

**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,**

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

**And**

**Cristal USA Inc.  
a corporation.**

**Docket No. 9377**

**COMPLAINT COUNSEL'S PRE-TRIAL BRIEF**

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## INTRODUCTION

Tronox Limited has proposed to acquire its rival, National Titanium Dioxide Company Limited (“Cristal”). Tronox and Cristal are two of the top three producers and sellers of titanium dioxide (“TiO<sub>2</sub>”) created through the chloride process (“chloride TiO<sub>2</sub>”) in the United States and Canada (“North America”).<sup>1</sup> If the Acquisition occurs, Tronox and a second producer, The Chemours Company, would account for { }% of North American chloride TiO<sub>2</sub> sales and over { }% of North American chloride TiO<sub>2</sub> capacity.

The Acquisition would substantially increase concentration in an already consolidated market with a long history of price-fixing litigation and subsequent court decisions outlining pervasive anticompetitive conduct. In September 2017, the U.S. Court of Appeals for the Third Circuit stated that “[t]here is no dispute that the [TiO<sub>2</sub>] market was primed for anticompetitive interdependence and that it operated in that manner.” *Valspar Corp. v. E. I. Du Pont De Nemours & Co.*, 873 F.3d 185, 197 (2017). And in a separate proceeding, the U.S. District Court for the District of Maryland ruled on summary judgment that “[t]he record contains ample evidence for concluding that the [d]efendants agreed to raise prices and shared commercially sensitive information . . . to facilitate their conspiracy.” *In re Titanium Dioxide Antitrust Litig.*, 959 F. Supp. 2d 799, 823 (2013). Moreover, Tronox has a demonstrated history of curtailing chloride TiO<sub>2</sub> output in order to drive up industry prices. *See infra* at Section C.2. The Acquisition would significantly exacerbate these concerns.

The relevant market is the sale of chloride TiO<sub>2</sub> in North America. TiO<sub>2</sub> is a critical input in the manufacture of paints and coatings, certain plastics, and other products. TiO<sub>2</sub> provides opacity, whiteness, and brightness to a variety of products. It is undisputed that there

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<sup>1</sup> Although Mexico is undoubtedly part of North America, Respondents and other market participants define the North American market as the United States and Canada. *See* { } { }

are no substitutes for TiO<sub>2</sub>. And North American customers cannot meaningfully substitute TiO<sub>2</sub> manufactured through the sulfate process (“sulfate TiO<sub>2</sub>”) for chloride TiO<sub>2</sub>. Chloride TiO<sub>2</sub> provides superior opacity, durability, and whiteness compared to sulfate TiO<sub>2</sub> and constitutes more than {█}% of North American TiO<sub>2</sub> purchases. Moreover, the evidence shows that North American customers have not and will not switch to sulfate TiO<sub>2</sub> to any meaningful degree, even in the face of dramatic price increases for chloride TiO<sub>2</sub>.<sup>2</sup> As Tronox’s CEO explained to its investors: “in the North American market, it has -- there was 95% or 98%, or some very, very high number chloride. It remains, essentially the same number market share for chloride. That was true when prices were over \$4,000 per ton, it is true now.” PX9012 at 8 (Tronox Q4 2013 Earnings Call).

Chloride sales to North American customers is the correct geographic market for the Court to assess the likely effects of the transaction. North American customers source nearly all of their TiO<sub>2</sub> locally, with suppliers delivering to their customers’ facilities in North America. Moreover, suppliers charge different prices to different regions. These regional price differences persist for extended periods of time and cannot be defeated by customers through arbitrage.<sup>3</sup> As a result, a hypothetical monopolist of the sale of chloride TiO<sub>2</sub> in North America would find it profitable to impose a small but significant non-transitory price increase, demonstrating the existence of a properly defined relevant market.<sup>4</sup>

The Acquisition would significantly increase market shares and concentration in North America, creating a strong presumption of anticompetitive harm. With the acquisition of Cristal, Tronox’s North American market share for chloride TiO<sub>2</sub> would increase to {█}%, and together with Chemours, the two producers would control over {█}% of North American sales, and over

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<sup>2</sup> See *infra* at Section B.1.

<sup>3</sup> See *infra* at Section B.2.

<sup>4</sup> *Federal Trade Commission and U.S. Department of Justice Horizontal Merger Guidelines* § 4.2.2.

{ }% of North American TiO<sub>2</sub> capacity. The presumption of harm is significantly strengthened in this case for two reasons: First, the TiO<sub>2</sub> industry has a history of coordination that multiple courts have recognized.<sup>5</sup> As the Seventh Circuit explained in *FTC v. Elders Grain, Inc.*, “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.*” 868 F.2d 901, 906 (1989) (emphasis added). There are no special circumstances here. Second, the presumption is further strengthened by direct evidence that the merger will result in anticompetitive effects. Tronox has already informed PPG, one of its largest customers, that it intends to raise prices after the transaction closes.<sup>6</sup> { }

{ } Moreover, Tronox’s competitors agree that the proposed merger will contribute to { } and “continued capacity constraints.”<sup>9</sup>

The proposed merger will likely reduce competition in at least two ways: it will increase the likelihood of coordination and it will strengthen Tronox’s incentive to reduce output in the North American market. Statements from both Tronox and Cristal executives, as well as the courts’ opinions in *Valspar* and *In re Titanium Dioxide Antitrust Litigation*, demonstrate that the chloride TiO<sub>2</sub> industry is already vulnerable to coordination. Indeed, producers in North America already behave as an interdependent oligopoly, avoiding competition to lower prices:

“The ‘**Evil Sin**’ would be to attempt to lower prices to take market share as markets weaken. **We Must Hold Price!**” PX2242 at 17 (Cristal) (emphasis in original).

<sup>5</sup> *Valspar*, 873 F.2d 185; *In re Titanium Dioxide Antitrust Litig.*, 959 F. Supp. 2d 799.

<sup>6</sup> PX7025 (Malichky (PPG) Dep. at 146, 269); *see infra* at Section C.

<sup>7</sup>

<sup>9</sup> PX3011 at 38 (Kronos).

“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 . . . .” PX9010 at 5 (Tronox Q2 2014 Earnings Call).

[REDACTED]

[REDACTED]

As the Third Circuit explained in *Valspar*, this competitive dynamic is already leading to higher TiO<sub>2</sub> prices.<sup>10</sup> The Acquisition, by eliminating an independent competitor, will worsen the existing conditions, making it easier for the remaining suppliers to maintain discipline and avoid price competition. Indeed, the Acquisition would cement Tronox’s position as a market leader with more influence as a “rational” competitor: one that will not undercut competitors on price, and will continue to manage the production and availability of chloride TiO<sub>2</sub> to support price increases and limit price erosion.

