

IN THE MATTER OF  
ETHYL CORPORATION, ET AL.

FINAL ORDER, OPINION, ETC., IN REGARD TO ALLEGED VIOLATION OF  
SEC. 5 OF THE FEDERAL TRADE COMMISSION ACT

*Docket 9128. Complaint, May 30, 1979—Final Order, March 22, 1983*

This Final Order requires the nation's two leading producers of lead-based antiknock gasoline additives, among other things, to cease announcing price changes in advance of the period contractually required for advance notice to customers, and using a "most-favored-nation" clause in any contract for the sale or delivery of lead-based antiknock compounds. Further, when stating a delivered price for any lead-based antiknock compound, the companies must also quote the product's point of origin price, a separate price for shipment, and allow customers to arrange for their own shipping and delivery. While the order does not prohibit the companies when acting individually from selecting their own customers, establishing their own prices, and selling at a delivered price or point of origin in good faith to meet the equally low price of a competitor, it does not exempt the companies' pricing practices from antitrust law.

*Appearances*

For the Commission: *Robert A. Burka, Edward T. Colbert, Thomas J. Keary, Stephen C. Palmer, Peter M. Kazon and Raymond T. Diamond.*

For the respondents: *Daniel K. Mayers, John H. Harwood, David Westin and Kathleen M. Russo, Wilmer, Cutler & Pickering, Washington, D.C., for Ethyl Corporation. Daniel M. Gribbon, Allan J. Topol, Terry Coleman and Edward R. Mackiewicz, Covington & Burling, Washington, D.C. and W.E. MacIntyre, in-house counsel, for E.I. du Pont de Nemours and Co. Alan S. Ward, Shirley Z. Johnson, Thomas J. Segal and Phillip A. Proger, Baker & Hostetler, Washington, D.C., Louis R. Sernoff and Michael Kelly, Morgan, Lewis & Bockius, Washington, D.C. and John W. Thomas, in-house counsel, for PPG Industries, Inc. Champ W. Davis and David C. Bogan, Chadwell, Kayser, Ruggles, McGee & Hastings, Chicago, Ill. and James S. Lambe, in-house counsel, for Nalco Chemical Co.*

COMPLAINT

The Federal Trade Commission, having reason to believe that the above-named respondents, each subject to the jurisdiction of the Commission, have violated and are now violating Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. 45, and that a proceed-

ing by it in respect thereof is in the public interest, hereby issues its complaint charging as follows:

*Definition*

1. For the purpose of this complaint the following definition shall apply:

*Leadbased antiknock compounds* mean additives to gasoline which increase its octane rating and which contain tetraethyl or tetramethyl lead.

ETHYL CORPORATION

2. Respondent Ethyl Corporation ("Ethyl") is a corporation organized under the laws of the Commonwealth of Virginia, with its principal place of business at 330 South Fourth Street, Richmond, Virginia. In 1977, its sales were in excess of \$1.2 billion, assets were over \$974 million, and net income was approximately \$78 million.

3. Ethyl is a manufacturer and seller of leadbased antiknock compounds in the United States with production [2] facilities in Baton Rouge, Louisiana and Pasadena, Texas. Its gross sales of leadbased antiknock compounds in 1977 were in excess of \$200 million, or more than 30% of domestic United States leadbased antiknock compound sales.

E.I. DU PONT DE NEMOURS AND COMPANY

4. Respondent E.I. du Pont de Nemours and Company ("Du Pont") is a corporation organized under the laws of the State of Delaware with its principal place of business at 1007 Market Street, Wilmington, Delaware. In 1977, its sales were in excess of \$9.4 billion, assets were over \$7.4 billion, and net income was approximately \$545 million.

5. Du Pont is a manufacturer and seller of leadbased antiknock compounds in the United States with production facilities in Deepwater, New Jersey and Antioch, California and a blending facility in Houston, Texas. Its gross sales of leadbased antiknock compounds in 1977 were in excess of \$200 million, or more than 30% of domestic United States leadbased antiknock compound sales.

PPG INDUSTRIES, INC.

6. Respondent PPG Industries, Inc. ("PPG") is a corporation organized under the laws of the Commonwealth of Pennsylvania with its principal place of business at One Gateway Center, Pittsburgh, Pennsylvania. In 1977, its sales were in excess of \$2.5 billion, assets were over \$2.1 billion, and net income was approximately \$91 million.

