SPECIALTY FLUIDS CO.

Now offering drop-in replacements for DC-702, DC-704, and DC-705

Specialty Fluids **MT-702**, **MT-704**, and **MT-705** Diffusion Pump Fluids are designed for fast pumping of large volumes of gas or vapor in production operations.

They are the ideal drop-in replacements for DC-702, DC-704, and DC-705. Pumps containing the Dow Corning products can be topped off with the corresponding MT Diffusion Pump Fluid. MT fluids are completely miscible with their Dow Corning counterparts.

MT-702 Diffusion Pump Fluid

is a general purpose fluid created for rapid pumping of large quantities of gas. It is **designed to produce vacuums in the range of 10-5 to 10-7 torr.** It is also effective in vapor ejector pumps that attain vacuums of 10-4 to 10-5 torr.

MT-704 Diffusion Pump Fluid

is a single component fluid **designed for high vacuums of 10-6 to 10-8 torr (untrapped) and 10-10 to 10-11 torr (trapped).** It performs well in difficult applications and offers quick pumpdown, even after there has been exposure to air at operating temperatures.

MT-705 Diffusion Pump Fluid

is a colorless to straw colored, single component fluid **designed for ultrahigh vacuum applications in the range of 10-9 to 10-10 torr (untrapped) and 10-11 torr (trapped).** The vapor pressure and backstreaming rate of MT- 705 Diffusion Pump Fluid are so low that use of traps or refrigeration is not required for some ultrahigh and ultraclean vacuum applications.

TYPICAL PROPERTIES

	MT-702 Diffusion Pump Fluid	MT-704 Diffusion Pump Fluid	MT-705 Diffusion Pump Fluid
Ultimate Vacuum, torr, untrapped	10-6	10-7 to 10-8	10-9 to 10-10
trapped	—	to 10-11	10-11
Extrapolated Vapor Pressure, torr, 25°C (77°F)	2 x 10-6	2 x 10-8	3 x 10-10
Specific Gravity at 25°C (77°F)	1.07	1.07	1.09
Viscosity at 25°C (77°F), cSt	44	39	175
Flash Point, open cup, °C (°F)	195 (383)	221 (430)	243 (469)
Boiling Point, at 0.5 torr, °C (°F)	182 (360)	215 (419)	245 (473)
Typical Boiler Temperature, °C (°F)	190 (374)	220 (428)	250 to 270 (482 to 518)
Surface Tension, dynes/cm	30	37.3	36.5
Heat of Vaporization, kcal/g mole	21.7/190°C (374°F)	25.5/200°C (392°F)	28.2/250°C (482°F)
Molecular Description	Mixed phenylmethyl-dimethyl cyclosiloxane	Tetramethyltetra-phenyltrisiloxane	Penta phenyltri-methyltrisiloxane
Molecular Weight	—	484	546

Packaging: Available in 1 kilogram, 3.8 kilogram (one gallon), and 200 kilogram containers.

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BENEFITS

Specialty Fluids Diffusion Pump Fluids offer the following benefits:

- **Shorter conditioning runs:** Single component silicone fluids reach maximum potential in far shorter time than that required for multi-component organic fluids.
- **Faster pumping:** Diffusion pumps using silicone fluids can operate against 50 to 300 percent higher forepressures than those using organic fluids. For higher gas throughput at the high pressure end of the pump's operating range, heat energy can be increased 20 to 30 percent.
- **Minimal backstreaming:** The vapor pressure of single component silicone fluids is so low that the use of traps – or refrigeration of existing traps – is often unnecessary in many applications.
- **Longer service life:** Thermal and chemical stability of silicone fluids allows extremely long runs without deterioration or contamination.
- **Cleaner systems, less maintenance required:** Low vapor pressure of silicone fluids at baffle temperatures results in low migration rates. Jets and boiler surfaces stay clean; silicone fluids exhibit almost no breakdown or decomposition under operational conditions.
- **Faster cycling, reduced downtime, less frequent fluid replacement:** The recovery rate of silicone fluids following exposure to air at operating temperatures is many times faster than that of organic fluids. Time is saved between cycles because the outstanding resistance of silicone fluids to oxidation and hydrolysis allows release of the vacuum without cooling the pump.