

# F14 Santovac® 5 Diffusion Pump Fluid

## Santovac 5 Polyphenyl Ether Vacuum Pump Fluid, Standard Grade

- Ultimate Pressure to 10<sup>-10</sup> Torr.
- Lowest Backstreaming Characteristics
- Excellent Thermal Stability
- High Tolerance to Pressure Bursts

Santovac 5 vacuum diffusion pump fluid operates efficiently, economically and safely in diffusion pumps, in properly designed systems, to produce ultra-high vacuums in the 10<sup>-10</sup> torr range. The wide liquid range, low vapor pressure and unique balance of properties make it an ideal working fluid in diffusion pumps. Santovac 5 is a light colored, slightly viscous liquid at room temperature. Santovac 5 is an isomeric mixture of five-ring polyphenol ethers.



### Low Vapor Pressure

Extremely low vapor pressure results in low ultimate pressures. The vapor pressure of Santovac 5 at 25°C determined by extrapolation of higher temperature data is 4 x 10<sup>-10</sup> torr. This, together with low backstreaming characteristics, means that 10<sup>-10</sup> torr vacuums can be obtained in well designed systems without the use of liquid nitrogen traps.

### Low Backstreaming

Oils have inherently low backstreaming characteristics. Low backstreaming can result in less contamination in chambers and longer term operation for those processes that are sensitive to organic matter. Experience has shown us that polyphenyl ether type fluids like Santovac 5 pump fluid can be used for electronic component manufacture, and for laboratory, analytical instrumental and research applications.

### High Thermal Stability

Santovac 5 offers unusually high thermal and oxidation stability. Isoteniscope tests show that they remain thermally stable at 870°F. Santovac 5 may discolor with use, but this does not affect its operation as a diffusion pump fluid. Oxidation and corrosion tests, as well as field experience, have shown that Santovac 5P has little tendency to increase in viscosity during the standard testing. These results indicate that there is less chance of overheating and thermal degradation.

## Santovac® 5P Ultra

-high purity Santovac 5 for ultra clean MS applications



Now there is a higher grade of Santovac 5 diffusion pump fluid. Santovac 5 has been the fluid of choice for diffusion pumps for many years and now an improved grade of fluid is available. Santovac 5P Ultra has the same properties of Santovac 5 but guarantees minimal amounts of the 3 and 4 ring polyphenyl ethers; less than .02% and .1% respectively. This makes Santovac 5P Ultra the fluid of choice for ultra-clean applications such as mass spectrometry. Santovac 5P Ultra is the standard diffusion pump fluid recommended by Agilent (Agilent #6040-0809). So if you require the best try Santovac 5P Ultra.

An 18.5 ml single charge bottle of Santovac 5P is now available for the Agilent MSD diffusion pumps. Just the right amount required for the BOC Edwards E050/060 diffusion pump used on the MSD's.

► **Tech Tip** Santovac 5P is the highest quality diffusion pump fluid available for scientific instruments.

Part No.	Description	Price each
SV5	Santovac 5, 500cc bottle	
SV100	Santovac 5, 100cc bottle	
SV5P	Santovac 5P Ultra, 500cc bottle	
SV100P	Santovac 5P Ultra, 100cc bottle	
SV185P	Santovac SP Ultra, 18.5 ml bottle	

### Specifications for Santovac 5 and Santovac 5P ultra

Vapor Pressure at 25°C	4 x 10 <sup>-10</sup> torr	Flash Point (COC)	288°C
Boiling Point at 0.5 torr	275°C	Fire Point (COC)	349°C
Specific Gravity, 25/25°C	1.198	Autogenous Ignition Temperature	590°C
Viscosity, cs		Refractive Index, n <sub>D</sub> <sup>25</sup>	1.6306
at 27°C	1000cs	Latent Heat of Vaporization (355-475°C)	49.2 cal/g
at 38°C	363cs	Average Molecular Weight	454
at 99°C	13.1 cs	Specific Heat at 20°C	0.35
at 149°C	4.5 cs	Thermal Conductivity, Watts/m <sup>2</sup> K at 20°C	0.1330
at 204°C	2.1 cs	Density	
at 260°C	1.2 cs	at 20°C	1.204
Pour Point	5°C	at 38°C	1.187