The merger will also facilitate coordination by further increasing transparency. In the highly concentrated market for chloride TiO<sub>2</sub>, price increases are transmitted quickly through the market, via public press releases as well as advance notice to customers. These announcements are echoed in forums such as earnings calls in which the publicly-traded producers affirm their intention to see these announced price increases succeed. Further, through their everyday competitive interactions, the major producers obtain detailed and accurate information about

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<sup>10</sup> “Valspar presents evidence that there was ‘a 16% overcharge’ and that ‘price increases were not correlated to supply-and-demand principles.’ While true, this is largely irrelevant because it ignores the fact that ‘firms in a concentrated market may maintain their prices at supracompetitive levels, or even raise them to those levels, without engaging in any overt concerted action.” *Valspar*, 873 F.3d at 197 (quoting *In re Flat Glass Antitrust Litig.*, 385 F.3d 350, 359 (3d Cir. 2004)).

their rivals' competitive behavior—including detailed information on competitors' pricing, operating costs, available capacity, and inventories.<sup>11</sup> Cristal is the only major producer of TiO<sub>2</sub> that is not a public company and thus does not publicly announce its TiO<sub>2</sub> revenue, pricing changes, and inventory levels on a quarterly basis. After the merger, such information will become available to the industry through Tronox's detailed earnings statements.

By further facilitating coordination, the Acquisition will benefit not only Tronox, but also will benefit Tronox's competitors. Indeed, the day after Respondents publicly announced the Acquisition, Peter Huntsman, the chairman of the former parent company of Venator, one of Tronox's direct competitors, emailed Tronox Chairman Tom Casey to congratulate him on the acquisition. Tom Casey responded that the Acquisition would be good not only for Tronox, but for competitors Huntsman, Chemours and Kronos, as well: "very happy that we were able to put [the acquisition] together since I think it will be very good for [Tronox's] shareholders – and if today's market reaction is an indication, for yours, and Chemours' and Kronos' too." PX1045 at 1 (Tronox). An acquisition that is good for Tronox's competitors, though, is assuredly not likely to benefit customers or consumers.

In addition to increasing the likelihood of coordination, the Acquisition will also increase Tronox's incentive and ability to unilaterally withhold output in order to drive up industry prices. For years, Tronox has consistently and openly pursued a strategy of output management by shuttering plants and curtailing production:

And then the question is when will [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 the others as well, they're doing the same thing. We see them acting in the same way." PX9005 at 10 (Tronox Q3 2015 Earnings Call).

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<sup>11</sup> [REDACTED]

A senior Tronox sales executive put it more bluntly: { [REDACTED]

[REDACTED] }  
 With control of even more capacity, and no longer constrained by Cristal, the Acquisition will provide Tronox with an even stronger basis from which to pursue a strategy to reduce North American market supply to bolster chloride TiO<sub>2</sub> pricing.

Complaint Counsel's *prima facie* case, therefore, relies not only on concentration statistics and the presumption of harm that arises from those numbers, but also evidence from many sources that point to the very real danger that this Acquisition will lead to higher prices. The Respondents' rebuttal evidence with respect to entry, expansion, and efficiencies will not be sufficient to overcome that case. There have been no new entrants into the manufacture of TiO<sub>2</sub> in many, many years, and the uncertain prospect of chloride TiO<sub>2</sub> expansion at some point in the future, by Chinese firms that have a *de minimis* presence in North America, is not sufficient to address the serious competitive concerns. Further, the efficiencies asserted by the Respondents are speculative, not merger-specific, and in any event, not likely to benefit North American consumers.

### 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.<sup>12</sup> The high market share and concentration levels establish the Acquisition as presumptively unlawful. *See United States v. Philadelphia 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*, 246 F.3d 708, 715 (D.C. Cir. 2001); *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 115 (D.D.C. 2016); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 52 (D.D.C. 2015). The evidence Complaint Counsel will present—that

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<sup>12</sup> The consideration from Tronox includes cash of \$1.7 billion and a 24% interest in the combined company.

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—bolsters 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 incipency.” *Polypore*, 150 FTC at \*8 (citing *Chicago Bridge & Iron Co. v. FTC*, 534 F.3d 410, 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.” *Elders Grain*, 868 F.2d at 906. 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); 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 rebutting that presumption then shifts to Respondents. See *Heinz*, 246 F.3d at 715. Because the Third Circuit's decision in the *Valspar* case has 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").

### **A. Background**

TiO<sub>2</sub> is a white pigment that provides opacity (hiding power), whiteness, and brightness to a variety of products. It is a critical input in the manufacture of paints and coatings, certain plastics, and other products. TiO<sub>2</sub> is used to make pure white colors, and used as a base for other colors. It is undisputed that there are no substitutes for TiO<sub>2</sub>.<sup>13</sup>

TiO<sub>2</sub> is manufactured by treating titanium-containing ore, commonly known as feedstock, with chlorine ("chloride TiO<sub>2</sub>") or sulfuric acid ("sulfate TiO<sub>2</sub>"). Chloride TiO<sub>2</sub> provides superior opacity, durability, and whiteness compared to sulfate TiO<sub>2</sub> and constitutes more than 90% of North American TiO<sub>2</sub> purchases. The producers of TiO<sub>2</sub> in North America

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<sup>13</sup> PX9104 at 42 (Tronox 2017 Form 10-K) ("At present, it is [Tronox's] belief that there is no effective mineral substitute for TiO<sub>2</sub> because no other white pigment has the physical properties for achieving comparable opacity and brightness, or can be incorporated as cost effectively.").

are Tronox, Cristal, Chemours, Venator and Kronos. Virtually all of the TiO<sub>2</sub> production capacity in North America is for chloride TiO<sub>2</sub>—the only sulfate TiO<sub>2</sub> plant in North America is a small Kronos plant in Quebec that is co-located with a much larger Kronos chloride plant.<sup>14</sup>

Tronox and Cristal are two of the top three producers of chloride TiO<sub>2</sub> in North America. Tronox manufactures only chloride TiO<sub>2</sub>, at three plants: 1) in Hamilton, Mississippi; 2) in the Netherlands at Botlek; and 3) in Australia, at Kwinana. Cristal manufactures chloride TiO<sub>2</sub> at four plants: 1) in Ashtabula, Ohio; 2) in Australia, at Kemerton; 3) in the United Kingdom, at Stallingborough; and 4) in Saudi Arabia at Yanbu. Cristal also manufactures sulfate TiO<sub>2</sub> at three plants: Bahia Brazil; Thann, France; and Tikon in China.

