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UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION

In the Matter of	)	
	)	
The Dow Chemical Company	)	
a corporation,	)	
	)	
and	)	
	)	Docket No. C-3999
Union Carbide Corporation,	)	
a corporation	)	

COMPLAINT

Pursuant to the provisions of the Federal Trade Commission Act and of the Clayton Act, and by virtue of the authority vested in it by said Acts, the Federal Trade Commission (the "Commission"), having reason to believe that respondents The Dow Chemical Company ("Dow"), a corporation, and Union Carbide Corporation ("Carbide"), a corporation, both subject to the jurisdiction of the Commission, have agreed to merge, in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 45, and it appearing to the Commission that a proceeding in respect thereof would be in the public interest, hereby issues its Complaint, stating its charges as follows:

I. RESPONDENTS

1. Respondent Dow is a corporation organized, existing and doing business under and by virtue of the laws of the State of Delaware, with its office and principal place of business at 2030 Dow Center, Midland, Michigan, 48674-2030. Dow is a global science and technology company that develops and manufactures a portfolio of plastic, chemical, and agricultural products and services and distributes its products to customers throughout the world.

2. Respondent Carbide is a corporation organized, existing, and doing business under and by virtue of the laws of the State of New York, with its office and principal place of business located at 39 Old Ridgebury Road, Danbury Connecticut, 06817-0001. Carbide is a worldwide chemical and plastics producer.

II. JURISDICTION

3. Dow and Carbide are, and at all times relevant herein have been, engaged in commerce as "commerce" is defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. § 12,

and are corporations whose businesses are in or affect commerce as "commerce" is defined in Section 4 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 44.

III. THE PROPOSED MERGER

4. Dow and Carbide announced on August 4, 1999, that their boards of directors approved a merger agreement, pursuant to which Carbide shareholders would receive shares of Dow stock. Dow and Carbide shareholders have subsequently approved the merger.

IV. VIOLATIONS CHARGED

COUNT ONE – LINEAR LOW DENSITY POLYETHYLENE AND RELATED TECHNOLOGY

5. Paragraphs 1-4 are incorporated by reference as if fully set forth herein.

6. Polyethylene is the world's most widely used plastic. Linear low density polyethylene ("LLDPE") is the fastest growing type of polyethylene, and is particularly well suited for making plastic films that are both flexible and strong (but not transparent). One of the largest uses of LLDPE is in making trash bags. LLDPE sales in the United States and Canada exceeded $3 billion in 1999.

7. LLDPE resins have distinct performance characteristics and superior physical properties, including superior strength and toughness as compared to other thermoplastics. LLDPE is used where its properties are important in applications, such as trash bags, stretch wrap, construction liners, and heavy duty sacks. Where LLDPE is used, it is the most cost effective resin per pound, and due to its superior properties, provides a substantial cost advantage on a volume basis.

8. LLDPE is a differentiated product with a high level of product customization. There are many distinct grades and formulations of LLDPE resins, and Dow and Carbide are leading producers of LLDPE formulations with performance characteristics that are superior to "commodity" LLDPE. These high performance resins (sold by Dow, Carbide and others, including Exxon Mobil Corporation ("Exxon")) account for a substantial portion of the LLDPE sold each year. Dow has historically led the industry in production and sale of LLDPE polymers tailored to deliver performance characteristics demanded by many LLDPE users, and has been able to sell such "premium" LLDPE polymers at premium prices.

9. Polyethylene is produced in specialized industrial reactors, in a polymerization reaction in the presence of a catalyst. Reactor process technology, catalyst technology, LLDPE polymers themselves and applications for LLDPE polymers are all areas in which firms (including

Respondents) compete by, among other things, innovating and developing technology (including patents, trade secrets and know-how) for their own use and, in some cases, for license to other LLDPE producers.

10. Dow is a leader in the polyethylene industry, both in product sales and technology. Dow produces and sells polyethylene in North America, and was the largest seller of polyethylene in the United States and Canada in 1999. Its focus is on high performance products, and it has developed a proprietary solution process and metallocene catalysts for the production of polyethylene. Carbide is also a leading producer of polyethylene and a leading developer of polyethylene technology.

11. Carbide, Dow and BP are leading developers of polyethylene reactor process technology. Carbide's "Unipol" reactor process, in which ethylene is in gaseous state during polymerization ("gas phase"), is the most widely licensed and widely used polyethylene process in the world. BP's "Innovene" process, also a gas-phase process, is the only other widely licensed process for LLDPE. Dow does not license its polyethylene reactor technology, in which ethylene is polymerized in solution. Gas phase LLDPE production is generally lower cost than solution production.

