

The JFTC's Review Results Concerning Acquisition of BASF Colors & Effects  
Japan Ltd. of shares by DIC Corporation

## **I. Parties**

DIC Corporation is a company which mainly operates pigment manufacturing and sales business, and BASF Colors & Effects Japan Ltd. is a company which mainly operates pigment sales business.

Hereinafter, DIC Corporation is referred to as "DIC", and a group of companies which have already formed joint relationships with DIC is referred to as "DIC Group". Also, BASF Colors & Effects Japan Ltd. is referred to as "BCE", and a group of companies which have already formed joint relationships with BCE<sup>1</sup> is referred to as "BCE Group".

DIC Group and BCE Group are collectively referred to as "the Parties".

## **II. Overview of this case and applicable provision**

This is a case in which DIC plans to acquire all the voting rights related to the shares of BCE (hereinafter referred to as the "Conduct of this case").

The applicable provision is Article 10 of the Antimonopoly Act.

## **III. Brief Summary of Results of Merger Review**

### **1. Merger review procedure by the JFTC**

The Parties voluntarily submitted to the Japan Fair Trade Commission (hereinafter referred to as the "JFTC") its written opinions and materials, in which it saw that the Conduct of this case is unlikely to substantially restrain competition in February 2020 and later, and, at the request of the Parties, the JFTC held several meetings with the Parties. Then, following the submission by DIC of a written notification of the plan for the Conduct of this case in accordance with the provisions of the Antimonopoly Act on April 20, 2020, the JFTC received such notification and started the primary review. Because, as a result of the progress of the primary review based on the aforementioned written notification and other materials submitted by the Parties, it was found that this case requires more detailed review, the JFTC requested DIC to submit reports, etc., and started the secondary review on May 20,

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<sup>1</sup> DIC Group plans to acquire all the issued shares held by the companies operating pigment manufacturing and sales business under BASF SE (headquartered in Germany), the ultimate parent company of BCE, and the Conduct of this case forms part of such plan. This case was reviewed by including the companies (including BCE) operating pigment manufacturing and sales business under BASF SE in the BCE Group.

2020, and publicized on the same day that it started the secondary review and that it will receive public comments from third parties.

In the secondary review, at the request of the Parties, the JFTC held several meetings with the Parties to explain and discuss relevant issues, etc. Also, the JFTC proceeded with the review on the impact of the Conduct of this case on competition, based on the reports, etc., submitted in turn by DIC, as well as on the results, etc., of the interview with, written surveys on and economic analysis about the users, distributors, etc.

In addition, with respect to the request to DIC to submit reports, etc., the submission of all the reports, etc., was completed when DIC submitted the reports, etc., on November 27, 2020.

## **2. Brief summary of the merger review**

The JFTC conducted review mainly on the fields of trade related to the pigments, the color indexes<sup>2</sup> of which were Pigment Red 179<sup>3</sup> (hereinafter referred to as “P.R.179”), Pigment Violet 29<sup>4</sup> (hereinafter referred to as “P.V.29”), Pigment Red 122<sup>5</sup> (hereinafter referred to as “P.R.122”), Pigment Red 202<sup>6</sup> (hereinafter referred to as “P.R.202”) and Pigment Violet 19<sup>7</sup> (hereinafter referred to as “P.V.19”) (hereinafter collectively referred to as the “Five Pigments”), which were deemed to have a relatively greater impact on competition in the fields of trade in which the Parties compete. With respect to the fields of trade related to P.R.179, P.V.29 and P.R.202 (hereinafter referred to as the “Three Pigments”), out of the Five Pigments mentioned above, which are expected to be of high quality because they are used for automotive paint, etc., as described in Sections IV through VIII, the JFTC concluded that the Conduct of this case is unlikely to substantially restrain competition based on the premise that the Parties will implement the remedies proposed by the Parties to the JFTC.

Also, with respect to all the fields of trade other than those of the Three Pigments, the JFTC concluded that the Conduct of this case is unlikely to substantially restrain competition in particular fields of trade.

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<sup>2</sup> Names assigned to colors registered in the database jointly maintained by the Society of Dyers and Colourists and the American Association of Textile Chemists and Colorists (e.g., “P.R.179 (Pigment Red 179)” is a name assigned to “No. 179” “Red” “Pigment”).

<sup>3</sup> A red pigment used for automotive paints, etc.

<sup>4</sup> A violet pigment used for automotive paints, carpet fibers, etc.

