Consumer Solutions

DOWSIL™ Silicone Sealants and Foams for Industrial, Appliance and Maintenance Selection Guide
DOWSIL™ Silicone Sealants and Foams for Industrial, Appliance and Maintenance

DOWSIL™ Silicone Sealants

Silicon-based sealants from Dow last longer and are more versatile than most organic polymer sealants. They are durable RTV sealants; cure at room temperature to a tough, rubbery solid with exceptional performance characteristics; and meet a wide variety of your industrial bonding and sealing needs.

Benefits of DOWSIL™ silicone sealants include:

- Stability over a wide temperature range
- Weather resistance
- High resistance to ultraviolet (UV) rays, radiation and weather prevents our products from hardening, cracking, crumbling, drying and becoming brittle.
- Chemical stability
- Our sealants do not readily degrade, even under long-term exposure to many chemicals and atmospheric pollutants.
- Good bond strength
- Our products provide good adhesion to a wide variety of industrial materials, including glass, ceramics and wood masonry; painted surfaces; and many metals and plastics.
- Electrical properties
- Designed for a variety of applications, our products can be used in various electrical and electronic applications, including devices that are thermally cycled over a wide temperature range.
- Low flammability
- In fire conditions, silicone adhesives/sealants are resistant to burn. Many products comply with UL flammability standards.

When you specify an assembly and maintenance product from Dow, you receive a solution backed by the world leader in silicone technology with more than 70 years of expertise and innovations.

Why Silicones?

For application versatility, durability, aesthetics and value, silicones outperform organics. Silicone sealants from Dow are unrivaled, delivering:

- Protection that typically lasts three times longer than organic materials in the same applications, thus avoiding premature and costly renovations
- Proven performance with successful track records in a range of diverse applications
- Outstanding life-cycle value

Solutions for Industrial, Appliance and Maintenance

Organics are prone to chemical reversion, a phenomenon in which organic polyurethane loses its cured properties and reverts to a substance with the softness of chewing gum. The differences between silicones and organics are the difference between long-term value and premature failure. Silicones prevail.
Which Silicone?
Silicone sealants from Dow are offered in a wide range of formulation options, including:

- **RTV (room-temperature-vulcanizing) sealants**
  These silicone polymers work with a condensation reaction in humidity at typical room conditions, but the cure can be accelerated by increasing temperature and humidity. RTV sealants are easy to install, and they offer relatively low cost and good adhesion.

- **Heat cure sealants**
  Delivering much shorter cure times than RTV sealants, these materials can be automatically dispensed to meet industrial equipment assembly requirements.

- **Hot-melt silicone sealants**
  Ideal for automated applications in the manufacturing of various components, these reactive hot-melt materials provide instant green strength, which can increase productivity, improve quality and reduce costs in industrial assembly applications.

- **One-part materials**
  Containing all the ingredients needed to produce a cured material, these sealants use external factors – such as moisture in the air, heat or the presence of UV light – to initiate, speed or complete the curing process. One-part sealant formulations are easy to use and typically have a low- or room-temperature cure.

- **Two-part materials**
  With the reactive ingredients separated, open time and cure time by manipulating the formulation, but they require mixing and may involve more sophisticated processes and application expertise.

- **Silicone foams**
  Ideal as compression gaskets or as “environmental seals” to protect against ambient air, splashed water, dust and moisture, these materials are a cost-effective sealing solution compared to preformed gaskets and foam tapes for use sealing high-tolerance gaps. Applied using automated robotic dispensing, these materials have a fast room-temperature or low-temperature cure.

Sealant Chemistry
Silicone sealants typically consist of an inorganic siloxane (Si-O-Si-O-Si) polymer and appropriate filler, crosslinker, catalyst, adhesion promoter, pigment and plasticizer.

To meet specific needs, silicone sealants are offered in a variety of chemistries and cure types, each with their own benefits. The following tables will assist you in selecting the right material to help meet your performance requirements.

