



## Men's clothes were going to pieces

THAT man is cleaning out a diesel fuel oil tank. To finish the job, he has to squirm into the tank where there's a mixture of oil and water. Trouble was the oil softened his work suit and boots, caused the rubber coating to peel off at the slightest snag.

This was the situation until B.F. Goodrich came up with protective clothing that solved this costly problem. The BFG work suit is made of a special nylon fabric that is four times stronger than the fabric used in ordinary protective clothing. This is then coated with a special oil-resisting rubber compound.

On many industrial jobs, B.F. Goodrich oil-resisting suits have shown they can stand the most punishing wear and tear

—outlast ordinary work suits by as much as 2 to 1. In spite of being far stronger, the BFG suit weighs much less than regular waterproof clothing, and it's softer and more comfortable, too.

The B.F. Goodrich Xtratuf boot, shown here, is ideal for use wherever oil and grease are encountered. It has a non-skid molded outsole that gives terrific traction on the slipperiest surfaces. Long-lasting BFG gloves have many features, too, that make them easy to wear as well as protective.

To find out more about B.F. Goodrich protective clothing, boots and gloves, see your supplier or write for free catalogs: B.F. Goodrich Industrial Products Co., Dept. M-307, Akron 18, O. In Canada: Kitchener, Ont.



CIRCLE 34 ON READER CARD

## A NATIONAL SAFETY COUNCIL TECHNICAL SERVICE

DATA SHEET 531

# DUSTS, FUMES, AND MISTS IN INDUSTRY

Copies of this data sheet will be available for purchase within 30 days. Subscribers to the Council's data sheet maintenance service will receive a copy in the next quarterly mailing.

## Introduction

1. Industrial dusts, mists, and fumes, their hazards and their control, are discussed in this data sheet.\* The general principles presented can be applied to evaluate most industrial situations involving these air contaminants and to determine the need for controls. This data sheet is intended to guide employers, plant safety engineers, personnel managers, and supervisors.

2. A plant manager who believes that he has a toxic or irritating dust problem should consult a competent industrial hygienist. Such help may be obtained from his own company, insurance carrier, private consultants, or state health or labor agency.

3. To protect the health of employees who work where a dust, fume, or mist created by a manufacturing process is released into the atmosphere, a control program may be required. In such a case, three steps must be taken:

a. The properties of the specific dust, fume, or mist and its possible physiological effects on employees must be ascertained.

\*This data sheet covers toxic and irritating air contaminants encountered in industry. It does not include a discussion of the explosive properties of such airborne particulate matter.

This data sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable safety procedure in this field is necessarily included. This data sheet should not be confused with American Safety Standards, federal laws, insurance requirements, state laws, rules, regulations or municipal ordinances.

b. The particular exposure must be evaluated by dust counts or by chemical analyses of air samples, and a step-by-step analysis of the operations must be made to find the areas where employees are exposed to hazardous amounts of the material. The operational analysis also should determine how the dust, fume, or mist is dispersed.

c. Appropriate methods of control must be provided where indicated. The type and extent of controls will depend upon the physical, chemical, and toxic properties of the dust, fume, or mist, the evaluation made of the exposure, and the operation that disperses the contaminant. The extensive controls needed for lead oxide dust, for example, would not be needed for limestone dust, since much greater quantities of limestone dust can be tolerated.

4. Except for the skin diseases, most occupational diseases are acquired by inhalation of material. Lung tissue is by far the most efficient medium the body possesses for absorbing materials. In addition, the surface area of this lung tissue averages 55 square meters or about 590 square feet.

5. Certain dusts that reach the lungs can pass directly into the blood stream and be absorbed over a long period of time. Others may stay in the lungs and set up local irritant or damaging action.

6. Toxic and irritant dusts can also be ingested in amounts that may cause trouble. If toxic dust swallowed with food or saliva is not soluble in body fluids, it is eliminated directly through the intestinal tract. Toxic materials that are readily soluble in body fluids can be absorbed in the digestive system and picked up by the blood.

7. A third way in which toxic and irritant substances may enter the system is skin absorption. Many organic compounds, such as TNT, cyanides, and most aromatic amines, amides, and phenols, can produce systemic poisoning by direct contact with the skin. Contact of toxic and irritant dusts with the skin also may result in skin irritation.

8. As compared to inhalation,