sysco*, 113 F. Supp. 3d at 83. In fact,



4. Respondents' Claimed Efficiencies Will Not Impact North American Consumers

Finally, Respondents' efficiencies defense fails because the vast majority of their claims would not materially benefit the North American chloride TiO2 market. *See Univ. Health*, 938 F.2d at 1222–23; *Sysco*, 113 F. Supp. 3d at 82; *CCC Holdings*, 605 F. Supp. 2d at 74 ("Even assuming *arguendo* that the Defendants will achieve significant cost savings in a timely manner, there is no evidence to suggest that a sufficient percentage of those savings will accrue to the benefit of the consumers to offset the potential for increased prices"). Reducing the cost of doing business may benefit the merged firm but this does not necessarily translate to benefiting customers or competition in North America. *CCC Holdings*, 605 F. Supp. 2d at 74. Indeed, efficiencies outside of the relevant market are not cognizable. *See Phila. Nat. Bank*, 374 U.S. at

⁶⁷ Respondents have also failed to provide sufficient evidence in other regards. *See, e.g.*, (CCFF ¶¶ 952–53, 962, 965–66, 973, 976, 979, 988, 991–93).

370 (indicating that "anticompetitive effects in one market" could not be justified by "procompetitive consequences in another").

The bulk of Respondents' claims are outside of the relevant market. Tronox CEO Jeffry Quinn appears to concede this, testifying that "an overwhelming portion of the synergies are ex – you know, non-U.S. assets." (CCFF ¶ 1011). In particular, the Jazan claim concerns the production of feedstock—not TiO2—outside of North America, and Respondents have failed to show how these purported benefits will have any effect inside the relevant market at issue here. (CCFF ¶ 1014). Although related to TiO2 production, the Yanbu claim likewise is largely out of market, {

Moreover, Respondents have failed to demonstrate how any of their claimed efficiencies (in or out of market) would benefit customers, and the evidence is to the contrary. Indeed,

Tronox acknowledged that it has not even attempted to quantify how its claimed efficiencies

would benefit customers. {

} (CCFF ¶ 1012).⁶⁹

V. Requested Relief

Once Complaint Counsel has established a violation of Section 7, "all doubts as to the remedy are to be resolved in its favor." *United States v. E.I. du Pont de Nemours & Co.*, 366 U.S. 316, 334 (1961). Consistent with this principle, Complaint Counsel requests an injunction blocking the Proposed Acquisition. *See* Comp., Notice of Contemplated Relief ¶ 2. The Commission has broad discretion to select a remedy so long as it bears a "reasonable relation to

 68 Several other claimed efficiencies are also out of market. (CCFF $\P\P$ 1015-17).

⁶⁹ Additionally, Tronox's history of curtailing TiO2 and feedstock output shows that it is unlikely to increase production at Jazan and Yanbu if doing so would cause prices to decrease.

the unlawful practice found to exist." *Jacob Siegel Co. v. FTC*, 327 U.S. 608, 611–13 (1946). Such a remedy must "effectively preserve competition in the relevant market" and "maintain the premerger level of competition." *Sysco*, 113 F. Supp. 3d at 72 (quotation omitted). In this case, the proper remedy is an Order prohibiting any transaction between Tronox and Cristal that combines their businesses, except as may be approved by the Commission. Complaint Counsel's proposed order is attached as Appendix A.

CONCLUSION

For the foregoing reasons, the evidence presented at trial and admitted to the record establishes that Tronox's Acquisition of Cristal violates Section 7 of the Clayton Act and Section 5 of the Federal Trade Commission Act, as alleged in the complaint, and justifies entry of an Order by the Court granting the relief sought therein.

Dated: August 14, 2018

D. Bruce Hoffman Director

Haidee L. Schwartz Acting Deputy Director

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Counsel Supporting the Complaint

Attachment A

UNITED STATES OF AMERICA BEFORE THE FEDERAL TRADE COMMISSION OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of

Tronox Limited, a corporation,

National Industrialization Company (TASNEE), a corporation,

a corporation,

National Titanium Dioxide Company Limited (Cristal), a corporation,

and

Cristal USA Inc., a corporation.

