

Irritants - Chemical Standard Operating Procedure

Revision: September 1, 2026

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This standard operating procedure (SOP) outlines the handling and use of irritant chemicals. 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 chemical irritants. All laboratory workers must read and understand the [Laboratory Emergencies SOP](#) prior to commencing any work in a laboratory.

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

A chemical irritant can cause a reversible inflammatory effect on living tissue via chemical action at the site of contact. Chemical irritants can affect the skin, respiratory system, and immune system by causing unfavorable responses such as contact dermatitis, allergic contact dermatitis, and respiratory sensitivities. Pre-existing conditions such as asthma, allergies, age, temperature, humidity, seasons, and work conditions can affect the development of reactions to chemical exposures (Richards & Bourgeois, 2014).

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

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

A wide variety of organic and inorganic chemical compounds are classified as irritants; thus, skin and respiratory contact with all laboratory chemicals that are irritants should be avoided. Common respiratory irritants include proteins from latex, microbial pesticides; haptens with a molecular weight of less than 3000 like toluene, reactive dyes, platinum salts, organic and inorganic chemicals; and adjuvants used in vaccines (Pradhan et al., 2018).

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

Use a properly functioning lab fume hood when handling irritants that can be inhaled (via mist/fume/gas/vapor). If the process does not permit the handling of such materials in a fume hood, contact Environment, Health & Safety (EHS) at (734) 647-1143 to review the adequacy of ventilation measures.

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

Handling processes should be designed to minimize the potential for splash, splatter, or other likely scenarios for accidental contact.

Ensure secondary containment and segregation of incompatible chemicals per guidance within the substance-specific storage guidance provided in Safety Data Sheet (SDS) documentation.

For irritants that are also considered particularly hazardous substances, a designated area shall be established per other applicable SOPs.

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

At minimum, safety glasses, lab coat, long pants, and closed toe 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 chemical-specific SDS.
- Goggles (not safety glasses) are appropriate for processes where splash or spray is foreseeable.
- For hazardous chemicals that are toxic via skin contact/ absorption, additional protective clothing (i.e., face shield, apron, oversleeves) is appropriate where chemical contact with body/skin is foreseeable.

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

- Transport chemicals in secondary containment, preferably a polyethylene or other non-reactive bottle carrier.
- Store in well-ventilated areas with secondary containment, such as a non-reactive plastic bin.
- Store below eye level.
- Store away from incompatibles. Review the chemical's SDS for incompatibility information.
- Avoid storing on the floor.

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

Chemical irritants that are intended for disposal may be considered hazardous wastes. Wherever possible, attempt to design research in a manner that reduces the quantity of waste generated. Contact EHS-HMM at (734) 763-4568 for waste containers, labels, manifests, waste collection and for any questions regarding proper waste disposal. Also, refer to the [EHS Hazardous Waste Web page](#) for more information.

Training of Personnel

All laboratory personnel are required to complete **EHS_BLS025w Chemical Laboratory Safety Training** via the [EHS My LINC](#) Web page. Furthermore, all personnel shall read and fully adhere to this SOP when handling irritant chemicals.

References

- Pradhan, D., Tripathy, G., Pattnaik, A., Pradhan, B., Pradhan, S., & Behera, B. (2018). *Toxicology in Current Science*. Notion Press.
- Richards, I. & Bourgeois, M. (2014). *Principles and Practice of Toxicology in Public Health*. Jones and Bartlett Learning.

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

[illegible]



Laboratory Director

Revision Date

Revision History (Do not print as part of SOP)		
9/1/2026	Annual Revision	Minor revisions. Reformatted to accessible document. (JMW)
06/13/2022	Annual Revision	
03/04/2019	Annual Revision	
09/14/2018	Partial Revision	EHS name and logo were added, updated the formatting, and revised the content under Exposure/Unintended Content (AKJ).