

Technical Bulletin VAC 103991

Solvent Purification Assembly and Accessories



Description: Vacuum Atmospheres Company's patented solvent purifier removes moisture in organic solvents. The moisture is removed by circulating the solvent through a purification cartridge and a stainless steel reservoir. VAC's solvent purifier allows for quick and easy delivery of high purity anhydrous solvents. Sample sizes can range from milliliters to liters. The compact design (installs into 33" high x 10" wide x 20" deep space) allows the solvent purifier to mount inside a fume hood, on a bench top, inside a glovebox, or under a glovebox. The purifier is sized to be filled/refilled from a standard 4 liter solvent bottle. The purifier eliminates the need to store large quantities of unstable solvents and reduces potential waste of large amounts of solvent due to accumulation of impurities, such as peroxides. There are no fire proof storage cabinets or large solvent kegs in this design. VAC's design also eliminates the possibility of pumping solvent through the vacuum pump. Drip free, quick release connections allow for easy maintenance of the purification cartridge. The user can easily replace the media using a VAC recharge kit.

Principle of Operation: The solvent purifier uses a patented recirculation principle to purify solvents to a moisture free condition. The basic purifier elements include a solvent resistant circulation pump, a purification cartridge and a storage tank.

Performance: The solvent purifier will remove moisture to less than 0.6-PPM. A KF titration test proves a 0.56-PPM performance with THF. See performance data, page 3.

Purification Time: The purifier will condition the solvent in 2 to 4 hours. With this fast recovery time, the purifier easily provides more than 8 liters of anhydrous solvent per day. See performance data, page 3.

Purification Cartridge Life: The purification cartridge will remove approximately 48 grams of H₂O. (> 250 liters of ACS grade solvent @ 200-PPM).

Power: 100-240 VAC, 50-60 Hz.

Fill Capacity: The purifier is optimized to be filled/refilled with a 4 liter solvent bottle.

Oxygen Removal: Inert gas sparging removes the initial oxygen in the unconditioned solvent. Contact factory about non sparging oxygen removal.

Sample Size: Take from a small milliliter sample to a large 4 liter sample. The circulation conditions and keeps all the solvent in an anhydrous condition.

Sampling: The purifier is provided with a 24/40 universal inlet adapter for application to a variety of flasks and sampling systems. Each user can easily customize the connection for each particular application or discuss other options with VAC.

Weight: 45 lbs.

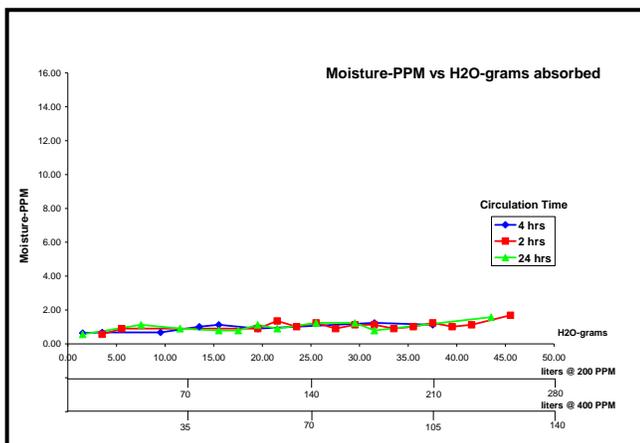
VAC 103991

Solvent Purifier: Stainless Steel assembly with storage tank, control valves, filters, user connections. This assembly is 27.3" high x 9.8" wide x 14.8" deep, not including the cartridge or allowance for gas or vacuum piping. The tank holds over 5 liters of solvent although the purifier is designed to be filled/refilled with a 4 liter solvent bottle. A solvent resistant circulation pump is included. A universal power adapter powers this pump.

Cartridge: The purification cartridge is a 2.5 liter stainless steel vessel that holds the purification media that removes the moisture from the organic solvents. The cartridge has quick release fittings to allow easy user installation of the cartridge. The cartridge media is preconditioned by VAC for peak performance.

Vacuum Pump Assembly: Includes solvent resistant PTFE vacuum pump, distribution manifold to supply 7 purifiers and 50' of PTFE tubing and fittings for connection.

Gas Regulator Kit: 0-10 psig gas regulator and distribution manifold for up to 7 purifiers. Mounted on a stainless steel panel that closes the open end of the right most purifier.