7. PPG is a manufacturer and seller of leadbased antiknock compounds in the United States with a production facility located in Beaumont, Texas. Its gross sales of leadbased antiknock compounds in 1977 were in excess of \$75 million, or more than 10% of the domestic United States leadbased antiknock compound sales.

#### NALCO CHEMICAL COMPANY

8. Respondent Nalco Chemical Company ("Nalco") is a corporation organized under the laws of the State of Delaware with its principal place of business at 2901 Butterfield Road, Oak Brook, Illinois. In 1977, its sales were in excess of \$445 million, assets were over \$285 million, and net income was approximately \$50 million. [3]

9. Nalco is a manufacturer and seller of leadbased antiknock compounds in the United States with a production facility in Freeport, Texas. Its gross sales of leadbased antiknock compounds in 1977 were in excess of \$75 million, or more than 10% of domestic United States leadbased antiknock compound sales.

#### LEADBASED ANTIKNOCK COMPOUND MARKET

10. The leadbased antiknock compounds produced by each respondent are substantially identical. The four respondents are the only firms which sell leadbased antiknock compounds in the United States. There has been no entry into the market for over 15 years, and during much of the period from at least 1974 to the present, the industry has operated at substantially less than capacity.

#### JURISDICTION

11. Leadbased antiknock compounds are sold and shipped by respondents from their principal places of business and production facilities to customers located throughout the United States. In the course and conduct of such sales, respondents have engaged in the acts and practices hereinbelow alleged in or affecting such commerce within the meaning of Section Four of the Federal Trade Commission Act, as amended, 15 U.S.C. 44.

#### ACTS AND PRACTICES

12. In the course of their leadbased antiknock compound businesses, respondents have engaged and continue to engage in the following acts, practices, and methods of competition, among others:

(a) Each respondent has quoted and sold leadbased antiknock compounds only on the basis of a delivered price inclusive of transportation;

(b) Respondents Ethyl and Du Pont have utilized a "most favored

nation" clause in their standard form sales contracts which promises that the buyer will receive the lowest price at which the same product is sold to any other customer, and have followed a policy of granting such treatment when sales are on a spot basis and not pursuant to an existing contract. Respondent Nalco has used a "most favored nation" clause in a substantial number of its sales contracts; [4]

(c) Each respondent (i) has utilized a 30-day advance notice of price change clause in sales contracts, and (ii) has frequently given advance notice of price changes to the press, directly or indirectly to other respondents, and to existing and potential customers in excess of 30 days.

#### EFFECT AND VIOLATION

13. The acts, practices, and methods of competition of respondents as hereinabove alleged have individually and in combination had the effect of reducing uncertainty about competitors' prices of leadbased antiknock compounds. Such reduced uncertainty has unfairly facilitated the maintenance of substantially uniform price levels and the reduction or elimination of price competition in the leadbased antiknock compound market.

14. The aforesaid acts, practices, and methods of competition of the respondents, individually and in combination, constitute unfair methods of competition in or affecting commerce and unfair acts and practices in or affecting commerce in violation of Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. 45.

#### INITIAL DECISION BY

ERNEST G. BARNES, ADMINISTRATIVE LAW JUDGE

AUGUST 5, 1981

#### PRELIMINARY STATEMENT

On May 30, 1979, the Commission filed the complaint in this proceeding charging that respondents Ethyl Corporation, E.I. du Pont de Nemours and Company, PPG Industries, Inc., and Nalco Chemical Company had violated Section 5 of the Federal Trade Commission Act, 15 U.S.C. 45.<sup>1</sup> It is alleged that these four companies have engaged in certain marketing practices which had the effect of reducing uncertainty about competitors' prices of lead-based antiknock compounds; such reduced uncertainty, it is alleged, unfairly facilitated

<sup>1</sup> Respondents, individually, were formally notified of the Commission's investigation of their marketing practices in the lead-based antiknock compound market in early January, 1978. (CX 2210A-D)

the maintenance of substantially uniform price levels and the reduction or elimination of price competition in the lead-based antiknock compound market. (Complaint, Par. 13)

Paragraph 12 of the complaint identifies these marketing practices as follows:

- (a) Each respondent has quoted and sold lead-based antiknock compounds only on the basis of a delivered price inclusive of transportation;
- (b) Respondents Ethyl and Du Pont have utilized a "most favored nation" clause in their standard form sales contracts which promises that the buyer will receive the lowest price at which the same product is sold to any other customer, and have followed a policy of granting such treatment when sales are on a spot basis and not pursuant to an existing contract. Respondent Nalco has used a "most favored nation" clause in a substantial number of its sales contracts; and
- (c) Each respondent (i) has utilized a 30-day advance notice of price change clause in sales contracts, and (ii) has frequently given advance notice of price changes to the press, directly or indirectly to other respondents, and to existing and potential customers in excess of 30 days.

In separately filed answers, each respondent generally admitted the use of some or all of these practices, as alleged in the complaint, but denied that they had the effect of reducing uncertainty about competitors' prices, or that they facilitated uniform price levels in the lead-based antiknock compound market. In addition to denying that these practices had any effect on competition, respondents also raised issues [3] concerning the relationship between the practices and the free speech protection provided in the First Amendment to the Constitution of the United States. While respondents admitted certain jurisdictional facts and that each respondent shipped lead-based antiknock compounds in interstate commerce, each denied that the challenged practices violated the Federal Trade Commission Act.

Nalco, joined by Ethyl and Du Pont, moved on May 20, 1980, for summary decision, which was denied by an order dated June 10, 1980.

Following reciprocal discovery by all parties, the administrative trial commenced on June 9, 1980. Complaint counsel concluded its case-in-chief on July 24, 1980, after 25 days of hearings. Complaint counsel called as witnesses 12 employees of respondents, seven employees of various-sized oil refining companies, and Dr. George Hay, a professor of law and economics from Cornell Law School. Respondents' motions to dismiss at the close of complaint counsel's case-in-chief were denied.

Ethyl's defense began on October 7, 1980, continued for four days during which it called to testify two of its employees, three employees of independent refining companies, an employee of National Economic Research Associates, and Jesse W. Markham, an economist from the Harvard Business School. Du Pont's defense began October 14,

1980, continued for six days, and consisted of the testimony of four of its employees, the employee of an independent refining company, and H. Michael Mann, an economist from Boston College. PPG's defense began October 23, 1980, continued for five days, and consisted of the testimony of three of its employees, two employees of consulting firms, and Michael Glassman, an economist from Glassman-Oliver Economic Consultants Inc. Nalco's defense began November 5, 1980, continued for three days, and consisted of the testimony of one of its employees, and Dennis William Carlton, an economist from the University of Chicago.

On rebuttal, complaint counsel presented two employees of the Federal Trade Commission—Charles A. Pidano, Jr., a certified public accountant, and David T. Sheffman, an economist,<sup>2</sup> during the week of December 8, 1980. Respondents Du Pont and Nalco each presented one surrebuttal witness, an employee of Du Pont, and Nalco's economist, Dr. Carlton, during February 1980. [4]

During the course of the proceeding over 3300 exhibits were admitted in evidence, and the transcript of testimony exceeds 8,000 pages. The record was formally closed on March 23, 1981.

A motion to dismiss the complaint was filed by Du Pont on October 10, 1980. By order of October 22, 1980, a ruling on the motion was deferred until after the close of the record and submission of briefs. In November, Nalco renewed its motion for summary decision. A ruling on this motion was deferred as well.

On October 1, 1979, Du Pont filed a lawsuit against the Commission and its individual Commissioners in U.S. District Court for the District of Delaware. Du Pont, subsequently joined by Ethyl and PPG as *amici curiae*, sought a declaration (but no injunctive relief) that the issuance of the instant complaint exceeded the scope of the Commission's authority because the challenged practices are not unfair or unlawful under Section 5 of the Federal Trade Commission Act, 15 U.S.C. 45. Du Pont also asserted that the prohibition on public announcements of antiknock compound prices in the Commission's Notice Order violated Du Pont's rights under the First Amendment to the Constitution. In November 1979, Du Pont moved for summary judgment before the district court and the Commission subsequently moved to dismiss the complaint. The district court, per Chief Judge Latham, denied Du Pont's motion on April 9, 1980 and granted the Commission's motion to dismiss the complaint because of Du Pont's failure to exhaust its administrative remedies. The court further held that issuance of the complaint did not impede constitutionally-protected speech. *E. I. du Pont de Nemours and Co. v. FTC*, 488 F. Supp.

