UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

UNITED STATES OF AMERICA, Plaintiff, v. THE DOW CHEMICAL COMPANY and ETHYL CORPORATION, Defendants.	)	CIVIL ACTION NO. 87C4280 Filed: May 11, 1987

COMPLAINT

The United States of America, by its attorneys, acting under the direction of the Attorney General of the United States, brings this civil action to obtain equitable and other relief against the defendants named herein and complains and alleges as follows:

I.

JURISDICTION AND VENUE

1. This complaint is filed and this action is instituted under Section 15 of the Clayton Act, as amended, 15 U.S.C. § 25, to prevent and restrain the violation by the defendants, as hereinafter alleged, of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

2. The Dow Chemical Company transacts business and maintains offices in the Northern District of Illinois.

3. Ethyl Corporation transacts business and maintains offices in the Northern District of Illinois.

II.

DEFINITIONS

4. "Bromides" means bromide salts, specifically sodium bromide, calcium bromide, and zinc bromide, used in blending clear brine fluids.

5. "Brominated clear brine fluids" or "brominated CBFs" means clear brine fluids containing one or more bromides.

6. "Bromine" means elemental bromine, a non-metallic halogen which is one of the chemical elements and a fundamental component of bromides.

7. "Clear brine fluid ingredients" or "CBF ingredients" means the bromides, chlorides, and other ingredients, such as water, used in blending clear brine fluids.

8. "Clear brine fluids" or "CBFs" means solids-free brine (i.e., salt) solutions used as weighting fluids during completions and workover operations on oil and gas wells.

9. "Completion" means the process by which, after an oil or gas well has been drilled to the desired depth and lined with a casing: (a) the casing and the formation in the well's production zone are perforated; (b) production tubing, which channels the oil or gas to the surface, is placed within the casing; (c) the space between the casing and the tubing, known as the annulus, is filled with fluids; and (d) the well formation is sealed.

10. "Crystallization temperature" means the temperature at which the salts in a CBF will crystallize.

11. "Density" means the weight per gallon of a solution.

12. "Drilling muds" means oil-based and water-based fluids laden with solids such as barite and bentonite, used primarily in the process of drilling oil and gas wells.

13. "Workover operations" means processes employed to enhance or maintain productivity of oil or gas wells already in production.

14. "HHI" means the Herfindahl-Hirschman Index, a measure of market concentration calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the HHI is 2600 (30 squared + 30 squared + 20 squared + 20 squared = 2600). The HHI, which takes into account the relative size and distribution of the firms in a market, ranges from virtually zero to 10,000. The index approaches zero when a market is occupied by a large number of firms of relatively equal size. The index increases as the number of firms in the market decreases and as the disparity in size between the leading firms and the remaining firms increases.

III.

DEFENDANTS

15. The Dow Chemical Company ("Dow") is made a defendant herein. Dow is a corporation organized and existing under the laws of the State of Delaware. It maintains its principal offices

in Midland, Michigan. Dow, which manufactures and sells chemicals, plastic materials, and a variety of pharmaceutical, agricultural, and consumer products, reported net sales of about $11.5 billion in 1985. Dow's Basic Chemicals Segment, which had about $5.2 billion in sales to unaffiliated customers in 1985, produces and sells inorganic and organic chemicals and hydrocarbons, including bromine and bromides.

16. Ethyl Corporation ("Ethyl") is made a defendant herein. Ethyl is a corporation organized and existing under the laws of the Commonwealth of Virginia. It maintains its principal offices in Richmond, Virginia. Ethyl is a diversified producer of performance chemicals for the petroleum industry, high technology chemicals, plastics and aluminum products, and has interests in oil, gas and coal. It reported net sales of about $1.5 billion in 1985. Its Special, Industrial and Bromine Chemicals Division, which accounted for about $500 million in net sales in 1985, produces a broad range of chemicals, including bromine and bromides.

IV.

TRADE AND COMMERCE

17. Clear brine fluids ("CBFs") are used in the oil and gas industry during completions and workover operations on oil and gas wells. The CBFs serve as weighting fluids that totally or partially counterbalance an oil or gas well's down-hole pressure and thereby prevent, or reduce the potential for, a blowout. Drilling muds are also used as weighting fluids in completions and workover operations.