<sup>5</sup> A red pigment used for inks, etc.

<sup>6</sup> A red pigment used for automotive paints, inks, etc.

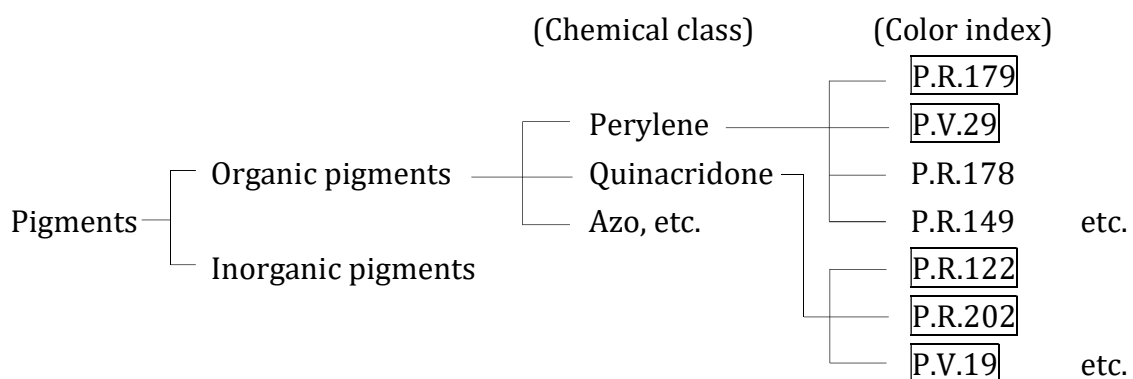
<sup>7</sup> A violet pigment used for paints, inks, etc.

## IV. Pigments

### 1. Product description

Pigments are colorants that give colors to substances and are preliminary goods in a powdery state for manufacturing inks or paints.

Pigments are largely categorized into organic pigments which are chemically synthesized mainly from petroleum, and inorganic pigments which are obtained by chemical reaction of metals, etc. These pigments are categorized by chemical class, and their classes are further categorized by color index depending on detailed classification differences.



### 2. Particular fields of trade

#### (1) Product market definition

##### a. Organic pigments and inorganic pigments

The demand substitutability of organic pigments and inorganic pigments is limited even if they belong to the same color, because they differ in characteristics such as richness of color variations, colorability and clearness of color. Also, there can be found no supply substitutability between organic pigments and inorganic pigments because it is difficult to change their manufacturing processes due to the differences in their raw materials, and manufacturing methods and facilities, etc.

Hence, organic pigments and inorganic pigments are defined as different product markets.

##### b. Organic pigments with different chemical classes

Organic pigments differ in characteristics such as weatherability and thermostability depending on their chemical classes; therefore, it is likely that users often cannot alternatively use organic pigments with different chemical classes. Also, the supply substitutability between organic pigments with

different chemical classes is limited due to certain difference in their raw materials, and manufacturing methods and facilities, etc.

Hence, organic pigments with different chemical classes are defined as different product markets.

c. Organic pigments of the same chemical class with different color indexes

At the interviews with users, some users explained that organic pigments with different color indexes are not normally used alternatively because each color index has different characteristics such as shade and transparency. Other users said that, in considering an alternative organic pigment with a certain color index, they first consider organic pigments with the same color index manufactured by a different manufacturer, and that there are also cases where they do not consider any organic pigment with a different color index. Hence, the demand substitutability between organic pigments with different color indexes is limited.

Also, the supply substitutability between organic pigments with different color indexes is limited because they have different structural details even if they have the same chemical class, thereby being manufactured with to some extent different raw materials, and manufacturing methods and facilities, etc.

d. Economic analysis

In order to confirm to what degree the price levels differ between the Five Pigments in the fields of trade in which the Parties competes, and to confirm whether the prices and price ratio proceed in a manner that can be said to fall under the same product market, the JFTC conducted price analysis such as price correlation analysis<sup>8</sup> and stationary analysis<sup>9</sup>, using the sales performance data for users in Japan (January 2016 – December 2019) submitted by the Parties<sup>10</sup>.

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<sup>8</sup> The price correlation analysis for market definition is an analytical method in which to calculate a correlation coefficient for the prices of two goods to be analyzed, and in which, if there is found a high correlation coefficient between them, it will be concluded that these goods are more likely to be in the same market.