<sup>2</sup> Dr. Sheffman is a tenured Associate Professor of Economics at the University of Western Ontario, and a visiting staff economist at the FTC's Bureau of Economics.

747 (D. Del. 1980). No notice of appeal from the district court's judgment was filed.

This proceeding is now before the Administrative Law Judge for decision based upon the complaint, the answers, pleadings, testimony and other documentary evidence of record, proposed findings of fact and conclusions of law, and legal authority submitted by the parties. These submissions have been given careful consideration and, to the extent not adopted herein in the form proposed or in substance, are rejected as not supported by the record or as immaterial. All motions not heretofore or herein specifically ruled upon, either directly or by the necessary effect of the conclusions in this Initial Decision, are hereby denied.

Having heard and observed the witnesses and after having carefully reviewed the entire record in this proceeding, together with the proposed findings of fact and conclusions of law submitted by the parties, the Administrative Law Judge makes [5] the following findings of fact and conclusions, and issues the Order set out at the end hereof.<sup>3</sup>

## FINDINGS OF FACT

### I. IDENTITY OF THE RESPONDENTS

1. Respondent Ethyl Corporation ("Ethyl") is a Virginia corporation with its principal place of business at 330 South Fourth Street, Richmond, Virginia. In 1977, its sales were in excess of \$1.2 billion, its assets were over \$974 million, and its net income was approximately \$78 million. Ethyl manufactures and sells lead-based antiknock compounds in the United States, with production facilities located in Baton Rouge, Louisiana and Pasadena, Texas. In 1977, its gross sales of antiknock compounds were in excess of \$200 million. (Complaint ¶¶ 2-3; Ethyl Answer ¶ 2)

At all times relevant hereto Ethyl has sold and shipped lead-based antiknock compounds in interstate commerce. (Complaint ¶ 2; Ethyl Answer ¶ 5) [6]

2. Respondent E. I. du Pont de Nemours and Company ("Du Pont")

<sup>3</sup> The findings of fact include references to supporting evidentiary items in the record. The supporting evidence cited in each instance is not necessarily all-inclusive of the record evidence. The following abbreviations have been used:

- F. - Findings of this Initial Decision followed by the number of the finding being referenced.
- References to the transcript are designated by the name of the witness and followed by the page number(s).
- CX.- Complaint counsel's exhibits followed by its number and the referenced page(s).
- REX.- Ethyl's Exhibits followed by its number and the referenced page(s).
- RDX.- Du Pont's Exhibits followed by its number and the referenced page(s).
- RPX.- PPG's Exhibits followed by its number and the referenced page(s).
- RNX.- Nalco's Exhibits followed by its number and the referenced page(s).

is a Delaware corporation with its principal place of business at 1007 Market Street, Wilmington, Delaware. In 1977, its sales were in excess of \$9.4 billion, its assets were over \$7.4 billion, and its net income was approximately \$545 million. Du Pont manufactures and sells lead-based antiknock compounds in the United States with production facilities located in Deepwater, New Jersey and Antioch, California. Du Pont also has an antiknock compound blending facility in Beaumont, Texas. In 1977, Du Pont's gross domestic antiknock compound sales exceeded \$200 million. (Complaint ¶¶ 4-5; Du Pont Answer ¶¶ 4-5)

At all times relevant hereto, Du Pont has sold and shipped lead-based antiknock compounds in interstate commerce. (Complaint ¶2; Du Pont Answer ¶¶ 5, 11)

3. Respondent PPG Industries, Inc. ("PPG") is a Pennsylvania corporation with its principal place of business at One Gateway Center, Pittsburgh, Pennsylvania. In 1977, PPG's sales exceeded \$2.5 billion, assets were over \$2.1 billion, and net income was approximately \$91 million. PPG manufactures and sells lead-based antiknock compounds in the United States with its production facility located in Beaumont, Texas. PPG's gross sales of antiknock compounds were over \$75 million in 1977. (Complaint ¶¶ 6-7; PPG Answer ¶¶ 6-7)

At all times relevant hereto PPG has sold and shipped lead-based antiknock compounds in interstate commerce. (Complaint ¶ 2; PPG Answer ¶¶ 7, 11)

4. Respondent Nalco Chemical Company ("Nalco") is a Delaware corporation with its principal place of business at 2901 Butterfield Road, Oak Brook, Illinois. In 1977, Nalco's sales were over \$445 million, assets were over \$285 million, and net income was approximately \$50 million. Nalco manufactures and sells lead-based antiknock compounds in the United States, with its production facility located in Freeport, Texas. Its gross antiknock compound sales were over \$75 million in 1977. (Complaint ¶¶ 8-9; Nalco Answer ¶¶ 8-9).

