

<b>Name of SOP</b>	VAC 101965 OMNI-LAB Glovebox System
Effective Date	Nov 22, 2013
Author	Ray LaPierre
Reason for SOP	<p>Check All that Apply:</p> <p><input type="checkbox"/> Procedure/Process could cause critical injury.</p> <p><input checked="" type="checkbox"/> Procedure/Process could cause occupational illness.</p> <p><input type="checkbox"/> Procedure/Process could cause environmental impairment.<sup>1</sup></p> <p><input type="checkbox"/> Procedure/Process could damage University property</p> <p><input type="checkbox"/> Not critical, but requesting a review</p> <p>Provide Details: Due to chemical handling in glovebox</p>
Approved by (supervisor)	Ray LaPierre
Date reviewed by JHSC	Feb 12, 2014
Date Last Reviewed	Feb 12, 2014

## Definitions

Terms	N/A
Acronyms	RMM – Risk Management Manual JHSC - Joint Health and Safety Committee EOHSS - Environmental and Occupational Health Support Services EPA – Environmental Protection Act OHSa – Occupational Health and Safety Act

## Requirements

<b>Applicable OHSa regulations and / or codes of practice.</b> 1. RMM #101 - McMaster University Risk Management System
<b>Training and Competency</b> 1. Training to be provided by supervisor or authorized delegate; read SOP and MSDS sheets.

## Description of the Task

<b>Location and time of work</b>	<b>JHE 322</b>
<b>Individuals involved</b>	members of Ray LaPierre research group
<b>Equipment and supplies required</b>	VAC 101965 OMNI-LAB Glove Box System
<b>Personal protective equipment required</b>	None

## Sequential Steps to Complete the Work Safely

<p>Unauthorized personnel should not use the equipment without proper training. Training is provided by the lab supervisor, Ray LaPierre, or designate.</p> <p>Consult the <b>Omni-Lab system user guide</b> before using the glove-box. The glovebox manual is</p>
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<sup>1</sup> i.e. Procedure/Process involves potentially hazardous materials.  
Ref: RMM Program #301 – Standard Operating Procedures  
SOP template Document last revised: Apr. 14, 2010

available in JHE 322, next to the glovebox.

This standard operating procedure is intended to provide supplementary information to the Omni-Lab system user guide. This standard operating procedure is not a replacement for the Omni-Lab system user guide.

#### Creating an Inert Atmosphere (Glovebox Purging)

Follow this procedure if the glovebox atmosphere has been compromised due to a glovebox leak; e.g., if the gloves tear.

Open the refill valve to the loading chamber half way. Also open the loading chamber hatch. This causes the valve to open and to continually push the inert gas in and push out the existing gas. The pressure on the inert gas can be raised from 20 psi to 40-50 psi to speed the process. Never let the pressure in the glove-box drop below 2-inches positive or raise above 5-inches positive. Approximately 8 glove box volumes of gas should be used for a good purge. Close the loading chamber hatch and the loading chamber refill valve. Set valve to normal operation pressure and return inert gas regulator to 20 psi. After purging Oxygen content should be ~200 ppm. **Read the Omni-Lab system user guide for further information.**

#### Sample Handling

Follow this procedure when passing specimens and instruments into or out of the glove-box.

Make sure that the refill valve and the chamber hatch on the inside of the glove-box are closed. Open the chamber hatch on the outside of the glove-box. Load specimens and instruments. Make sure that all bottles are open and any part of anything going in is not capable of holding air. If not the glove-box could be contaminated. Close outer hatch. Open evacuate valve and wait for it to vacuum to as far as it can (usually takes a few minutes). Open refill valve partially- watch the pressure on the gauge and make sure the pressure doesn't drop too low- and refill chamber until pressure in chamber is 10 inches. Open evacuate valve again and repeat previous steps 2 or 3 times to ensure that there is no residual air. After repeating, open refill valve slowly until chamber is same pressure as glove-box. Open chamber from glove-box end. **Read the Omni-Lab system user guide for further information.**

#### Pedatrol Operation

Using the foot pedal:

- Raise pressure by pressing on right side of pedal.
- Lower pressure by pressing on left side of pedal.

#### Dri-Train Operation

Make sure the dri-train and blower are plugged in.  
Open the circulation valves.

**Regenerate the purifier once a year. Follow the regeneration procedure in the Omni-Lab system user guide.**

#### Replacing the Purifier Charge

**Replace the purifier charge once per year.** Follow the procedure in the Omni-Lab system user guide.

## **Contingency Plan and Reporting**

<p><b>Accident / injury response</b></p> <p>If a spill occurs inside the glovebox, use the chemical spill mats available inside the glovebox to absorb the spill. Dispose of the mats using the proper waste management procedure:  <a href="http://www.mcmaster.ca/CEDTsafety/WasteManagement.htm">http://www.mcmaster.ca/CEDTsafety/WasteManagement.htm</a></p> <p><b>In the Case of Serious/Critical Injuries</b></p> <p>A serious injury with the glovebox is unlikely. However, in case of a serious or critical injury, dial 88 immediately. Complete an incident report: <a href="http://www.mcmaster.ca/CEDTsafety/IncidentReports.htm">http://www.mcmaster.ca/CEDTsafety/IncidentReports.htm</a></p>
<p><b>Equipment Malfunction</b></p> <p>N/A</p>
<p><b>Equipment shutdowns</b></p> <p>N/A</p>

## Environmental Responsibility

<p><b>Waste disposal procedures</b></p> <p>If a spill occurs inside the glovebox, use the chemical spill mats available inside the glovebox to absorb the spill. Dispose of the mats using the proper waste management procedure:  <a href="http://www.mcmaster.ca/CEDTsafety/WasteManagement.htm">http://www.mcmaster.ca/CEDTsafety/WasteManagement.htm</a></p>
<p><b>Building air quality</b></p> <p>N/A</p>

## References

<ol style="list-style-type: none"> <li>1. OHSA/ regulations</li> <li>2. EPA and Municipal environmental regulations</li> <li>3. RMM #100 McMaster University Environmental Health and Safety Policy</li> <li>4. Material Safety Data Sheets (MSDS)</li> <li>5. RMM #300 Safety Orientation and Training Program</li> <li>6. RMM #301 Standard Operating Procedures</li> <li>7. <b>Standard Operating Procedure for VAC 101965 OMNI-LAB Glove Box System</b></li> </ol>
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## Distribution

<ol style="list-style-type: none"> <li>1. Faculty of Engineering JHSC (for review)</li> </ol>
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## Legal Disclaimer

The Standard Operating Procedures on this website are provided for the use of the McMaster University employee and/or student community. The procedures outlined in the above referenced document are intended to reflect best practices in this field; as such they are provided to the community for guidance and/or direction. However, these recommendations should not be construed as legal advice.