### TABLE 1: Sealant Chemistries

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Surface Care</th>
<th>Green Strength</th>
<th>Primerless Adhesion</th>
<th>Shelf Life</th>
<th>Cure/Transience</th>
<th>Features</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acid Cure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetoxy (One-Part)</td>
<td><strong>•••</strong></td>
<td>*</td>
<td><strong>••</strong></td>
<td><strong>••</strong></td>
<td>*</td>
<td>**Competitive priced versus organos</td>
<td>• Acidic; potentially corrosive to metals</td>
</tr>
<tr>
<td><strong>Neutral Cure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alkoxyl (One-Part)</td>
<td>*</td>
<td>*</td>
<td><strong>••</strong></td>
<td><strong>••</strong></td>
<td>*</td>
<td><strong>Fast cure</strong></td>
<td>• Strong odor</td>
</tr>
<tr>
<td><strong>Oxime</strong> (One-Part)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td><strong>•••</strong></td>
<td><strong>Slow cure</strong></td>
<td>• Good silica versions with clear/translucent offerings</td>
</tr>
<tr>
<td><strong>Alkoxy</strong> (One-Part)</td>
<td>*</td>
<td>*</td>
<td>•</td>
<td>*</td>
<td><strong>•••</strong></td>
<td><strong>Low VOC</strong></td>
<td>• High-temperature (104°F/40°C) storage causes discoloration</td>
</tr>
<tr>
<td><strong>Silicone Foams</strong></td>
<td><strong>••</strong></td>
<td><strong>•</strong></td>
<td><strong>••</strong></td>
<td><strong>•</strong></td>
<td><strong>••</strong></td>
<td><strong>High-gloss</strong></td>
<td>• Proven neutral-cure 100% silicone chemistry</td>
</tr>
<tr>
<td><strong>Platinum</strong> (Two-Part)</td>
<td><strong>•</strong></td>
<td><strong>•</strong></td>
<td><strong>•</strong></td>
<td><strong>•</strong></td>
<td><strong>•</strong></td>
<td><strong>High-temperature, low-cure</strong></td>
<td>• Potentially priced versus organos</td>
</tr>
</tbody>
</table>

**Acid Cure**
- **Acetoxy (One-Part)**
  - **Competitive priced versus organos**
  - **Fast cure**
  - **Premix or pre-catalyst versions available**
  - **Good shelf life**
  - **Clear**
  - **Adhesion durability**

**Neutral Cure**
- **Alkoxyl (One-Part)**
  - **Neutral cure**
  - **Robust adhesion**
  - **Economical, shelf filled**
  - **Low YDC**
  - **High-temperature (104°F/40°C) storage causes discoloration**

**Oxime** (One-Part)
- **Fast cure**
- **Low-catalyst options possible**
- **Good silica versions with clear/translucent offerings**

**Alkoxy** (One-Part)
- **Fast cure**
- **Low VOC**
- **Economical; chalk filled**

**Silicone Foams**
- **Fast-cure/green strength, parts can be moved in under 4 hours**
- **Total VOC low when mixed**
- **Tunable cure profile based on mix ratio**
- **Adhesion to many substrates**

**Platinum** (Two-Part)
- **High-temperature, low-cure**
- **Premixed neutral cure 100% silicone chemistry**
- **No-catalyst versions available**

**Features**
- **Competitive priced versus organos**
- **Fast cure**
- **Premix or pre-catalyst versions available**
- **Good shelf life**
- **Clear**
- **Adhesion durability**
- **Neutral cure**
- **Robust adhesion**
- **Economical, shelf filled**
- **Low YDC**
- **High-temperature (104°F/40°C) storage causes discoloration**
- **Fast cure**
- **Low YDC**
- **Economical; chalk filled**
- **Fast-cure/green strength, parts can be moved in under 4 hours**
- **Total VOC low when mixed**
- **Tunable cure profile based on mix ratio**
- **Adhesion to many substrates**
- **High-temperature, low-cure**
- **Premixed neutral cure 100% silicone chemistry**
- **No-catalyst versions available**
- **Optimised for fluid sealing**
- **Dos not offer high adhesion without a primer or surface treatment**

**Limitations**
- **Acidic; potentially corrosive to metals**
- **Strong odor**
- **High-temperature (104°F/40°C) storage causes discoloration**
- **Strong odor**
- **High VOC; typically due to large boosting group**
- **Dispensing equipment and maintenance**
- **Setting of components can be an issue**
- **Catalyst is flammable**
- **Not intended for use when in total confinement (atmospheric moisture required for cure)**
- **Not intended for continuous water immersion**
- **Not intended for use on surfaces that might bleed oils, plasticisers or solvents**
- **Not optimized for fluid sealing**
- **Does not offer high adhesion without a primer or surface treatment**
- **Cure inhibition (“poisoning” of platinum catalyst)***
### TABLE II. Acetoxy Sealants

#### Special Features
- Resistant to weathering, withstands temperature extremes
- Solvent resistant
- Good adhesion
- Bonding and sealing:
  - General-purpose bonding and sealing:
    - Making FKM/EPDM seals
    - Making bonded seams for water tanks and other fluid containers
    - Bonding rubber to metal in conjunction with primers
- General-use bonding and sealing:
  - Bonding metal to metal
  - Bonding rubber to rubber
  - Bonding metal to rubber

