

Diffusion Pump Fluids

Varian offers a wide range of diffusion pump fluid types and containers sizes. We have just the right fluid type and container size to meet the requirements of your particular application. Varian now offers exact pump charges for many of our diffusion pumps, including the VHS-6, VHS-10, HS-16, HS-20, HS-32, and

NHS-35. Exact pump charges enables you to purchase just enough fluid to fill your diffusion pump, thus eliminating costly waste. This eliminates problems associated with the disposal of diffusion pump fluid and eliminates the guess work associated with filling the pump.

	NEOVAC SY	DC-702	DC-704	DC-705	SANTOVAC 5*
Chemical description	Synthetic Hydrocarbon	Silicone	Single-Component Silicone	High-Purity Silicone	Mixed 5-Ring Polyphenyl Ether
Chemical composition	Mono-N Alkyldiphenylether	Mixed Phenylmethyldimethyl Cyclosiloxane	Tetramethyltetraphenyltrisiloxane	Penta phenyltrimethyltrisiloxane	Mixed 5-Ring Polyphenyl Ether
Ultimate pressure Untrapped (torr) Trapped (torr)	Low 10^{-8} Range 1×10^{-11} Range	10^{-6} –	10^{-7} to 10^{-8} range to 10^{-11} range	10^{-9} to 10^{-10} range 10^{-11} range	10^{-10} –
Vapor pressure at 25 °C (torr)	1×10^{-8}	1×10^{-6}	2×10^{-8}	3×10^{-10}	1×10^{-9} at 20 °C
Viscosity (cst) at 25 °C	25 at 40 °C	45	39	175	2400
Average molecular weight	405	–	484	546	446
Boiling temperature (°C) at 0.5 torr	220 at 0.8 torr	180	215	245	275
Flash point	230	193	221	243	288
Ultimate pressure	Very Good	Fair	Very Good	Excellent	Excellent
Thermal stability	Good	Excellent	Excellent	Excellent	Very Good
Oxidation resistance	Good	Excellent	Excellent	Excellent	Very Good
System cleanliness	Very Good	Good	Very Good	Very Good	Excellent
NOTE • Santovac 5 is the only recommended fluid for leak detectors					

NEOVAC SY is a high quality, low cost synthetic organic compound (alkyldiphenylether) that performs as well as DC-704. With its low vapor pressure, it will achieve base pressures in the low 10^{-8} torr range untrapped and will not produce inorganic deposits which can cause electrostatic charge buildup on electrodes of sensitive instruments.

Dow Corning DC-702 is an all-purpose silicone fluid that is capable of achieving pressures of 10^{-7} torr range. With lower boiling points than DC 704 and DC 705, it gives higher throughput for a given power.

Dow Corning DC-704 is a single component silicone fluid that will achieve pressures in the low 10^{-8} torr range untrapped. With its low vapor pressure, it combines very good pumping characteristics with low Backstreaming Rates.

Dow Corning DC-705 is a high-purity, single component silicone fluid designed for ultrahigh vacuum applications. It can achieve pressures in the low 10^{-10} torr range untrapped. The vapor pressure and backstreaming rate of this fluid is so low that the use of traps and baffles is often unnecessary.

Santovac 5 is a five-ring polyphenylether for use in ultrahigh vacuum applications. With ultra low vapor pressure and backstreaming rates, this fluid is very clean and often eliminates the need for traps and baffles. Ultimate pressures in the 10^{-10} torr range can be achieved and will not produce inorganic deposits which can cause electrostatic charge buildup on electrodes of sensitive instruments.

Ordering Information

Description	Diffusion Pump Exact Charge	Part Number	Shipping Weight lbs. (kg)
NEOVAC SY			
1 liter/1,000 cc	VHS-10, VHS-400	K6948301	3.0 (1.4)
1 U.S. gallon (3.8 liters)		K6948305	10.6 (4.8)
5 U.S. gallons (18.9 liters)		K6948315	53.0 (23.9)
Dow Corning DC-702			
500 cc	VHS-6, VHS-250	695472005	3.0 (1.4)
1 U.S. gallon (3.8 liters)		695472008	12.0 (5.4)
5 U.S. gallons (18.9 liters)		695472015	51.0 (23.0)
Dow Corning DC-704			
500 cc	VHS-6, VHS-250	695474005	3.0 (1.4)
1 U.S. gallon (3.8 liters)		695474008	12.0 (5.4)
6.2 U.S. gallons (23.5 liters)		695474015	51.0 (23.0)
Dow Corning DC-705			
500 cc	VHS-6, VHS-250	695475005	3.0 (1.4)
1 U.S. gallon (3.8 liters)		695475008	12.0 (5.4)
Santovac 5			
40 cc		695405001	1.0 (0.5)
65 cc		695405002	2.0 (0.9)
500 cc	VHS-6, VHS-250	695405005	2.5 (1.1)

Diffusion and Mechanical Pump Fluids

Exact diffusion pump fluid charges are now available!

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NHS-35. Exact pump charges enables you to purchase just enough fluid to fill your diffusion pump, thus eliminating costly waste. This eliminates problems associated with the disposal of diffusion pump fluid, and eliminates the guess work associated with filling the pump.

Ordering Information			
Description	Diffusion Pump Exact Charge	Part Number	Shipping Weight lbs. (kg)
NEOVAC SY*			
1 liter/1,000 cc	VHS-10, VHS-400	K6948301	3.0 (1.4)
1 U.S. gallon (3.8 liters)		K6948305	10.6 (4.8)
5 U.S. gallons (18.9 liters)		K6948315	53.0 (23.9)
Dow Corning DC-702*			
500 cc	VHS-6, VHS-250	695472005	3.0 (1.4)
1 U.S. gallon (3.8 liters)		695472008	12.0 (5.4)
5 U.S. gallons (18.9 liters)		695472015	51.0 (23.0)
Dow Corning DC-704*			
500 cc	VHS-6, VHS-250	695474005	3.0 (1.4)
1 U.S. gallon (3.8 liters)		695474008	12.0 (5.4)
5 U.S. gallons (18.9 liters)		695474015	51.0 (23.0)
Dow Corning DC-705*			
500 cc	VHS-6, VHS-250	695475005	3.0 (1.4)
1 liter/1000 cc	VHS-10, VHS-400	695475006	6.0 (2.8)
1 U.S. gallon (3.8 liters)		695475008	12.0 (5.4)
Santovac 5			
40 cc		695405001	1.0 (0.5)
65 cc		695405002	2.0 (0.9)
500 cc	VHS-6, VHS-250	695405005	2.5 (1.1)

* For technical information, refer to the Diffusion Pump Section page 32.

Varian Oil, GP Type Mechanical Pump Fluid

Varian GP Type Fluid is a mechanical pump fluid recommended for use in non-corrosive applications. As a result of molecular distillation, it has low vapor pressure and, therefore, back-streams less than undistilled refinery products.

Ordering Information		
Description	Part Number	Shipping Weight lbs. (kg)
1 liter bottle	K7516301	3.5 (1.6)
1 gallon bottle	K7516302	14.0 (6.4)