Docket No. 9377

[PROPOSED] ORDER

I.

IT IS ORDERED that, as used in the Order, the following definitions shall apply:

- A. "Tronox" means Tronox Limited, its directors, officers, employees, agents, representatives, successors, and assigns; the joint ventures, subsidiaries, partnerships, divisions, groups, and affiliates controlled by Tronox Limited, and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- B. "Cristal" means the National Titanium Dioxide Company Limited (Cristal), its directors, officers, employees, agents, representatives, successors, and assigns; the joint ventures, subsidiaries (including Cristal USA), partnerships, divisions, groups, and affiliates controlled by the National Titanium Dioxide Company Limited (Cristal), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- C. "Cristal USA" mean Cristal USA Incorporated, its directors, officers, employees, agents, representatives, successors, and assigns; the joint ventures, subsidiaries, partnerships, divisions, groups, and affiliates controlled by Cristal USA Incorporated, and the

respective directors, officers, employees, agents, representatives, successors, and assigns of each.

- D. "TASNEE" means the National Industrialization Company (TASNEE), its directors, officers, employees, agents, representatives, successors, and assigns; the joint ventures, subsidiaries (including Cristal), partnerships, divisions, groups, and affiliates controlled by the National Industrialization Company (TASNEE), and the respective directors, officers, employees, agents, representatives, successors, and assigns of each.
- E. "Proposed Acquisition Agreement" means the "Transaction Agreement Dated as of February 21, 2017 between The National Titanium Dioxide Company Limited, Tronox Limited and, solely for the purposes of Articles I, II, VIII, IX and XIII, Cristal Inorganic Chemicals Netherlands Coöperatief W.A."

II.

IT IS FURTHER ORDERED that:

- A. Respondent Tronox and Respondents Cristal, TASNEE, and Cristal USA shall terminate the Proposed Acquisition Agreement, and cease and desist from taking any actions, directly or indirectly, to consummate the Proposed Acquisition Agreement.
- B. Respondent Tronox shall cease and desist from acquiring Cristal, in whole or in part, including, but not limited to, any stock, assets, share capital, equity, or other interest in or related to Cristal, directly or indirectly, from Respondents Cristal, TASNEE, or Cristal USA.
- C. Respondents Tronox, Cristal, TASNEE, and Cristal USA shall return all confidential information received, directly or indirectly, from one another and destroy all notes relating to such information.
- D. Respondents shall submit a verified written statement within 15 days of the Order becoming final certifying compliance with the requirements of Paragraphs II.A. and II.C. relating to terminating the acquisition agreement and returning/destroying each other's confidential information, with sufficient detail and supporting documentation to allow the Commission to determine independently that Respondents are in compliance.

ORDERED:	
	D. Michael Chappell Chief Administrative Law Judge
Date:	

CERTIFICATE OF SERVICE

I hereby certify that on August 14, 2018, I filed the foregoing document electronically using the FTC's E-Filing System, which will send notification of such filing to:

Donald S. Clark Secretary Federal Trade Commission 600 Pennsylvania Ave., NW, Rm. H-113 Washington, DC 20580 ElectronicFilings@ftc.gov

The Honorable D. Michael Chappell Administrative Law Judge Federal Trade Commission 600 Pennsylvania Ave., NW, Rm. H-110 Washington, DC 20580

I also certify that I delivered via electronic mail a copy of the foregoing document to:

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National Titanium Dioxide Company
Cristal USA, Inc.

By: <u>/s/ Blake Risenmay</u>
Blake Risenmay
Counsel Supporting the Complaint

CERTIFICATE FOR ELECTRONIC FILING

I certify that the electronic copy sent to the Secretary of the Commission is a true and correct copy of the paper original and that I possess a paper original of the signed document that is available for review by the parties and the adjudicator.

August 14, 2018 By: /s/ Blake Risenmay

Blake Risenmay

Counsel Supporting the Complaint