

Safety of aerosols, cosmetics probed

Even with the vast quantities consumed nowadays, aerosol products and cosmetics appear to have a reasonably good safety record. Consumers are injured, however, particularly through accidental misuse and deliberate abuse of the products.

But do these acknowledged hazards justify further federal regulation? No, argued the aerosol and cosmetics industries in two public forums late last month, stressing the infrequency of injuries and the very few deaths. Yes, countered their critics in and out of the Government who cite their own safety data and even question society's need for the products.

Meanwhile, a new potential hazard in aerosols and other products must be corrected, urges a Ralph Nader unit. The Health Research Group has petitioned three federal agencies to bar vinyl chloride's use in aerosol cosmetics, including hair sprays, and other aerosols, and immediately end the use of polyvinyl chloride containers for cosmetics. Supporting evidence for the petition includes the findings in an Italian research study in which rats inhaling vinyl chloride at levels down to 250 p.p.m. develop the same rare liver cancer confirmed as the cause of death in workers at a B. F. Goodrich PVC plant (C&EN, Feb. 25, page 16) and for an employee at Union Carbide's South Charleston, W. Va., PVC plant.

Vinyl chloride use in aerosols presently appears to be minimal. Indeed, Dow Chemical in May 1973 warned its customers for the monomer not to use it in aerosols. But vinyl chloride has been used as a component in such aerosol products as shellac-based hair sprays, paint sprays, insecticides, and fixatives. HRG calculations from one study [*Aerosol Age*, April 1964, page 44] indicate an exposure of more than 250 p.p.m. of vinyl chloride following spraying of a hair spray in a tiny room (282.5 cu. ft.) for 30 seconds.

Although the risk to consumers from vinyl chloride remains unknown now, the hazards from aerosols and cosmetics are better documented, although still incompletely. Extrapolating from National Electronic Injury Surveillance System (NEISS) data, some 12,000 aerosol-related—not necessarily aerosol-caused—injuries occur in the U.S. annually, Consumer Product Safety Commission chief Richard O. Simpson estimated at agency hearings last month.

This CPSC estimate was challenged by Chemical Specialty Manufacturers Association witnesses who say that although 11 billion aerosols were distributed there were only seven confirmed aerosol explosions, all in backyard fires, over a four-year period in the agency's in-depth reports.

CSMA also denied allegations that the industry has "virtually ignored" the "growing problem" of aerosol abuse, saying that the industry "acted with responsibility" from the outset. The charge was made in the petition by the Center for Science in the Public Interest (CSPI) prompting the CPSC hearings. CSPI claimed that there have been "hundreds" of deaths among aerosol sniffers.

Aerosols play a "small part" in the total inhalant problem in the "drug culture," CSMA argued, citing a study of nearly 57,000 students, about 3% of whom "had experience with aerosol sniffing," [*J. Amer. Med. Ass.*, 216, 1464 (1971)]. Deliberate abuse is "a people problem—part of a broad social phenomenon—and not a product problem," CSMA concludes.

CSMA experts, among them Gillette's Robert P. Giovacchini, and CSPI codirectors Dr. Albert Fritsch, a chemist, and Barbara Hogan, a microbiologist, also sparred over alleged toxic effects of aerosols in normal use. These effects include irregular heart rhythms from inhaling the propellant gas, various respiratory changes, and toxicity of active ingredients. Essentially, both sides concede that more research must be completed.

Indeed, Dr. Fritsch labels "home atmospheric pollution" a "virgin field for research." Aside from dangers to children from aerosols, he says that potential synergistic effects deserve immediate investigation. As the CSPI petition points out, caustic oven cleaners might react with common aerosol solvents to form highly toxic dichloroacetylene.

Hard data on cosmetic injuries are as hard to come by as those for aerosols. Disputing one federal estimate of 60,000 cosmetic injuries a year, the industry disclosed a lower figure to the Senate Subcommittee on Health. According to the Cosmetic, Toiletry and Fragrance Association, the probable injuries from intended uses are less than 10,000 for each 6 billion units sold, the current yearly volume. CTFA claims that the "overwhelming proportion" of these are "mild and usually transient."

