Product Information

DOW CORNING

DOW CORNING® 210H Fluid

FEATURES

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

Heat stabilised polydimethylsiloxane

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 Dow Corning sales representative prior to writing specifications on this product.

Parameter	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

DOW CORNING 210H Fluid has improved oxygen stability. In the presence of oxygen or air, DOW CORNING 210H Fluid has a greater resistance to high temperatures. This is illustrated in Table 1, which shows that DOW CORNING 210H Fluid is very resistant to weight loss and gelation.

The data in Table 1 was obtained by putting 35 to 40g samples of DOW CORNING 210H 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

DOW CORNING 210H 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, DOW CORNING 210H Fluid behaves like a Newtonian fluid, showing little appreciable drop in apparent viscosity with increasing shear.

At extreme shear rates above 2000/s, DOW CORNING 210H Fluid shows some slight deviation from Newtonian behaviour.

Any change in the apparent viscosity of DOW CORNING 210H Fluid due to shear is only temporary. When the shear stress is removed, the viscosity returns to its original value.

Effects of temperature

DOW CORNING 210H Fluid does not boil or flash at temperature as high as 288°C and withstands long heat exposure without gumming or oxidising. The maximum service temperature of DOW CORNING 210H Fluid will vary with each specific application.

Suitability of this fluid must be individually qualified by the customer for a given use. DOW CORNING 210H 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 DOW CORNING 210H Fluid.

Solubility

DOW CORNING 210H 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, 70% isopropyl alcohol, ethylene glycol, propylene glycol and diethylene glycol stearate.

HANDLING PRECAUTIONS

DOW CORNING 210H Fluid may cause slight temporary discomfort if accidentally rubbed into the eyes. It is essentially non-irritating to the skin.

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

USABLE LIFE AND 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.

LIMITATIONS

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

HEALTH AND ENVIRONMENTAL INFORMATION

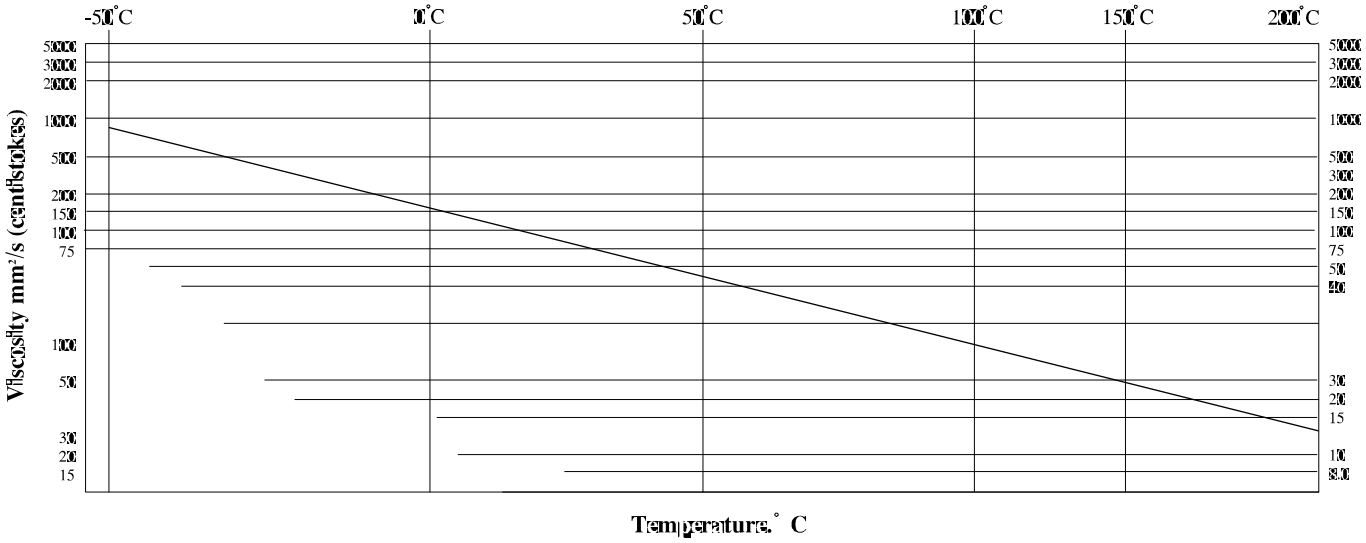
To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

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's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning 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. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

Figure 1: Viscosity-Temperature for DOW CORNING 210H Fluid



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