

TECHNICAL DATA SHEET



Product Description

AOS Non-Silicone HTC 52053 is a dispensable, one-part, non-silicone gap filler. This dark gray product is very tacky, resists vibration and shock, will stay in place and not run, even under elevated use temperatures. This product is very viscous. The initial yield point is very high. The material will flow under higher shear and tends to increase in viscosity slightly over time. This solid is able to withstand temperatures in excess of 180 °C for short periods of time. 52053 was developed by AOS in response for a moderately priced product that adheres very well initially and stays put in place while still providing increased thermal transfer efficiency. The material appears compatible with most electronic materials. The material does not phase separate.

The Non-Silicone Advantage

Silicone-based compounds have an undesirable tendency to physically migrate and contaminate components nearby. This interferes with circuit operation long after hardware installation to cause unexpected, untimely and often inaccessible problems. The AOS Heat Sink Compound's *no creep* feature extends circuit life by protecting components longer and by eliminating premature failure of adjacent components caused by migrating silicone base fluid.

Product Features & Benefits

AOS 52053 retains all the unique advantages of AOS Heat Sink Compound (Product Code: 52038) with the added benefit of high temperature use. The non-silicone, "no creep" feature extends OEM service life. It is compatible with most metal and plastic components. It has a five year minimum shelf life in its unopened container. Additional benefits include excellent thermal conductivity and thermal resistance over a wide operating temperature range.

AOS 52053 is a much more cost effective gap filling solution compared to pre-formed gap pads. The product has considerably greater thermal conductivity than our standard non-silicone thermal grease, and can be modified by customer request.

**Customers are responsible for testing AOS Thermal Compounds materials for their proposed use. Any information furnished by AOS Thermal Compounds and its agents is believed to be reliable, but AOS Thermal Compounds does not guarantee the results to be accurate and makes no warranties as to the fitness, merchantability, or suitability of any AOS material or product for any specific or general use and shall not be held liable for incidental or consequential damages of any kind. (040206)

Typical Properties

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Specific Gravity, @ 25°C	2.7	ASTM D-70
Bleed, @ 200°C, 24 Hrs., %/Wt	0.0 %	FTM-321 MODIFIED
Viscosity, 1 sec⁻¹, 25°C/50°C	2,100,000, 400,000 cP	ARES G-2 RHEOMETER
Evaporation, @ 200°C, 24 Hrs., %/Wt.	0.0 %	FTM-321 MODIFIED
Thermal Conductivity, @ 36°C	2.5 W/m-K	ASTMD 5470-06
Thermal Resistance, @ 50°C	0.100 °C/W	Oracle TTV Model 270-7806-01
Anticipated Minimum Bond Lines (mil) Based on filler dimensions	3 mils	
Electrical Properties		
Dielectric strength, 0.05" gap, V/mil	318	ASTM D-149
Dielectric Strength after exposure to 85°C/85% R.H. for 48 hours	212	
Dielectric constant, 25°C @ 1,000 Hz	5.0	ASTM D-150
Dissipation factor, 25°C @ 1,000 Hz	0.0027	ASTM D-150
Volume Resistivity, ohm-cm	2.15 x 10 ¹⁵	ASTM D-257
Operating Temperature Range	-40°C to 200°C	
Flow Rate	2 to 6 g/min	AOS Method # 2
Appearance	Gray Paste	
Shelf Life	5 Years	