#### Primary Uses
- General industrial sealing and adhesive applications:
  - Bonding, sealing and caulkin when resistance to heat, oils, and solvents is required
  - General-purpose bonding and sealing:
    - Making FKM/EPDM seals
    - Making bonded seams for water tanks and other fluid containers
    - Bonding rubber to metal in conjunction with primers

#### Applications
- Adhering auto trim, appliance trim and hardware:
  - Bonding and sealing:
    - General-purpose bonding and sealing:
      - Making FKM/EPDM seals
      - Making bonded seams for water tanks and other fluid containers
      - Bonding rubber to metal in conjunction with primers

#### Temperature Range
- F / °C:
  - General-use bonding and sealing:
    - Bonding metal to metal
    - Bonding rubber to rubber
    - Bonding metal to rubber
  - General-purpose bonding and sealing:
    - Making FKM/EPDM seals
    - Making bonded seams for water tanks and other fluid containers
    - Bonding rubber to metal in conjunction with primers

#### Pressure
- psi:
  - General-use bonding and sealing:
    - Bonding metal to metal
    - Bonding rubber to rubber
    - Bonding metal to rubber
  - General-purpose bonding and sealing:
    - Making FKM/EPDM seals
    - Making bonded seams for water tanks and other fluid containers
    - Bonding rubber to metal in conjunction with primers

#### Gels
- %:
  - General-use bonding and sealing:
    - Bonding metal to metal
    - Bonding rubber to rubber
    - Bonding metal to rubber
  - General-purpose bonding and sealing:
    - Making FKM/EPDM seals
    - Making bonded seams for water tanks and other fluid containers
    - Bonding rubber to metal in conjunction with primers

#### Primers/Adhesives
- Acryl: NR
- Acrylic: NR
- Low Density Polyethylene (LDPE): NR
- Nylon 66: NR
- Polyethylene (PE): NR
- Glass: NR
- Aluminum, Mill Finish: NR
- Copper: NR
- Steel, Galvanized: NR
- Steel, Low Carbon: NR
- Steel, Stainless: NR

#### Specific Gravity
- FKM/EPDM: 1.3
- NBR: 1.3
- CR: 1.3

#### Specific Gravity
- FKM/EPDM: 0.8
- NBR: 0.8
- CR: 0.8

#### Weathering
- FKM/EPDM: Not tested
- NBR: Not tested
- CR: Not tested

#### Color
- Clear translucent, white
- Clear translucent, black
- Gray
- Red

#### Sealant Type for Fluid Resistance Table
- M1: Not tested
- M2: Not tested
- M3: Not tested
- M4: Not tested

#### Primers/Adhesives
- Acryl: NR
- Acrylic: NR
- Low Density Polyethylene (LDPE): NR
- Nylon 66: NR
- Polyethylene (PE): NR
- Glass: NR
- Aluminum, Mill Finish: NR
- Copper: NR
- Steel, Galvanized: NR
- Steel, Low Carbon: NR
- Steel, Stainless: NR

#### Weathering
- FKM/EPDM: Not tested
- NBR: Not tested
- CR: Not tested

#### Color
- Clear translucent, white
- Clear translucent, black
- Gray
- Red

#### Sealant Type for Fluid Resistance Table
- M1: Not tested
- M2: Not tested
- M3: Not tested
- M4: Not tested

#### Primers/Adhesives
- Acryl: NR
- Acrylic: NR
- Low Density Polyethylene (LDPE): NR
- Nylon 66: NR
- Polyethylene (PE): NR
- Glass: NR
- Aluminum, Mill Finish: NR
- Copper: NR
- Steel, Galvanized: NR
- Steel, Low Carbon: NR
- Steel, Stainless: NR

#### Weathering
- FKM/EPDM: Not tested
- NBR: Not tested
- CR: Not tested

#### Color
- Clear translucent, white
- Clear translucent, black
- Gray
- Red

#### Sealant Type for Fluid Resistance Table
- M1: Not tested
- M2: Not tested
- M3: Not tested
- M4: Not tested
### TABLE III. Alkoxy (Neutral-Cure) Sealants

