Micro to Nano
Innovative Microscopy Supplies

Technical Support Bulletin

Micro-Tec Polycarbonate Vacuum Desiccators

Products #13-004150 and 13-004250

Description

The Micro-Tec polycarbonate vacuum desiccators have been designed to store sample or parts in a dust-free and clean environment. Features are:

- Clear and robust polycarbonate base module (7) and top module (8) with soft silicon rubber seal (3)
- Sample storage plate (5) in base with space for desiccant (6) underneath
- Pumping valve in base module (4), includes hose connection for optional vacuum pump
- Venting valve in top module (2) for venting, includes hose connection for inert gas source
- Integrated vacuum gauge (1) in top module to indicate vacuum level
- Internal gas distribution hose (4)

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An optional vacuum pump is needed for evacuating the desiccator. We strongly suggest to use a dry pumping system such as a diaphragm pump or a scroll pump. If no vacuum pump is used, keep both valves closed.

There are two different sizes:
1 – Micro-Tec PD150 with an inside diameter of 150mm
2 – Micro-Tec PD250 with an inside diameter of 250mm

Installation:

- Unpack the parts and remove all packaging materials. Discard the packaging material in a safe way.
- Place base module on a smooth and level surface
- Place the white sample storage plate in the base of the base module
- Clean the orange silicon rubber O-ring and remove any lint
- Clean the sealing surface of the top and base modules
- Install the orange silicone rubber O-ring on the rim of the base module
- Place top module on the O-ring
- If a vacuum pump is used, install hose in the valve in the base module and connect to pump
- If a dry gas source is used, install hose in the valve on the top module.

Operation with optional vacuum pump

Loading sample and evacuate

The status of the desiccator is not under vacuum- check integrated vacuum gauge

- Remove top module
- Make sure samples are dry and non-poreus
- Place sample(s) inside on the sample storage plate
- Check sealing surfaces and clean if needed
- Check O-ring and clean if needed – reinstall O-ring
- Place top module on the base module and ensure seal by pressing down the top module
- Make sure the venting valve on the top module is firmly closed
- Open base module valve
- Switch on the vacuum pump and evacuate the polycarbonate desiccator
- Monitor vacuum level on the integrated vacuum gauge
- When maximum attainable vacuum has been reached close valve in the base module firmly
- Switch off pump – if a rotary pump is used it might be needed to disconnect to avoid oil suck-back
- The samples are now stored under vacuum
- If samples are poreus and/or wet the vacuum level will quickly deteriorate and re-evacuating is needed
- Close gas inlet valve
- Close gas outlet valve

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- The samples are now stored under inert gas

Removing sample

The status of the desiccator is under vacuum – check integrated vacuum gauge

- If a dry gas source is connected make sure that the overpressure is in the range of 0.1 bar
- Slowly open venting valve on the top module
- The vacuum level should decrease until the desiccator is fuly evacuated
- Hold top module until full venting and remove from the base module
- Take sample(s) out
- Check O-ring, clean if needed and reinstall on the rim of the base module
- Place top module on the O-ring and insure seal
- Close venting valve on the top module
- Evacuate by switching on the vacuum pump and opening the valve in the base module
- See further above for vacuum procedure.

Maintenance

The Micro-Tec polycarbonate desiccator requires little maintenance:

- Keep the sealing O-ring clean and dust free.
- Do not allow dust or debris to enter the valves
- Keep the sealing surfaces of the top and base module clean
- If needed, apply a small amount of silicon grease to the silicone rubber O-ring
- The polycarbonate desiccator can be cleaned with luke warm water and detergent. Isopropyl alcohol can also be used if a solvent is needed.

Warning

Do not use any chemicals which are not compatible with polycarbonate! Consult the chemical compatibility of polycarbonate before using any chemicals.

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