Standard Operating Procedure

Methyltrichlorosilane

**This is an SOP template and is not complete until: 1) lab specific information is entered into the box below 2) lab specific protocol/procedure is added to the protocol/procedure section and
3) SOP has been signed and dated by the PI and relevant lab personnel.**

Print a copy and insert into your *Lab-Specific Chemical Hygiene Plan*.

**Section 1 – Lab-Specific Information**

| **Building/Room(s) covered by this SOP:** | Click here to enter text. |
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| **Department:** | Click here to enter a date. |
| **Principal Investigator Name:** | Click here to enter text. |
| **Principal Investigator Signature:** | Click here to enter text. |

**Section 2 – Hazards**

Methyltrichlorosilane is a flammable liquid, toxic by inhalation, harmful by skin absorption, corrosive, and water-reactive. It reacts violently with water forming hydrogen chloride, an extremely toxic, corrosive gas.



**Section 3 – Engineering Controls and Personal Protective Equipment (PPE)**

**Engineering Controls:** Methyltrichlorosilane should be used in a properly functioning chemical fume hood whenever possible. The chemical fume hood must be approved and certified by REM and have a face velocity between 80 – 125 feet per minute.

**Hygiene Measures:** Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.

**Hand Protection:** Chemical-resistant gloves must be worn, Nitrile or fluorinated rubber gloves are recommended. **NOTE:** Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with the specific chemical being used.

**Eye Protection:** ANSI approved properly fitting safety glasses or chemical splash goggles are required.

**Skin and Body Protection:** Laboratory coats must be worn and be appropriately sized for the individual and buttoned to their full length. Flame resistant lab coats must be worn when handling volumes greater than 1 liter. Personnel must also wear full length pants, or equivalent, and close-toed shoes. Full length pants and close-toed shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle must not be exposed.

**Respiratory Protection:** If methyltrichlorosilane is being used outside of a chemical fume hood, respiratory protection is required. If the respirator is the sole means of protection, use a full-face supplied air respirator. If this activity is necessary, contact REM (49-46371) so a respiratory protection analysis can be performed.

**Section 4 – Special Handling and Storage Requirements**

* Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
* Use extreme care when handling methyltrichlorosilane, which is flammable, toxic, corrosive, and water-reactive (~~W~~) liquid.
* A designated storage area must be established for methyltrichlorosilane such as a flammable storage cabinet that does not contain aqueous solutions. Methyltrichlorosilane can also be stored with other organic acids. Secondary containment should be used as a precautionary measure.
* Methyltrichlorosilane must be segregated from the following chemicals: strong acids, bases, oxidizing agents (e.g., hydrogen peroxide), aqueous solutions (reacts violently with water to form HCl gas).
* Do not over purchase; only purchase what can be safely stored in the laboratory.
* Avoid contact with skin, eyes, and inhalation.
* Keep away from sources of ignition.
* Keep containers tightly closed. Store in a cool, dry, and well-ventilated area away from incompatible substances such as oxidizers.
* Use in the smallest practical quantities for the experiment being performed.
* If flammable liquids such as methyltrichlorosilane are stored in refrigerators or freezers, these must be specially modified or purpose-made “flammable-safe” refrigerators and freezers which have no internal sources of ignition posed by an internal light or thermostat circuit.
* Any expired or unnecessary reactive materials should be properly disposed of as hazardous waste.
* Note: In case you need to dilute the concentration of acids, always add acid to water.
* Conduct the procedure detailed in Section 13 of this SOP only after a supervisor has observed the user performing the proper technique unassisted. Do not work with dangerous when wet materials alone.

**Section 5 – Spill and Accident Procedures**

Immediately evacuate area and ensure others are aware of the spill. If there is an imminent threat of a fire, pull the nearest fire alarm station to evacuate the building and **dial 911**. If personnel have become exposed and need medical assistance, **dial 911**. If the spill is minor and does not pose a threat to personnel, contact REM at 49-40121 during normal business hours (Monday – Friday, 7 AM – 4 PM) for spill cleanup assistance (dial 911 if spill occurs after hours and assistance is needed).

**Section 6 – Waste Disposal Procedures**

Store hazardous waste in closed containers that are properly labeled, and in a designated area (flammable cabinet is recommended). Complete a Chemical Waste Pickup Request Form to arrange for disposal by REM; detailed instructions are provided at the following link: <http://www.purdue.edu/ehps/rem/hmm/chemwaste.htm>.

**Section 7 – Protocol/Procedure (Add lab specific Protocol/Procedure here)**

Click here to enter text.

**NOTE:** Any deviation from this SOP requires approval from PI.

**Section 8 – Documentation of Training (signature of all users is required)**

Prior to conducting any work with methyltrichlorosilane, the Principal Investigator must ensure that all laboratory personnel receive training on the content of this SOP.

**I have read and understand the content of this SOP:**

| **Name** | **Signature** | **Date** |
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