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Features</strong></td>
<td>Plastic adhesive</td>
<td>FDA and NSF-approved</td>
<td>Excellent adhesion</td>
<td>Nonflowing; high elongation for added stress relief, UL 94 HB; faster in-line processing with optional heat acceleration; added reliability can result from lower cured stress</td>
<td>Nonflowing; high elongation for added stress relief, UL 94 HB; faster in-line processing with optional heat acceleration; can be considered for use with Mil Spec requirements</td>
</tr>
<tr>
<td><strong>Primary Uses</strong></td>
<td>Adhering, bonding and sealing plastic and metal, making formed-in-place gaskets</td>
<td>Electrical sealing applications; food processing and transportation applications</td>
<td>Bonding, sealing and assembly where a noncorrosive sealant is required</td>
<td>General-purpose adhesive applications using automated or manual needle dispensing systems</td>
<td>Bonding and assembly in applications requiring Mil Spec standards</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>Adhering auto trim, appliance trim and parts; assembling plastic toys, bonding garden or refrigeration units, signs and sign letters; sealing and connecting transient; making formed-in-place gaskets; controlling environment and preventing moisture; sealing bonding, vents, gaskets, marine cabins and windows, waterproofing hydraulic or tractor cabs</td>
<td>Bonding and sealing electrical equipment, power and control connections, meters, covers, panel boxes, instrument boxes, electronic circuits, and control panels; sealing refrigeration and freezer liners</td>
<td>Sealing and repairing roof penetrations, gutters, concrete floor seams, marine equipment and machinery, forming-in-place gaskets, and assembling original equipment components</td>
<td>Sealing openings in modules and housings; adding mechanical stability to individual components; assembly of components on printed wiring boards (PWBs); sealing in and around sealed electrical leads, yoke assembly.</td>
<td>Sealing openings in modules and housings; assembly of components on printed wiring boards (PWBs); sealing in and around sealed electrical leads</td>
</tr>
<tr>
<td><strong>Temperature Range</strong>, °F/°C continuous (intermittent)</td>
<td>-65 to 300 (-54 to 149)</td>
<td>-65 to 300 (-54 to 149)</td>
<td>-67 to 300 (-55 to 149)</td>
<td>-49 to 392 (-45 to 200)</td>
<td>-49 to 392 (-45 to 200)</td>
</tr>
<tr>
<td><strong>Skin-Over Time, min</strong></td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td><strong>Tack-Free Time, min</strong></td>
<td>45</td>
<td>30</td>
<td>50</td>
<td>33</td>
<td>63.8</td>
</tr>
<tr>
<td><strong>Extrusion Rate, g/min</strong></td>
<td>110</td>
<td>150</td>
<td>133</td>
<td>199.2</td>
<td>78.6</td>
</tr>
<tr>
<td><strong>Durometer, Shore A</strong></td>
<td>37</td>
<td>25</td>
<td>35</td>
<td>31</td>
<td>45.6</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Off-white</td>
<td>White</td>
<td>Black, white, gray</td>
<td>Black, gray, off-white</td>
<td>Black, gray</td>
</tr>
</tbody>
</table>

**Primerless Adhesion**

| Acrylic | NR | ** | ** | NR | ** | NR |
| Acrylonitrile Butadiene Styrene (ABS) | NR | ** | ** | NR | ** | NR |
| Low Density Polyethylene (LDPE) | NR | NR | NR | NR | NR | NR |
| Nylon 66 | ** | ** | ** | ** | ** | ** |
| Polyethylene (PE) | NR | NR | NR | NR | NR | NR |
| Glass | ** | ** | ** | ** | ** | ** |
| Aluminum, Mill Finish | NR | NR | NR | NR | NR | NR |
| Copper | ** | ** | ** | ** | ** | ** |
| Steel, Galvanized | ** | ** | ** | ** | ** | ** |
| Steel, Low Carbon | ** | ** | ** | ** | ** | ** |
| Steel, Stainless | * | ** | ** | ** | ** | ** |

NR = Not recommended; * = Limited; ** = Fair; *** = Good; **** = Excellent

1. Not recommended with water-based or solvent-based adhesives or in adhesive applications requiring a specific resistance to shear. May stress-crack some plastics; test before use.

2. Estimated service temperature based on product formulation and laboratory testing. Actual service temperature range is dependent on other factors, including the specific application environment.


**Sealant Type for Fluid Resistance Table**

| MQL | MQL | MQL | MQL |

**Color**

- Black, gray, white
- Off-white
- Black, gray, off-white
- White
- Clear translucent
- Black, white, gray

**Retention of Adhesive**

| Acrylic | NR | ** | ** | NR | ** | NR |
| Acrylonitrile Butadiene Styrene (ABS) | NR | ** | ** | NR | ** | NR |
| Low Density Polyethylene (LDPE) | NR | NR | NR | NR | NR | NR |
| Nylon 66 | ** | ** | ** | ** | ** | ** |
| Polyethylene (PE) | NR | NR | NR | NR | NR | NR |
| Glass | ** | ** | ** | ** | ** | ** |
| Aluminum, Mill Finish | NR | NR | NR | NR | NR | NR |
| Copper | ** | ** | ** | ** | ** | ** |
| Steel, Galvanized | ** | ** | ** | ** | ** | ** |
| Steel, Low Carbon | ** | ** | ** | ** | ** | ** |
| Steel, Stainless | * | ** | ** | ** | ** | ** |
### TABLE IV. Two-part Alkoxy and One-Part Oxime (Neutral-Cure) Sealants