**B. The Proposed Acquisition Is Presumptively Unlawful in a Market for Sales of Chloride TiO<sub>2</sub> 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 TiO<sub>2</sub> to customers in North America, and would result in just two firms (Tronox and Chemours) accounting for {█} percent of sales of chloride TiO<sub>2</sub> in North America, thereby substantially increasing market concentration in the sale and manufacture of chloride TiO<sub>2</sub> North American customers.<sup>15</sup>

**1. The Relevant Product Market is Chloride TiO<sub>2</sub>.**

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), *aff’d*, 855 F.3d 345 (D.C. Cir.) (quoting *FTC v. Arch Coal*, 329 F. Supp. 2d 109, 119 (D.D.C. 2004)). The Supreme Court established the “basic rule for defining a product market”<sup>16</sup> in *Brown Shoe*: “The outer boundaries of a product market are determined by the reasonable

<sup>14</sup> {█} Both Tronox and Cristal at one time manufactured sulfate TiO<sub>2</sub> in North America, but closed their plants as demand for sulfate TiO<sub>2</sub> in North America declined in favor of chloride TiO<sub>2</sub>.

<sup>15</sup> {█}

<sup>16</sup> *Staples*, 190 F. Supp. 3d at 116–17.

interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.” 370 U.S. at 325. In other words, courts consider “whether there are other products offered to consumers which are similar in character or use . . . as well as how far buyers will go to substitute one commodity for another.” *Staples 1997*, 970 F. Supp. at 1074. In defining an antitrust product market, courts consider “such practical indicia as industry or public recognition of the [relevant market] as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.” *FTC v. Whole Foods Mkt.*, 548 F.3d 1028, 1037–38 (D.C. Cir. 2008) (Brown, J.) (quoting *Brown Shoe*, 370 U.S. at 325); *see also CCC Holdings*, 605 F. Supp. 2d at 38.

Courts and the Commission also rely on the Federal Trade Commission and U.S. Department of Justice Horizontal Merger Guidelines (“*Merger Guidelines*”).<sup>17</sup> *See Heinz*, 246 F.3d at 716 n.9, 718; *Polypore*, 150 FTC at \*8–9. The *Merger Guidelines* define a relevant product market in economic terms, by asking whether a monopolist of a particular group of substitute products could profitably impose a “small but significant non-transitory increase in price” (“SSNIP”)—typically 5 percent—over those products, or whether customers switching to alternative products would make 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.<sup>18</sup> Applied to the facts here, the hypothetical monopolist test asks whether a single combined producer of chloride TiO<sub>2</sub> could profitably raise prices to North American customers by 5 percent. As the evidence will show, the answer is yes.

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<sup>17</sup> “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).

<sup>18</sup> 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 3.



[REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED] } These limited uses of sulfate TiO<sub>2</sub> do not support an inference that other North American purchasers of chloride TiO<sub>2</sub> can switch to sulfate TiO<sub>2</sub>. To the contrary, these are applications where color and durability are simply less important than, for example, interior and exterior house paint.

Additionally, unlike in other regions, 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.<sup>20</sup> Sulfate TiO<sub>2</sub> cannot be used in these paints, because point-of-sale tinting requires a consistent color base that only chloride TiO<sub>2</sub> can provide. PX7020 (Young (Sherwin-Williams) Dep. at 47–49) (Point-of-sale tinting requires chloride TiO<sub>2</sub> in order “to achieve the color palette reliably that the customers expect, it has to be a bright white, a clean white product.”); [REDACTED]

[REDACTED] }

Further, for North American customers using chloride TiO<sub>2</sub> to attempt switching to sulfate TiO<sub>2</sub>, even on a limited scale, would require that they engage in lengthy qualifications and [REDACTED]; see PX8003 (Young (Sherwin-Williams) Decl.) ¶ 17 (“It takes a minimum of one year to qualify a TiO<sub>2</sub> grade for use in one of our core architectural or industrial coatings products, and it may take as long as three years.”); PX7044 (True Value (Vanderpool) Dep. at 128) (“[I]t’s significantly more difficult, if even possible, to substitute a sulfate for a chloride.”); [REDACTED]

<sup>20</sup> See PX7020 (Young (Sherwin-Williams) Dep. at 48) (“Typically in Europe colors are premade in the manufacturing environment so you have the ability to overcome variation in color by adjusting in the plant. In the North America[n] market, all the paint companies tint at point of sale . . . .”); *id.* at 134 (By contrast, there are “a lot of prepackaged colors in South America.”).

[REDACTED]

Moreover, many of the major coatings customers in North America have TiO<sub>2</sub> delivered in slurry (liquid) form TiO<sub>2</sub>, as opposed to dry TiO<sub>2</sub>, because it lowers costs: slurry can be shipped by rail cars and pumped directly into the customer's storage tank to be mixed into paint.

{ [REDACTED]

Only chloride TiO<sub>2</sub> is available in slurry form in North America, and it would be expensive and impractical to ship slurry from overseas. { [REDACTED] } Switching from slurry to dry TiO<sub>2</sub> would present significant logistical challenges and costs for customers.

{ [REDACTED]

The lack of sulfate slurry TiO<sub>2</sub> in North America is yet another reason why sulfate TiO<sub>2</sub> is not an effective substitute for chloride TiO<sub>2</sub> in North America. { [REDACTED]

[REDACTED] }

That chloride TiO<sub>2</sub> and sulfate TiO<sub>2</sub> are not close substitutes in North America is demonstrated by North American customers' consistent reliance on chloride TiO<sub>2</sub>, despite paying a premium for it. On average, chloride TiO<sub>2</sub> was { [REDACTED] }% more expensive than sulfate

TiO2 in North America from { [REDACTED] } Despite this, the dominance of chloride TiO2 in North America has persisted, with chloride TiO2 accounting for around { [REDACTED] }% of sales in North America throughout this period. { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }

Tronox itself has confirmed 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:

{ [REDACTED]

Tronox { [REDACTED] } described the limited threat posed by sulfate

TiO2: { [REDACTED]

[REDACTED] } Indeed, during a call with investors,

Tronox's former 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.” PX9012 at 8 (Tronox Q4 2013 Earnings Call).<sup>21</sup>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Likewise, [REDACTED] also recognize the important differences between chloride and sulfate TiO<sub>2</sub>, and recognize that customers in North America do not consider them readily substitutable in most applications. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] } PX8005 (Maiter

(Venator) Decl.) ¶ 8 (“In North America, coatings customers developed formulations that mostly incorporate chloride grades.”).