<sup>9</sup> The stationary analysis for market definition is an analytical method in which to confirm whether there is stationarity in the price ratio of two goods (i.e., whether there can be found any relationship that the prices of goods converges to the same price level in a long-term period even if there is a temporary gap between the price of certain goods and that of the other goods) using the price ratio of such two goods to be analyzed, and in which, if there is stationarity, it will be concluded that these goods are more likely to be in the same market.

<sup>10</sup> Basically, the same results were obtained also in the price analysis using the respective data on the performance of sales for users in Europe and the U.S. included in the sales performance data of the Parties. However, because the data showed that exchange rate fluctuations are likely to be extremely large, the price analysis, using monthly average sales prices worldwide calculated by adding up the data on the performance of sales for users in Japan, Europa and the U.S. after converting such data to the same currency

First, it was confirmed that the monthly average sales prices of the Five Pigments proceed with more than certain degree of difference<sup>11</sup>. Next, in the price correlation analysis of monthly average sales prices, there was a significance found between organic pigments with color indexes with different chemical classes in that the correlation coefficient became partially greater than a certain degree<sup>12</sup>. However, there was no robustness found<sup>13</sup> in the price correlation analysis conducted in parallel using log difference<sup>14</sup>. For other combinations, the robustness was also found in that the correlation coefficients were low (i.e., minus 0.142 to minus 0.260). Thus, it was concluded that organic pigments with different chemical classes are unlikely to be included in the same product market.

On the other hand, with respect to the organic pigments of the same chemical class with color indexes, the stationary analysis was conducted using the Augmented Dickey-Fuller (ADF) test<sup>15</sup> because there were significance and robustness found in the values of correlation coefficient, although not so high, of such combination of organic pigments<sup>16</sup>. As a result, it was suggested that organic pigments with different color indexes are highly likely to be included in different product markets, because the analysis did not confirm robustness that is sufficient to conclude that the price ratio of monthly average sales prices is stationary<sup>17</sup>.

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unit, has not been conducted.

<sup>11</sup> In particular, the price level of P.V.29 was extremely high, which was approximately 1.9-3.6 times higher than that of organic pigments with other color indexes.

<sup>12</sup> Significance means that it is hard to see that the estimated result is coincidental, but it is considered to make sense, and means in this context that the prices of two goods are not statistically uncorrelated (i.e., correlation coefficient is zero) but are correlated.

<sup>13</sup> Robustness means that there arises no significant difference in estimated results even if there is a change in conditions or assumptions to a certain extent. The combinations in which robustness was not confirmed were those of "P.V.29 and P.R.122" and "P.V.29 and P.V.19", and their correlation coefficients were 0.669 (0.183) and 0.341 (0.017), respectively (the values in brackets are correlation coefficients in the case of using log differences). Also, with respect to P.V.29, the price level is also extremely high as described in footnote 11.

<sup>14</sup> Log difference means, with respect to some numbers like  $x_1$  and  $x_0$ , taking a difference of natural logarithm (i.e.,  $\ln x_1 - \ln x_0$ ). Because it is known that, if the rate of change is small enough, the log difference is an approximate value for such rate of change (if  $g_1$  is a rate of change from  $x_0$  to  $x_1$ , that is,  $g_1 = (x_1 - x_0)/x_0$ , it will be  $\ln x_1 - \ln x_0 = \ln(x_1/x_0) = \ln(1 + g_1) \approx g_1$ ), the price correlation analysis using log difference can be said to be a price correlation analysis using the rate of change in monthly average sales prices.

<sup>15</sup> The ADF test is known as a standard method for statistically determining whether there is stationarity.

<sup>16</sup> The correlation coefficients of "P.R.179 and P.V.29", "P.R.122 and P.R.202" and "P.R.122 and P.V.19" were 0.492 (0.372), 0.315 (0.356) and 0.383 (0.327), respectively.

In addition, although it is likely that the "spurious correlation" in which the correlation coefficient is high due to a change in the price of raw materials used in the two goods, the JFTC has not addressed such "spurious correlation" because the correlation coefficient is not high.

<sup>17</sup> In conducting the ADF test, the first through twelfth lag orders (e.g., the first lag order means the

As described above, the economic analysis led to a conclusion that supports the qualitative analysis in paragraphs b and c above.

e. Conclusion of this part

As described above, the JFTC defined the product markets of organic pigments by color index and defined the Five Pigments as independent product markets, respectively.

(2) Geographic market definition

Pigments are not subject to restrictions in terms of import shipping costs.