<table>
<thead>
<tr>
<th></th>
<th>Neutral, Two-Component</th>
<th>Neutral, Oxime</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEILASTIC™ Q3-306</strong></td>
<td>DOWSIL™ 226 Dispersion</td>
<td>DOWSIL™ 737 Neutral Cure Sealant</td>
</tr>
<tr>
<td><strong>Primary Uses</strong></td>
<td>Durable adhesive sealing of components that meet performance in difficult environments</td>
<td>Release coating for surfaces that offer protection from weathering, corrosion and dirt</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>Bonding of polycarbonate or glass lenses to the reflector housing of headlamps and fog lamps, in appliance manufacturing, especially for oven and ceramic hob assembly or for bonding glass to metal, glass to painted metal or glass to plastic</td>
<td>Preventing creasing of laser-manufacturing equipment and patenting operations and removal of flash in encapsulate and polymer molding; preventing adhesions and buildup on conveyer belts, paper and fibers rolls, reducing buildup on sanding and polishing equipment</td>
</tr>
<tr>
<td><strong>Temperature Range</strong></td>
<td>–</td>
<td>–40 to 300</td>
</tr>
<tr>
<td>Skin-On Time, min</td>
<td>2.5-10</td>
<td>2.5-10</td>
</tr>
<tr>
<td>Tack-Free Time, min</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Extraction Rate, g/min</td>
<td>150</td>
<td>20</td>
</tr>
<tr>
<td>Density, Shore A</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Elongation</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.16</td>
<td>1.16</td>
</tr>
<tr>
<td>Color</td>
<td>Gray, black, special black</td>
<td>Black, clear translucent, white</td>
</tr>
<tr>
<td><strong>Sealant Type for Fluid Resistance Table</strong></td>
<td>Sili</td>
<td>MRI</td>
</tr>
<tr>
<td><strong>Acrylic</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Acrylonitrile Butadiene Styrene (ABS)</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Low Density Polyethylene (LDPE)</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Nylon-66</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Polyester</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Polypropylene (PP)</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Glass</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Aluminum, Mill Finish</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Steel, Cold Rolled</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
<tr>
<td><strong>Steel, Stainless</strong></td>
<td>Not Applicable (dispersion)</td>
<td>Not Applicable (dispersion)</td>
</tr>
</tbody>
</table>

**NR** = Not recommended; **+** = Limited; **+** = Fair; **++** = Good; **+++** = Excellent

Most gaskets will not adhere to unwetted or distillate water. Use atmospheric moisture to cure. May cause soak-in some plastics; test before use.

*Estimated service temperature based on product formulation and laboratory testing. Actual service temperature range is dependent on other factors, including the specific application environment.*
TABLE V. Hot-Melt (Neutral-Cure) Sealants