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<sup>21</sup> These statements, and others by Tronox to investors, should be accorded considerable weight. SEC Rule 10b-5 forbids, among other things, the making of any "untrue statement of a material fact" or the omission of any material fact "necessary in order to make the statements made . . . not misleading." 17 C.F.R. § 240.10b-5.

Consistent with the record described above, Complaint Counsel’s economic expert, Dr. Nicholas Hill, conducted an empirical analysis and found { [REDACTED]

[REDACTED] } Dr. Hill will more fully describe his economic analysis of the relevant product market during trial.

## 2. The Relevant Geographic Market is North America.

“The boundaries of the relevant geographic market, like the boundaries of the relevant product market, depend on reasonable interchangeability and cross-elasticity of demand.” *Polypore*, 150 FTC at \*16 (citing *Brown Shoe*, 370 U.S. at 336). “Where suppliers can set prices based on customer location, and 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 at \*16 (citing *Merger Guidelines* § 4.2.2).

Here, the relevant geographic market is defined around the locations of chloride TiO<sub>2</sub> customers in North America.<sup>22</sup> *See Merger Guidelines* § 4.2.2. This geographic market includes *all* sales of chloride TiO<sub>2</sub> in North America—including imports by foreign suppliers—even

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<sup>22</sup> North America is defined as the United States and Canada. *See supra* note 1.

though imports are limited. { [REDACTED] }  
[REDACTED] } As the evidence indicates, TiO2 producers price regionally, on a delivered basis, and a hypothetical monopolist controlling all sales of chloride TiO2 to North American customers would not be defeated by those customers turning outside of North America to purchase chloride TiO2. As such, the geographic market is properly defined around North American customers. *See Polypore*, 150 FTC at \*16; *Merger Guidelines* § 4.2.2.

Notably, TiO2 producers price on a delivered basis, and North American customers obtain nearly all of the TiO2 they consume through deliveries by suppliers to the customers' North American locations. { [REDACTED]

[REDACTED] }  
Indeed, North American customers prefer to source chloride TiO2 locally, because local supply offers faster order fulfillment, a more responsive supply chain, and greater security of supply.

{ [REDACTED] } And even North American customers with operations in other regions of the world pay different prices in North America than in other regions. { [REDACTED]

[REDACTED] }  
The differences in chloride TiO2 prices across regions persist over time—a fact that industry participants broadly acknowledge. The merging parties organize their chloride TiO2 business and make sales and pricing decisions on a regional basis.<sup>23</sup> { [REDACTED]

---

<sup>23</sup> [REDACTED]

[REDACTED]

[REDACTED]

And many documents from both Tronox and Cristal corroborate the testimony by

executives:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

---

24 [REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]

Consistent with Respondents' internal documents, the public statements in Tronox's earnings calls explain the different conditions in North America compared to other parts of the world.

- [Tronox CEO] TOM CASEY: . . . [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 being somewhat higher.<sup>26</sup>
- We 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. . . . We don't think that the huge influx of supply competing in that market explains the pricing behavior that we see in the North American market.<sup>27</sup>

[REDACTED]

<sup>26</sup> PX9008 at 8 (Tronox Q4 2014 Earnings Call).  
<sup>27</sup> PX9006 at 6 (Tronox Q2 2015 Earnings Call).

Customers also recognize the regional nature of their chloride TiO<sub>2</sub> purchases. *See* PX8003 (Young (Sherwin-Williams) Decl.) ¶ 27 (“North American TiO<sub>2</sub> prices are traditionally higher than other regions due to supply and demand conditions. . . . In other regions, customers use primarily sulfate TiO<sub>2</sub>, which has more supply options, such as sulfate TiO<sub>2</sub> from China or Eastern Europe. TiO<sub>2</sub> prices tend to fluctuate more in other regions than in North America, and can be higher than North American prices when supply is tight.”); { [REDACTED] }; PX8000 (Malichky (PPG) Decl.) ¶ 7 (“Even as a global purchaser, though, pricing and volume for TiO<sub>2</sub> purchase[s] are negotiated and determined regionally. Between 2011 and 2016, PPG's price for TiO<sub>2</sub> in the United State[s] tended to be more stable, and higher, on average, than in other parts of the world.”).

Unsurprisingly in light of the foregoing, over at least a four-year period, Respondents recognized that prices for customers in North America were higher, by large amounts, than anywhere else in the world:

- { [REDACTED] }
- 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.” PX2030 at 3 (Cristal);
- { [REDACTED] }
- [REDACTED]

- [REDACTED]
- [REDACTED]

Consistent with Respondents' ordinary course documents, Dr. Hill analyzed pricing data

{ [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] }

Moreover, customers have been unable to use arbitrage to defeat the higher prices in North America. { [REDACTED]

[REDACTED] } Tronox admits the cost of shipping and duties adds at least { [REDACTED] }% to the cost of imported TiO<sub>2</sub> in the United States.

{ [REDACTED] }. These additional costs, which likely exceed { [REDACTED] }, make arbitrage particularly difficult. { [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>28</sup> In the second quarter of 2017, prices in other regions began to exceed North American prices. [REDACTED] [REDACTED] The higher price levels in other regions coincided with reduced availability of TiO<sub>2</sub> in those regions. In China, for example, TiO<sub>2</sub> production capacity was reduced due to reduced availability of feedstock as well as the closure of a number of TiO<sub>2</sub> plants due to increased environmental regulation. { [REDACTED] [REDACTED] }. In Europe, TiO<sub>2</sub> production capacity was reduced when Venator closed its plant in Calais, France and due to a fire that led to the shutdown of Venator's plant in Pori, Finland. PX7015 (Maiter (Venator) Dep. at 164); *id.* at 217.

[REDACTED]  
 [REDACTED]  
 [REDACTED] } The lack of arbitrage is not surprising, given that it { [REDACTED]  
 [REDACTED]  
 [REDACTED] }

For all of these reasons, the North American market reflects the commercial realities of how TiO<sub>2</sub> is bought and sold, how it is priced, and how producers analyze and organize their TiO<sub>2</sub> businesses. Consequently, the sale of chloride TiO<sub>2</sub> to North American customers is a properly defined relevant market.

