SILASTIC® 9161 RTV
Silicone Elastomer

FEATURES
- Room temperature cure
- Usable at temperatures from -50°C to +250°C
- Excellent dielectric properties
- Highly resistant to moisture, oxidation and weathering
- Easy to pour
- Flexible pot life depending on catalyst concentration

APPLICATION
- Applications include encapsulation of electronic components, potting of electromagnets and coating of electronic circuits.

TYPICAL PROPERTIES
Specifications 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.

<table>
<thead>
<tr>
<th>CTM*</th>
<th>ASTM*</th>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>As supplied - base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0176</td>
<td></td>
<td>Colour</td>
<td></td>
<td>Off white</td>
</tr>
<tr>
<td>0050</td>
<td>D455</td>
<td>Viscosity at 25°C</td>
<td>mPa.s</td>
<td>13,000</td>
</tr>
<tr>
<td>0097</td>
<td>D792</td>
<td>Relative density at 25°C</td>
<td></td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>As supplied - N9162 catalyst</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0176</td>
<td></td>
<td>Colour</td>
<td></td>
<td>Light yellow</td>
</tr>
<tr>
<td>0022</td>
<td>D792</td>
<td>Relative density at 25°C</td>
<td></td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixing ratio by weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical properties, cured with 2% N9162 Catalyst for 24 hours at 20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0099</td>
<td>D676</td>
<td>Durometer hardness</td>
<td>Shore A</td>
<td>39</td>
</tr>
<tr>
<td>0137A</td>
<td>D412</td>
<td>Tensile strength</td>
<td>MPa</td>
<td>2.75</td>
</tr>
<tr>
<td>0137A</td>
<td>D412</td>
<td>Elongation</td>
<td>%</td>
<td>250</td>
</tr>
<tr>
<td>0159A</td>
<td></td>
<td>Tear strength</td>
<td>kN/m</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Linear shrinkage, 24 hours at 70°C</td>
<td>%</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thermal conductivity</td>
<td>W/(m.K)</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical properties, cured with 2% N9162 Catalyst for 24 hours at 20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0114</td>
<td>D149</td>
<td>Dielectric strength</td>
<td>kV/mm</td>
<td>21.5</td>
</tr>
<tr>
<td>0112</td>
<td>D150</td>
<td>Permittivity at 1MHz</td>
<td></td>
<td>4.01</td>
</tr>
<tr>
<td>0112</td>
<td>D150</td>
<td>Dissipation factor at 1MHz</td>
<td></td>
<td>0.0072</td>
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<tr>
<td>0249</td>
<td>D257</td>
<td>Volume resistivity</td>
<td>ohm.cm</td>
<td>3.0 x 10¹⁴</td>
</tr>
</tbody>
</table>

* CTM: Corporate Test Method, copies of CTMs are available on request.

HOW TO USE

Substrate preparation
For best adhesion, clean and degrease application surfaces using solvents (see Handling Precautions). Remove all solvent and ensure all surfaces are dry before applying the product.

Mixing
The pot life of the catalysed material depends on the concentration of DOW CORNING® N9162 Catalyst for 24 hours at 20°C.
and the temperature. The catalyst (see Handling Precautions) should be measured by weighing and can be effectively dispersed by simple hand or mechanical stirring. A clean paper cup, metal, glass or plastic container can be used for the mixing operation. Catalysed SILASTIC 9161 RTV will normally de-air itself on standing. However, for encapsulating intricate components, vacuum degassing is recommended and a residual pressure of 10mm to 20mm of mercury will sufficiently de-air the material in 10 minutes.

Typical pot life at 25°C
% by weight of DOW CORNING N9162 Catalyst added to SILASTIC 9161 RTV

<table>
<thead>
<tr>
<th>% weight</th>
<th>Pot life ¹ (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>35</td>
</tr>
<tr>
<td>1.5</td>
<td>25</td>
</tr>
<tr>
<td>2.0</td>
<td>12</td>
</tr>
<tr>
<td>3.0</td>
<td>7</td>
</tr>
<tr>
<td>4.0</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ Pot life is the time taken for the catalysed material to double its initial viscosity

How to apply

Being careful to minimise air entrapment, apply the encapsulant. Vacuum encapsulation is recommended for complex geometries.

For information on appropriate dispensing equipment for your application, please contact Dow Corning.

Heat ageing

SILASTIC 9161 RTV exhibits excellent heat ageing characteristics at temperatures up to 250°C. In totally confined conditions, SILASTIC 9161 RTV may depolymerise at elevated temperatures. To minimise this effect, components which must operate in total confinement at elevated temperatures should be given a step wise cure. No problems are experienced with normal open air heat ageing. The effect of heat ageing on SILASTIC 9161 RTV at various temperatures is shown in Table I.

