



New Jersey Department of Health and Senior Services

HAZARDOUS SUBSTANCE FACT SHEET

Common Name: **METHYL ACRYLATE**

CAS Number: 96-33-3

DOT Number: UN 1919

DOT Hazard Class: 3 (Flammable Liquid)

RTK Substance number: 1219

Date: May 1998

Revision: March 2006

HAZARD SUMMARY

- * **Methyl Acrylate** can affect you when breathed in and by passing through your skin.
- * Contact can severely irritate and burn the skin and eyes with possible eye damage.
- * Breathing **Methyl Acrylate** can irritate the nose and throat causing coughing and wheezing.
- * Breathing **Methyl Acrylate** can irritate the lungs causing coughing and/or shortness of breath. Higher exposures can cause a build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.
- * **Methyl Acrylate** may cause a skin allergy. If allergy develops, very low future exposure can cause itching and a skin rash.
- * Prolonged exposure to **Methyl Acrylate** may cause liver and kidney damage.
- * **Methyl Acrylate** is a **FLAMMABLE** and **REACTIVE LIQUID** and a **FIRE** and **EXPLOSION HAZARD**.

IDENTIFICATION

Methyl Acrylate is a clear, colorless liquid with a sharp, fruity odor. It is used to manufacture polymers, and in leather finishing, resins, textile and paper coatings, and plastic films.

REASON FOR CITATION

- * **Methyl Acrylate** is on the Hazardous Substance List because it is regulated by OSHA and cited by ACGIH, DOT, NIOSH, DEP, IARC, IRIS, NFPA and EPA.
- * This chemical is on the Special Health Hazard Substance List because it is **FLAMMABLE** and **REACTIVE**.
- * Definitions are provided on page 5.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

The New Jersey Right to Know Act requires most employers to label chemicals in the workplace and requires public employers to provide their employees with information and training concerning chemical hazards and controls. The federal OSHA Hazard Communication Standard (29 CFR 1910.1200) requires private employers to provide similar training and information to their employees.

- * Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under the OSHA Access to Employee Exposure and Medical Records Standard (29 CFR 1910.1020).
- * If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.
- * **ODOR THRESHOLD = 0.0048 to 0.263 ppm**
- * The range of accepted odor threshold values is quite broad. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is **10 ppm** averaged over an 8-hour workshift.

NIOSH: The recommended airborne exposure limit is **10 ppm** averaged over a 10-hour workshift.

ACGIH: The recommended airborne exposure limit is **2 ppm** averaged over an 8-hour workshift.

- * The above exposure limits are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above.

WAYS OF REDUCING EXPOSURE

- * Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- * Wear protective work clothing.
- * Wash thoroughly immediately after exposure to **Methyl Acrylate** and at the end of the workshift.
- * Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of **Methyl Acrylate** to potentially exposed workers.

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short-term) health effects may occur immediately or shortly after exposure to **Methyl Acrylate**:

- * Contact can severely irritate and burn the skin and eyes with possible eye damage.
- * Breathing **Methyl Acrylate** can irritate the nose and throat causing coughing and wheezing.
- * Breathing **Methyl Acrylate** can irritate the lungs causing coughing and/or shortness of breath. Higher exposures can cause a build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.

Chronic Health Effects

The following chronic (long-term) health effects can occur at some time after exposure to **Methyl Acrylate** and can last for months or years:

Cancer Hazard

- * While **Methyl Acrylate** has been tested, it is not classifiable as to its potential to cause cancer.

Reproductive Hazard

- * According to the information presently available to the New Jersey Department of Health and Senior Services, **Methyl Acrylate** has not been tested for its ability to affect reproduction.

Other Long-Term Effects

- * **Methyl Acrylate** may cause a skin allergy. If allergy develops, very low future exposure can cause itching and a skin rash.
- * Prolonged exposure to **Methyl Acrylate** may cause liver and kidney damage.

MEDICAL

Medical Testing

For those with frequent or potentially high exposure (half the TLV or greater), the following are recommended before beginning work and at regular times after that:

- * Liver and kidney function tests

If symptoms develop or overexposure is suspected, the following are recommended:

- * Evaluation by a qualified allergist, including careful exposure history and special testing, may help diagnose skin allergy.
- * Consider chest x-ray after acute overexposure

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information under the OSHA Access to Employee Exposure and Medical Records Standard (29 CFR 1910.1020).

Mixed Exposures

- * Because smoking can cause heart disease, as well as lung cancer, emphysema, and other respiratory problems, it may worsen respiratory conditions caused by chemical exposure. Even if you have smoked for a long time, stopping now will reduce your risk of developing health problems.
- * Because more than light alcohol consumption can cause liver damage, drinking alcohol can increase the liver damage caused by **Methyl Acrylate**.

WORKPLACE CONTROLS AND PRACTICES

Unless a less toxic chemical can be substituted for a hazardous substance, **ENGINEERING CONTROLS** are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

In evaluating the controls present in your workplace, consider: (1) how hazardous the substance is, (2) how much of the substance is released into the workplace and (3) whether harmful skin or eye contact could occur. Special controls should be in place for highly toxic chemicals or when significant skin, eye, or breathing exposures are possible.

In addition, the following controls are recommended:

- * Where possible, automatically pump liquid **Methyl Acrylate** from drums or other storage containers to process containers.
- * Before entering a confined space where **Methyl Acrylate** may be present, check to make sure that an explosive concentration does not exist.