<table>
<thead>
<tr>
<th>DOWSIL™ HM-2500 Assembly Sealant</th>
<th>DOWSIL™ HM-2510 Assembly Sealant</th>
<th>DOWSIL™ HM-2515 Assembly Sealant</th>
<th>DOWSIL™ HM-2520 Assembly Sealant</th>
<th>DOWSIL™ HM-2600 Silicone Assembly Sealant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Features</strong></td>
<td><strong>Offers the fastest build of green strength; 100% silicone sealant; high viscosity at room temperature resists flow of material, which reduces material squeeze-out; excellent clarity</strong></td>
<td><strong>Offers high robustness; multipurpose 100% silicone sealant; high viscosity at room temperature resists flow of material, which reduces material squeeze-out; excellent clarity</strong></td>
<td><strong>Lowest viscosity; 100% silicone sealant; can be used in assembly and lamination; dispensed in fine beads, fibers or spiral patterns; low durometer</strong></td>
<td><strong>Offers highest degree of mechanical adhesion and overall performance; 100% silicone; high durometer; excellent clarity</strong></td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>1.08</td>
<td>1.08</td>
<td>1.07</td>
<td>1.11</td>
</tr>
<tr>
<td><strong>Viscosity at 120°C, Pa·s</strong></td>
<td>200</td>
<td>110</td>
<td>27</td>
<td>130</td>
</tr>
<tr>
<td><strong>15-Min Green Strength, MPa</strong></td>
<td>0.06</td>
<td>0.04</td>
<td>0.004</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Durometer, Shore A</strong></td>
<td>49</td>
<td>38</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td><strong>Ultimate Tensile Strength, MPa</strong></td>
<td>4.8</td>
<td>4.6</td>
<td>2.3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Ultimate Elongation, %</strong></td>
<td>1,900</td>
<td>1,900</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td><strong>Tear Strength – Type B, pli</strong></td>
<td>80</td>
<td>78</td>
<td>67</td>
<td>89</td>
</tr>
<tr>
<td><strong>SAFT, °C</strong></td>
<td>250</td>
<td>250</td>
<td>248</td>
<td>280</td>
</tr>
<tr>
<td><strong>NSF/ANSI Standard 51 and 61</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>FDA 21 CFR 177.2600</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>UL 94 (Relative Thermal Index)</strong></td>
<td>HS (105)</td>
<td>HS (105)</td>
<td>HS (105)</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Clear</td>
<td>Clear</td>
<td>Clear</td>
<td>Clear</td>
</tr>
<tr>
<td><strong>Primerless Adhesion</strong></td>
<td>Acrylic</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Acrylonitrile Butadiene Styrene (ABS)</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Low-Density Polyethylene (LDPE)</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Nylon-66</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Polycarbonate</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Polypropylene (PP)</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Glass</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Aluminum, Mill Finish</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Copper</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Steel, Galvanized</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Steel, Low Carbon</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
<tr>
<td></td>
<td>Steel, Stainless</td>
<td>****</td>
<td>****</td>
<td>****</td>
</tr>
</tbody>
</table>

NR = Not recommended; • = Limited; •• = Fair; ••• = Good; •••• = Excellent

1Most paints will not adhere to sealant; not for underwater or structural adhesive applications; exposure atmospheric moisture to cure. May stress-crack some plastics; test before use.

2180° peel from various substrates based on ASTM C794: 21-day cure (24 ± 2°C; 50 ± 5% RH) + 7-day H2O immersion.

3Shore adhesion failure temperature based on ASTM 4498.

4Quoted only under electronics or lighting industry label.

5Qualified only under electronics or lighting industry label.

Hot-melt, neutral-cure sealants are intended for assembly, bonding, sealing, gasketing and other OEM applications that require instant adhesion and high green strength. These sealants feature:

- Excellent adhesion to most substrates without the need for a primer
- Instant adhesion, enabling parts to be shipped out quickly
- Long open time
- Long pot life
- Low VOC
- Safe handling with nonhazardous composition and by-products
- Long life once cured

DOWSIL™ Silicone Sealants and Foams for Industrial, Appliance and Maintenance
Two-part, addition-cure silicone foams are designed to be dispensed and cured directly on parts to form an integrated compression gasket. They typically are used in automotive parts, including seals for vibration and noise damping, housings for electronic devices, exterior lighting, and domestic appliance components.

These sealant features:
- Room temperature cure (RTV)
- 1:1 mix ratio
- CFC-free content
- Low post-cure compression set
- Stability and flexibility across a wide range of temperatures

## Table VI: Silicone Foams (Two-Part, Addition Cure)

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>Gray</th>
<th>Dark Gray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Features</td>
<td>Low hardness (Shore 00), available in white and black, low density</td>
<td>Low to medium hardness (Shore 00), medium density</td>
<td>Medium hardness (Shore 00), medium to high density, reduced flow aid application to vertical surfaces</td>
<td>Medium hardness (Shore 00), available in gray and dark gray, high density, reduced flow aid application to vertical surfaces</td>
</tr>
</tbody>
</table>
| Viscosity, mPas | A: 21,000  
B: 12,000 | A: 20,000  
B: 12,000 | A: 14,000  
B: 15,000 | A: 21,000  
B: 40,000 |
| Snap Time, sec   | 230         | 240         | 220           | 200          |
| Tack-Free Time, min | 8           | 8           | 7             | 6            |
| Density, kg/m³  | 140         | 150         | 250           | 300          |
| Flowability, cm  | Flowable     | Flowable    | Flowable      | 17           |
| Cell Structure, Zellen/cm² | 35          | 10          | Fine          | Fine         |
| Hardness, Shore 00 | 25           | 25          | 45            | 45           |

**Sealant Application**

Apply DowSIL™ brand adhesives/sealants to one of the prepared surfaces, then quickly cover with the other substrate to be bonded. On exposure to moisture, the fresh applied material will “skin over” in about 5 to 30 minutes (depending on the product) at room temperature and 50% relative humidity. Tool the sealant to coat or the wet substrate surface for maximum bonding. This is typically done by properly filling the joint first and then dry-stripping the sealant by pressing and pulling a round-tipped spatula or similar tool across the sealant surface. This step forces sealant into joints and helps remove air pockets or voids at the bond line. Tooling should be completed before the skin forms.