At all times relevant hereto Nalco has sold and shipped lead-based antiknock compounds in interstate commerce. (Complaint ¶ 2; Nalco Answer ¶¶ 9, 11)

## II. LEAD-BASED ANTIKNOCK COMPOUNDS

### A. *The Product, Its Characteristics And Uses*

5. There are two basic lead antiknock products: tetraethyl lead ("TEL") and tetramethyl lead ("TML"). (Tunis, 36-38; J. M. Robinson, 977-78; CX 922J, 923C) TEL has been commercially manufactured since the mid-1920's. (CX 960 O, 2002Z4) TML was first manufactured commercially in 1960. (CX 960 O) The basic compound is combined



with solvents, dyes, [7] antioxidants, and scavengers to form finished antiknock compound fluid. (Tunis, 39; CX 597E-N) The finished fluid is about 40% elemental (pig) lead. The scavengers combine with the lead in the engine's combustion chamber, so that the lead is exhausted as part of a gaseous compound instead of remaining in the engine. In most cases the scavenger consists of ethylene dichloride and ethylene dibromide. (Altman, 1326-37; Cantwell, 5211-12, 5236; Tunis, 39)

6. Lead-based antiknock compounds are added to motor fuel to improve the octane rating or performance of a gasoline engine. An octane rating is the measure of an engine's resistance to premature detonation, or "knock." (Tunis, 29) Antiknock compounds improve engine performance by slowing the combustion process of the engine to the point that the chemical energy of the fuel is equilibrated to the mechanical capability of the engine to absorb the chemical release, thus reducing "knock," or engine noise and vibration. Use of antiknock compounds allows an engine to do a given amount of work with less gasoline. (Tunis, 29-32, 37; Cantwell, 5168) Only a small amount of lead is contained in a gallon of gasoline. The cost of that lead per gallon of gasoline is minimal. (Day, 666-67; Werling, 3709; J. A. Robinson, 5385-86)

7. Antiknock compounds are usually sold as mixtures of TEL and TML. (Altman, 1382-83) However, some refiners use straight TEL; no refiner uses straight TML. (Altman, 1382-83) In 1976, Ethyl estimated that TML production constituted approximately 20% of total antiknock production. (REX 127P) Generally, TEL is more effective than TML in raising octane ratings when relatively small amounts of antiknock compounds are used. (Day, 611) The relative effect of TEL and TML on gasoline octane ratings is also a function of the gasoline blend available to the refiner. (Tunis, 42-44) TEL and TML may be combined into physical mixes, which are formed by blending the TEL and the TML without any chemical reaction. TEL and TML are more commonly combined into reacted mixes, which are formed by chemically reacting TEL and TML with a catalyst. (Tunis, 37-38; Altman, 1383) Types of antiknock compounds differ depending, *inter alia*, on the proportions of TEL and TML that are used in the physical mixes and the reaction mixes. (Tunis, 38; CX 597G, H, Q)

8. Individual antiknock compounds of a given type produced or sold by one respondent are substantially similar in composition to those of the same type produced or sold by another respondent. (Complaint ¶ 10; Ethyl Answer ¶ 4; Du Pont Answer ¶ 10; Nalco Answer ¶ 10; Steen, 3395) For example, the 50/50 mixture sold by Du Pont is not substantially different from that sold by Ethyl, Nalco or PPG. There are differences between a 50/50 mixture and a 75/25 mixture. (Tunis, 37-41)

9. Each respondent offers to sell a group of "standard" antiknock compound mixes. (Tunis, 182; Lockerbie, 698-700; J. M. Robinson, 1038; Altman, 1269; *e.g.*, CX 2A, 3A, [8] 4, 9, 13, 599F-G, 600-617, 1113Z22-Z33, 1142-62, 1345-49, 1360A-C) The standard antiknock compound mixes offered for sale by each respondent are listed by trade name on Appendix A, arranged so that each respondent's equivalent mixes are on the same line.