### **3. 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 ‘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.

To assess an acquisition’s presumptive illegality, courts first consider Defendants’ 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*, 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 North American market share of {█}% of North American sales of chloride process TiO<sub>2</sub>, and that the acquisition would increase the HHI by over 700 points, to a level of over 3000.

These market share statistics demonstrate this Acquisition is presumptively anticompetitive. *See Staples*, 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.”).

#### **4. The Documented History of Coordination in the TiO<sub>2</sub> Industry Strengthens the Presumption.**

The reason that Section 7 of the Clayton Act presumes a significant increase in concentration to be unlawful is that 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). Coordination includes conduct ranging from outright collusion, to tacit coordination, to “parallel accommodating conduct,” which “includes situations in which each rival’s response to competitive moves made by others is individually

rational . . . but nevertheless emboldens price increases and weakens competitive incentives to reduce prices.” *Merger Guidelines*, §7.0.

“Tacit coordination ‘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)).

The conclusions that the courts have drawn in the two previous TiO<sub>2</sub> price fixing cases confirm the strong presumption that this merger will increase the likelihood of coordination. In *Valspar*, the U.S. Court of Appeals for the Third Circuit found insufficient evidence of overt price fixing by TiO<sub>2</sub> producers, but highlighted the oligopolistic market conditions that underpin Complaint Counsel’s concern that this Acquisition will result in reduced competition: “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.” 873 F.3d at 197. In *In re Titanium Dioxide*, the District Court concluded that the plaintiffs had provided enough evidence to support their allegations of a TiO<sub>2</sub> price fixing conspiracy:

Having carefully considered the sheer number of parallel price increase announcements, the structure of the titanium dioxide industry, the industry crisis in the decade before the Class Period, the Defendants’ alleged acts against their self-interest, and the myriad non-economic evidence implying a conspiracy, this Court finds that the Plaintiffs put forward sufficient evidence tending to exclude the possibility of independent action. 959 F. Supp. 2d at 830.

This well-documented history of coordination described by the courts builds on the inferences to be drawn from the market share statistics, and demonstrates that the competitive concerns in this case are particularly strong. Indeed, as the 7<sup>th</sup> Circuit 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).

### **C. 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. Whether in coordination with the remaining competitors—Chemours, Kronos and Venator—or acting unilaterally, the merged firm would likely succeed in curtailing output in order to raise prices or prevent them from falling. This “additional proof that the merger would harm competition” further strengthens the presumption, thus increasing the burden Defendants must shoulder on 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. Tronox met with PPG, one of Tronox and Cristal’s largest customers, and explained that it intends to raise PPG’s North American chloride TiO<sub>2</sub> prices after the merger because “Cristal is selling TiO<sub>2</sub> too low in the market; [] they’re undercutting the market.” PX7025 (Malichky (PPG) Dep. at 146). The message from Tronox was clear: “‘We’re going to consolidate the price,’ meaning that the Cristal price is going to go up.” *Id.* That Tronox believes the merger will result in higher prices is further confirmed in its own internal documents. Ian Mouland, a senior Tronox sales executive who participated in the meeting with PPG, { [REDACTED]

Finally, other TiO<sub>2</sub> suppliers have similarly acknowledged the Acquisition's likely effect on competition, noting that it will contribute to { }<sup>29</sup> and "continued capacity constraints."<sup>30</sup> 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.

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

"[T]he 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. Indeed, the Acquisition would leave Tronox and Chemours in control of { }% of North American sales, and over { }% of North American capacity. "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.

Under the *Merger Guidelines*, a market is more vulnerable to coordination where: 1) firms are aware of their mutual interdependence; 2) there are only a small number of competing firms; 3) the products are relatively homogenous; 4) the market is transparent enough for firms to monitor their competitors' behaviors; 5) price elasticity of demand is low; and/or 6) there is a past history of actual or attempted coordination among the firms. *See Merger Guidelines* §7.2. This market is vulnerable to coordination, whether by express collusion, tacit collusion, or

<sup>29</sup> { }

<sup>30</sup> PX3011 at 38 (Kronos).







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.<sup>33</sup> The Acquisition would result in Tronox making public disclosures about Cristal’s competitive activities that Cristal does not make today.

The market also demonstrates the oligopolistic interdependence that the *Valspar* and *Titanium Dioxide* courts have cited. [REDACTED]

[REDACTED]

[REDACTED] { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }

Consistent with its overall emphasis on *not* growing share, Tronox has managed competition and kept chloride TiO<sub>2</sub> away from North American customers by building inventory,<sup>34</sup> reducing production,<sup>35</sup> and exporting to lower price markets.<sup>36</sup> At trial, the Court

<sup>33</sup> Courts have viewed earnings calls to be an industry practice that can facilitate coordination: “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.” *In re Delta/AirTran Baggage Fee Antitrust Litigation*, 733 F. Supp. 2d 1348, 1360 (N.D. Ga. 2010).

<sup>34</sup> [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

will hear about Tronox’s efforts to reduce production in 2015. Tronox has contended that this was an effort to decrease its high levels of inventory and save money. But Tronox could have cut price to sell more product into the market. For example, in 2015, Tronox had the opportunity to gain additional business with { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] } Far from the “bare-knuckle” competition Tronox’s lawyers are sure to describe, Tronox chose instead to cut production and avoid provoking its competitors, { [REDACTED]

[REDACTED] }

At every turn, Tronox opts not to undercut competitors, even where it has product available to sell to its customers.

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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 . . . .” PX9010 at 5 (Tronox Q2 2014 Earnings Call). And Tronox has

publicly recognized coordinated actions taken with its competitors to reduce output and maintain prices:

I can tell you that . . . last year, Huntsman [now Venator], . . . 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 reduced production and continues to maintain sales, which is what we have all tried to do. PX9003 at 8 (Q1 2016 Tronox Earnings Call).

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!*” PX2242 at 17.

{ [REDACTED]  
[REDACTED]  
[REDACTED] }

But Cristal also has caused disruption and forced Tronox to respond to aggressive moves.

{ [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] } By comparison,

Tronox’s strategy was to { [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]



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. Fundamentally, Tronox has adopted a strategy that is consistent with facilitating coordination among its rivals. 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.

