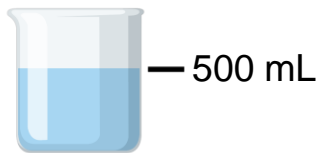


Chemistry Department Hazard Assessment

Identify the hazards class of your reaction or process using the following guiding questions:

Scale



Is the reaction volume > 500 mL?



Is any reactant, intermediate, product, or solvent **category 1** toxic or carcinogenic? (see SDS)



is DMSO used as the solvent for the reaction?



Is this reaction pressurized?



Is any component of this reaction or process labelled as **category 1** flammable or pyrophoric?



Are gases evolved in a closed vessel?



Do any other hazards not identified with the questions above require additional PPE?

← Is the answer to **every** question **no**?

→ Is the answer to **any** question **yes**?

Examples of additional safety measures:

1. Blast shield for explosion risks
2. Insulated gloves and face mask for cryogenic risks

Primary resources:

1. SDS
2. Postdocs and senior grad students
3. Helen Wright

Hazard assessment:
yellow

Health hazards



Physical hazards



yellow hazard assessment includes caustic hazards



Protocol:
wear normal PPE (lab coat, goggles and gloves)

Hazard assessment:
red

Protocol:
Additional safety measures are required

wear normal PPE and implement additional safety measures

High Risk Chemicals and Reactions

Chemical/Reaction	Hazard
Organic azides	Explosion hazard (note: do not use ground glass joints)
Sodium azide	Toxic Disposal hazard (do not dispose in drains)
Perchlorate salts	Explosion hazard
Lithium aluminum hydride, sodium metal, potassium metal, etc.	Fire hazard when quenching
Palladium on carbon	Pyrophoric after exposure to H ₂ Disposal hazard (do not throw away in trash cans)
Nitric acid, aqua regia	Reacts violently with organics Disposal hazard (do not dispose in organic-containing waste)
Ethers with alpha-hydrogen atoms	May form peroxides (Explosion hazard)
Thiols	Nuisance hazard (low ppm will evacuate the building)
Overnight reflux	Flooding hazard (Flooding is the #1 cause of damage in our department)
Lithium metal	Fire/explosion hazard (reacts with N ₂)