

Chemical Resistance of CentriVap[®] Components

The CentriVap Centrifugal Concentrator and Cold Trap are designed to be chemical resistant to most compounds that are commonly used in concentration processes. However, by necessity, the CentriVap is comprised of a number of different materials, some of which may be attacked and degraded by certain chemicals. The degree of degradation is dependent on the concentration and duration of exposure. Some of the major components of the CentriVap that are susceptible to degradation are as follows:

C - Moderate degradation; Limited use

D - Severe degradation; Infrequent use recommended; Immediate thorough cleaning required

Component	Material	Acids							Bases	Solvents														
		Acetic Acid 20%	Boric Acid	Formic Acid	Hydrobromic Acid 20%	Hydrochloric Acid 20%	Nitric Acid 20%	Sulfuric Acid 10%		Trifluoroacetic Acid (TFA)	Ammonium Hydroxide	Acetone	Acetonitrile	Chloroform	Dimethyl Formamide	Dimethyl Sulfoxide (DMSO)	Ethanol	Ethyl Acetate	Hexanes	Isopropanol	Methanol	Methylene Chloride	Methyl t-Butyl Ether (MTBE)	Toluene
Rotor Hub	Acetal (Delrin)	C			C	C	D	D	D	C				D										C
Chamber & Cold Trap Lid	Acrylic							C	D	C	D	D	D		C	D		D	C	D	D			D
Chamber	Epoxy-Coated Aluminum			C					D			C	D											
Tubing	PVC	D		C			D	D			D	D	D	C	D	D					D		D	D
Lid Gasket	EPDM											D				D					C			D
Cold Trap Gasket	Neoprene		D		D	C	D		D						D						D	C		D
Rotor	Anodized Aluminum					D	D																	
Rotor Shaft & Cold Trap	Stainless Steel				D	D		D																
Bearings	High Carbon Steel	D	D	D	D	D	D	D		D														

- If a rotary vane vacuum pump is used, most compounds used in the CentriVap will degrade the oil if allowed to enter the pump. Frequent oil changes are required.
- Diaphragm vacuum pumps sold by Labconco have wetted parts either made from Teflon* or protected by Teflon coatings and are suitable for nearly all procedures.

When using compounds in the CentriVap that are hostile to the materials of construction, it is imperative that the equipment is appropriately maintained.

- After each run, clean up all residues, spills and materials that might have splashed in the chamber using agents suitable for the substance involved.
- Drain the cold trap immediately after the collected ice is melted to prevent corrosive liquids from residing in the trap. Flush out the trap with water after draining.

DO NOT chip ice from the cold trap walls as damage may occur.

DO NOT start a rotary vane pump when the cold trap contains liquid of any amount. The liquid will be drawn into the pump and will contaminate the vacuum pump oil.

- If the compounds used attack acrylic, consider using the optional Glass Lid 7456600. Contact Labconco for ordering information.
- If the stainless steel cold trap chamber is attacked by the compounds in use, consider using the optional Glass Trap 7873400. Contact Labconco for ordering information.
- When using a rotary vane vacuum pump, the oil in the pump should be checked often. It must be changed if it is cloudy, shows

particles or is discolored. The useful life of vacuum pump oil can be extended if the vacuum pump is operated for an extended period of time after the CentriVap run is over. This allows contaminants to be purged from the hot oil. This must be done with the inlet to the pump blocked off to prevent air from free flowing through the pump. If the pump is operated at an elevated vacuum level, oil will be expelled from the pump and damage will occur.

- If optional secondary traps are used, monitor their condition often and replace them when they are saturated. A new Acid Trap Insert 7814800 is off-white and changes color to purple when saturated. A new Moisture Trap Insert 7814900 is blue and changes color to pink when it is saturated. The Solvent Trap Insert 7815200 molecular sieve does not change color when saturated so extra care must be taken to determine when a replacement cartridge should be installed.

With prudent maintenance the CentriVap System will provide years of service. Warranty on the affected parts will be void if maintenance has been obviously neglected. If you have questions about using specific compounds in the CentriVap,

*Teflon[®] is a registered trademark of E. I. DuPont.

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