Cosmetic safety testing required in S. 863, a bill sponsored by Sen. Thomas F. Eagleton (D.-Mo.), CTFA argues, would take 30 years to complete for a conservative estimate of 25,500 products now commercially available, at a cost of \$6.5 billion. "The real effect of these testing burdens is to prohibit cosmetic products from being introduced timely to meet changes in fashion as they arise," the trade group concludes.

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Health Hazards

TWO MORE CASES OF ANGIOSARCOMA REVEALED AT LOUISVILLE GOODRICH PLANT

The fifth and sixth cases of angiosarcoma, a rare liver cancer, were discovered among workers at the B.F. Goodrich Company plant in Louisville, Ky.

An industry-wide scare in the rubber and plastics industry began when four worker deaths from angiosarcoma were announced by B.F. Goodrich (Current Report, February 7, p. 1131). Meetings on the issue were held by the National Institute for Occupational Safety and Health (Current Report, February 14, p. 1164) and the Occupational Safety and Health Administration (Current Report, February 21, p. 1189).

B.F. Goodrich had revealed the angiosarcoma deaths of four workers between early 1968 and last December. Another death from angiosarcoma in 1964 was discovered later.

The sixth case of angiosarcoma, in a worker still living, was confirmed by Dr. J. Bradford Block, Kentucky medical program.

NIOSH Surveys

Another worker death from angiosarcoma was discovered by a NIOSH team reviewing 750 death certificates at a Union Carbide plant in South Charleston, W.Va. The

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certificate attributed the worker's death primarily to heart disease, secondarily from a gall bladder operation, and thirdly from angiosarcoma (which was found during the gall bladder operation).

The worker was employed at the plant for 18 years and died in 1968. According to NIOSH, the description fits the general history of the angiosarcomas found at the Louisville plant of B.F. Goodrich.

The NIOSH team is searching for other cases of angiosarcoma at the Pottstown, Pa., plant of Firestone Tire and Rubber Company.

Other plants scheduled to be reviewed are Uniroyal, Painesville, Ohio; General Tire and Rubber, Ashtabula, Ohio; B.F. Goodrich, Avon Lake, Ohio; Monsanto, Indian Orchard, Mass.; Union Carbide, Texas City, Tex.; and Diamond Shamrock, Deer Park, Tex.

Health Hazards

RUBBER MAKERS ARE TOLD OF OSHA PROGRESS, VINYL CHLORIDE PROBLEM

NEW ORLEANS — (By an OSHR staff correspondent) — Vinyl chloride should have been covered by the carcinogens standards adopted by the Occupational Safety and Health Administration, Assistant Labor Secretary John H. Stender told the Rubber Manufacturers Association on February 20-21.

Some 100,000 workers may be dying each year from various job-related diseases, Stender said. OSHA simply does not possess enough data to assess the dimensions of the occupational health problem.

If a substance is proven hazardous to animals it should be considered hazardous to humans until proven otherwise, Stender said. Those who argue the reverse would feel differently if they were the ones exposed, he said.

On the other hand, safe levels for many substances have not been established, Stender said. This does not mean safe levels do not exist. The only way to achieve zero levels of exposure is to ban the chemicals, and this cannot be done, he said.

Manufacturers should provide instructions and training to employees in regard to carcinogens, Stender said. There is no justification for hiding the danger from employees. Employees must be told what to do to avoid dangers that might exist.

Right now vinyl chloride is OSHA's biggest concern, Stender said. Exposure to carcinogenic substances can be controlled. One of the worst worker hazards is atomic energy, yet the Atomic Energy Commission achieved the best safety record of all industries.

Though most employers are concerned about employee welfare, there are some firms using carcinogenic substances that are careless and unconcerned about employee welfare, Stender said.

George C. Guenther, Insurance Companies of North America and former head of OSHA, said OSHA is performing the primary task of getting the attention of top management. OSHA also is living up to its promise as a lawyer's retirement plan, he said.

