

DOW CORNING® 550 Fluid

FEATURES

- Low volatility
- Serviceable temperature range of -40°C up to 230°C in open systems, and up to 315°C in closed systems
- Low viscosity of 125mm²/sec at 25°C
- High flash point
- Excellent heat transfer characteristics
- Flat viscosity temperature curve
- Good compressibility
- Good oxidation and gumming resistance

Polyphenylmethyldimethylsiloxane

APPLICATIONS

As a lubricant:

- Base oil for high temperature ball bearing greases.
- Lubricating oil for high temperature instruments.
- Impregnating oil for sintered bronze bearings in small electric motors and mechanisms exposed to high ambient temperatures.

As a heat transfer medium:

- Heat-treating baths for speciality metals.
- Heat exchange fluid for research apparatus and instrument calibration baths.
- Heat transfer oil in capacitors, transformers and various electronics.

As a thermostat fluid:

- Suitable for temperatures from -40°C to 315°C in thermostat systems, which should be kept clean.

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
Color		Colourless
Colour (platinum-cobalt scale)		40
Specific gravity at 25°C/15.6°C		1.068
Viscosity at +99°C	mm ² /s	20
Viscosity at +38°C	mm ² /s	84
Viscosity at +25°C	mm ² /s	125
Viscosity at -29°C	mm ² /s	22,000
Viscosity-temperature Coefficient ¹		0.76
Viscosity stability ²		<5%
Flash point - open cup	°C	315
Freeze point	°C	-50
Refractive index at 25°C		1.4935
Surface tension at 25°C	mN/m	24.5
Volatility 12 months/ 150°C	%	4
Volatility 12 months/ 200°C	%	15
Volatility 4 hours/ 250°C	%	1.2
Volatility 48 hours/ 250°C	%	5.5
Thermal gel time ² - months at 200°C ³		14
Thermal gel time ² - hours at 250°C ³		1200
Thermal gel time ² - hours at 260°C ³		200
Thermal conductivity at 25°C, W/m.K		0.13
Specific heat at 0°C	kJ/kg. K	1.418

TYPICAL PROPERTIES (continued)

Parameter	Unit	Value
Specific heat at 40°C	kJ/kg. K	1.498
Specific heat at 100°C	kJ/kg. K	1.615
Specific heat at 200°C	J/kg.K	1.812

1. Viscosity-temperature coefficient equals (1- viscosity at 99°C/viscosity at 38°C).
2. % change after 16 hours at 250°C, viscosity measured at 25°C
3. As determined by heating a 35 to 40 gramme sample in a 150 ml beaker (19.35cm² bottom area). Air circulating oven used.

Table 1: Vapour Pressure vs. Temperature

Temperature, °C	Pressure, Pa
228	11
244	25
263	84
277	155
380	13332

(1mm Hg = 133.322 Pa)

Table 2: Volume Expansion vs. Temperature

Temperature Range, °C	Coefficient of expansion 1/K
-18 to 149	0.00075
150 to 204	0.00077
205 to 260	0.00080

Table 3: Compressibility

Pressure MPa	% Compressibility
7	0.5
20	1.4
35	2.3
50	3.0
75	4.2
100	5.2
150	6.8

HANDLING PRECAUTIONS

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 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.

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.