10. Ethyl, Du Pont and PPG offered several "special" or "nonstandard" antiknock compounds. (Lockerbie, 600; Fremd, 1599; Park, 1824-25; McNally, 2192-93; Werling, 3650-51) An Ethyl official testified that less than 1% of sales were nonstandard mixes. (Lockerbie, 820) The composition of special or nonstandard mixes was generally the same as each company's comparably-named standard mix with the exception of the scavenger: the special mixes contained only ethylene dichloride and had no ethylene dibromide. (Tunis, 39-40; Fremd, 1670; Werling, 3623) Special or non-standard mixes are listed on Appendix B, arranged so that equivalent mixes are on the same line.

11. [\*\*\*]\*

12. Lead-based antiknock compounds sold by each of the four respondents are homogenous. (Tunis, 369; CX 960Q; Complaint ¶ 10; Ethyl Answer ¶4; Du Pont Answer ¶10; Nalco Answer ¶ 10; Steen, 3395; Hay, 3803-04, 3998, 4123; J. M. Robinson, 979; Markham, 6781; Carlton, 6959-60; Mann, 5429) There is no variation in the quality or performance of the products sold by each of the four respondents. (Tunis, 369; Charles, 2510; McCormick, 2646, 2702; Solomon, 2816; Wilson, 3195; Steen, 3395; Dana, 4465; CX 960Q)

13. Lead-based antiknock compounds are dangerous to handle because organic lead is flammable and explosive (J. M. Robinson, 1181; Koehnle, 4585-86; Baker, 5757), and can cause serious illness or death if they are ingested or come into direct contact with the human body because they are highly toxic. (Tunis, 46; Altman, 1286; Baker, 5757; White, 5945-46, 5975)

#### *B. Substitutes for Lead-Based Antiknock Compounds*

14. Products other than lead-based antiknock compounds can be used to increase octane rating. (Tunis, 32-33) Chemicals such as toluene, benzene, and MMT, a manganese-based compound, can be added to gasoline to improve engine performance. (Altman, 1248; Park, 1907-09; McCormick, 2793-96, 2811-12; Werling, 3680; Cantwell, 5170; CX 1953N) These products have not gained commercial acceptance since they are available in only limited quantities and are more costly to use than lead-based antiknock compounds. (Altman, 1248; Park, 1907, 1924; McCormick, 2793-96; Cantwell, 5170; CX

\* Throughout this document, [\*\*\*] refers to *in camera* material that has been excised.

1953N) Certain [9] alcohols may also be used as octane enhancers, but they must be used in significant volumes and are substantially more expensive to use than lead-based antiknock compounds. (McCormick, 2794-96, 2811-12).

15. Octane ratings can also be increased by further refining the crude oil used to produce gasoline. (Tunis, 32-33; Altman, 1392-93; Cantwell, 5168-69) A number of different refining processes may be used, but the most important is catalytic reforming. (Altman, 1392-93; Cantwell, 5169) All of these processes, however, result in a yield loss; that is, more crude oil must be used to produce a given quantity of gasoline. (Tunis, 32-35; Cantwell, 169-70) Therefore, further refining, alone, is nearly always more expensive than adding antiknock compounds because of the increased crude oil costs. (Tunis, 33) Because each incremental unit of antiknock compound has less of an impact on raising octane ratings, at some point the cost of using additional antiknock compounds will exceed the cost of further refining. (Cantwell, 5169-70, 5185-86; RDX 332C) As the price of crude oil increased during the 1970s, the cost of reforming increased, making lead antiknock compounds relatively more valuable to refiners. (Tunis, 35, 51, 370; Day, 552-53; Cantwell, 5173-74) Witnesses uniformly testified that antiknock compounds were the most economical method of enhancing octane. (McCormick, 2634-35; Shouse, 2879; Steen, 3456-57; Fetter, 4538) Refiners had no real alternative to lead-based antiknock compounds. (Day, 554)

