

PROGRAM Standard Operating Procedure – Laboratory Services	
Title: MIC61100 – Microbiology Laboratory Equipment	Policy Number:
Program Name: Laboratory Services	
Applicable Domain: Lab, DI and Pharmacy Services	
Additional Domain(s): NA	
Effective Date:	Next Review Date
Issuing Authority: Director, Laboratory and Diagnostic Imaging Services	Date Approved:
Accreditation Canada Applicable Standard: NA	

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**GUIDING PRINCIPLE:**

The maintenance of laboratory equipment ensures it is kept in good working condition. All microbiology staff are responsible for these duties.

**PURPOSE/RATIONALE:**

This standard operating procedure describes the maintenance performed on the equipment in the microbiology laboratory.

**SCOPE/APPLICABILITY:**

This procedure applies to Medical Laboratory Technologists (MLTs) maintaining equipment in the microbiology laboratory.

**REAGENTS and/or MEDIA:**

- Accel TB wipes
- Sterile water

**SUPPLIES:**

- Gauze
- FYRITE GAS analyzer
- Lens paper
- Lens cleaner
- Paper towel
- Glass cleaner
- Vacuum
- Plastic scraper
- Small broom

**EQUIPMENT**

- O<sub>2</sub> incubator
- CO<sub>2</sub> incubator
- Microbiology refrigerators
- Microbiology ultra-low freezer
- Biological safety cabinet
- Microbiology microscope

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Step	Action
<b>O<sub>2</sub> Incubator Maintenance</b>	
<b>1</b>	<u>Daily Maintenance:</u> <ul style="list-style-type: none"> <li>Record the digital reading temperature and internal thermometer temperature of the incubator on QUA40491.3</li> </ul>
<b>2</b>	<u>Weekly:</u> <ul style="list-style-type: none"> <li>Empty the humidity pan and wipe with Accel TB wipes. Fill with tap water and replace in the incubator and record date and initials on QUA40491.3</li> <li>Result as complete in TQC</li> </ul>
<b>3</b>	<u>Monthly:</u> <ul style="list-style-type: none"> <li>Inspect the grey door gasket for any cracks or tears and record date and initials on QUA40491.3</li> <li>Result as complete in TQC</li> </ul>
<b>4</b>	<u>Bi-annually:</u> <ul style="list-style-type: none"> <li>Clean interior and exterior of the incubator: Wipe with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue and record date and initials on QUA40491.3</li> <li>Result as complete in TQC</li> </ul>

Step	Action
<b>CO<sub>2</sub> Incubator Maintenance</b>	
<b>1</b>	<u>Daily:</u> <ul style="list-style-type: none"> <li>Record the digital reading temperature, internal thermometer temperature and CO<sub>2</sub> level of the incubator on QUA40491.7 and QUA40491.8</li> <li>Check the CO<sub>2</sub> tanks gauze to ensure adequate amount of CO<sub>2</sub> is present to last the rest of the day or weekend and record on QUA40491.7 and QUA40491.8 with a ✓</li> </ul>
<b>2</b>	<u>Weekly:</u> <ul style="list-style-type: none"> <li>Empty the humidity pan and wipe with Accel TB wipes. Fill with tap water and replace in the incubator and record date and initials on QUA40491.7 and QUA40491.8</li> <li>Result as complete in TQC</li> </ul>
<b>3</b>	<u>Monthly:</u> <ul style="list-style-type: none"> <li>Inspect the grey door gasket for any cracks or tears</li> <li>Perform the FYRITE CO<sub>2</sub> measurement. Refer to MIC61110-FYRITE Gas Analysis Job Aid and record CO<sub>2</sub> measurement, date and initials on QUA40491.7 and QUA40491.8</li> <li>Result as complete in TQC</li> </ul>
<b>4</b>	<u>Bi-annually:</u> <ul style="list-style-type: none"> <li>Clean interior and exterior of the incubator: Wipe with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue and record date and initials on QUA40491.7 and 40491.8</li> <li>Result as complete in TQC</li> </ul>

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Step	Action
<b>Refrigerator Maintenance</b>	
<b>1</b>	<u>Daily:</u> <ul style="list-style-type: none"> <li>Record the digital reading temperature and the internal thermometer temperature of the refrigerator and record on QUA40491.1, 40491.2, 40491.10 and 40491.12</li> </ul>
<b>2</b>	<u>Monthly:</u> <ul style="list-style-type: none"> <li>Inspect the seal on the door gasket for any cracks or tears and record date and initials on QUA40491.1, 40491.2, 40491.10 and 40491.12</li> <li>Result as completed in TQC</li> </ul>
<b>3</b>	<u>Bi-annually:</u> <ul style="list-style-type: none"> <li>Clean interior and exterior of the refrigerator: Wipe with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue and record date and initials on QUA40491.1, 40491.2, 40491.10 and 40491.12</li> <li>Result as complete in TQC</li> </ul>

