Vibration Damping Properties of SIBSTAR™

- SIBS performs well over a wider range of temperature in terms of vibration attenuation, compared to other SBCs.
- With the help of tackifier, the peak temperature of tanδ curve can be controlled arbitrarily.

**DMA: share mode, 10Hz, 0.05% strain**

**Tan δ**

```
SIBS: SIBSTAR® 103T
SEBS and SEPS: commercially available products (M.W.=100,000, St content=30%)
Test method: JISK6394 (Testing method of dynamic properties)
```

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**NOTE:**
The properties of this brochure are typical values and are not intended as product specifications.

**Restriction on Medical/Healthcare Applications**

Please be noticed that the SIBSTAR™ products are NOT manufactured in accordance with any legislative requirements/guidance for medical/healthcare applications. Users should inquire or contact authorities or organizations at own risk before any proposed use of SIBSTAR™ in manufacture of medical device or other special indications.

Without the suitable regulatory assessments, Kaneka Corporation nor its subsidiaries may NOT provide or supply the SIBSTAR™ products to the users.

**The novel “Isobutylene-based” thermoplastic elastomer offers:**

- Good heat aging resistance
- Excellent gas barrier properties
- High vibration damping performance
- Flexibility without liquid plasticizers
**Primary Structure of SIBSTAR™**

- SIBSTAR™ is constituted of Triblock type “SIBS” and Diblock type “SIB”.
- SIBS varies in molecular weight and Styrene contents, and their hardness depends on Styrene contents.
- SIBS is more flexible than other SBCs, and less- or non-oil plasticizer system can be designed.

**Heat Aging Resistance of SIBSTAR™**

- SIBS has a “wholly saturated” soft segment, therefore SIBS is highly stable against heat aging.
- SIBS has a better heat aging resistance than hydrogenated SBCs, such as SEBS and SEPS.

![Diagram of SIBS structure](image)

**Basic Properties of SIBSTAR™, SIBS Grades**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method &amp; Condition</th>
<th>Unit</th>
<th>062M</th>
<th>062T</th>
<th>072T</th>
<th>073T</th>
<th>102T</th>
<th>103T</th>
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<tbody>
<tr>
<td>Specific Gravity</td>
<td>Specific Gravity Test</td>
<td>g/cm³</td>
<td>0.947</td>
<td>0.948</td>
<td>0.948</td>
<td>0.954</td>
<td>0.942</td>
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<tr>
<td>Flexibility</td>
<td>Hardness JIS K6253</td>
<td>JIS-A</td>
<td>20</td>
<td>33</td>
<td>33</td>
<td>45</td>
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<td>Flow</td>
<td>Melt Flow Rate JIS K7210 230°C 2.16kgf/g</td>
<td>g/10 min</td>
<td>20</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>0.6</td>
<td>0.1</td>
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<tr>
<td>Apparent Viscosity</td>
<td>Apparent Viscosity JIS 7190 200°C 1200 sec</td>
<td>Poise</td>
<td>1100</td>
<td>1650</td>
<td>2000</td>
<td>2000</td>
<td>3000</td>
<td>4000</td>
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<tr>
<td>Tensile Properties</td>
<td>Strength @Break JIS K6251 No.3 Dumbbell 23°C</td>
<td>MPa</td>
<td>6</td>
<td>10.9</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>18</td>
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<td></td>
<td>Elongation @Break</td>
<td>%</td>
<td>760</td>
<td>630</td>
<td>670</td>
<td>650</td>
<td>870</td>
<td>620</td>
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<td></td>
<td>Modulus @100%</td>
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<td>Peel Strength</td>
<td>80° Angle JIS Z0237</td>
<td>N/25 mm</td>
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<td>8.3</td>
<td>7.4</td>
<td>4.8</td>
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<td>Permanent Set</td>
<td>Compression Set JIS K6252 70°C 22hrs</td>
<td>%</td>
<td>95</td>
<td>90</td>
<td>85</td>
<td>70</td>
<td>65</td>
<td>50</td>
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</tbody>
</table>

**Gas Barrier Performance of SIBSTAR™**

- SIBS has lower gas permeation characteristics than those of other SBCs.
- SIBS has similar gas permeability to that of Butyl rubber (IIR) and Polyolefins (such as PP, PE).