



IRRITANTS/SENSITIZERS

STANDARD OPERATING PROCEDURES



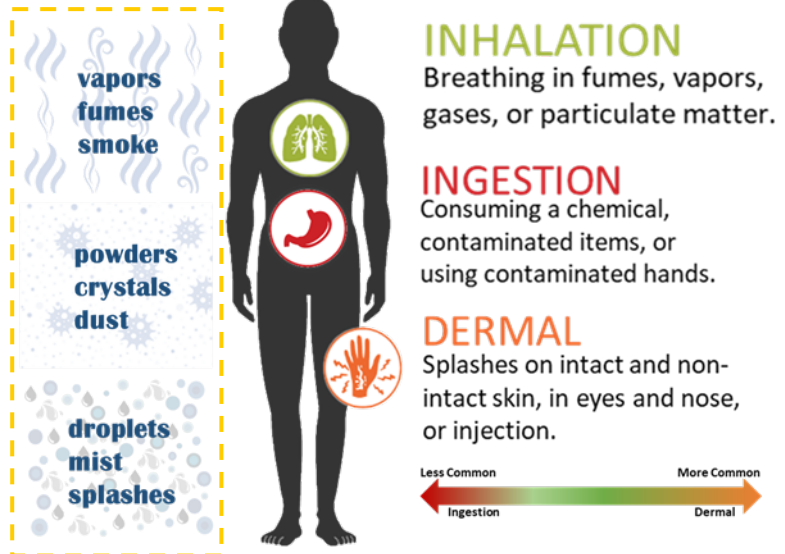
GENERAL SUMMARY

Irritants cause **reversible inflammatory effects** on living tissues including the eyes, skin, mucous membranes, or respiratory tract on contact. Irritants generally have no systemic toxic action and chemical concentration, duration, and personal health status and sensitization all play a role in the severity of the reaction. **Sensitizers** can **induce an allergic reaction** in a majority of the population after **repeated exposure**.

In the most severe cases, anaphylaxis can occur. Common sensitizers include formaldehyde, isocyanates, certain animal proteins, and many metals (such as nickel in jewelry).

Irritants and sensitizers are different classes of substances, but the reactions they cause in the body are similar in that they are both short term, reversible, and **occur largely through skin contact and/or inhalation**. The specific chemical being used could have other hazards associated with it, so be sure to **reference the Safety Data Sheet** before beginning work.

Routes of Exposures



ENGINEERING CONTROLS

Single pass ventilation, where 100% of the air is pulled from the outside and directly exhausted back out, should be provided to all areas where irritants and sensitizers may be handled.

Chemical Fume hoods are required when working with irritants and sensitizers. If a chemical fume hood is not available, glove boxes or other appropriate containment devices may be used.



Check that your fume hood is in working order by:

- Verifying the date on the **certification** sticker is in the past year.
- Check the flow monitor is between **80 and 120 FPM**.
- Test the hood alarm to ensure correct function.
- Contact EHS&EM if hood is not functioning properly.

Work safely in a fume hood by:

- Working with the **sash as low as practicable** and not above 16.”
- **Work 6 inches into the depth** of the cabinet, not right on the edge.
- Keep **bulky equipment outside the hood** if possible.



ADMINISTRATIVE CONTROLS

Always Use **Good Lab Safety Practices!**

- No Food or drink
- Label fridges and ice machines "Lab Use only"
- Don't work alone.

PLANNING CONSIDERATIONS

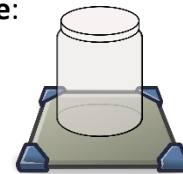
- Use a **less hazardous chemical**, if possible.
- Purchase the **minimum quantity and concentration** needed.
- Purchase chemicals already **in solution**, if possible.

- Design procedures to:
 - **Minimize contact**
 - **Minimize exposure time**
 - **Minimize open container work.**
- Designate and label work areas with **limited access.**
- **Never leave experiments unattended.**
- Practice proper glove removal technique. ([Click here for a video](#)).
- **Never reuse disposable gloves.**
- **Wash hands** before breaks and after work has been completed.
- **Regularly check containers** for cracks/warping.

