May 7, 1968

Mr. J. S. Falls
Ford Motor Company
Rouge Office Building
3001 Miller Road
Dearborn, Michigan 48121

Dear Mr. Falls:

I understand that Dr. Kelly's letter to you of April 16, 1968 relative to the toxicity and hazards of our fire resistant hydraulic fluid, Pydraul 312 did not answer your questions concerning the possibility of phosgene formation when Pydraul 312 undergoes thermal decomposition.

In rather extensive thermal decomposition studies carried out at Kettering Laboratories about fifteen years ago, no significant quantities of phosgene were measured when a similar fluid was decomposed at approximately 850° and 1050°F. Additional confirmation by Underwriters Laboratories on similar fluids has confirmed the Kettering data.

Our history of uses of the Pydraul series of fluids for nearly fifteen years includes several instances where these fluids have been discharged on to molten metal or extremely hot metal surfaces when hydraulic lines or other system components have failed. In no case have personnel been seriously affected by the undecomposed vapors of the fluid and/or the thermal decomposition products. I am not aware of the extent of exposure to plant workers in these circumstances but in each case workers have been able to shut down equipment and evacuate the area. I would expect that if phosgene had been formed in significant concentrations and under the varying conditions of these several accidents we would have been notified of the consequences.

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The chlorinated hydrocarbon components of our fire resistant fluids are not the simple short chain organic compounds which have been reported to break down to phosgene under high thermal conditions. In the case of our complex compounds uses other than in hydraulic fluids have included those where even electrical arcing could occur. Even under such conditions the decomposition has not resulted in phosgene formation.

If I can be of any further assistance, please let me know.

Sincerely,

Elmer P. Wheeler
Manager, Environmental Health

EPW:cjs

bcc: J. R. Fallon - Detroit
G. F. Fague - Detroit
Dale Smith

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