NATIONAL TOXICOLOGY PROGRAM
FACT SHEET
Headquartered at the National Institute of Environmental Health Sciences • NIH • DHHS

Occupational Exposures

Year 2003

National Toxicology Program Testing

The **N**ational **T**oxicology **P**rogram (NTP) is addressing potential safety issues associated with certain occupational exposures. Some of the agents for which toxicology studies are currently planned or ongoing are listed below.

1-Bromopropane **(CAS No. 106-94-5)** – an industrial chemical used in metal cleaning and degreasing that is currently being considered as a replacement for ozone-depleting chemicals such as hydrochlorofluorocarbons and chlorinated solvents.

Metal working fluids – complex mixtures of varying composition that have also been called cutting oils, machining fluids, and metal removal fluids. Millions of gallons of these fluids are used each year for cutting, milling, drilling, stamping, and grinding metal.

Methyl isobutyl ketone **(also called MIBK; CAS No. 108-10-1)** – primarily used as a solvent in protective coatings, it is also used as a solvent in specialty adhesives and inks, as a process solvent in the extraction and production of pharmaceuticals, and in the manufacture of pesticides.

Propargyl alcohol **(CAS No. 107-19-7)** – used as a starting material or intermediate in the manufacture of pharmaceutical, electrical and agricultural chemicals, as a solvent in paint products, as a stabilizer in solvents, and as an inhibitor of corrosion.

Stoddard Solvent (Type IIc) **(CAS No. 64742-88-7)** – used as a thinning agent for paints, as a solvent in liquid photocopier toners and drying cleaning fluids, and as a degreaser and cleaner in mechanical shops. NTP long-term toxicology and carcinogenesis studies on Stoddard Solvent are tentatively scheduled for peer review by the NTP Board of Scientific Counselors Technical Reports Review Subcommittee in 2003.

Triethanolamine **(CAS No. 102-71-6)** – used in the production of mineral and vegetable oil emulsions and as an intermediate in the manufacture of surfactants, waxes, polishes, herbicides, petroleum demulsifiers, toilet goods, and cement additives. NTP long-term toxicology and carcinogenesis studies on triethanolamine are tentatively scheduled for peer review by the NTP Board of Scientific Counselors Technical Reports Review Subcommittee in 2003.

Triethylamine **(CAS No. 121-44-8)** – used as an industrial catalyst in the manufacture of foundry mold resins and phenol-formaldehyde adhesives, and in the manufacture of quarternary ammonia compounds and antibiotics.

Initiatives in Occupational Health

The **N**ational **I**nstitute of **E**nvironmental **H**ealth **S**ciences of the **N**ational **I**nstitutes of **H**ealth (NIEHS/NIH) and **N**ational **I**nstitute for **O**ccupational **S**afety and **H**ealth (NIOSH/CDC) are coordinating an effort to better characterize worker exposures, educate workers, and identify occupational health research gaps. Current efforts are addressing worker exposure to *asphalt fumes* and *1-bromopropane*. Previously this effort addressed exposure to *cellulose fiber insulation.*

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Asphalt fumes generated during road paving have been linked to acute irritation of mucous membranes and skin, but to date no cancer risk has been established. Using a system designed to produce asphalt fumes similar to those found in the field, NIOSH/CDC has developed methods for characterizing these fumes and for monitoring asphalt fume exposure in inhalation toxicity studies. Laboratory inhalation studies designed to evaluate the effects of exposure to asphalt fumes in cells and animals have been completed and reports are in preparation.

An industry consortium has petitioned the EPA to list *1-bromopropane* as an alternative for ozone-depleting solvents. The NIOSH/CDC is conducting an industry-wide exposure assessment to gain information about the exposure of workers to 1-bromopropane. The target population is a variety of industrial sectors: chemical, aerosol, and adhesive manufacturers; adhesive users; and the metal degreasing and electronics industries. Exposure will be characterized by work site, personal monitoring and biological measures.

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