SAFE WEIGHING PRACTICES







To weigh irritant/sensitizing powders safely, **use a balance inside a chemical fume hood.** If the balance can't be placed in the fume hood, use the **tared container procedure:**

- **Tare** a container and lid.
- **Add chemical** to container in the fume hood.
- **Close lid** and **weigh** in the balance.
- **Repeat** until desired weight is achieved.



PERSONAL PROTECTIVE EQUIPMENT

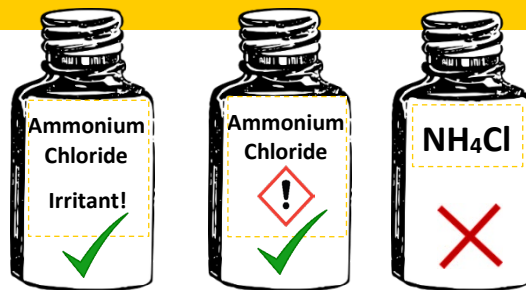
Remove all PPE before leaving the lab; don't touch common items (e.g., doorknobs) with gloves on.

HANDS	EYE & FACE	SKIN
<ul style="list-style-type: none">➤ Gloves are always required.➤ Always check glove compatibility with the specific chemical in use.➤ If working with a chemical with high dermal toxicity, double-glove.➤ Change gloves when contaminated or damaged.	<ul style="list-style-type: none">➤ Safety glasses required.➤ Safety goggles and/or a face shield must be worn when transferring large volumes, and in other situations where a splash or aerosols are likely (e.g., transfer of liquids outside of a fume hood).	<ul style="list-style-type: none">➤ Lab coat, fastened with sleeves extending to the wrists is required.➤ Long pants and close-toed shoes are required.
	 	  

LABELING REQUIREMENTS

Chemical containers **must be labeled** with:

- **Full chemical name and hazards**
- Labels should be **legible** and in **good condition**.
- Regularly check chemical stock to verify chemicals are labeled properly.



STORAGE REQUIREMENTS

- Store in **shatter-resistant containers** in **secondary containment**.
- Keep containers **tightly closed**.
- Store in a **well-ventilated** area.
- **Do not store with incompatible chemicals**. Ex. Bleach + Vinegar = Chlorine gas

WASTE DISPOSAL

- Refer to App State's [Drain Disposal Guidance](#) if you are unsure on whether a chemical can be discarded into the drain or must be Collected for disposal.
- **Store** hazardous waste in **chemically compatible containers** within designated waste area.
- Ensure **structural integrity** of containers until pick up.
- Keep containers **capped tightly** and use **secondary containment**.
- **Separate** waste by hazard class and compatibility.
- **Label** with an [App State hazardous waste label](#) prior to pick up.
- Waste should be neutralized before pickup, if possible.



CONTACT **EHS & EM** AT **(828) 262-4008** FOR CHEMICAL WASTE COLLECTION OR REGULATORY GUIDANCE.

EMERGENCY INFORMATION:

FIRE:

Evacuate the building immediately, pulling the fire alarm on the way out. Meet at your building's assembly point and contact emergency personnel (University Police- 828-262-8000 or 911). Follow instructions and advise emergency personnel of the situation. When able, contact the primary and secondary emergency contacts listed in the Lab Safety Plan.

SPILLS:

Do not clean the spill unless trained. Evacuate the area if the spill is fuming or irritating to the respiratory tract or eyes/skin. Contact emergency personnel (University Police- 828-262-8000 or 911). Follow instructions and provide information such as location, chemical name & hazards, amount released, etc. When able, contact the primary and secondary emergency contacts listed in the Lab Safety Plan.

EXPOSURE:

Consult the Lab-Specific procedures to identify and follow any exposure procedures for the specific chemical in question. If no specific procedures are listed, for spills on the body, in the eye, or in an open wound, find and activate the nearest emergency shower or eyewash station. Immediately discard any contaminated clothing. Stand in the emergency shower stream or use the eyewash/drench hose to stream water over the affected areas for at least 15 full minutes. Contact emergency personnel (University Police- 828-262-8000 or 911) using the Safety Data Sheet of the chemical to communicate the hazards with medical professionals. When able, contact the primary and secondary emergency contacts listed in the Lab Safety Plan.



EMERGENCY CONTACT INFORMATION

Appalachian Police Department (828) 262-8000
Environmental Health, Safety, and Emergency Management (828) 262-4008
Watauga Medical Center (828) 262-4100
Poison Control Center (800) 222-1222

