XIAMETER® PMX-0210 Silicone Fluid

Heat stabilised polydimethylsiloxane

FEATURES

- Dimethyl silicone fluid with improved oxidation stability
- Minimal viscosity change when subjected to severe heat and shear stresses

APPLICATIONS

- Mechano-fluid devices and controls
- Heat transfer fluid in oil baths

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER® sales representative prior to writing specifications on this product.

Test	Unit	Value
Flash point - open cup	°C	>288
Pour point[1] (ASTM D-97)[1]	°C	-65
Specific gravity at 25°C/15.6	°C	0.960
Viscosity at 25°C	cSt	100
Viscosity-temperature coefficient, 1- (viscosity at 99°C/viscosity at 38°C)		0.60
Coefficient of expansion per °C unit volume/ unit volume		0.00095
Vapour pressure at 204°C	pa	~330
Thermal conductivity at 25°C, W/m.K[2]		0.11
Volatility, % weight loss[3]		<2
Specific heat at 98.8°C	J/kg.K	1423

1. Apparently due to super-cooling, this test method yields pour points lower than the temperatures at which this silicone fluid would freeze if held at such temperature for a longer period.
2. Temperature gradient of 1°C per cm thickness.
3. 35-40 grammes of fluid in a beaker having approximately a 20 cm² bottom area, heated in an air-circulating oven for 48 hours at 204°C.

DESCRIPTION

XIAMETER® PMX-0210 Silicone Fluid has improved oxygen stability. In the presence of oxygen or air, XIAMETER PMX-0210 Silicone Fluid has a greater resistance to high temperatures. This is illustrated in Table 1, which shows that XIAMETER PMX-0210 Silicone Fluid is very resistant to weight loss and gelation. The data in Table 1 was obtained by putting 35 to 40g samples of XIAMETER PMX-0210 Silicone Fluid in 150ml beakers having approximately a 20cm² bottom area and heating them in an air circulating oven.

Table 1: Typical Oxidation Stability

Weight Loss at 249°C	
After 4 hours, %	2.0
After 24 hours, %	4.5
After 48 hours,%	7.0
Weight Loss at 288°C	
After 4 hours, %	3.0
After 24 hours, %	9.4
After 48 hours, %	11.5
Gel Time (hours)	
At 199°C	>19,000
At 288°C	> 5,000

EFFECTS OF SHEAR

XIAMETER PMX-0210 Silicone Fluid provides physical stability and uniform performance in mechanofluid devices and controls. Because uniform flow

characteristics under shear are rigidly controlled, uniform performance from lot to lot is assured. Even after repeated or long service at high shear rates, this fluid has little or no permanent change in viscosity, and the damping effects remain nearly constant. At low shear rates, XIAMETER PMX-0210 Silicone Fluid behaves like a Newtonian fluid, showing little appreciable drop in apparent viscosity with increasing shear. At extreme shear rates above 2000/s, XIAMETER PMX-0210 Silicone Fluid shows some slight deviation from Newtonian behaviour. Any change in the apparent viscosity of XIAMETER PMX-0210 Silicone Fluid due to shear is only temporary. When the shear stress is removed, the viscosity returns to its original value.

EFFECTS OF TEMPERATURE

XIAMETER PMX-0210 Silicone Fluid does not boil or flash at temperature as high as 288°C and withstands long heat exposure without gumming or oxidizing. The maximum service temperature of XIAMETER PMX-0210 Silicone Fluid will vary with each specific application. Suitability of this fluid must be individually qualified by the customer for a given use. XIAMETER PMX-0210 Silicone Fluid remains pourable to -40°C. In addition, this fluid shows very little change in viscosity and flow characteristics over a wide temperature span. The graph (see Figure 1) gives temperature vs viscosity relationships for XIAMETER PMX-0210 Silicone Fluid.

SOLUBILITY

XIAMETER PMX-0210 Silicone Fluid is soluble in most aliphatic hydrocarbon solvents, aromatic solvents and chlorinated solvents, including gasoline, heptane, VM&P naptha,xylene, toluene, methylene chloride, perchloroethylene, ethyl ether and hexyl ether. It is partially soluble in such solvents as 99% isopropyl alcohol, heptadecanol, acetone and insoluble in such liquids as water, ethyl alcohol, isopropyl alcohol, ethylene glycol, propylene glycol and diethylene glycol stearate.

HANDLING PRECAUTIONS

XIAMETER PMX-0210 Silicone Fluid may cause slight temporary discomfort if accidentally rubbed into the eyes. It is essentially non-irritating to the skin.

PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER® WEB SITE AT WWW.XIAMETER.COM.

STORAGE

When stored at or below 60°C in closed but vented containers, this product has a usable life of 60 months from date of production.The most up-to-date shelf life information can be found on the XIAMETER Web site in the Product Detail page under Sales Specification.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

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