Sensitizers

Standard Operating Procedure

Revision Date: 1/4/2024

Laboratory Director (LD) Approval is Required Prior to Performing this Procedure

This standard operating procedure (SOP) outlines the handling and use of sensitizers. Review this document and supply the information required in order to make it specific to your laboratory. In accordance with this document, laboratories should use appropriate controls, personal protective equipment, and disposal techniques when handling sensitizers. *All laboratory workers must read and understand the*[*Laboratory Emergencies SOP*](https://ehs.umich.edu/wp-content/uploads/2022/05/LaboratoryEmergencyProceduresSOP.docx)*prior to commencing any work in a laboratory.*

# Description [Provide additional information as it pertains to your research protocol]

A sensitizer (allergen) is a substance that causes the development of an allergic reaction in normal tissue after repeated exposure. The condition of being sensitized to a substance is called hypersensitivity.

Chemicals classified as sensitizers may affect either the skin or respiratory tract. Respiratory sensitizer means a chemical that will lead to hypersensitivity of the airways following inhalation of the chemical. Skin sensitizer means a chemical that will lead to an allergic response following skin contact

Sensitization is an immune response. While some individuals are easily sensitized, others may never be affected even after experiencing the same amount of exposure. Certain chemicals have no immediate health effects; however, after repeated exposure to a sensitizer, you may become allergic or sensitive to it very suddenly. Once you are sensitized to a particular substance, even minute amounts of exposure can cause potentially severe symptoms. Sensitization is usually a life-long effect.

Sensitizing chemicals will be indicated by one or both of the following Globally Harmonized System (GHS) hazard categories.

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| **Pictogram** | **Hazard Classification** | **Hazard Statement** |
| undefined | Sensitization - Respiratory | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| undefined | Sensitization - Skin | May cause an allergic skin reaction |

## Process [Write the steps for using the sensitizer in your research protocol]

# Potential Hazards [Provide additional information as it pertains to your research protocol]

A reaction caused by a sensitizer might be as mild as a rash (contact dermatitis) or as serious as anaphylactic shock. Sensitizers may also be corrosive or carcinogenic. Examples of compounds that may cause sensitization in some individuals are diazomethane, various isocyanates, formaldehyde, toluene, latex, and benzylic and allylic halides.

A reaction to a sensitizer can be fatal. Because you cannot predict your reaction to a sensitizer, treat all sensitizers with caution and follow proper chemical safety and hygiene procedures.

# Engineering Controls [Provide additional information as it pertains to your research protocol]

Use a properly functioning lab fume hood or other exhausted enclosure when handling sensitizers that can be inhaled (via mist/fume/gas/vapor).

If the process does not permit the handing of such materials in an exhausted enclosure, contact EHS at (734) 647-1143 for review of the adequacy of ventilation measures.

# Work Practice Controls [Provide additional information as it pertains to your research protocol]

For sensitizers that are also considered particularly hazardous substances, a designated area shall be established per the other applicable SOP.

# Personal Protective Equipment [Provide additional information as it pertains to your research protocol]

At minimum, safety glasses, lab coat, long pants, and closed toed shoes are to be worn when entering laboratories having hazardous chemicals.

Additionally, when handling hazardous chemicals or contacting potentially contaminated surfaces, protective gloves are to be worn. For proper selection of glove material, review the SDS or refer to the [glove compatibility charts](http://ehs.umich.edu/research-clinical/planning-safe-research/glove-compatibility-chart/) available through the EHS website.

For hazardous chemicals that are toxic via skin contact/ absorption, additional protective clothing (i.e., face shield, apron, over sleeves) is appropriate where chemical contact with body/skin is foreseeable.

Goggles (not safety glasses) are appropriate for processes where splash or spray is foreseeable.

# Transportation and Storage [Provide additional information as it pertains to your research protocol]

Follow any substance-specific storage guidance provided in the SDS documentation.

# Waste Disposal [Provide additional information as it pertains to your research protocol]

Many sensitizers intended for disposal may likely be considered hazardous wastes. For general guidance regarding waste disposal or to obtain waste containers, labels, manifests, or schedule waste collection refer to the EHS Hazardous Materials Management (EHS-HMM) [Hazardous Waste](http://ehs.umich.edu/haz-waste/) Web page. For specific guidance contact EHS-HMM at (734) 763-4568.

# Training of Personnel

All personnel shall read and fully adhere to this SOP when handling sensitizers.

# Certification

I have read and understand the above SOP. I have received prior approval from my Lab Director to perform this procedure. I agree to contact my Lab Director if I plan to modify this procedure.

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### Major Revisions (Tracking purposes only -- Do not print as part of SOP)

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| Date | Revision |
| 3-20-2018 | Put into EHS format, changed department name, and fixed links. Revised Spill Procedure section (AJK). |
| 04-09-18 | Revised formatting (AJK). |
| 10-08-18 | **EHS name and logo were added, updated the formatting, and revised the content under exposure/unintended content (dab).** |
| **03-07-19** | **Updated links, certification and format (DML).** |
| **05-18-20** | Updated editing rights to headings (RSH) |
| **05-16-22** | Removed emergency response section (LGS) |
| **01-04-24** | Annual review, added GHS info (JMW) |

**References**

National Academies of Sciences, Engineering, and Medicine. 1995. Prudent Practices in the Laboratory: Handling and Disposal of Chemicals. Washington, DC: The National Academies Press. https://doi.org/10.17226/4911.