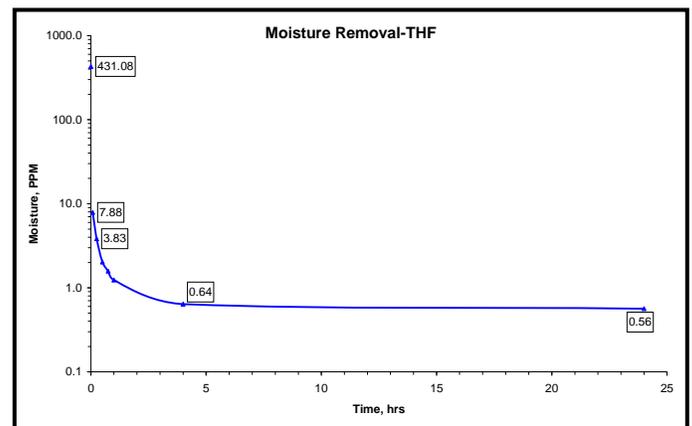
VACUUM ATMOSPHERES COMPANY

Installation: The modular design allows the use of a single purifier for one solvent or the expansion into a seven solvent purifier system by stacking side by side. The compact size allows installation into fume hood or on a bench top.



Utilities Required: The unit requires high-purity inert gas and a solvent resistant vacuum source for operation. See Options on page 3.

Purification Media Replacement/ Cartridge Recharge: When saturated, the purification media is easily replaced with fresh **pre-activated** media supplied by VAC. Remove the cartridge using the snap-on, quick release connections. Safely dispose of the old media. Pour the new media into the cartridge, seal it and then re-install on purifier assembly. **No on-site activation required.** No heating mantles or regeneration gas required.



Options

In-Glovebox Solvent Dispenser: This dispenser provides the most anhydrous solvent for researchers by eliminating any exposure of the solvent to moisture.



In Glovebox Dispenser

The VAC dispenser design also provides circulation of the solvent into the glovebox to keep the solvent fully conditioned.

Solvent Adapter: The VAC module fill adapter allows users to replenish the VAC built in reservoir from industry standard large volume reservoirs.



In many jurisdictions container designs eliminate the need for flammable safety storage cabinets.



Vacuum Pump Kit



Gas Regulator Kit



Purification Cartridge

Part Numbers and Available Solvent Cartridges

Part Number	Description
VAC 103991	Solvent Purifier Assembly
VAC 104423	Regulator Kit, 10 PSI
VAC 104424	Cartridge, Pentane, CAS 109-66-0
VAC 104425	Cartridge, Hexane CAS 110-54-3
VAC 104426	Cartridge, Methanol CAS 67-56-1
VAC 104427	Cartridge, Tetrahydrofuran, THF, CAS 109-99-9
VAC 104428	Cartridge, Methyl tert-butyl ether (MTBE), CAS 1634-04-4
VAC 104429	Cartridge, Diethyl Ether, Ethyl Ether, Ether, CAS 60-29-7
VAC 104430	Cartridge, Benzotrifluoride, CAS 98-08-8
VAC 104431	Cartridge, Ethylene Glycol Dimethyl Ether, DME, CAS 110-71-4
VAC 104432	Cartridge, Toluene, CAS 108-88-3
VAC 104433	Cartridge, Triethylamine, CAS 121-44-8
VAC 104434	Cartridge, Acetone, CAS 67-64-1
VAC 104435	Cartridge, Acetonitrile, CAS 75-05-8
VAC 104436	Cartridge, Benzene, CAS 71-43-2
VAC 104437	Cartridge, Diisopropylethylamine, CAS 7087-68-5
VAC 104438	Cartridge, Dimethylformamide, DMF, CAS 68-12-2
VAC 104439	Cartridge, Dimethyl Sulfoxide, DMSO, CAS 67-68-5
VAC 104440	Cartridge, Chloroform, CAS 67-66-3
VAC 104441	Cartridge, Dichloromethane, CAS 75-09-2
VAC 104442	Cartridge, Dioxane, CAS 123-91-1
VAC 104443	Cartridge, Pyridine, CAS 110-86-1
VAC 104444	Cartridge, Ethanol, CAS 64-17-5
VAC 104446	Cartridge, Dodecane, CAS 112-40-3
VAC 104448	Cartridge, Diethylformamide, CAS 617-84-5
VAC 104450	Cartridge, Butanol, CAS 71-36-3
VAC 104452	Cartridge, Cyclohexane, CAS 11-82-7
VAC 104454	Cartridge, Chlorobenzene, CAS 108-90-7
VAC 104456	Cartridge, Propylene Carbonate, CAS 108-32-7
VAC 104458	Cartridge, Dimethylacetamide (DMAC), CAS 127-19-5
VAC 104460	Cartridge, Hexamethyldisiloxane, CAS 107-46-0
VAC 107086	Vacuum Pump Kit - Single Phase, with North American power plug
VAC 107087	Vacuum Pump Kit - Single Phase, with Continental European power plug
VAC 107088	Vacuum Pump Kit - Single Phase, Japan power plug

SHIPPING

Domestic Shipping Weight: 50 lbs. (single)
 Export Shipping Weight: 130 lbs. (single).packed in wooden crate



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