March 9, 1960

Mr. G. M. McClintock
Safety Director
Colorado Interstate Gas Company
Post Office Box 1087
Colorado Springs, Colorado

Dear Mr. McClintock:

Your letter of March 2 has been referred to the Medical Department for reply.

We make a number of hydraulic fluids designated as Pydrauls. Since you refer to the use of Pydraul in an air compressor, we have assumed that you are referring to Pydraul AC.

Animal toxicity screening studies with Pydraul AC indicate that the oral lethal dose to rats is greater than 52.0 grams per kilogram. In the case of rabbits, the minimum lethal dose was found to be 3.5 to 4.5 grams per kilogram. The difference in toxicity to various animal species is not unusual in the case of our hydraulic fluids. Based on the lethal dose in rabbits, we conclude that Pydraul AC may be considered only "slightly toxic" from the standpoint of accidental ingestion of single doses.

When applied to the unbroken skin of rabbits, the skin penetration lethal dose was found to be between 4.0 and 5.0 grams per kilogram. Again, this indicates a relatively low order of toxicity in terms of accidental exposure to large areas of the skin surface. Skin and eye irritation potential studies in animals indicate that irritation is not a serious hazard. We do recommend, however, that prolonged and repeated skin contact be avoided. In relation to eye irritation, animal studies do not reflect the pain which has been reported when the fluid has accidentally splashed in the eyes of workers. Significant pain and moderate irritation has resulted in the case of such accidents. As would be predicted from experience in animals, no permanent damage to eye tissues or to sight has resulted.

Rats survived six-hours continuous exposure to an atmosphere saturated with vapors of Pydraul AC. This indicates that accidental exposure to massive vapor concentrations presents no serious acute hazard.

We believe that any Pydraul AC carried over in compressed air or gases presents no significant toxicity hazard to humans breathing the air or gas. Certainly, single or limited repeated inhalation exposures cause no effect in industrial uses of compressed air where workers are provided with protective air-supplied respiratory equipment. Any Pydraul AC vapors in concentrations to be toxicologically significant would be objectionable from the standpoint of odor. Even these concentrations would not be significant in terms of possible toxic effects unless the workers were continuously exposed 8 hours a day, week after week, during their working hours.

We believe good industrial practice dictates that compressed air systems providing air to workmen engaged in sand blasting or other industrial operations include air line filters. As I am sure you know, an example of such a filter is one available from the Mine Safety Appliances Company which will remove oil, water, mists and condensation from compressed air, organic vapors and odors.

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

Very truly yours,

Elmer P. Wheeler
Assistant Director
Medical Department

EPW:dh

cc Mr. C. T. Crooker
Mr. J. W. Hopkins