## **2. The Proposed Acquisition Would Increase Tronox's Incentive to Unilaterally Reduce Output.**

In addition to increasing the likelihood of coordinated effects, the Proposed Acquisition will increase Tronox's incentive and ability to reduce TiO<sub>2</sub> output.<sup>37</sup> Tronox has a history of curtailing production and taking capacity offline in order to support higher chloride TiO<sub>2</sub> pricing. As discussed below, the Proposed Acquisition will increase Tronox's incentive to engage in this unilateral output suppression. The Proposed Acquisition will also increase Tronox's ability to unilaterally suppress output, both by giving Tronox more capacity to manage, and by eliminating an independent competitor (Cristal) that could undermine its efforts. *See Merger Guidelines* §6.3 ("A 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.").

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<sup>37</sup> "[A] firm with a large market share with few competitors of any significance (i.e. large market shares), will exercise market power by either directly raising prices above the competitive level, reducing or restricting output or reducing quality (i.e. costs) without a corresponding reduction in price. The dominant firm can exercise market power because it controls such a large segment of the market. Other firms cannot muster enough output (capacity) to accommodate all the customers seeking to avoid the dominant firms' exercise of market power (i.e. higher prices). Thus, these customers are forced to pay prices above competitive levels." *United States v. Rockford Mem'l Corp.*, 717 F. Supp. 1251, 1279 (N.D. Ill. 1989), *aff'd*, 898 F.2d 1278 (7th Cir. 1990).



After operating at very low rates of capacity utilization during 2012, { [REDACTED] }  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] }

In 2015, Tronox curtailed TiO<sub>2</sub> production at its Hamilton and Kwinana plants, as well as reduced feedstock production, in order to “balance the market,” even though these curtailments caused it to absorb about \$30 million in fixed costs. PX9003 at 11 (Tronox Q1 2016 Earnings Call). Tronox’s then CEO explained its rationale:

- “It is our view that an upward move in Pigment selling prices will be predicated on a reduction of supply in the pigment market relative to demand, and/or an upward move in feedstock selling prices and we expect to see both.” PX9007 at 5 (Tronox Q1 2015 Earnings Call).
- “And then 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 the others as well, they’re doing the same thing. We see them acting in the same way.” PX9005 at 10 (Tronox Q3 2015 Earnings Call).<sup>41</sup>

In early 2016, when a distributor conveyed concerns regarding supply shortages for some Tronox chloride TiO<sub>2</sub> grades, a Tronox executive explained that { [REDACTED] }

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>41</sup> { [REDACTED] } with Tronox’s CEO remarking, “[i]t’s good [Chemours] can follow the leader!” PX1130 at 3; PX1325 at 1.

[REDACTED] } On multiple occasions, Tronox has reiterated this 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 market 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.” PX9003 at 10 (Tronox Q1 2016 Earnings Call).
- [REDACTED]
- [REDACTED] }

After announcing the Cristal acquisition, Tronox again reaffirmed its commitment to the strategy of matching production to demand and to market discipline, { [REDACTED]

[REDACTED]

[REDACTED] }

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. PX9000 at 12 (Tronox Q4 2016 Earnings Call).

Tronox’s former CEO went on to confirm that post-acquisition, Tronox will “still balance our supply with demand.” *Id.*

The other North American TiO<sub>2</sub> producers, including Cristal, have likewise recognized that reducing output is a means to support pricing. { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] } In

a recent investor presentation, Kronos observed that “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.” PX3011 at 15, 38.

The Proposed Acquisition will increase Tronox’s incentives to withhold TiO2 output in North America. Dr. Hill modeled how the Proposed Acquisition will affect Tronox’s incentives regarding production. { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }

**D. Respondents Cannot Rebut The Strong Presumption Of Illegality.**

With the presumption of illegality firmly established, the burden shifts to Defendants 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

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42 [REDACTED]

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.<sup>43</sup>

Here, Defendants 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—in a market pervaded by coordinated conduct—corroborates the presumption. Respondents will be unable to rebut the presumption, as neither the possibility of entry or expansion, nor any claimed efficiencies, can redeem the Acquisition.

### **1. 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 cannot meet this burden here. New greenfield entry is unlikely to occur in this mature market; the time and costs associated with building a new TiO<sub>2</sub> plant are too great. *See, e.g.*, PX3011 at 15 (Kronos 2017 Public Investor Presentation) (greenfield entry would take five years and cost around \$1 billion). Likewise, more distant producers, particularly the various Chinese producers, are unlikely to expand their sales in North America to deter or counteract the competitive harm resulting from the loss of Cristal as an independent competitor.

Today, TiO<sub>2</sub> from Chinese producers is not a meaningful competitive constraint in North America, where it is used primarily in low-end applications. *See, e.g.*, PX9001 at 9 (Tronox Q3 2016 Earnings Call) (“So the question for us is, do we confront China-produced supply in the

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<sup>43</sup> 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.

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.”); 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.”); { [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED] }

Most Chinese production, and almost all sales of Chinese TiO<sub>2</sub> into North America, consists of sulfate TiO<sub>2</sub>, which, as discussed above in Section B.1., does not provide meaningful competition to chloride TiO<sub>2</sub> in North America.<sup>44</sup>

Although chloride TiO<sub>2</sub> exported from China currently makes up less than { [REDACTED] }% of the North American market,<sup>45</sup> Respondents nevertheless speculate that expansion by Chinese manufacturers of chloride TiO<sub>2</sub>, such as Lomon Billions, may provide a future competitive constraint. There are significant barriers to Chinese chloride TiO<sub>2</sub> becoming a meaningful competitive presence in North America, however. These barriers include the “proprietary technology,” “operating expertise,” and “highly skilled workforce” necessary to run a chloride TiO<sub>2</sub> facility (PX1001 at 14 (Tronox)), { [REDACTED]

[REDACTED]

[REDACTED] }, and that “superior chloride technology [is] closely

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<sup>44</sup> { [REDACTED]

guarded by Western producers.” PX3011 at 19 (Kronos 2017 Public Investor Presentation).

Whether Chinese producers will be able to overcome these barriers is highly uncertain, and even if they eventually do, they are unlikely to do so in a sufficient and timely manner to counteract the competitive harm resulting from the Proposed Acquisition.

As Respondents themselves recognize in their public statements and internal documents, Chinese producers of chloride TiO<sub>2</sub> are, at best, still years away from being able to produce substantial quantities of chloride TiO<sub>2</sub> that are commercially suitable and cost competitive in North America. For example, in response to a 2016 questionnaire from the German competition authority, Cristal described the lack of development of Chinese chloride manufacturing:

Many in the industry have been predicting this sulphate to chloride transformation for quite some time, but progress thus far has been minimal. It’s been exceedingly difficult for the Chinese to acquire and successfully employ the proprietary chloride technology. Over time the Chinese are expected to gradually progress with this transformation, but it’s difficult to predict when, to what extent, and how fast this will occur. Very small inroads have been made to date. PX2073 at 12.