**Primer Cure**

At normal room temperatures and 50% relative humidity conditions, allow the primer to air-dry from five to 30 minutes. Low humidity and/or low-temperature conditions require longer cure times. Mild heat acceleration of the cure rate may be possible, but temperatures above 140°F (60°C) are not recommended. During application, the carrier solvent typically evaporates quickly, allowing the active ingredients to begin to react with atmospheric moisture and bonding surfaces. For optimal bonding, different cure times may be required for different temperature and humidity conditions; determine the best cure schedule and conditions for your application. Apply the desired silicone sealant after the primer, prime coat or adhesion promoter has fully cured.

---

**TABLE VII: Cleaners and Primers**

<table>
<thead>
<tr>
<th>Cleaners</th>
<th>DOWSIL™ PR-1200 Silicone Cleaner</th>
<th>DOWSIL™ DS-2025 Silicone Cleaner</th>
<th>DOWSIL™ DS-4500 Silicone Cleaner</th>
<th>DOWSIL™ DS-820 Silicone Cleaner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Features</td>
<td>VOC exempt (VOC ≤ 8 g/L), certified as a Clean Air Product by the California South Coast Air Quality Management District.</td>
<td>Easy to use; low viscosity; essentially solvent-free; side on plastics and nonreinforced to metals; ideal for diluting and tailoring the viscosity of silicons</td>
<td>Clean for use on unsealed silicone; effectively simulates silicone oils, gasses and aerosols, elemental effective degreaser on a wide range of applications; aqueous solution</td>
<td>Cleaner for use on aged silicone; rapid dispersion of grain silicone; silicone-free surface; nonflammable; high flash point; nonhalogenated solvent, nonstaining; multiple use and recyclable</td>
</tr>
<tr>
<td>Applications</td>
<td>Cleaning plastics, metals and other surfaces or preparing surfaces for painting, bonding or sealing</td>
<td>Cleaning surfaces, equipment and machinery contaminated with nonmeltable cured silicone resins</td>
<td>Cleaning surfaces, equipment and machinery contaminated with arborite cured silicone resins</td>
<td>Cleaning surfaces, equipment and machinery contaminated with two-part silicone systems</td>
</tr>
<tr>
<td>Primers</td>
<td>DOWSIL™ PR-1200 KTV Primer Coat</td>
<td>DOWSIL™ DS-4500 Adhesion Promoter</td>
<td>DOWSIL™ DS-820 Silicone Primer</td>
<td>DOWSIL™ Primer-C OS</td>
</tr>
<tr>
<td>Special Features</td>
<td>Significantly improves the adhesion of silicone sealants to a wide variety of challenging adherends, available in clear and red</td>
<td>Useful for both moisture-curing KTV and heat-curing silicone; available in low (less than 100°F), medium (250°F), and high (400°F) cure temperatures</td>
<td>Improves adhesion of silicone sealants to many substrates, including plastics, alloys and noncorrosive to metals; ideal for diluting structural sealants</td>
<td>Improves adhesion of silicone sealants to many substrates, including plastics, acrylics and metals; used on a wide range of applications; ideal for primers, bonding processes and general purposes</td>
</tr>
<tr>
<td>Applications</td>
<td>Enhances bonding/adhesion of silicone sealants, coatings and rubbers to ceramics, glass, wood, masonry, structural plaster (including FR-4) and many metals</td>
<td>Improves the adhesion of silicone sealants, coatings and rubber to masonry, wood, granule metal, glass, ceramics, plastics, rubbers and coatings</td>
<td>Improves the adhesion of silicone sealants, coatings and rubber to masonry, wood, granule metal, glass, ceramics, plastics, rubbers and coatings</td>
<td>Improves adhesion of silicone sealants to many substrates, including plastics, acrylics and metals; effective for bonding processes and general purposes</td>
</tr>
</tbody>
</table>

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**TABLE VI. Silicone Foams (Two-Part, Addition Cure)**

<table>
<thead>
<tr>
<th>Silicone Foam</th>
<th>Special Features</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWSIL™ 3-8259</td>
<td>Low hardness (Shore 00); available in white and black, low density</td>
<td>Cleaning surfaces, equipment and machinery contaminated with nonmeltable cured silicone resins</td>
</tr>
<tr>
<td>DOWSIL™ 3-4259 RF</td>
<td>Low to medium hardness (Shore 00), medium density; available in gray and dark gray, high density, reduced flow aid application to vertical surfaces</td>
<td>Cleaning surfaces, equipment and machinery contaminated with arborite cured silicone resins</td>
</tr>
<tr>
<td>DOWSIL™ 3-1235</td>
<td>Medium hardness (Shore 00), available in gray and dark gray, high density, reduced flow aid application to vertical surfaces</td>
<td>Cleaning surfaces, equipment and machinery contaminated with arborite cured silicone resins</td>
</tr>
</tbody>
</table>

