St. Louis - General Offices

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Breck's Diving School, Warwick, Bermuda -- Air Quality Standards for Scuba Diving
Your Letter of February 16 to Dick Davis

RANDALL GRAHAM
New York

Dale Smith asked for our comments relative to Mr. Breck's inquiry. I believe there are two pertinent points in your memo. One is that the volume of Pydraul in such applications would be pretty limited. Secondly, I doubt that Monsanto wants to get involved in any extensive studies in connection with Mr. Breck's problem.

In the last 2 - 3 years we have looked at standards for compressed air more from the standpoint of that used in a number of our plants rather than the problem of scuba divers. It is interesting to note that only recently has much attention been given to establishing standards for compressed air for either use. In industry more problems have arisen from connecting a cylinder of some other gas to the compressed air line rather than from contaminants in the compressed air. On the other hand, there have been numerous cases of poisoning and deaths from compressed air in plants where the air entering the compressor has been a source of CO or other toxic material and then distributed around the plant through pressure lines rather than in cylinders.

I would expect that problems which have arisen in scuba diving have been similar in that cylinders have been filled from a filling station compressor where the inlet air picked up CO from an auto exhaust or where a compressor had the exhaust located in a spot close to the air inlet to the compressor.

In January 1964 the Department of Public Health of California issued a publication under the title "Skin and Scuba Diving as a Health Problem." This is made up of about 30 pages. A xerox copy of page 9 which indicates standards for the air is attached. (If Mr. Breck writes to California for a copy of this publication, he will find that the report recommends a water lubricated compressor.)

In February, 1964 the State of New Jersey published regulations governing compressed air used in scuba activities. A xerox copy of their regulations is also attached.

I have enclosed the above in case you wish to send them to Mr. Breck.

Getting back to the question of use of Pydraul, we feel that the hazard is no greater with this lubricant than with an oil lubricant. We have limited data on one compressor at the Queeny Plant where analysis of samples showed no significant contamination in air lines downstream from the compressor. Considerable more sampling would have to be done, however, with many makes of compressors, sizes, conditions of wear, etc. The simplest solution with either oil or Pydraul is to filter the air through commercially available filters which would remove any contaminants in the air stream including rust and particulate matter as well as oil mist, Pydraul mist or decomposition products if the compressor is run at excessive temperatures.

I have returned the original copy of Mr. Brock's letter and will not volunteer to read the text of his proposed book. I am not sure how much of the above you want to forward to him in order to maintain the proper Monsanto image.

Elmer P. Wheeler

EPW:mjb