12. Polyethylene catalysts, including metallocenes, initiate the polymerization of ethylene to produce polyethylene, and these catalysts control important characteristics of the resulting polymer. Metallocene catalysts are an advanced form of catalyst which allow polyethylene producers to make polymers that have distinct advantages over polymers made with conventional catalysts, such as higher strength and enhanced processability. The technology to make and use metallocene catalysts in manufacturing LLDPE is claimed by U.S. and foreign patents owned by Dow and Exxon.

13. If metallocene catalysts were generally available to LLDPE producers, those producers likely would be able to erode Respondents' position as leading producers of premium LLDPE polymers.

14. Carbide owns a 50% interest in Univation Technologies, LLC, a joint venture with Exxon. Univation develops and licenses metallocene catalyst technology for use in Carbide's Unipol gas phase polyethylene process. Post-merger, Dow will become Exxon's partner in Univation.

15. Dow uses its metallocene catalyst technology to produce LLDPE and other polymers in its proprietary solution process. In addition, prior to entering into the agreement to merge with Carbide, Dow was working with BP Amoco plc ("BP") pursuant to a Joint Development Agreement ("JDA") to combine Dow's metallocene catalysts with BP's Innovene gas phase process for producing polyethylene. Through the JDA, Dow and BP developed technology allowing the use of Dow's metallocene catalysts in gas phase process reactors, and developed several metallocene-based advanced polyethylene polymers.

16. In 1999, at or about the time it agreed to merge with Carbide, Dow terminated the JDA rather than enter into a joint licensing venture to market the jointly developed technology. Dow declined to license its own metallocene catalyst technology to BP for sublicense to others. As a result of Dow's decision not to proceed with a licensing venture with BP, BP is not able to offer metallocene catalysts or the jointly developed technology to BP's process technology licensees or prospective licensees.

17. There are no economic substitutes for LLDPE in the vast majority of applications in which it is used. LLDPE constitutes a relevant product market and "line of commerce" within the meaning of the antitrust laws.

18. Metallocene catalysts are distinct from conventional polyethylene catalysts and produce polymers that have distinct advantages over polymers produced with conventional catalysts. There is no economic substitute today for metallocene catalyst technology as part of a complete LLDPE technology package. In addition, metallocene catalyst technology and metallocene-based polymers have the potential to constitute substantial competition in high performance LLDPE polymers. Metallocene catalyst technology for use in LLDPE manufacture constitutes a relevant product market and "line of commerce" within the meaning of the antitrust laws.

19. Dow and Exxon are the only firms in the world that have succeeded in developing a commercially viable metallocene catalyst technology for LLDPE, and Dow (working with BP) and Carbide (working with Exxon in Univation) are the only firms that have succeeded in developing a viable implementation of metallocene catalyst technology in gas phase polyethylene processes. Dow and Univation have the largest metallocene patent estates, and have exchanged patent immunities giving each of them freedom to operate in this area. Other firms attempting to develop metallocenes have not succeeded in commercializing those catalysts or in using, licensing or selling them without threat of patent infringement actions brought by Dow, Univation or Exxon. Unlike Dow and Univation, other firms seeking to develop metallocenes have not demonstrated success in persuading LLDPE producers to license their metallocene technology.

20. Even if firms that are attempting to commercialize metallocene catalyst technology succeeded in doing so, they would not be significant constraints on Dow or Univation unless and until they further developed metallocenes for use in gas phase reactors. The substantial majority of LLDPE production capacity not controlled by Respondents is gas phase, and it would take substantial time and expense for other firms to adapt metallocene catalysts for use in gas phase reactors, particularly in light of the need to invent around patents controlled by Dow or Univation.

21. Innovation through competition in research and development in LLDPE reactor process technology leads to reductions in cost, improved product properties, performance, and

expansion of uses for polyethylene resin. LLDPE reactor process technology constitutes a relevant product market and "line of commerce" within the meaning of the antitrust laws.

22. The relevant geographic market and section of the country within which to analyze the likely effects of the proposed transaction in the production and sale of LLDPE is the United States and Canada. The relevant geographic market and section of the country within which to analyze the likely effects of the proposed transaction in the market for metallocene catalyst technology for use in LLDPE manufacture and in the market for LLDPE reactor process technology is the world.

23. The relevant markets would be highly concentrated as a result of the merger. Two firms (Respondents and Exxon) likely would control more than 50% of LLDPE polymer sales in North America, essentially all metallocene technology for LLDPE that has been commercialized to date, and a substantial share of LLDPE reactor process technology. By illustration, Respondents' technology is used in approximately 75% of the installed LLDPE capacity in the United States and Canada.