Similarly, recent Tronox strategy documents observe that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] } In addition, Tronox documents indicate { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The difficulty Chinese producers face in producing chloride TiO2 is illustrated by the experience of China’s largest TiO2 producer, Lomon Billions. Although Lomon Billions successfully operates sulfate TiO2 facilities, chloride TiO2 plants are significantly more complex, and Lomon Billions has struggled to get its existing chloride TiO2 facility { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] } Respondents will likely point to Lomon Billions publicly announced plans to build additional chloride capacity over the next few years. { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }

Chinese manufacturers have also been unable to produce chloride TiO2 that meets the quality requirements of North American customers for anything but low-end applications, and it

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46 [REDACTED]

[REDACTED] Tronox and Cristal documents refer to the ongoing dispute between Lomon Billions and Ti-Cons based on Lomon Billions’ claim that the inadequacy of the Ti-Cons technology is to blame for the “failure” of its chloride plant. PX2072 at 23 (Cristal).

is highly uncertain when, or if, they will ever be able to produce chloride TiO<sub>2</sub> that will be commercially acceptable for most applications in North America. {

[REDACTED]

Even if Chinese producers are eventually able to improve the quality of their chloride TiO<sub>2</sub> and operate their chloride TiO<sub>2</sub> plants reliably—both of which are uncertainties—there will still be barriers to Chinese chloride TiO<sub>2</sub> becoming a meaningful competitive constraint in North America in a timely and sufficient manner. If Chinese producers do someday produce chloride TiO<sub>2</sub> that meets customers’ performance standards for broad usage in North America,

[REDACTED]

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47 [REDACTED]





[REDACTED] } uncertain whether Chinese TiO<sub>2</sub> producers will ever be a meaningful competitive presence in North America, and agree that if this were to happen, it would take years.<sup>53</sup> *Staples 2016*, 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-cv-00133-WHO, 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.”).

## 2. Respondents’ Efficiencies Defense Fails.

Respondents bear a heavy burden to substantiate their efficiencies claims. They must 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; *see also FTC v. Penn State Hershey Med. Ctr.*, 838 F.3d 327, 347 (3d. Cir. 2016) (describing “rigorous standard that applies to efficiencies, which must be merger specific, verifiable, and must not arise from any anticompetitive reduction in output or service”); *United States v. H&R Block*, 833 F. Supp.

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<sup>53</sup> { [REDACTED] }

2d 36, 89 (D.D.C. 2011) (quoting *Merger Guidelines* § 10); *Staples 1997*, 970 F. Supp. at 1089-90; *Staples 2016*, 190 F. Supp. 3d at 137-38 n.15. Moreover, “high market concentration levels,” like those presented by the Proposed Acquisition, require “proof of extraordinary efficiencies.” *Heinz*, 246 F.3d at 720. No court has ever permitted an otherwise unlawful transaction to proceed as a result of claimed efficiencies. *See id.* at 720-21; *Sysco*, 113 F. Supp. 3d at 82; *CCC Holdings*, 605 F. Supp. 2d at 72. The result should not differ here, as Respondents have failed to substantiate their efficiencies claims.

Respondents’ primary asserted efficiencies fall into three categories: (1) alleged expansion of TiO<sub>2</sub> feedstock at Cristal’s high-grade feedstock manufacturing facility in Jazan, Saudi Arabia;<sup>54</sup> (2) alleged expansion of TiO<sub>2</sub> production at Cristal’s TiO<sub>2</sub> manufacturing facility in Yanbu, Saudi Arabia; and (3) alleged cost savings efficiencies. Respondents’ claims regarding Jazan fail as a threshold matter because they are not even efficiencies generated by this proposed acquisition. Moreover, none of Respondents’ asserted efficiencies are verifiable or merger-specific, nor are they likely to impact the chloride TiO<sub>2</sub> market in North America.

First, in claiming efficiencies relating to the Jazan facility, 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. Respondents did not include the Jazan facility in the Proposed Acquisition. Instead, Respondents intend to enter into an Option Agreement whereby Tronox may purchase the Jazan facility at a later date, {

[REDACTED] }.<sup>55</sup>

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<sup>54</sup> [REDACTED]

That the Jazan facility is not a part of the Proposed Transaction should, by itself, doom these claims. Respondents have failed to identify any case that has credited efficiencies when the purported efficiencies were 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 Med. Ctr.–Nampa Inc. v. St. Luke’s Health Sys., Ltd.*, 778 F.3d 775, 790 (9th Cir. 2015) (efficiencies defense entails a showing by defendants that “the *proposed merger* will create a more efficient combined entity and thus increase competition”) (emphasis added); *FTC v. University Health*, 938 F.2d 1206, 1222-23 (11th Cir. 1991) (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). Respondents’ claimed Jazan efficiencies are not generated by the acquisition of assets in this Proposed Transaction. Thus, they are not a cognizable defense in this matter.

Regardless, even accepting that Respondents’ Jazan claims should be considered in evaluating this transaction, they fail for lack of merger specificity. First, the Jazan claims are not merger specific because, not being a part of this proposed acquisition, they are not “accomplished with the proposed merger.” *Merger Guidelines* § 10 (defining a “merger-specific” efficiency as one that is “likely to be accomplished with the proposed merger and



Respondents' Jazan claims also fail because they are not verifiable. To start, these claims are rife with uncertainty, and thus are speculative and unverifiable, given that Respondents have yet to even sign the Option Agreement related to Jazan<sup>61</sup> and given that the contemplated Option Agreement provides { [REDACTED] }  
*See St. Alphonsus*, 778 F.3d at 790 (“Claimed efficiencies must be verifiable, not merely speculative.”) (citation omitted). To put it plainly, the Jazan efficiencies cannot be independently verified when no one can verify today that the Jazan acquisition will even take place.

