

B.F.GOODRICH CHEMICAL COMPANY HAZARDOUS CHEMICALS AUDIT

S U M M A R Y

In 1974, in the U.S.A., B.F.Goodrich Chemical Company plants used nearly four billion pounds (Summary Table I) of about six hundred major chemicals to make 2.6 billion pounds of end products for sale to trade or other divisions. These end products include over two hundred specific polymers of 30 different types plus about 50 polymer chemicals, plasticizers and general chemicals. Many of the above are sold as pre-compounded powders, pellets, and polymer bends.

The OSHA regulations on the 14 carcinogens, asbestos, beryllium, and recently on vinyl chloride, have caused us to take an overview of our chemical handling product line and general operating procedures. Out of the 170 types of chemicals, we have designated thirty-six (*) of special concern (Summary Table II) which will need increased area monitoring and medical surveillance attention in 1975 for improvement of health protection of our employees.

In addition to VCM, there are seven areas which could reach a significant financial impact level on the Company in the next year or two:

ethylene dichloride (CC), benzene (CC, O, H),
mercury (CC), compounding dusts (Lv, AL, H, LB, PT) ,
aromatic amines (AK, H), and Agerite Resin D
(AK and Tire Company).

The VCM impact has been severe and will continue to be so for some time. Our consensus opinion at this time is that none of these, nor other lesser risk volume/employee chemical handling problems, have the potential dramatic impact of the VCM problem on B.F.Goodrich.

However, there are things we should do in 1975 in these other areas that we are not now doing. This is a brief overview audit of the magnitude of our chemical handling operations, potentially exposed employees, and the OSHA regulations, ACGIH and NIOSH recommendations on exposure levels for hazardous chemicals.

Historically, our safety programs have revolved around fire and explosion prevention, mechanical accidents and protective clothing for acutely toxic chemicals. Long term health hazards were of concern where Food and Drug and Department of Agriculture registrations were important and for accumulative poisons, such as lead and mercury, and subacute feeding studies on extractable materials. We can anticipate more concern in the future for chronic toxicity effects of many of the chemicals we use in manufacturing polymers and polymer compounds, especially where large numbers of our employees can come in contact with them.

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Of the "14 carcinogens", we remain concerned with four potent human carcinogens, such as Beta-naphthylamine, 4-aminobiphenyl, benzidine, and benzopyrenes. These are minor impurities in some rubber chemicals which we make and use, and in carbon blacks which we use in very large volumes. They may also be present in some paraffin waxes.

A a result of the vinyl chloride association with cancer, we have increased concern for five other chlorinated products which we use in quantity - EDC, vinylidene chloride, epichlorohydrin, chloroethyl vinyl ether, and allyl chloride.

We do not know enough about some of our other large volume monomers - acrylonitrile, styrene and possibly butadiene and isoprene. There are a number of other heavy metal, peroxide and toxic chemicals that have low exposure limits, that are used in volume. None of these, except EDC, might have the dramatic impact on us that the vinyl chloride discovery has had - but, of course, they all could have great accumulative impact on our resources.

We are also anticipating new OSHA standards in the next six months on several other chemicals which we use and for which NIOSH has recently issued criteria documents - carbon tetrachloride, chloroform, sulfuric acid, lead, arsenic, coal tars, UV radiation, cotton dust, ammonia, SO₂, and CO among others. NIOSH has also issued an additional list of "urgent" additions to the original ACGIH list adopted in OSHA 70. which includes products we use, such as para-nitroaniline and peroxides.

As OSHA hires more inspectors with chemical backgrounds, we anticipate many more questions concerning regulated chemical exposure levels and monitoring results in our plants and laboratories. A survey has been initiated on our R&D and production laboratory inventories which will be reported at a later date. However, in our plant operations we foresee problems.

Except for some major items, we do not now monitor for very many of the products listed in the present law. In our present study we have noted those for which we believe there is sufficient concern to do more analytical work.

We need to do more to get updated supplier safety data sheets on file in all of our plants and laboratories and to review our chemical handling procedures.

The monitoring program has been implemented in the Chemical Company by assignment of a full time chemical engineer to the job.

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It is important to update our hazardous substances rating (and labeling) system and make it compatible with other divisions for appropriate areas.

There is a need to upgrade at all levels of plant managements an awareness of the need for better procedures for handling all chemicals more carefully.

Each area covered in this survey is summarized in more detail in the sections noted in the summary tables.

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