

XIAMETER[®] PMX-0210 Silicone Fluid

Heat stabilized 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.

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 areas 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 mechano-fluid 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 Silicone PMX-0210 Fluid shows some slight deviation from Newtonian behavior.

Any change in the apparent viscosity of XIAMETER Silicone PMX-0210 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.

Solubility

XIAMETER PMX-0210 Silicone Fluid is soluble in most aliphatic

hydrocarbon solvents, aromatic solvents and chlorinated solvents, including gasoline, heptane, VM&P naphtha, 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, 70% isopropyl alcohol, ethylene glycol, propylene glycol and diethylene glycol stearate.

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 WEBSITE AT WWW.XIAMETER.COM.

USABLE LIFE AND STORAGE

When stored at or below 60°C in the original unopened containers, this product has a usable life of 60 months from the date of production.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or Pharmaceutical uses.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that *Dow Corning*® and XIAMETER® products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that *Dow Corning* or XIAMETER products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.