The Occupational Safety and Health Review Com-

mission is now the second busiest quasi-judicial board in Washington, D.C., Guenther said. OSAHRC received 5,900 contested cases in the first 32 months under the Act. There is now a backlog of 2,100 cases and the prospect of cleaning it up is not very good. OSAHRC Chairman Robert D. Moran's position on vague standards should trigger even more contests, he said.

The rubber and plastics industry has an overall recordable injury rate of 18.6 (number of injuries and illnesses per 100 full time workers) which is very high, Guenther said. The industry has safety as well as health problems, he added.

The closing conference is the most important part of the inspection process, Guenther said. Employers should have representatives prepared to deal with OSHA should an inspection take place. Key personnel should be kept updated, he said.

The rubber manufacturers will face some interesting issues in upcoming union negotiations, Guenther said. These areas include joint safety-health committees, refusal to work because of hazards, incorporating standards in the contract to make them grievable, payment for walk-around, protective equipment, confidentiality of employee records, research funding, and employee participation in the closing conference.

Consensus Standards

Nixon de Tamowsky, standards coordinator, American National Standards Institute, said ANSI standards would stand cross-examination and probing by OSHA engineers. The Act is strongly centered on the standards package, he said.

ANSI does not write standards, but depends on its member groups to do so, de Tamowsky said. ANSI is supported by 180 member organizations and basically is an approval and coordination agency.

There is no greater challenge to the safety profession than to devise a system of analyzing causation of accidents and motivating employees toward safety, de Tamowsky said.

OSHA does not wish to adopt vertical standards, de Tamowsky said. There are at least 4,000 ANSI standards OSHA could adopt on that basis.

Specifications Standards

Wayne T. Brooks, Organization Resources Counselors, Inc., Washington, D.C., said specification and emergency standards could grow in such complex detail that they would lack practical utility. Standards should specify the problems to be solved and permit the scientist and engineer to search with minimum restraint for innovative solutions.

A standard is a paragraph in a chapter of rationalized workplace conditions, practices, means, methods, operations, and processes which as a collective whole affect the safety and health of the workplace, Brooks said. OSHA makes some precise regulations about the content of standards but leaves considerable choice of form, style, and composition to the draftsman.

A single standard approach for specific hazards will reach a point of diminishing effect, Brooks said. All standards must be coordinated in the whole body of rules

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to interrelate for maximum effect. A term that means one thing in one standard should mean the same in other standards, he said.

OSHA is coming to mean a lot more than government regulation, Brooks said. It means a whole concourse of governments, institutions, researchers, health scientists, congeries of pro bono doctors and lawyers, writers and investigative reporters, university fora, scientific journals, and the presentation of learned papers.

OSHA will be felt in pension programs, workmen's compensation, and group life and hospitalization insurance, Brooks said. These programs are pre-OSHA and must now be examined post-OSHA. The slow onset of some job diseases will raise questions for workmen's compensation about illnesses caused by exposures 20 to 30 years ago.

New management strategies are needed, Brooks said. These are dynamic and exciting times. Standards are becoming the grammar by which Government expresses its regulatory power. Standards deserve special attention because they are in the formative stage.

In the future OSHA will be recognized in each detail of employment practice, Brooks said.

Safety and Profits

Thomas Minter, vice president, The Goodyear Tire and Rubber Company, said it is not immoral to talk about safety and profits in the same breath. Without profits, jobs do not exist, and without a sound safety program, profits are diminished, he said.

Traditionally safety jobs have become the refuge of dead-enders and under-achievers, Minter said. Today every company department and official must have a piece of the OSHA action.

An efficient safety program can cut workmen's compensation and insurance costs and improve efficiency, Minter said. Safety also offers a good yardstick to measure supervisory performance.

The Rubber Manufacturers Association voice in standards-setting is a necessity, Minter said. For example, to reduce noise from 90 to 85 dBA would only benefit a few but would more than double the cost of compliance. Not many employees would want to lose their jobs because of a little noise, he said.

Corporations have an obligation to improve the lives of employees and communities, Minter said, but industry should not have to do it under duress.

Cost of Compliance

Dr. Walter Harris, industrial toxicologist, Uniroyal, Inc., said society will not accept high costs as a valid reason for businesses not to clean up workplace hazards. To determine if a substance is carcinogenic takes years and costs about \$100,000, he said. Even then the evidence is not conclusive because animal studies do not necessarily relate to humans.