### III. THE LEAD-BASED ANTIKNOCK COMPOUND MARKET

#### A. *Early History of the Market*

16. Ethyl's corporate predecessor was formed in 1924 as a joint venture of General Motors Corporation and Standard Oil Company of New Jersey to exploit a patent monopoly on lead-based antiknock compounds. Du Pont controlled General Motors at that time. (Glassman, Tr. 6015)<sup>4</sup> Du Pont, in 1959, was enjoined from voting its General Motors stock and subsequently disposed of its General Motors stock holdings (*see United States v. E. I. du Pont de Nemours and Co.*, 177 F. Supp. 1 (N.D. Ill. 1959)). Prior to 1948 Ethyl was the sole domestic marketer of lead-based antiknock compounds, which were first manufactured commercially by Du Pont at Deepwater, New Jersey. After 1938, antiknock compounds were also manufactured by Ethyl [10] in Baton Rouge, Louisiana. (Koehnle, 4645; Glassman, 6015-17) In 1962 Ethyl was purchased by the Albemarle Paper Company and all con-

<sup>4</sup>The history of Ethyl's formation and early relationship with Du Pont is described in detail by the district court in *United States v. E. I. du Pont de Nemours & Co.*, 126 F. Supp. 235, 301-13 (N.D. Ill. 1954), *rev'd on other grounds*, 353 U.S. 586 (1957).

nections with General Motors and with the Standard Oil Company of New Jersey were terminated. (Lockerbie, 851)

17. Du Pont began selling lead-based antiknock compounds in 1948 and until the early 1960's, Ethyl and Du Pont were the only domestic producers and marketers of lead-based antiknock compounds. (Lockerbie, 721; Glassman, 6016-17) The Houston Chemical Company entered the lead-based antiknock compound market in August 1961. (J. M. Robinson, 965; Fremd, 1734) Houston Chemical Company, acquired by PPG in March 1963, marketed antiknock compounds under the Houston Chemical Company name until 1978 when the Houston Chemical Company division was merged into PPG's Chemical Division - U.S. Thereafter, antiknock compounds were marketed under the PPG corporate name. (J. M. Robinson, 965-67) Nalco Chemical Company entered the market as a TML manufacturer in approximately 1964, when TML was a relatively new product. (CX 1956N, 9600; Altman, 1387)

#### *B. The Sellers of Lead-Based Antiknock Compounds*

18. The four respondents are the only domestic marketers of lead-based antiknock compounds. (Complaint ¶ 10; Ethyl Answer ¶4; Du Pont Answer ¶ 10; PPG Answer ¶ 10; Nalco Answer ¶10) No foreign firm has ever sold lead-based antiknock compounds in the United States. (Tunis, 218; Wilson, 3286-87, 3358-60) There are only three commercial manufacturers of each of the two basic lead antiknock products, TEL and TML. Ethyl, Du Pont and PPG each manufactures TEL (Tunis, 40-41; Werling 3630; Baker, 5763; CX 105); Ethyl, Du Pont and Nalco each manufactures TML. (Tunis, 40-41; Altman, 1383-84; Werling, 3630; Hay 3805; CX 105)

#### *C. The Purchasers of Lead-Based Antiknock Compounds*

19. Antiknock compounds are used exclusively by gasoline refiners and blenders. (Cantwell, 5168) Purchasers of antiknock compounds include six of the ten largest industrial corporations in the United States, *i.e.*, Exxon, Mobil, Texaco, Chevron, Gulf and Amoco (*Fortune* rankings August 1979). (CX 220M) During the period 1974-1979, there were 154 antiknock compound purchasers, with the ten largest accounting for more than 30 percent of total purchases. (REX 324A-Z17) The larger refiners operate more than one refinery; for example, Texaco operates eleven refineries (Wilson, 3233-34),<sup>5</sup> Exxon operates [11] five refineries (Payne, 3503),<sup>6</sup> and Chevron operates seven refin-

<sup>5</sup> Two refineries are located on the West Coast, one on Puget Sound, and one in Wilmington, California; others are located at Casper, Wyoming; Amarillo, Port Arthur and El Paso, Texas; Tulsa, Oklahoma; Lawrenceville and Lockport, Illinois; Eagle Point, New Jersey; and Baton Rouge, Louisiana. (Wilson, 3233-34)

<sup>6</sup> The Exxon refineries are located at Baton Rouge, Louisiana; Baytown, Texas; Bayway, New Jersey; Benicia, California; and Billings, Montana. (Payne, 3503)