18. Drilling muds or CBFs that do not include bromides are used in the majority of completions and workover operations. Bromides are the most expensive CBF ingredients now in use, and brominated CBFs generally are the most expensive weighting fluids. Consequently, operators of oil and gas wells use brominated CBFs only when they determine that the physical characteristics of a well's geological formation require the use of a CBF with properties that only the bromides can provide. Once an operator has decided to use a brominated CBF, only as much of a bromide as is necessary to obtain the lowest cost CBF with the desired properties is blended into the CBF.

19. The ingredients of any specific CBF are dictated by the density and crystallization temperature of the CBF that an operator desires for a particular well. Bromides are the densest CBF ingredients; they also have different crystallization temperatures from those of other CBF ingredients. Increasing the density of a CBF or changing the crystallization temperature thus may require the addition of a specific amount of a bromide to the CBF. For example, without the use of bromides, the densest possible CBF is about 11.6 pounds per gallon. When a CBF with a density of at least 11.7 pounds per gallon is required, sufficient bromides must be added to the CBF to achieve the required density.

20. Brominated CBFs are used as weighting fluids primarily in high pressure oil or gas producing formations that have highly unconsolidated sands or shale or a significant amount of hydratable clays. In the United States, these formations are

concentrated primarily in the coastal areas and offshore in the Gulf of Mexico and offshore near the State of California, although they also exist in other parts of the country. In these wells, the use of brominated CBFs in completions and workover operations helps the operator to maximize the well's productivity and protect the capital investment in the well.

21. Other CBF ingredients do not serve as substitutes for the bromides in CBFs because the other CBF ingredients cannot be blended to produce a CBF with the density and crystallization properties unique to the bromides. Operators do not regard drilling muds and other solids-laden weighting fluids as viable substitutes for brominated CBFs in most situations in which they choose to use brominated CBFs. The solids in such fluids could decrease the well's productivity, create the need for more frequent workover operations, and increase the difficulty of working on the well. The use of brominated CBFs avoids these problems. A small but significant, nontransitory increase in the prices of bromides would not cause operators to replace bromides with other CBF ingredients, drilling muds or other solids-laden weighting fluids in those applications in which they now use bromides.

22. Dow, through its Basic Chemicals Segment, and Ethyl, through its Special, Industrial and Bromine Chemicals Division, manufacture bromide solutions and concentrates and sell them as commodity products to oilfield service companies. Oilfield service companies then blend the bromides with other CBF

ingredients to form brominated CBFs having the precise densities and crystallization temperatures desired by operators for completions and workover operations on particular oil and gas wells. The service companies sell the brominated CBFs to operators in the oil and gas industry, including major oil companies and independent oil exploration firms.

23. The production and sale of bromides (hereinafter "bromide market") constitutes a line of commerce and a relevant product market for antitrust purposes.

24. The relevant geographic market for antitrust purposes for the bromide market is nationwide. All bromide producers are able to compete in all regions of the United States where brominated CBFs are used in completions and workover operations on oil and gas wells. In 1985, total sales in the United States bromide market were about $50 million.

25. The United States bromide market is highly concentrated, and Dow and Ethyl are direct competitors in the market. Only two other firms produce bromides for sale in the United States: Great Lakes Chemical Corporation ("Great Lakes"), which is located in the United States; and Dead Sea Bromine Company Limited, which produces bromides in Israel and exports them to the United States for sale through wholly-owned subsidiaries.

26. Dow and Ethyl are the second and third largest firms, respectively, in terms of sales in the United States bromide

market. In 1985, Dow had about 24 percent of bromide sales in the United States, and Ethyl had about 17 percent of such sales. Based on 1985 sales, the combination of the two firms would increase the HHI by about 816, from 3710 to about 4526. In 1986, Dow was projected to have about 30 percent of bromide sales in the United States, and Ethyl was projected to have about 16 percent of such sales. Based on 1986 projected sales, the combination of the two firms would increase the HHI by about 960, from 3582 to about 4542.

