STANDARD OPERATING PROCEDURES (SOP) FOR WORKING WITH
PHENYL METHANESULFONYL FLUORIDE (PMSF) AT AMHERST
COLLEGE
AUGUST 2019

General Information

Phenylmethanesulfonyl Fluoride (PMSF) is a white crystalline compound, often used in solution, as a protease inhibitor in the Laboratory. It is an acutely hazardous compound that is characterized by high toxicity and high corrosivity. Upon exposure to water, PMSF forms Hydrofluoric Acid, which is extremely toxic and corrosive. As a result, it is recommended that personnel also review the SOP for Hydrofluoric Acid before working with this compound.

Personal Protective Equipment

When working with PMSF, the following Personal Protective Equipment (PPE) must be worn:

- Splash goggles
- Lab coat
- Long pants
- Close toed shoes
- Nitrile Gloves (double gloving is recommended; change as often as needed)

Safety Devices

Fume hood – always work with PMSF in a fume hood to prevent exposure by inhalation.

Identify the location of all the safety devices in the room before starting your procedure. Also, familiarize yourself with all the possible means of egress. Keep safety devices and means of egress at all times.

Specific Health Hazards

PMSF may cause severe skin burns and serious eye damage. It is very toxic if swallowed.

Pictogram:

Hazards: Toxic, Corrosive
**Routes of Entry**

Inhalation, skin/eye contact, ingestion.

If *any part of your body* comes in contact with PMSF, call the Amherst College Emergency phone number 413-542-2111. Also call this number if you begin to feel ill after working with or in the vicinity of PMSF.

Choose corresponding route of entry and action – note that the actions listed for each route of entry may vary depending on chemical; consult Safety Data Sheet.

*Inhalation*

If inhaled, move to fresh air, and get help. if you begin to feel ill during / after working with PMSF, Call the Amherst College Police Department (ACDP) at x2111 to report it.

*Eye contact*

Use eyewash to flush eyes with water for at least 15 minutes. Remove contact lenses, if present.

*Skin Contact*

Call the Amherst College Police Department (x2111).

Wash skin with plenty of water for 15 minutes. Use safety shower, if needed.

If in solution with water, Wash skin with plenty of water for 5 minutes (Use safety shower, if needed), then apply enough 2.5% calcium gluconate (usually kept close to work station) to cover the entire area. DO NOT USE CALCIUM CHLORIDE!

(see SOP for Hydrofluoric Acid for more information)

*Ingestion*

Do not induce vomiting, rinse mouth, drink plenty of water, etc.

**Storage and Special Handling**

Store in a tightly closed container in a cool, dry area that is well ventilated - such as a chemical cabinet.

Store in a secondary container with a lid.

Label containers with the words: “**Acutely Toxic**” and “**Corrosive**”.

Do not store on shelf.

Do not store in glass containers as PMSF may corrode glass containers.

Compounds incompatible with PMSF are oxidizers, sources of ignition, heat, water, strong bases and strong acids.

If you have PMSF that you no longer need, please contact Jason Williams at x2736, for disposal.
**Special Handling**

Upon exposure with water, PMSF forms hydrofluoric acid and hydrogen fluoride gas in contact with water (both compounds are very toxic and corrosive).

Add acid to water, not water to acid; maximum concentration or volume to make stock expired after X days, pour dropwise, etc.

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**Spill clean up**

Please do not attempt to clean up a PMSF spill as this is an acutely hazardous compound.

Contact Jason Williams (x2736) or call the emergency phone number, x2111 to report *ANY* spills of this compound.

Alert everyone in the area

Leave the room

Close the door behind you

Call Jason Williams (Chemical Hygiene Officer) at x2736 or the Amherst College Police Department (x2111) to report it.

**Due to the high toxicity of this compound, clean up shall not be done by lab personnel.**

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**Disposal**

Disposable pipets, pipet tips, and any other disposal devices that come in contact with PMSF must be disposed of as hazardous waste.

Waste containing acutely hazardous chemicals shall not be mixed with other types of waste.

If you have PMSF that you no longer need, contact Jason Williams (Chemical Hygiene Officer) at x2736.

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**Questions**

Contact Jason Williams or Environmental Health and Safety if you have any questions about this SOP or this compound.