



# TECHNICAL DATA SHEET

## Product Description

**AOS 340 LR (lowest resistance)** is a non-silicone thermal grease with the current lowest thermal resistance on the market (for thin bond line applications\*). AOS 340 LR is also extremely durable and will not pump-out making it ideal for applications requiring extended life and no degradation.

\* For larger gaps/thicker films use a high thermal conductivity material such as 52050, 52060 or Sure-form gap filler.

## 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 340 LR** is non-silicone based, non-reactive, and non-abrasive with a soft, grease-like consistency with thixotropic behavior. It has excellent dielectric properties, lowest thermal resistance and superior durability (will not pump-out).

## Major Applications

**AOS 340 LR** is designed to be applied where thermal coupling is required and where a device may need to be removed from the heat sink at a later time. Major applications include CPU/GPU, power semiconductors and LED's. It is also the most efficient and cost effective low bond line TIM 2 for use in any thermal management application.

## Typical Properties

| <u>Property</u>   | <u>Value</u>           | <u>Test Method</u>           |
|---|------------------------|------------------------------|
| <b>Specific Gravity, @ 25°C</b>   | 3.0                    | ASTM D-70                    |
| <b>Bleed, @ 200°C, 24 Hrs., %/Wt</b>  | 0.0 %                  | FTM-321 MODIFIED             |
| <b>Viscosity, 1 sec<sup>-1</sup>, 25°C/50°C</b>                             | 470,000/410,000 cP     | ARES G-2 RHEOMETER           |
| <b>Evaporation, @ 200°C, 24 Hrs., %/Wt.</b>                                 | 1.0 %                  | FTM-321 MODIFIED             |
| <b>Thermal Conductivity, @ 36°C</b>   | 1.3 W/m-K              | ASTMD 5470-06                |
| <b>Thermal Resistance, @ 50°C</b>   | 0.0310 °C/W            | Oracle TTV Model 270-7806-01 |
| <b>Anticipated Bond Line Thickness (mils)</b><br>Based on filler dimensions | < 0.3 mils             |                              |
| <b>Electrical Properties</b>  |                        |                              |
| Dielectric strength, 0.05" gap, V/mil                                       | 265                    | ASTM D-149                   |
| Dielectric constant, 25°C @ 1,000 Hz  | 5.02                   | ASTM D-150                   |
| Dissipation factor, 25°C @ 1,000 Hz   | 0.0022                 | ASTM D-150                   |
| Volume Resistivity, ohm-cm  | 2.0 X 10 <sup>15</sup> | ASTM D-257                   |
| <b>Operating Temperature Range</b>  | -40°C to 180°C         |                              |
| <b>Flow Rate</b>  | 7 to 10 g/min          | AOS Method                   |
| <b>Appearance</b>   | Smooth White Paste     |                              |
| <b>Shelf Life</b>   | 5 Years                |                              |

## Performance

AOS 340 LR's exceptional performance can be attributed to its durability and resistance to pump-out. AOS 340 LR was uniquely engineered and tested under thermal cycling conditions in order to ensure stability. Due to the growing number of various applications in the thermal management industry, an increased demand for longer lasting products has proven essential. AOS 340 LR's resistance to pump-out provides excellent performance and product longevity.

### COMPANY A: STANDARD WHITE THERMAL GREASE

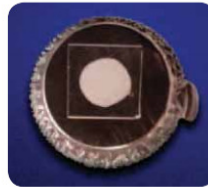


• Zero cycles



• After 300 cycles: Thermal grease voids and pumps out

### AOS 52054 THERMAL GREASE



• Zero cycles



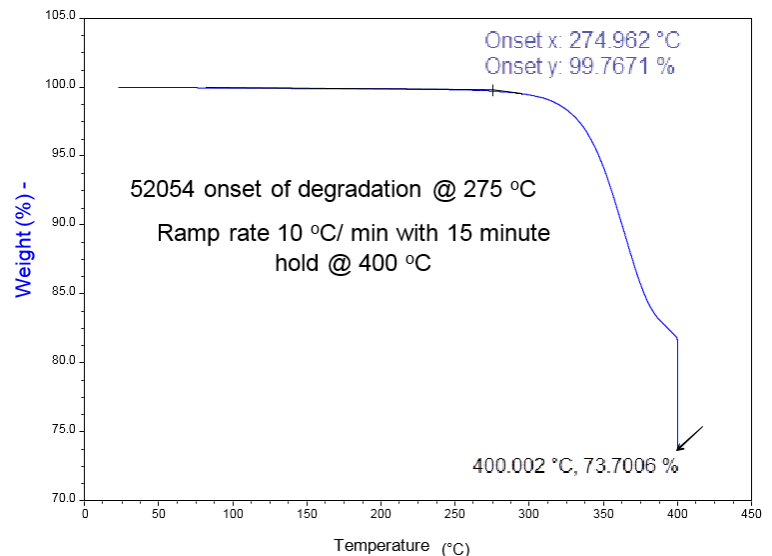
• After 300 cycles: Remains tacky with zero pump out

Thermal Shock Stability (0-165°C @ 10 Minute Dwell)

## Thermogravimetric Analysis (TGA)

Thermogravimetric Analysis is a vital technique used in evaluating the thermal stability of a material over a designated temperature range. A material will begin to lose weight % composition at the onset temperature of degradation. AOS 340 LR's highly stable thermal properties allow it to reach temperatures as high as 275°C in an inert atmosphere before any initial degradation or mass loss reinforcing its performance and durability.

### Thermogravimetric Analysis of AOS 340 LR - 52054



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)

### AOS Thermal Compounds

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