Also, suppliers have transacted with users regardless of where users are located, and users have also transacted with suppliers without discriminating against suppliers<sup>18</sup>.

Accordingly, the JFTC defines the geographic market as “worldwide”.

## V. Competitive assessment

### 1. Position of the Parties and the state of competition

This case falls under the horizontal business combination because both of the Parties manufacture and sell the Five Pigments.

The market share status of the Three Pigments out of the Five Pigments are as shown in the tables below. The respective markets after the Conduct of this case are described as follows: HHI<sup>19</sup> for P.R.179 is approximately 2,800 with an increment in HHI of approximately 900, and the market share of the Parties is approximately 40% (first ranked); HHI for P.V.29 is approximately 3,300 with an increment in HHI of approximately 300, and the market share of the Parties is approximately 35% (first ranked); and IHH for P.R.202 is approximately 3,500 with an increment in HHI of

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difference between  $P_{t-1}$  and  $P_{t-2}$  (i.e.,  $\Delta P_{t-1}$ ) that is the value of the difference between the price ratio  $P_t$  and  $P_{t-1}$  for the previous period (i.e.,  $\Delta P_t$ ), which is used for eliminating serial correlation in the error terms) were used. Although it is necessary to note that the number of observation is small, in the ADF test, the stationarity of the price ratio of the combination of “P.R.122 and P.R.202” was found only in the cases of the first through fourth lag orders, and the stationarity of the other combinations was confirmed only in lag orders less than the fourth order; therefore, it cannot be said that there can be found robustness in the results indicating stationarity, and it is possible that stationarity may have been confirmed by serial correlation in the error terms.

<sup>18</sup> In defining the geographic market, the JFTC considered to conduct a price analysis to compare changes in prices in Japan, Europe and the U.S. after converting the data on the performance of sales for users in Japan, Europa and the U.S. to the same currency unit. However, because, as described in footnote 10, the data showed that the impact of exchange rate fluctuations is highly likely to be significant, the JFTC did not conduct comparative analysis among areas following the Bishop, S. and M. Walker (2002) “The Economics of EC Competition Law – Concepts, Application and Measurement” London Sweet & Maxwell, Chapter11.

<sup>19</sup> Herfindahl-Hirschman Index (i.e., an index that shows the concentration ratio of a market, which is calculated by the sum of the squares of market shares of companies in certain fields of trade).

approximately 200, and the market share of the Parties is approximately 20% (third ranked). Any of the above does not fall under the safe-harbor criteria for the horizontal business combination.

[Market share of P.R.179 in 2019]

Rank	Company name	Market share <sup>20</sup>
1	BCE Group	Approx. 25%
2	Company A	Approx. 20%
3	Company B	Approx. 20%
4	DIC Group	Approx. 20%
5	Company C	Approx. 15%
—	Others	0-5%
Total		100%

[Market share of P.V.29 in 2019]

Rank	Company name	Market share
1	Company D	Approx. 35%
2	Company E	Approx. 35%
3	DIC Group	Approx. 30%
4	BCE Group	0-5%
5	Company F	0-5%
Total		100%

[Market share of P.R.202 in 2019]

Rank	Company name	Market share
1	Company G	Approx. 50%
2	Company H	Approx. 25%
3	BCE Group	Approx. 15%
4	DIC Group	Approx. 5%
—	Others	0-5%
Total		100%

On the other hand, the respective markets of the pigments other than those of the Three Pigments after the Conduct of this case are described as follows: HHI for P.R.122 is approximately 1,200 with an increment in HHI of approximately 100, and HHI for P.V.19 is approximately 1,400 with an increment in HHI of approximately 400. They fall under the safe-harbor criteria for the horizontal business combination.

## 2. Legal assessment based on the Antimonopoly Act

As described in paragraph 1 above, the Three Pigments do not fall under the safe-harbor criteria for the horizontal business combination. Also, according to the interviews with users, there were users who said that there was no alternative other

<sup>20</sup> Shown in increments of 5% (e.g., “Approx. 25%” stands for “22.5% or more and less than 27.5%”); therefore, the total will not necessarily add up to 100. The same applies hereinafter.

than the Parties with respect to the Three Pigments because these were expected to be of high quality as they were used for automotive paint, and because there were uncertainties concerning the quality and stable supply of competing companies other than the Parties listed in the tables on market shares in paragraph 1 above.