A substance in a closed system will not harm anyone, regardless of how toxic it is, Harris said. Almost any substance used at high levels can anesthetize workers, he said.

Vinyl chloride is very flammable, Harris said. Most early precautions were designed to avoid fire and explosions.

All plants should have chemical control committees to review all substances used, Harris said.

Increased Costs

H.C. Smith, director of labor relations, General Tire and Rubber Company, said no corporation of any size could deny OSHA has resulted in increased costs. Safety is becoming a prime concern and companies can no longer delegate responsibilities to inexperienced employees, he said.

Companies and unions have no one to blame but themselves for Government intervention in job safety and health, Smith said. For years the bargaining table was ignored as a means of improving workplace conditions.

The rubber industry is seeing little in the way of safety and health demands in union negotiations, Smith said. Most of the provisions being sought are simply paraphrasing existing OSHA requirements.

A figure like five million injuries means nothing to most corporate officials, Smith said. If it is converted to money lost, management will be impressed.

Safety Communication

William R. Miller, Goodyear Tire and Rubber Company and chairman of the RMA Occupational Safety and Health Committee, said the more business communicates with unions on safety and health problems, the easier those problems will be to solve.

To talk about effective safety and health programs, a strong data base is needed, Miller said. The RMA must be able to comment on standards activity with valid data to back its arguments.

New attitudes and approaches to safety and health will require pushing from top management, Miller said.

Different companies in the industry must get together to develop monitoring systems for polyvinyl chloride, Miller said. Such a system will be difficult to develop and much duplication of effort could be avoided.

Goodyear has fired at least one employee for failure to obey safety rules, Miller said.

The Union View

Anthony Mazzocchi, citizenship-legislative director, Oil, Chemical, and Atomic Workers International Union, said that corporate health departments usually are primarily interested in the health of the corporation. The revelation of the vinyl chloride hazard at the Louisville, Ky., plant was a "fluke," he said. B.F. Goodrich Company lost control of an "obstinate doctor."

There is no monolithic union position on OSHA, Mazzocchi said. Some unions apparently have not heard about the Act yet.

There has been evidence about the hazards of vinyl chloride for years, Mazzocchi said. No one knows how many people died from exposure. It may cause cancers other than angiosarcoma.

OCAW tries to use OSHA as a consciousness-raising device for employees, Mazzocchi said. OCAW has been the only union to use the Review Commission to any extent.

OSHA is heavily weighted on the employer side, Mazzocchi said. Even so it can be used by employees.

Under the National Labor Relations Act, unions have

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the right to names of substances its members are exposed to in the workplace, Mazzocchi said.

OCAW sees itself shaping up for a major fight, Mazzocchi said. Organized labor will use the provisions of OSHA that allow employees to petition for emergency standards more in the future.

Ventilation Booklet

The RMA meeting was told of a booklet on industrial ventilation that could help businesses install systems with a minimum of expense.

The booklet is available from Industrial Ventilation, Committee on Industrial Ventilation, P.O. Box 453, Lansing, Mich. 48902.

Health Hazards

HRG PETITIONS FDA, EPA, AND CPSC TO BAN USE OF POLYVINYL CHLORIDE

A petition to ban the use of polyvinyl chloride in aerosolized products and in pesticide products was filed with the Food and Drug Administration, the Environmental Protection Agency, and the Consumer Product Safety Commission by the Health Research Group on February 21.

The chronic toxicity and evidence of carcinogenicity of vinyl chloride monomer for humans has been documented by scientific studies and clinical reports, the HRG said.

The group called for immediate action to regulate the use of the chemical since there is no evidence to show that human beings can be exposed safely to the chemical. HRG sent letters requesting all three agencies make public the brand names of all aerosol consumer products presently marketed, or marketed at any time in the past, which contain vinyl chloride as a propellant so that exposed people can inform their physicians. The public has the right to be fully informed about the dangers it faces or has faced, regardless of the public relations damage that certain companies may suffer, the group maintained.

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