

Laboratory Standard Operating Procedure: Degassing Liquids with a Vacuum Chamber

Lab Manager: Trevor Marks

Building/Room: 503 / 2226

Department: Mechanical Engineering

Date: Revised 2015

1 Description

This SOP is designed to cover the degassing of liquids using a vacuum chamber.

2 Potential Hazards

Evacuated glass vessels carry with them with risk of implosion, creating a shower of fragments and spattering of chemicals.

3 Procedure

- The supplied bell jar can be used with the building supplied vacuum (approximately 20" Hg) or, with permission of the lab manager, a vacuum pump. **Do not use with hazardous materials, corrosive vapors, or solvents.**
- Before beginning, check the chamber for cracked glassware, loose joints, or strain points that can lead to leaks or implosion. Do not use the chamber if any flaws are observed, notify the lab manager immediately.
- Make sure the hose line is properly connected between the bell jar lid and vacuum port (either house vacuum or vacuum pump). If using a vacuum pump check the pump oil level.
- Ensure the lid is centered and placed fully on the bottom portion of the chamber.. A thin layer of vacuum grease may be placed around the mating flanges of the bell jar.
- Be sure to use a property sized container to hold the liquid. Many liquids expand 3–4 times their size during degassing.
- To evacuate the chamber turn the knob on the vacuum port (house vacuum), or if using a vacuum pump, follow instructions in the pump's user manual.
- The liquid should begin to degas.

Restoring the chamber to atmospheric pressure:

- Close the vacuum port valve, or if using a vacuum pump, follow the pump's instructions to turn off the pump.
- Disconnect the hose from the vacuum port or pump.

4 Waste Disposal

Avoid excessive waste generation.

Dispose of waste per EH&S standards.

5 Engineering/Ventilation Controls

Not Applicable.

6 Required Personal Protective Equipment

The following equipment is required to be used:

- Gloves are required. Use appropriate gloves for handling the liquid.
- Eye protection
- Pants and closed-toed, impervious footwear
- Lab coat (optional)

7 Approvals Required

Permission of the lab manager.

8 Spill and Accident Procedure

Clean up any spills and dispose of waste as per EH&S standards.

Notify EH&S and the lab manager of any spill larger than 5 gallons.

Notify lab manager of any damaged or broken equipment.

Notify lab manager if any injuries are sustained.

9 TRAINING DOCUMENTATION

Name (Printed)	Signature	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____