24. Entry into the relevant markets would not be timely, likely, or sufficient in magnitude, character, and scope to deter or counteract the anticompetitive effects of the merger.

25. The effects of the merger, if consummated, may be substantially to lessen competition and tend to create a monopoly in each of the relevant markets in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45. Specifically, the merger would:

a. eliminate actual, direct and substantial competition between Dow and Carbide and between Dow and Univation in the relevant markets;

b. substantially reduce competition in the market for LLDPE polymers by giving Respondents an effective monopoly of metallocene catalysts for LLDPE, thereby impeding the ability of Respondents' polymer competitors to compete with Respondents;

c. substantially reduce competition in the market for LLDPE polymers by giving Respondents control of the most widely licensed LLDPE reactor process technology, and by impairing the competitive viability of their leading competitor, thereby allowing Respondents to impede the development of LLDPE reactor process technology for the benefit of Respondents' LLDPE business;

d. eliminate potential competition between Dow and Carbide in the market for metallocene catalyst technology for use in LLDPE manufacture;

e. increase barriers to entry into the relevant markets, including enhancing patent barriers in the relevant markets resulting in increased cost of LLDPE production and increased prices for LLDPE polymers;

f. reduce innovation competition among developers of the relevant products, including the delay of, or redirection of, research and development projects in metallocene catalyst technology, LLDPE reactor process technology, LLDPE and LLDPE applications;

g. substantially increase the level of concentration in the relevant markets and enhance the probability of coordination;

h. permit Dow to further impair the ability of BP to compete in gas phase licensing and develop new technology and products based on its work with Dow under the JDA;

i. increase Respondents' ability to exercise market power unilaterally in the relevant markets;

j. allow Dow to impair Univation's ability to compete in the licensing of metallocene catalyst technology and LLDPE reactor process technology through Dow's post-merger ownership and governance interest in Univation; and

k. eliminate BP as an actual and potential competitor in the development and licensing of metallocene catalyst technology for LLDPE manufacture.

26. The merger agreement described in Paragraph 4 constitutes a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

27. The merger described in Paragraph 4, if consummated, would constitute a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, and Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

COUNT TWO – ETHYLENEAMINES

28. Paragraphs 1-27 are incorporated by reference as if fully set forth herein.

29. One relevant line of commerce in which to assess the effects of the acquisition is ethyleneamines. Ethyleneamines are a family of homologues containing nitrogen, hydrogen and carbon, formulated so that each nitrogen atom is separated from every other nitrogen atom by two carbon atoms.

30. Ethyleneamines are produced by the chemical reaction of ammonia with ethylene dichloride or by the reductive amination method. Ethyleneamines are used as chemical intermediates, used to make other chemical products, which are used in many diverse applications. There are no economic substitutes for ethyleneamines.

31. One relevant geographic area and section of the country in which to analyze the effects of the proposed acquisition in the market for ethyleneamines is the world.

32. Another relevant geographic area and section of the country in which to analyze the effects of the proposed acquisition in the market for ethyleneamines is the United States and Canada. There are no producers of ethyleneamines outside the United States and Canada to which customers located in the United States and Canada can turn for a supply of ethyleneamines which can economically supply customers in the United States and Canada.

33. Both geographic markets for ethyleneamines are highly concentrated. There are two producers of ethyleneamines in the United States and Canada, Dow and Carbide. There are six producers of ethyleneamines in the world, including both Dow and Carbide. As measured by either current sales to customers, or capacity available for the production of ethyleneamines, the relevant markets are highly concentrated.

34. Entry into production and marketing of ethyleneamines requires more than two years and would not be likely, timely, or sufficient to prevent anticompetitive effects in the relevant markets.

35. Dow and Carbide are actual competitors in the relevant markets.

36. The effect of the acquisition, if consummated, may be substantially to lessen competition and to tend to create a monopoly in the relevant markets in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45. Specifically, the merger would:

a. eliminate actual, direct, and substantial competition between Dow and Carbide in the relevant markets for ethyleneamines;

b. create a monopoly in the market for ethyleneamines in the United States and Canada;

c. increase the likelihood that Respondents will unilaterally exercise market power in the markets for ethyleneamines;

d. substantially increase the level of concentration in the world and increase the likelihood of coordinated pricing behavior among worldwide producers of ethyleneamines;

e. increase barriers to entry; and

f. increase the likelihood that customers of ethyleneamines would be forced to pay higher prices.

