St. Louis - General Offices

Dale Smith

March 31, 1965

A-202

Pydraul Fluids -- N.C.B.

T. Denton-Roberts
MCL - London

Dale Smith has asked me to comment in response to your January 4 memo. I believe there is a pencilled note on Dale's copy that this arrived in St. Louis on March 15.

We are familiar with the publication by H. F. Bondy, etal, copies of which were included with your memo. Since its publication, this article has caused some concern and difficulties in the United States. Our usual reply to TCP customers states that the article is a major contribution to basic knowledge concerning the toxicology of triaryl phosphates. Few producers or suppliers of TCP in the U.S. provide a product that will meet the specifications suggested in the article. In the first place, there is no record of industrial poisoning for occupational health cases resulting from the production and use of TCP made in the U.S. starting with a cresylic acid containing less than 3% of the ortho-isomer. To our knowledge, there are no reports in the foreign literature that indicate any difficulties with the production meeting this specification. The horrible experiences in Algeria and elsewhere resulting from the ingestion of TCP sprang from a material made from higher ortho content cresylic acid. I hasten to add we would not recommend the ingestion of the material made to our specification.

It is our understanding that the economics of the raw materials and production in the U. S. do not warrant a triaryl phosphate plasticizer meeting Bondy's specifications. Markets have been established for other phosphate and phthalate plasticizers for use in food wrapping materials or containers which make it undesirable or unnecessary to go the route of "non-toxic" triaryl compounds.

Those of our Pydrauls which contain TCP use our "plasticizer grade" TCP as compared to our higher ortho isomer material used as a gasoline additive. I repeat that even this material would not pass the "chicken wing drop" test described in the article. The U. S. Naval Medical Research Institute did some work in 1958 and published the results in 1959. The chicken studies led to our conclusion as indicated in the enclosed

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copy of my letter to H. O. Jacobsen concerning American Oil Company's interest. Since that time we have learned that some samples of petroleum oil without any triaryl phosphate give positive results in the chicken test. This tends to confirm that the test is either too sensitive or defies extrapolation to the potential hazard with humans in any practical sense.

I have enclosed a copy of our Hygienic Guide series relating to Triorthocresylphosphate and a copy of another letter of mine to a gentlemen at Western Electric Company which summarizes further some of our views on the TCP question.

I believe Denis Perry in the Brussels office has been intimately involved in obtaining approval of a number of the Pydrauls for use in underground mines in Germany and/or France. He might be of assistance to you in your negotiations with the N.C.B. Mining Research Establishment. We cannot win a battle based on the "non-toxic TCP" in our Pydrauls.

Elmer P. Wheeler

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