Additionally, Tronox's assertion that it will be able to fix the Jazan facility is also highly speculative, and therefore not verifiable. *St. Alphonsus*, 778 F.3d at 790; *H&R Block*, 833 F. Supp. 2d at 89. Tronox's confident projections about Jazan are belied by the steps it has taken to insulate itself from the risk that it will not be able fix the facility. In fact, this uncertainty surrounding whether the Jazan facility can be fixed { [REDACTED] }  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] } Instead, under the still unsigned

option agreement, { [REDACTED] }  
[REDACTED]  
[REDACTED]

---

61 { [REDACTED] }  
62 { [REDACTED] }  
[REDACTED]

[REDACTED]

} Therefore, despite its confident pronouncements, it is clear from Tronox’s own behavior that fixing the Jazan facility is a highly uncertain proposition.<sup>64</sup>

Tronox’s own documents also reflect uncertainty about whether it will be able to fix the Jazan facility. { [REDACTED]

[REDACTED]

Second, Respondents’ claimed efficiencies with respect to increased TiO2 output from the Yanbu facility likewise are not merger specific or verifiable. These alleged efficiencies ignore that Cristal is already taking steps to address issues at Yanbu, and that these steps are improving performance at Yanbu. PX2374 at 1 (Cristal) (“the changes we have made in Yanbu are setting the plant on a positive trajectory already”); { [REDACTED]

[REDACTED]

<sup>63</sup> [REDACTED]

[REDACTED]

[REDACTED] } Because Cristal can and is taking steps to reach Yanbu’s full output potential on its own, Respondents’ alleged efficiencies with respect to Yanbu are not merger specific.

Respondents’ Yanbu efficiency claims also are not verifiable. { [REDACTED]

[REDACTED]

[REDACTED] } Tronox bases the Yanbu efficiencies claims on the assumption { [REDACTED]

[REDACTED]

Moreover, Tronox’s projections of increased output at Yanbu post-acquisition appear to be based

<sup>66</sup> [REDACTED]; PX2379 at 4-6 (Cristal) (describing Yanbu organizational changes, including addition of several experts in low-pressure technology).

on little more than managerial business judgment, and therefore should be rejected. { [REDACTED] }; see also *H&R Block*, 833 F. Supp. 2d at 91 (rejecting efficiencies based on managers' judgments rather than detailed analysis of data).

Third, Respondents further allege a number of cost saving efficiencies relating to optimizing various operations and processes. Complaint Counsel's efficiencies expert, Dr. Mark E. Zmijewski, has reviewed Respondents' efficiencies submissions with respect to the Jazan facility, the Yanbu facility, and the claimed cost saving efficiencies. Dr. Zmijewski concludes that { [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] }

Finally, Respondents' efficiencies defense fails because any post-acquisition output increases at Jazan or Yanbu (both in Saudi Arabia), and any post-acquisition cost savings, would be unlikely to materially impact the North American TiO<sub>2</sub> market. See *University Health*, 938 F.2d at 1222-23 (defendant asserting efficiency defense "must demonstrate" that the claimed efficiencies "ultimately would benefit competition and, hence, consumers"); *Sysco*, 113 F. Supp. 3d at 82 (defendants must "demonstrate that their claimed efficiencies would benefit customers"); *CCC Holdings*, 605 F. Supp. 2d at 74 (same). Indeed, the bulk of Respondents' claims are outside of the relevant market at issue here. Tronox CEO Jeffrey Quinn appears to concede as much, observing to analysts that "an overwhelming portion of the synergies are ex U.S." PX9101 at 7 (Tronox Q4 2017 Earnings Call). In particular, the Jazan efficiencies concern the production of feedstock—not TiO<sub>2</sub>—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. Although related to TiO<sub>2</sub> production, the Yanbu efficiencies claims likewise are

largely out of market, { [REDACTED] }<sup>67</sup> Efficiencies outside of the relevant market are not cognizable. *See Phila. Nat. Bank*, 374 U.S. at 370 (indicating that “anticompetitive effects in one market” could not be justified by “procompetitive consequences in another”). And the limited circumstance in which the antitrust agencies consider out-of-market efficiencies is not at issue here,<sup>68</sup> given that—as Respondents appear to concede—Respondents could achieve the “ex U.S. synergies” while divesting their North American TiO<sub>2</sub> production facilities that are at the core of the anticompetitive effects.<sup>69</sup>

Moreover, Respondents have failed to demonstrate that any of the claimed efficiencies (in or out of market) will benefit customers, and the evidence is to the contrary. Indeed, Tronox acknowledges that it has not even attempted to quantify how its claimed efficiencies would benefit customers. { [REDACTED]

[REDACTED] } Additionally, Tronox’s history of curtailing TiO<sub>2</sub> and feedstock output shows that it is unlikely to increase production at Jazan and Yanbu if doing so would cause prices to decrease. *See, e.g.*, PX9000 at 12 (Tronox Q4 2016 Earnings Call) (“[W]e have tried to be economically rational over these last several years. If

<sup>67</sup> [REDACTED]

[REDACTED] } Even if Tronox is able to increase production at Yanbu beyond what Cristal could do on its own, the increase will be small in magnitude compared to overall chloride TiO<sub>2</sub> production.

<sup>68</sup> *Merger Guidelines* § 10 n.14 (“In some cases, however, the Agencies in their prosecutorial discretion will consider efficiencies not strictly in the relevant market, but so inextricably linked with it that a partial divestiture or other remedy could not feasibly eliminate the anticompetitive effect in the relevant market without sacrificing the efficiencies in the other market(s).”).

<sup>69</sup> PX9087 (Tronox Ltd. to Discuss FTC Complaint Conference Call) (CEO Jeff Quinn: “Moreover, we believe that the net impact of reasonable remedies if we were -- be forced to sell a U.S. asset or part of the U.S. asset that we purchased, given current market conditions would not materially detract from the overall attractiveness of the transaction and will still create significant shareholder value.”)

there was surplus supply in the market we slow down our production and we did that with respect to pigment. We also did it with respect to mineral sands [feedstock].”<sup>70</sup>

### **CONCLUSION**

For the foregoing reasons, the evidence presented at trial and admitted to the record will establish 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 will justify entry of an Order by the Court granting the relief sought therein.

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<sup>70</sup> See also PX9000 at 12 (Tronox Q4 2016 Earnings Call) (“[O]ver the last couple years we shut down 75,000 tons of pigment production when we felt that all we were doing was adding to inventory levels. And we shut down two of our four slag [feedstock] furnaces. And I believe in running the business to produce returns for the owners.”).

Dated: May 22, 2018

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**CERTIFICATE OF SERVICE**

I hereby certify that on May 22, 2018, I filed the foregoing document electronically using the FTC's E-Filing System, which will send notification of such filing to:

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**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.

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