Step	Action
<b>Ultra-low Freezer Maintenance</b>	
<b>1</b>	<u>Daily:</u> <ul style="list-style-type: none"> <li>Record the digital reading temperature and the internal thermometer temperature of the ultra-low freezer and record on QUA40491.9.</li> </ul>
<b>2</b>	<u>Monthly:</u> <ul style="list-style-type: none"> <li>Inspect the seal on the door gasket for any cracks or tears and record date and initials on QUA40491.9</li> <li>Clean the condenser filter: Pull the grill door open and remove the filter. Rinse with tap water and blot dry with towel or paper towels. Replace the filter and record date and initials on QUA40491.9</li> <li>Remove ice/frost build up: Using the white scraper, remove any ice or frost build up around the gasket and inner doors. Remove any "snow" with the small broom and dustpan and discard in sink. Silence alarm and put note on freezer that temperature is out of range due to maintenance. Record date and initials on QUA40491.9</li> <li>Result as completed in TQC</li> </ul>
<b>3</b>	<u>Bi-annually:</u> <ul style="list-style-type: none"> <li>Clean the condenser: Pull the grill door open and vacuum the condenser and record date and initials on QUA40491.9</li> <li>Clean exterior of the freezer: Wipe with Accel TB wipes. Rinse with gauze soaked with sterile water to remove any residue and record date and initials on QUA40491.9</li> <li>Result as complete in TQC</li> </ul>

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Step	Action
<b>Biological Safety Cabinet (BSC) Maintenance</b>	
<b>1</b>	<u>Daily:</u> <ul style="list-style-type: none"> <li>Check air grilles to ensure they are unobstructed</li> <li>Wipe the interior surface with Accel TB wipes before use</li> <li>Wipe the interior surface with Accel TB wipes after use</li> <li>Lower the sash at the end of the evening</li> <li>Record on LSM30210.1 and LSM30210.</li> </ul>
<b>2</b>	<u>Weekly:</u> <ul style="list-style-type: none"> <li>Using an appropriate glass cleaner, clean the sash</li> <li>Operate the cabinet blower and record the percent filter life remaining on LSM30210.1 and LSM30210.2</li> <li>Record date and initials on LSM30210.1 and LSM30210.2</li> <li>Result as complete in TQC</li> </ul>
<b>3</b>	<u>Bi-annually:</u> <ul style="list-style-type: none"> <li>Using Accel TB wipes, clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust</li> <li>Disinfect and lift the work surface. Clean the lower plenum with Accel TB wipes</li> <li>Check the towel catch and remove any retained materials</li> <li>Record date and initials on LSM30210.1 and LSM30210.2</li> <li>Result as complete in TQC</li> </ul>
<b>4</b>	<u>Annually:</u> <ul style="list-style-type: none"> <li>BSCs are inspected, tested and certified annually by a qualified technician</li> </ul>

Step	Action
<b>Microscope Maintenance</b>	
<b>1</b>	<u>Daily:</u> <ul style="list-style-type: none"> <li>Perform Kohler illumination. Refer to MIC61120-Kohler Illumination Job Aid</li> <li>When you are finished viewing the slide, move the objective turret to bring the 10X objective into position over the viewing area and remove the slide from the stage. Do not go back to the 40X objective to prevent it from coming into contact with immersion oil. If this does occur, immediately remove any immersion oil as the 40X objective is not sealed against oil penetration, and any immersion oil left in contact will penetrate the lens and be deposited on the inside of the lower lens</li> <li>Do not allow the 100X oil objective lens to sit above the condenser when changing slides as oil will drip off the objective</li> <li>The microscope should be cleaned after each use when immersion oil is used. Wipe off the immersion oil with a gauze pad and then repeat with lens paper moistened with lens cleaner</li> <li>To protect the microscope against dust, cover the microscope with the dust cover at the end of the day</li> </ul>

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<b>2</b>	<u>As needed:</u> <ul style="list-style-type: none"><li>To change the fuse, refer to Leica DM 2000 operating manual for instructions</li><li>To change the bulb, refer to Leica DM 2000 operating manual for instructions</li></ul>
<b>3</b>	<u>Annually:</u> <ul style="list-style-type: none"><li>Microscopes are inspected, tested and certified annually by a qualified technician</li></ul>

**NOTE:** Notify the Technical Supervisor of any issues with equipment

**CROSS-REFERENCES:**

- MIC61110-FYRITE Gas Analysis Job Aid
- MIC61120-Kohler Illumination Job Aid

**REFERENCES:**

- Thermo Scientific Heratherm Microbiology Incubators. Model 3110, 2014
- LABCONCO. Biological Safety Cabinet Manual, 2018
- Thermo Scientific Incubator Manual. Model 51029321, June 12, 2014
- Thermo Scientific Refrigerator Manual. Model TSG5055A, April 2018
- Thermo Scientific Refrigerator Manual. Model FRGL404, 2010
- Thermo Scientific Refrigerator Manual. Model TSX 2305, September 2016
- Thermo Scientific Refrigerator Manual. Model TSX 4505, September 2016
- Thermo Scientific Ultra-Low Freezer Manual. Model FDE4008FD, March 2019
- Leica LED Operating Manual. Model DM1000 Leica DM1000, June 2010
- BACHARACH Manual. FYRITE Gas Analyzer CO2 Indicators, October 2015

**APPROVAL:**

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Date

**REVISION HISTORY:**

REVISION	DATE	Description of Change	REQUESTED BY
1.0	20 Sep 17	Initial Release	L. Steven
2.0	06 Oct 19	Procedure reviewed	L. Steven
3.0	05 Jul 21	Procedure reviewed and added to NTHSSA policy template	L. Steven
4.0	03 Jul 23	Procedure reviewed	L. Steven
5.0	02 Jun 25	Procedure reviewed	L. Steven

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