CARCINOGENS

**Carcinogens** are chemicals or physical agents that cause cancer or increase its incidence. Carcinogens are chronically toxic substances: they cause damage after repeated or long-duration exposure, and their effects may not be immediately apparent but only become evident after a long latency period. The resources below can be used to determine whether a material is a carcinogen:

* [Department of Labor & Industries Carcinogen List (WAC 296-62)](https://app.leg.wa.gov/WAC/default.aspx?cite=296-62-07302) (**Note:** This SOP does not cover listed carcinogens.Materials on the L&I list require chemical-specific SOPs.)
* [Annual Report on Carcinogens by the National Toxicological Program](https://ntp.niehs.nih.gov/ntp/roc/content/listed_substances_508.pdf), including substances listed as “known to be carcinogens” or “reasonably anticipated to be carcinogens”
* [The International Agency for Research on Cancer](http://monographs.iarc.fr/ENG/Classification/latest_classif.php), including Group 1, 2A and 2B chemicals
* Section 11 of the material’s safety data sheet (SDS)

# ENGINEERING/VENTILATION CONTROLS

* Chemical fume hood or glovebox

If the process/experiment cannot be performed in a fume hood or glovebox, contact the ASO for an assessment to determine necessary controls.

# SAFE WORK PRACTICES

* Before beginning work, prepare an experiment plan that describes the safety considerations for each step of the process, including disposal (i.e., cradle to grave).
* Know the signs and symptoms of exposure to the material before working with it. (Consult the SDS.)
* Follow universal administrative controls described in the [Chemical Hygiene Plan](https://www.seattleu.edu/media/academic-safety/files/Chemical-Hygiene-Plan.pdf).
* Limit the amount of material handled: use the smallest amount possible.
* Work with carcinogens in a designated area.
* Wash hands thoroughly after handling carcinogenic substances.

# PPE

* Eye Protection: ANSI Z87.1 safety glasses or goggles
* Body Protection: lab coat
* Hand Protection: protective gloves appropriate for the chemical being used (consult the SDS)

Depending on the risk assessment, a face shield and/or chemical splash apron may be appropriate. Additional PPE may be required if the chemical has additional hazard classification(s).

# HANDLING AND STORAGE

* Keep containers closed when not in use.
* Ensure containers are in good condition and compatible with the material.
* Store carcinogens in secondary containers.
* Work with open containers only in the fume hood or glovebox.
	+ Use ventilated containment to weigh solid chemicals or use the “tare” method: weigh an empty container, add the chemical to the container in the fume hood, seal the container, remove it from the fume hood and re-weigh it.
* Label the storage location with a hazard warning.
* Avoid all contact with carcinogens, including skin contact and inhalation.
* Consult Sections 7 and 10 of the SDS for chemical-specific storage recommendations.

# SPILL AND ACCIDENT PROCEDURE

Consult the [Chemical Hygiene Plan](https://www.seattleu.edu/media/academic-safety/files/Chemical-Hygiene-Plan.pdf) for spill and accident procedures.

# DECONTAMINATION AND WASTE DISPOSAL

* Decontaminate work areas, fume hoods/gloveboxes and equipment after each use while wearing proper PPE. Consult the SDS for decontamination procedures. Soap and water are effective for many materials.
* Collect waste in chemically compatible containers labeled with a Seattle University [Hazardous Waste Label](https://www.seattleu.edu/media/facilities-services/ehs-/Hazardous-Waste-Label-for-Avery-5164.pdf).
* Segregate incompatible waste streams. Refer to Section 10 of the SDS for specific incompatibilities.
* Consult the [Regulated Waste Management policy](https://seattleu.policystat.com/policy/8670318/latest) for more details on waste disposal. Specific disposal recommendations are available in the SDS.