37. The merger agreement described in Paragraph 4 constitutes a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

38. The merger described in Paragraph 4, if consummated, would constitute a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, and Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

COUNT THREE – ETHANOLAMINES

39. Paragraphs 1-38 are incorporated by reference as if fully set forth herein.

40. One relevant line of commerce in which to assess the effects of the acquisition is ethanolamines. Ethanolamines are a family of homologues produced by the reaction of ammonia and ethylene oxide, including monoethanolamine, diethanolamine, and triethanolamine. Ethanolamines are used as chemical intermediates to make other chemical products, which are used in many diverse applications. There are no economic substitutes for ethanolamines as chemical intermediates.

41. One relevant geographic area in which to analyze the effects of the proposed acquisition in the market for ethanolamines is the United States and Canada.

42. The market for ethanolamines in the United States and Canada is highly concentrated. There are three principal producers of ethanolamines, including Dow and Carbide, and two additional small producers who have very limited capacity. As measured by either current sales or capacity available for the production of ethanolamines, the relevant market is highly concentrated.

43. Entry into production and marketing of ethanolamines requires more than two years and would not be likely, timely, or sufficient to prevent anticompetitive effects in the relevant market.

44. Dow and Carbide are actual competitors in the relevant market.

45. The effect of the merger, if consummated, may be substantially to lessen competition and tend to create a monopoly in the relevant market in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45. Specifically, the merger would:

a. eliminate actual, direct, and substantial competition between Dow and Carbide in the market for ethanolamines in the United States and Canada;

b. substantially increase the level of concentration and increase the likelihood of coordinated pricing behavior among producers of ethanolamines;

c. increase the likelihood that Respondents will unilaterally exercise market power in the market for ethanolamines;

d. increase barriers to entry; and

e. increase the likelihood that customers of ethanolamines in the United States and Canada would be forced to pay higher prices.

46. The merger agreement described in Paragraph 4 constitutes a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

47. The merger described in Paragraph 4, if consummated, would constitute a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, and Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

COUNT FOUR – MDEA BASED GAS TREATING PRODUCTS

48. Paragraphs 1-47 are incorporated by reference as if fully set forth herein.

49. One relevant line of commerce in which to assess the effects of the acquisition is methyldiethanolamine ("MDEA") based gas treating products.

50. MDEA, either alone or blended with other chemicals, is used in a wide variety of settings to remove impurities such as sulphur and carbon dioxide from hydrocarbon gas streams. When used to remove impurities from hydrocarbon gas streams, the sale of MDEA is branded and combined with engineering services that can include the design of the equipment used to treat the gas stream, monitoring the effectiveness of the gas treatment over time, and maintaining the optimum blend of MDEA and other chemicals. There are no economic substitutes for MDEA based gas treating products in the treatment of hydrocarbon gas streams.

51. Because of the high economic cost of failure of a hydrocarbon gas treating product, consumers of MDEA based gas treating products cannot economically substitute commodity MDEA for use in treatment of hydrocarbon gas streams.

52. One relevant geographic area in which to analyze the effects of the proposed acquisition in the market for MDEA based gas treating products is the United States and Canada.

53. The market for MDEA based gas treating products in the United States and Canada is highly concentrated, as measured by current sales. There are only two developers and producers of MDEA based gas treating products in the United States and Canada who offer a wide array of products to treat gas with different levels of impurities.

54. Entry into development and marketing of MDEA based products for the treating of hydrocarbon gasses requires more than two years and would not be likely, timely, or sufficient to prevent anticompetitive effects in the relevant market. Because of the high economic cost of failure of a hydrocarbon gas treating product, consumers of MDEA based gas treating products would be reluctant to accept a supplier that does not have an established reputation and a recognized brand MDEA based product for the treating of hydrocarbon gas streams.

55. Dow and Carbide are actual competitors in the relevant market.

56. The effect of the Acquisition, if consummated, may be substantially to lessen competition and to tend to create a monopoly in the relevant market in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45. Specifically, the merger would:

a. eliminate actual, direct, and substantial competition between Dow and Carbide in the United States and Canada market for MDEA based gas treating products;

b. increase the likelihood of coordinated pricing behavior among United States and Canada producers of MDEA based gas treating products;

c. increase the likelihood that Respondents will unilaterally exercise market power in the United States and Canada market for MDEA based gas treating products; and

d. increase the likelihood that United States and Canada customers of MDEA based gas treating products would be forced to pay higher prices.

57. The merger agreement described in Paragraph 4 constitutes a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

58. The merger described in Paragraph 4, if consummated, would constitute a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, and Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

WHEREFORE, THE PREMISES CONSIDERED, the Federal Trade Commission on this fifth day of February, 2001, issues its Complaint against said Respondents.

By the Commission.

SEAL

Donald S. Clark
Secretary