Good **WORK PRACTICES** can help to reduce hazardous exposures. The following work practices are recommended:

- * Workers whose clothing has been contaminated by **Methyl Acrylate** should change into clean clothing promptly.
- * Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to **Methyl Acrylate**.
- * Eye wash fountains should be provided in the immediate work area for emergency use.
- * If there is the possibility of skin exposure, emergency shower facilities should be provided.
- * On skin contact with **Methyl Acrylate**, immediately wash or shower to remove the chemical. At the end of the workshift, wash any areas of the body that may have contacted **Methyl Acrylate**, whether or not known skin contact has occurred.
- * Do not eat, smoke, or drink where **Methyl Acrylate** is handled, processed, or stored, since the chemical can be swallowed. Wash hands carefully before eating, drinking, applying cosmetics, smoking, or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT. However, for some jobs (such as outside work, confined space entry, jobs done only once in a while, or jobs done while workplace controls are being installed), personal protective equipment may be appropriate.

The OSHA Personal Protective Equipment Standard (29 CFR 1910.132) requires employers to determine the appropriate personal protective equipment for each hazard and to train employees on how and when to use protective equipment.

The following recommendations are only guidelines and may not apply to every situation.

Clothing

- * Avoid skin contact with **Methyl Acrylate**. Wear protective gloves and clothing. Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing material for your operation.
- * Safety equipment manufacturers recommend *Viton®/Butyl Rubber*, and *Tychem® BR/LV* and *TK* as protective materials.
- * All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.

Eye Protection

- * Wear indirect-vent, impact and splash resistant goggles when working with liquids.
- * Wear a face shield along with goggles when working with corrosive, highly irritating or toxic substances.

Respiratory Protection

IMPROPER USE OF RESPIRATORS IS DANGEROUS.

Such equipment should only be used if the employer has a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing, and medical exams, as described in the OSHA Respiratory Protection Standard (29 CFR 1910.134).

- * Where the potential exists for exposure over **2 ppm**, use a NIOSH approved full facepiece respirator with an organic vapor cartridge. Increased protection is obtained from full facepiece powered-air purifying respirators.
- * Where the potential exists for exposure over **20 ppm**, use a NIOSH approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode. For increased protection use in combination with an auxiliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode.
- * Exposure to **250 ppm** is immediately dangerous to life and health. If the possibility of exposure above **250 ppm** exists, use a NIOSH approved self-contained breathing apparatus with a full facepiece operated in a pressure-demand or other positive-pressure mode.

HANDLING AND STORAGE

- * Prior to working with **Methyl Acrylate** you should be trained on its proper handling and storage.
- * **Methyl Acrylate** must be stored to avoid contact with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); and AMINES.
- * Store in tightly closed containers in a cool, well-ventilated area away from HEAT, MOISTURE, METALS, and COMBUSTIBLES.
- * At temperatures above 70°F (21°C), a violent reaction can take place.
- * **Methyl Acrylate** should always be used with an inhibitor to prevent violent reactions or polymerization.
- * Sources of ignition, such as smoking and open flames, are prohibited where **Methyl Acrylate** is used, handled, or stored.
- * Metal containers involving the transfer of **Methyl Acrylate** should be grounded and bonded.
- * Use only non-sparking tools and equipment, especially when opening and closing containers of **Methyl Acrylate**.
- * Wherever **Methyl Acrylate** is used, handled, manufactured, or stored, use explosion-proof electrical equipment and fittings.

QUESTIONS AND ANSWERS

- Q: If I have acute health effects, will I later get chronic health effects?
- A: Not always. Most chronic (long-term) effects result from repeated exposures to a chemical.
- Q: Can I get long-term effects without ever having short-term effects?
- A: Yes, because long-term effects can occur from repeated exposures to a chemical at levels not high enough to make you immediately sick.
- Q: What are my chances of getting sick when I have been exposed to chemicals?
- A: The likelihood of becoming sick from chemicals is increased as the amount of exposure increases. This is determined by the length of time and the amount of material to which someone is exposed.
- Q: When are higher exposures more likely?
- A: Conditions which increase risk of exposure include physical and mechanical processes (heating, pouring, spraying, spills and evaporation from large surface areas such as open containers), and "confined space" exposures (working inside vats, reactors, boilers, small rooms, etc.).
- Q: Is the risk of getting sick higher for workers than for community residents?
- A: Yes. Exposures in the community, except possibly in cases of fires or spills, are usually much lower than those found in the workplace. However, people in the community may be exposed to contaminated water as well as to chemicals in the air over long periods. This may be a problem for children or people who are already ill.
- Q: Don't all chemicals cause cancer?
- A: No. Most chemicals tested by scientists are not cancer-causing.

The following information is available from:

New Jersey Department of Health and Senior Services
Occupational Health Service
PO Box 360
Trenton, NJ 08625-0360
(609) 984-1863
(609) 984-7407 (fax)

Web address: <http://www.state.nj.us/health/eoh/odisweb/>

Industrial Hygiene Information

Industrial hygienists are available to answer your questions regarding the control of chemical exposures using exhaust ventilation, special work practices, good housekeeping, good hygiene practices, and personal protective equipment including respirators. In addition, they can help to interpret the results of industrial hygiene survey data.

Medical Evaluation

If you think you are becoming sick because of exposure to chemicals at your workplace, you may call personnel at the Department of Health and Senior Services, Occupational Health Service, who can help you find the information you need.

Public Presentations

Presentations and educational programs on occupational health or the Right to Know Act can be organized for labor unions, trade associations and other groups.

Right to Know Information Resources

The Right to Know Infoline (609) 984-2202 can answer questions about the identity and potential health effects of chemicals, list of educational materials in occupational health, references used to prepare the Fact Sheets, preparation of the Right to Know Survey, education and training programs, labeling requirements, and general information regarding the Right to Know Act. Violations of the law should be reported to (609) 984-2202.
