

Vacuum Pumps

Used to remove air and other vapors from a vessel or a system.
Ensure that your vacuum pump is properly installed, trapped, and exhausted.



Personal Protective Equipment (PPE)

Safety glasses, lab coat, long pants, close-toed shoes, and gloves.

Hazards:

- Exposure to hazardous chemicals
- Explosion and/or over-pressure rupture
- Electrical shock/electrical fire
- Physical hazards from moving parts



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pump safety

Before Work, Verify:

- Belt guards are in place
- Electrical cords are in good condition
- Cord is plugged directly into outlet
- Oil level and type of oil are appropriate
- Inlet and outlet (ventilation) are connected
- Cold trap(s) filled with appropriate coolant
- Chemicals used with pump/oil are appropriate (read the Safety Data Sheet)

During Work:

- Ensure adequate pump ventilation
- Do not open the system to ambient air while vacuum is running – can condense oxygen
- If you see condensed oxygen (pale blue liquid):
 - turn off pump, lower the bath until the trap is above the LN₂, open the system to air, close the fume hood sash, and evacuate the laboratory
 - Call EH&S at (515) 294-5359
- Empty the trap and coolant once work is completed
- Slowly bleed vacuum lines before disconnecting

Example of an oil-based vacuum pump