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**Primers and Adhesion Promoters**

For maximum adhesion, DowSil™ brand primer is recommended. After solvent-cleaning, apply a thin coat of DowSil™ brand primer in a very light, even coat by wiping, spraying or dipping. Wipe off excess material to avoid overapplication, which generally appears as a white, chalky surface. When dip- or spray-coating, dilute by a factor of 2 to 4 with additional solvent may avoid excessive buildup.

**Primer Cure**

At normal room temperatures and 50% relative humidity conditions, allow the primer to air-dry from five to 30 minutes. Low humidity and/or low-temperature conditions require longer cure times. Mild heat acceleration of the cure rate may be possible, but temperatures above 140°F (60°C) are not recommended. During application, the carrier solvent typically evaporates quickly, allowing the active ingredients to begin to react with atmospheric moisture and bonding surfaces. For optimal bonding, different cure times may be required for different temperature and humidity conditions; determine the best cure schedule and conditions for your application. Apply the desired silicone sealant after the primer, prime coat or adhesion promoter has fully cured.

---

**Sealant Application**

Apply DowSil™ brand adhesives/sealants to one of the prepared surfaces, then quickly cover with the other substrate to be bonded. On exposure to moisture, the fresh applied material will “skin over” in about 5 to 30 minutes (depending on the product) at room temperature and 50% relative humidity. Tool the sealant to coat or the wet substrate surface for maximum bonding. This is typically done by properly filling the joint first and then dry-stripping the sealant by pressing and pulling a round-tipped spatula or similar tool across the sealant surface. This step forces sealant into joints and helps remove air pockets or voids at the bond line. Tooling should be completed before the skin forms.

Keeping the primed surface clean may allow application of the silicone elastomer to be delayed – but in some cases, in too much time elapses, lower adhesive can result. Users are encouraged to determine the cure conditions for their specific applications and the effects of any hold times imposed between applications of the primer and sealant. In some cases, it may be recommended to reprimed surfaces in 8 to 24 hours elapsed before the silicone sealant can be applied.
Cure Time
After skin formation, cure continues inward from the surface. In 24 hours (at room temperature and 50% relative humidity), DOWSIL™ adhesive/sealant will cure to a depth of about 1/8". Very deep sections, especially when access to atmospheric moisture is restricted, will take longer to cure completely. Cure time is extended at lower humidity levels.

Because the sealants cure by reaction with moisture in the air, keep the container tightly sealed when not in use. A plug of used material may form in the tip of a tube or cartridge during storage. This is easily removed and does not affect the remaining contents.

Compatibility
Some DOWSIL™ adhesives/sealants release a small amount of acetic acid during cure. This may cause corrosion on some metallic parts or substrates, especially in direct contact or when the cure is carried out in a totally enclosed environment that does not allow cure by-products to escape.

Platinum catalysts used in addition-cure silicone sealants – including silicone foams – are sensitive to contamination by certain compounds that have the power to stop or inhibit cure. For more information, refer to “Guarding against potential inhibitors/poisons of platinum-catalyzed addition-cure release coatings,” Form No. 30-1053-01, available on consumer.dow.com or upon request from Dow customer service.

Cleanup/Sealant Removal
Cured silicone can be removed from a surface with a sharp blade if the cured silicone material is accessible. If it is difficult to cut through, solvents – such as IPA, toluene, xylene, naphtha or mineral spirits – may be used to soften the cured sealant. DOWSIL™ OS Fluids also can be used to help soften cured silicone and/or remove silicone residue after it has been removed mechanically from a surface. DOWSIL™ OS Fluids will generally be a lower-VOC alternative to standard solvents.

Limitations
Refer to individual product data sheets for use limitations.

Health and Environmental Information
To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For more information, please see our website, consumer.dow.com, or consult your local Dow representative.

How to Contact Us
For more than 60 years, OEM designers, maintenance and materials engineers around the world have trusted the Dow brand for performance and expertise to solve or prevent sealant problems. Dow has sales offices, manufacturing sites, and science and technology laboratories – and a network of more than 3,000 distributors – around the world.

To learn more about our extensive product and service offerings, order samples, or find a local distributor, visit consumer.dow.com.