

J. W. HANLEY, s secy.

5/15/74

Mr. M. C. Throdahl --

Mr. Hanley has not seen. Would you please have someone handle?

Thanks.

Joyce Fox

Suggest an immediate reply

M.C.T.

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mon*

The Plastic Peril

Vinyl chloride is a colorless gas that has been used as a propellant in such popular products as hair, disinfectant and insect sprays. It is also the principal ingredient of polyvinyl chlorides, the plastics that go into a host of familiar products including food wrappers and containers, suitcases, detergent bottles and garbage bags. No one questions vinyl chloride's utility, but a growing number of doctors now suspect its safety. Increasing evidence links vinyl chloride to a crippling bone disease and a rare but invariably fatal form of cancer.

Evidence of vinyl chloride's toxicity has been around for years. Production of polyvinyl chloride (PVC) was begun in 1938 by B.F. Goodrich Co. That year experiments showed that the vinyl chloride gas used at the plant was dangerous to animals. A 1949 Russian study showed that vinyl chloride (VC) caused nonmalignant liver damage in 15 of 48 workers exposed to the chemical; surveys in other European countries over the next decade and a half confirmed the connection. In 1966 and 1967 British scientists examining PVC workers reported a high incidence of acro-osteolysis, a condition partially characterized by distortion of the skin and bones of the fingers and feet.

Mini-Epidemic. The connection between VC and cancer was first made in 1970 by Publio L. Viola of the University of Rome, who found tumors in the lungs, skin and bones of rats exposed to high concentrations of the gas. The link was strengthened in 1973 when researchers from Bonn University found evidence of liver damage in 19 out of 20 PVC workers at a single plant. The bombshell really burst early this year when B.F. Goodrich Co. reported that

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three men who worked with VC in its Louisville, Ky., plastics plant had died of angiosarcoma of the liver since 1971. Since then doctors have identified nine more cases of the cancer in the U.S., one in Great Britain and another in Norway.

Their findings are all the more significant because angiosarcoma of the liver is so rare that it has been reported only about 100 times in medical history; a major hospital in Los Angeles found only one case in 52,000 autopsies. The discovery of a dozen closely linked cases thus constitutes a sort of mini epidemic of the disease. Since such cancers may not develop for at least 15 years after initial exposure, environmental health researchers suspect that more cases will be uncovered. Says J. William Lloyd, of the National Institute for Occupational Safety and Health (NIOSH): "I would suspect that this is going to be the occupational disease of the century."

His prediction could prove correct, for in the U.S. alone some 6,500 workers are involved in making VC gas or converting the gas into PVC; thousands more are engaged in converting the plastic into finished products. European and Japanese firms are also heavily involved in VC production.

Whopping Levels. So far, at least, there is no clear evidence that consumers are in any danger from VC. The U.S. Food and Drug Administration and the Environmental Protection Agency have, as a precautionary measure, put a halt to the distribution of spray products using VC propellants.* The FDA had already ordered companies to stop bottling whisky in PVC bottles; whisky dissolves the plastic. Other PVC products offered to the consumer have yet to be proved unsafe.

But the risks to plastics workers are real. A research team headed by Dr. Irving Selikoff of New York's Mount Sinai School of Medicine has found that workers at one plant are exposed to VC levels of 400 to 500 parts per million of the gas, more than enough to cause liver disease in rats. Workers involved in cleaning the reactors in which VC is converted to PVC are exposed to even higher concentrations of the gas. One study showed that VC levels in these cookers range from 600 to a whopping 1,000 parts per million.

Neither Japan nor the European nations have done more than start studies on VC, but American authorities are moving to reduce the risks from the plastic peril. The Department of Labor's Occupational Safety and Health Administration has issued emergency regulations reducing allowable VC levels to 50 parts per million. Whether this is adequate to provide long-term protection for plastics workers remains to be seen. An industry-sponsored study has shown that when mice are exposed to those levels, they develop angiosarcoma.

*The majority of spray-product manufacturers use Freon gas.