

General Offices

December 29, 1958

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Mr. R. D. Minter-40
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Mr. H. S. Litzsinger *

General Offices

TOXICITY REPORTS ON OS-95

On February 20, Mr. Darrett forwarded a copy of the screening toxicity data on OS-95. As you know, since that time we have had some additional work done and copies of these reports are attached. The report dated October 20 is a repeat of two parts of the procedures done originally; that is, skin absorption or skin penetration lethal dose and skin irritation potential. The data confirms the results of the original screening studies.

More recently we have received a report on a limited study to determine the toxicity of decomposition products of the fluid. A summary of this work is quoted below:

Group A: Exposure to Moderate Mist (Six Hours Total)

All animals survived the schedule of six, one hour exposures spread over a period of two weeks. Copious nasal discharge, salivation, lethargy, and moderate weakness developed. The fog caused considerable inflammation and discomfort but the cumulative effect was not lethal.

Group B: Exposure to Heavy Concentration of Mist (Fifteen Minutes Total)

No deaths resulted from fifteen minutes exposure to a heavy concentration of fog. There was irritation but the animals were not in danger of collapse.

Group C: Exposure to Heavy Concentration of Mist (One Hour Total)

Collapse and near collapse developed in the latter stages of the one hour exposure. No deaths resulted. The animals were moving about in fifteen to forty-five minutes after exposure. Weakness was evident for several days."

On December 11, Dr. Kelly sent you a memo with an attachment entitled "OS-95 Toxicity Statement". Copies of this correspondence are attached to those who were not copied in originally.

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This statement was prepared by Dr. Kelly and me after you informed us that there were some plant workers who had quite continuous skin contact with Pydraul F-9. The degree of exposure which we talked about was comparable to that of an automobile mechanic spending 6 hours a day tearing down, repairing and reassembling automobile engines. It was and is my opinion that such a degree of exposure to OS-95 could lead to skin difficulties in workers. We would not expect that this would be of the Skydrol 500 type but rather a combination of the defatting action comparable to that with paint thinners and some absorption leading to production or development of chloracne.

As a result of our conversations and Dr. Kelly's suggested OS-95 toxicity statement, I believe you have included in your report turning this product over to Sales, a statement that emphasis must be given to avoidance of skin contact. With this I highly agree. Mr. Sands has since called me to discuss the implications of this recommendation. I told Mr. Sands that our concern about the use of OS-95 is in line with our recent thinking concerning all fluids incorporating Aroclors in the formulations. The Medical Department does not recommend any stronger precautionary statement on labels for OS-95 than has been recommended recently for other fluids containing the Aroclors or, in fact, for the Aroclors alone. To do so would add to the inconsistency which appears to have developed in most of our recent thinking and opinions concerning hydraulic fluids.

As you are well aware, the precautions which we in the Medical Department recommend in an effort to prevent difficulties in the use of our products must be based on an estimate of the exposures of the people using and handling the fluids. I personally have never seen a diecasting machine. Dr. Kelly has seen one or two small ones at North American Aviation. From the verbal descriptions of such equipment provided us by Sales and Development personnel, it would appear that prolonged continuous skin contact could be avoided. This was what we had expected with the Skydrol fluid only to learn that such was not the case in every instance. As we become better educated or better informed as to the degree of exposures, subsequent opinions must be related to these exposures.

In summary, we would not recommend that any of our fluids be handled as if they were "non-toxic" petroleum lubricating oil. The fact that this may have been the case for a few people with Pydraul F-9 and no difficulties have been experienced does not lead us to condone this practice. For this reason we do not believe that the sales approach in attempting to substitute OS-95 for Pydraul F-9 should be that "if you handle OS-95 the way you have been handling Pydraul F-9, you will have no difficulties". We do think that if potential customers are told that skin contact must be avoided in accordance with our recommendation in the past

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that such contact be avoided with Pydraul F-9, there should be no serious problems.

Elmer F. Wheeler

EPW:dh

Attachments

* Receive copy of report

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