27. Each of the four bromide producers also produces bromine, and each firm uses its own bromine-bearing raw materials in the production of its bromides. Arkansas Chemicals, Inc. ("ACI") is the only other United States producer of elemental bromine with access to the bromine-rich brines necessary for large-volume production of elemental bromine. ACI is a joint venture between Great Lakes and PPG Industries, Inc. and is managed by Great Lakes.

28. A de novo entrant into the production of bromides for sale in the United States bromide market would need to invest significant amounts of time and money to become a significant competitor. In addition to constructing a bromide processing facility and developing a commercially acceptable product, a new entrant would incur other costs in the storage, transportation, and marketing of bromides. In order not to be dependent on its competitors for its supply of bromine-bearing brines or other bromine-bearing raw materials, and to be cost-competitive with

other producers of bromides, a new entrant would also need to bring into operation a brine field, and possibly a bromine processing plant, to supply its bromide plant with either bromine-bearing brines or other bromine-bearing raw materials. Entry into the production of bromine-bearing brines, and possibly bromine production, would require significant additional investments in time and money in leasing mineral rights, drilling production and disposal wells, constructing transport pipelines, possibly constructing a bromine production plant, and complying with stringent state and federal government regulations applicable to the drilling of bromine-bearing brine production and disposal wells and operation of bromine production plants.

29. Due to currently depressed conditions in the oil and gas industry, the number of completions and workover operations has declined considerably, and the demand for brominated CBFs has been sharply reduced. Sales of bromides in the United States dropped from about $59 million in 1984 to a projected $31 million in 1986. The decline in sales of bromides has depressed the United States bromide market and created substantial excess production capacity in the market. The depressed condition of the United States bromide market and the substantial excess production capacity in the market serve as significant disincentives to de novo entry into the production of bromides. Significant excess production capacity also exists in the bromine production industry, and that industry is depressed. These factors create additional disincentives for de novo entry into the production of bromides for sale in the United States.

30. Dow and Ethyl regularly purchase and ship substantial quantities of materials in interstate commerce. Dow and Ethyl sell substantial quantities of bromides in interstate commerce, and Dow has shipped substantial quantities of bromine in interstate commerce for use in its bromide production operations. Dow and Ethyl each are engaged in interstate commerce, and their activities are in the flow of and substantially affect interstate commerce.

V.

VIOLATION ALLEGED

31. On September 11, 1986, Ethyl agreed to acquire Dow's bromine and brominated products business for approximately $55 million. Pursuant to the agreement, Ethyl would acquire:

a. substantially all of Dow's real property and equipment used or to be used in the production of bromine, bromides, and other brominated products in Arkansas;

b. an option to take possession of much of Dow's equipment used in the production of bromides and other brominated products in or near Midland, Michigan;

c. Dow's inventories of bromine, bromides, and other brominated products; and

d. a variety of intangible assets including copyrights, patents, technology and know-how.

32. After consummation of the agreement, Dow will no longer produce or sell bromides, and following a transition period, Dow

will cease its production of bromine, except as a by-product, and other brominated products.

33. The effect of the acquisition of Dow's bromine and brominated products business by Ethyl may be substantially to lessen competition in the United States bromide market in violation of Section 7 of the Clayton Act, in the following ways, among others:

a. actual and potential competition between Dow and Ethyl in the bromide market will be eliminated;

b. competition generally in the bromide market may be substantially lessened.

PRAYER

WHEREFORE, plaintiff prays:

1. That the proposed acquisition of Dow's bromine and brominated products business by Ethyl be adjudged to be in violation of Section 7 of the Clayton Act;

2. That the defendants be permanently enjoined from carrying out any agreement, understanding, or plan, the effect of which would be to combine the bromide businesses of Dow and Ethyl;

3. That the defendants be permanently enjoined from carrying out any agreement, understanding, or plan, the effect of which would be to reduce the competitive viability of the bromide business of either Dow or Ethyl;

4. That the plaintiff have such other and further relief as the Court may deem just and proper; and

5. That plaintiff recover the costs of this action.

Dated:

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