





LABORATORY SAFETY GUIDELINE

Methyl Methacrylate [CAS No. 80-62-6]

All users of methyl methacrylate must review this document before use. Methyl methacrylate is a monomer of acrylic resin widely used for dental (e.g., dentures), medical and industrial (e.g., acrylic sheets, emulsions, or molding and extrusion resins) applications. Users should contact their EHS Laboratory Safety Advisor and department safety officer if they have questions before beginning work.

HAZARDS

	Highly flammable liquid and vapor.
	Causes skin irritation. May cause an allergic skin reaction or respiratory irritation.

Stabilizing inhibitors such as hydroquinone are commonly added to keep this substance from initiating polymerization during transport and storage. This substance may polymerize if heated or contaminated with strong acid or base. If the polymerization takes place inside a container, the container may rupture violently. Beware of explosive concentrations of the vapors that could accumulate particularly in small, poorly ventilated spaces.

PRECAUTIONS

Before starting work:

- Determine if you can use a less hazardous substance in place of methyl methacrylate;
- Review manufacturer's Safety Data Sheet and additional chemical information at ehs.harvard.edu/safety-data-sheets-sds;
- Ensure that a written experimental protocol, including safety information, is available;
- Be familiar with general University emergency procedures in the EHS Lab Emergency Response Guide;
- Order the most dilute solutions available that will meet experimental needs. Order only the quantity that you need;
- Identify the location of the nearest eyewash and shower and verify that they are accessible;
- Locate and verify that appropriate spill cleanup materials are available, including the following:
 - Spill-X-S (or comparable material such as activated charcoal) for solvents
- Ensure another person who knows emergency procedures is in the area.

During work:

- AVOID INHALATION! Perform all operations in a certified chemical fume hood or other approved ventilated enclosure. Sash lowered as much as possible. Always work at least 6 inches into the fume hood and behind the sash;
- AVOID CONTACT! Use appropriate personal protective equipment (PPE):
 - Wear a lab coat (flame resistant recommended), a garment covering to the ankles, and closed-toed shoes
 - Safety glasses should be worn during use.
 - Butyl-rubber gloves with a minimum thickness of 0.3 mm should be worn for splash protection.
 - Always consult a [Chemwatch Gold SDS](#) or a manufacturer's glove compatibility chart or search tool if the substance is used in a solution or mixed with other substances (e.g., use laminated multilayer gloves in the case of long-term handling of acrylates containing high levels of acetates or ketones);
 - Gloves must be thoroughly inspected prior to each use. Do not use damaged gloves;
 - Change gloves whenever you suspect they have become contaminated;
 - Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact;
 - Wash hands and forearms thoroughly with soap and water each time gloves are removed;
- Use materials and containers appropriate for methyl methacrylate use and remain aware of potential incompatibilities (examples given below) and elevated temperatures (above 90 °F or 32 °C);

- Incompatible materials: Oxidizing agents, strong bases, strong acids, reducing agents, polyvinyl chloride, ketones, nitrates, etc.;
- Keep all containers tightly closed when not in use and during transport.

After completing the work:

- Dispose of methyl methacrylate waste following Harvard University Hazardous Waste Procedures
 - Hazardous Waste Classification: Ignitable/Flammable
 - Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. **Without an inhibitor it may polymerize on exposure to light as well.**
 - Return container to storage area following Harvard University Laboratory Chemical Storage Guide
 - Storage Group: Flammable Liquids (FL);
 - Store in original containers or other appropriate containers;
 - Store primary container in designated and compatible secondary containers;
 - Store away from incompatibles;
- Wash hands and forearms thoroughly with soap and water before leaving the lab.

EMERGENCY PROCEDURES

First Aid

SKIN CONTACT

- Wash with plenty of tepid water for at least 15 minutes using the closest available sink, safety shower or drench hose. Remove any exposed clothing as well as any jewelry.
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

EYE CONTACT

- Using eyewash, flush eyes while holding eyelids open;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

INHALATION

- If breathed in, move person into fresh air;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

INGESTION

- Do NOT induce vomiting;
- Never give anything by mouth to an unconscious person;
- Seek medical attention; call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

Spill Response

LARGE AMOUNT (500 ml or more) OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE

- Alert others and evacuate to a safe distance and prevent entry.
- Contact the University Operations Center at (617) 495-5560 [HMS/HSDM (617) 432-1901]
- Remain in a safe location until EH&S or other response personnel arrive.

SMALL AMOUNT (< 500 ml) OR INSIDE VENTILATED ENCLOSURE

- If trained and confident, you may assist in the clean-up effort, wearing PPE described above and using appropriate spill supplies.
 - Using the spill cleanup material Spill-X-S cover the spill area with absorbent material;
 - Let adsorbent sit on spill for the amount of time indicated on the bottle.
 - Sweep up absorbent material with a dustpan and broom.
 - Collect debris in appropriate container and move to your Satellite Accumulation Area. Label with appropriately completed hazardous waste tag and request a waste pickup.
- Otherwise close the fume hood sash and await support.
- Contact the University Operations Center at (617) 495-5560 [HMS/HSDM (617) 432-1901] if you need support or technical assistance.