However, with respect to the Conduct of this case, after the secondary review started, the Parties notified the JFTC that it plans to transfer a part of DIC Group's pigment business to a third party. In response to this, because the Parties in the end made a proposal of remedies as described Section VI below as a result of the review by the JFTC, the JFTC decided to conduct a legal assessment based on the Antimonopoly Act in light of such proposal.

## **VI. The proposal of remedies by the Parties**

The Parties proposed the following remedies:

- (i) To transfer the pigment manufacturing and sales business operated in DIC Group's Bushy Park plant (in South Carolina, the U.S.) to a company other than members of the Parties (hereinafter such business to be transferred is referred to as the "Business to Be Transferred"). The Business to Be Transferred includes tangible assets (e.g., manufacturing assets and facilities), intangible assets (e.g., technology, research and development results), employees, etc., related to pigments manufactured in the Bushy Park Plant;
- (ii) The transferee will be selected based on criteria such as being a company with sufficient experience and ability in the pigment field, being a company independent of and without financial ties to the Parties, and having financial resources, expertise and incentive to maintain and develop the Business to Be Transferred. The specific transferee will be notified to the JFTC to obtain approval of the JFTC;
- (iii) The Parties will ensure to manage the Business to Be Transferred as business suitable for sales by separating the Business to Be Transferred from other business of DIC Group until the remedies are completed; the effectiveness thereof will be monitored by an independent third party (i.e., monitoring trustee<sup>21</sup>); and
- (iv) If the Parties fails to enter into a contract with a transferee within six months, an independent third party (i.e., divestiture trustee<sup>22</sup>) will, upon approval of the

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<sup>21</sup> Meaning a person, as a third party independent of the Parties, who monitors whether the Parties appropriately operates business without undermining the value of the Business to Be Transferred until the completion of the business transfer.

<sup>22</sup> If any transferee is not found within a certain period of time, the Parties will designate a disposition trustee who is an independent third party, and, after the designation of a divestiture trustee takes effect, only such disposition trustee will have the rights to sell the Business to Be Transferred.



JFTC, designate a transferee, and then the Parties will transfer the Business to Be Transferred to the designated transferee.

Currently, DIC Group manufactures P.R.179 only in the Bushy Park Plant, and almost all P.V.29 and P.R.202 in the Bushy Park Plant. Hence, by transferring its Bushy Park Plant, DIC Group will transfer all of its manufacturing and sales business related to P.R.179 and almost all of its manufacturing and sales business related to P.V.29 and P.R.202.

## **VII. Assessment of the remedies**

If the remedies in Section VI above are implemented, the market share of the Parties will not increase due to the Conduct of this case in the fields of trade related to P.R.179 out of the Three Pigments, because the manufacturing and sales business of DIC Group (i.e., one of the Parties) as such will be transferred to another company other than the members of the Parties. Also, with respect to the fields of trade related to P.V.29 and P.R.202, the increase in the Parties' market share due to the Conduct of this case will be small because the business equivalent to almost all of DIC Group's market share will be transferred.

The content of the Business to Be Transferred is, as described in (i) of Section VI above, deemed to be sufficient for the purpose of a transfer because this is the transfer in which the entire Business to Be Transferred as such, including the business related to the Three Pigments operated by DIC Group so far and employees involved in manufacturing in the Bushy Park Plant, will be transferred.

Moreover, it is considered that, if a transferee meets all the requirements in (ii) of Section VI, it will be a major independent competitive company in the manufacturing and sales market of the Three Pigments; however, whether the actual transferee meets such requirements will be concluded by the JFTC after receiving reports from the Parties.

In addition, the deadline of the remedies is appropriately and clearly set out in that, as described in (iii) of Section VI above, the Group Company will have a third party (monitoring trustee) involved in order to ensure the effectiveness of business transfer and the competitiveness of the Business to Be Transferred until the time of transfer, that, as described in (iv) of Section VI above, even in the case of the business transfer after the Conduct of this case, such transfer will be implemented within at most six months, and that, if a contract with the transferee is not finally concluded within such period, an independent third party (i.e., divestiture trustee) will, upon approval of the JFTC, designate a transferee of the Business to Be Transferred.

Accordingly, the JFTC considered that the remedies proposed by the Parties are appropriate.

#### **VIII. Conclusion**

Based on the premise that the Parties will implement its remedies, the JFTC concluded that the Conduct of this case is unlikely to substantially restrain competition in the particular fields of trade.