HSMF thermal interface material is a metal/polymer hybrid technology designed to incorporate some of the benefits of both technologies. The polymer portion exhibits very high compliance and some amount of tackiness. This helps to achieve a low interfacial resistance. The metal portion is high thermal conductivity improving the overall performance of the system. This material resists pump-out and bake-out, performs better over time, and is easy to use. The standard HSMF materials are well suited for TIM2 applications while the OS version is specifically designed for use in burn-in and test applications.

About this Product
HSMF is a compressible material for use in a wide range of applications requiring thermal transfer. There are several thicknesses available to accommodate varying levels of planarity. In general, if the surfaces are flat and planar, a thinner TIM will be recommended. Assembly is efficient as this material has an inherent adhesive property, allowing for ease of placement. HSMF cleans up with IPA, making rework easy. Improved performance is ideal for long-life reliability as this material does not pump-out or bake-out in use over time. Because this material contains metal, it cannot be considered electrically isolating even though the polymer portion is. The polymer material used in HSMF is silicone-free and not prone to outgassing in critical optical applications.

HSMF products come with a release liner to protect the polymer layer. Be sure to remove the release liner before placement.

Standard Configurations

<table>
<thead>
<tr>
<th>HSMF Material</th>
<th>Thickness Range</th>
<th>Pressure</th>
<th>Maximum Operating Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSMF-04 (100 microns)</td>
<td>25μm, 50μm, 25μm</td>
<td>10psi minimum to 500psi</td>
<td>-40–175°C</td>
</tr>
<tr>
<td>HSMF-06 (150 microns)</td>
<td>50μm, 50μm, 50μm</td>
<td>10psi minimum to 500psi</td>
<td>-40–175°C</td>
</tr>
<tr>
<td>HSMF-10 (250 microns)</td>
<td>50μm, 50μm, 50μm</td>
<td>10psi minimum to 500psi</td>
<td>-40–175°C</td>
</tr>
<tr>
<td>HSMF-OS (100 microns)</td>
<td>50μm, 50μm</td>
<td>10psi minimum to 500psi</td>
<td>-40–175°C</td>
</tr>
</tbody>
</table>

Mechanical and Physical

- Color: Dark gray, aluminum backer
- Hardness: Grease is compliant @ 10psi, Aluminum backer 310MPa
- Thickness Range: 100, 150 microns ± 12.5 microns
- Pressure: 10psi minimum to 500psi
- Maximum Operating Range: -40–175°C

Storage and Packaging
HSMF can be provided in a variety of packaging configurations, depending on volume and size. If automation is required, tape & reel packaging is available.

Shelf life is 5 years in unopened packaging. Unused material should be stored in original packaging resealed for up to 12 months at room temperature.

Technical Support
Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder preforms, wire, ribbon, and paste. Indium Corporation’s Technical Support Engineers provide rapid response to all technical inquiries.

Safety Data Sheets
The SDS for this product can be found online at http://www.indium.com/sds
Testing Data

Thermal Resistance (ASTM D5470)

- HSMF-06
- HSMF-04

Pressure (MPa)

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation’s products and solutions are designed to be commercially available unless specifically stated otherwise.

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