Addition of DOW CORNING® 200/20mm²/s Silicone Fluid

It is possible to add up to 20 parts by weight of DOW CORNING 200/20mm²/s Dimethyl Silicone Fluid to SILASTIC 9161 RTV to obtain the following effects:

- reduced hardness
- lower mixed viscosity
- increased pot life

The physical strength of SILASTIC 9161 RTV is reduced, but this is often acceptable in potting applications where protection is given by the outer casing.

Reducing the setting time

It is sometimes required that the elastomer should be in a handleable condition as soon as possible after using. In such cases, the setting time* can be reduced by heat curing the catalysed elastomer. A maximum temperature of 80°C is recommended since there is no significant advantage to be gained by going above this point and there is a risk of bubbling. Figure 1 shows the typical effect of temperature on the setting time of SILASTIC 9161 RTV.

<table>
<thead>
<tr>
<th>Temperature, °C</th>
<th>Setting time, hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>4</td>
</tr>
<tr>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>80</td>
<td>2</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

* Setting time is the time required for SILASTIC 9161 RTV to reach a rubber like state when it can be handled.

HANDLING PRECAUTIONS

DOW CORNING N9162 Catalyst is flammable and contact with sources of ignition should be avoided. Skin and eye contact should also be avoided. Splashes should be washed first with alcohol and then soap and water.

DOW CORNING 1200 Primer is flammable. Keep away from heat, sparks and open flames. Use only with adequate ventilation. Avoid prolonged breathing of vapours and prolonged or repeated skin contact.

When using solvents avoid heat, sparks and open flame. Always provide adequate ventilation. Obtain and follow handling precautions from the solvent supplier.

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 32°C in the original unopened containers, this product has a usable life of 12 months from the date of production.

DOW CORNING N9162 Catalyst is

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Figure 1: SILASTIC 9161 RTV catalysed with 2% DOW CORNING N9162 Catalyst.
very easily hydrolysed by atmospheric moisture and it is essential that it should be kept out of contact with water and water vapour. It is, therefore, important that the lid of the catalyst container is replaced immediately after use. If DOW CORNING N9162 Catalyst is stored at 8°C or below, it may haze or solidify. In this event it should be warmed gently to 20°C until all the material liquifies. DOW CORNING N9162 Catalyst should not be used in the non homogeneous state.

PACKAGING
This product is available in 0.5kg, 5kg and 20kg containers, net weight.

DOW CORNING N9162 Catalyst is available in 0.5kg and 5kg containers.

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.

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Table I: Typical physical properties after heat ageing at 150°C and 250°C

<table>
<thead>
<tr>
<th>Ageing period after 24 hour cure Days</th>
<th>Tensile strength MPa</th>
<th>Elongation at break %</th>
<th>Hardness, Shore A</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILASTIC 9161 RTV, 150°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2.75</td>
<td>150</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>2.75</td>
<td>150</td>
<td>37</td>
</tr>
<tr>
<td>21</td>
<td>3.05</td>
<td>150</td>
<td>38</td>
</tr>
<tr>
<td>SILASTIC 9161 RTV, 250°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2.75</td>
<td>150</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>1.38</td>
<td>150</td>
<td>30</td>
</tr>
<tr>
<td>21</td>
<td>0.59</td>
<td>120</td>
<td>30</td>
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</tbody>
</table>

Table II: Typical electrical properties after heat ageing at 250°C

<table>
<thead>
<tr>
<th>Unaged</th>
<th>3 months at 250°C after 24 hour cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean thickness, mm</td>
<td>1.350</td>
</tr>
<tr>
<td>Dielectric strength, kV/mm</td>
<td>21.5</td>
</tr>
<tr>
<td>Permittivity at 1 MHz</td>
<td>4.01</td>
</tr>
<tr>
<td>Dissipation factor at 1 MHz</td>
<td>0.0072</td>
</tr>
<tr>
<td>Volume resistivity, Ohm.cm</td>
<td>$3.4 \times 10^{-13}$</td>
</tr>
</tbody>
</table>
Your Global Connection

At home or abroad - wherever your business takes you - you'll find the product supply, customer service and technical support you need to succeed available locally from Dow Corning. Whether you face a challenge that could benefit from Dow Corning’s international experience, or you need a reliable, local source of supply for innovative solutions, just pick up the phone and call us.

To consult Dow Corning web site, type: www.dowcorning.com

### DOW CORNING ASIA

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Contact Information</th>
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<tbody>
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<td>Australia &amp; New Zealand</td>
<td>Dow Corning Australia Pty Ltd.</td>
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<tr>
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<td>Dow Corning Taiwan Inc.</td>
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### DOW CORNING EUROPE

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<tbody>
<tr>
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<td>Dow Corning GmbH</td>
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<td>Dow Corning France S.A.</td>
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</tr>
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<td>Dow Corning S.p.A.</td>
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<td>Dow Corning Polska Sp. zo.o.</td>
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<tr>
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<tr>
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### DOW CORNING NORTH AMERICA

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<tbody>
<tr>
<td>Dow Corning Corporation</td>
<td>Tel.: +1 517 496 6000 Fax: +1 517 496 8026</td>
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