Freeman Polyurethane Elastomers

A complete line of easy to use, economical tooling and prototyping resins, these materials are widely used in many applications that demand the ideal balance between price and performance.

Our flexible urethanes are generally more abrasion resistant than silicone rubber, making them preferred materials for concrete and architectural castings. Our semi-rigid urethanes are known for their excellent impact strength and abrasion resistance, making them ideal for foundry tooling as well as semi-rigid part production. Our rigid urethanes are designed to simulate injection molded plastic parts.
Flexible Polyurethane Elastomers

**Freeman 1035 – Beige**
- Castable to 2" in Thickness
- 30 Min. Gel Time
- 35A Shore Hardness

This flexible material is excellent for making molds with deep undercuts or where a flexible mold makes demolding easier. This economical urethane features one to one mix ratio by weight or volume, making mixing easy and convenient.

**Catalog Number** | **Description** | **Availability** | **Net Wt Lbs. (Kg)**
--- | --- | --- | ---
055129 | Freeman 1035 | Pint Unit | 2 (0.9)
055401 | Freeman 1035 | Gallon Unit | 16 (7.3)
055402 | Freeman 1035 | 5 Gallon Unit | 80 (36.3)

**Freeman 1040 – Off-White**
- Castable to 2" in Thickness
- 28 Min. Gel Time
- 52A Shore Hardness

This flexible urethane is an excellent low-cost alternative to RTV silicone rubber mold making materials. Like most castable urethane rubber systems, it is ideal for general flexible mold construction, flexible parts and gaskets, plaster casting, and prototypes. Freeman 1040 flows easily and features a high tear strength.

**Catalog Number** | **Description** | **Availability** | **Net Wt Lbs. (Kg)**
--- | --- | --- | ---
055130 | Freeman 1040 | Gallon Unit | 8.8 (4.0)
055131 | Freeman 1040 Resin Only | 2 Quarts | 4 (1.8)
055132 | Freeman 1040 Hardener Only | 5 Gallon | 40 (18.2)

Semi-Rigid Polyurethane Elastomers

**Freeman 1050 – Amber**
- Castable to 4" in Thickness
- 26 Min. Gel Time
- 85A Shore Hardness

Freeman 1050 is a tough, semi-flexible urethane that is ideal for creating molds requiring some degree of flexibility, as well as for producing semi-rigid prototypes and finished parts. A one to one mix ratio by weight. Its 26 minute gel time provides ample time to vacuum degas prior to pouring. Overnight demold time is required.

**Catalog Number** | **Description** | **Availability** | **Net Wt Lbs. (Kg)**
--- | --- | --- | ---
055142 | Freeman 1050 | Quart Unit | 2.5 (1.1)
055141 | Freeman 1050 | Gallon Unit | 10 (4.5)
055139 | Freeman 1050 Resin Only | 5 Gallon | 25 (11.4)
055140 | Freeman 1050 Hardener Only | 5 Gallon | 25 (11.4)

**Freeman 1060 – Red, Black**
- Castable to 2" in Thickness
- 28 Min. Gel Time
- 60D Shore Hardness

This semi-rigid polyurethane casting resin is renown throughout the industry for its excellent impact strength and abrasion resistance, particularly in foundry tooling and other modeling and prototyping applications requiring strength and durability. Freeman 1060 is available in either red or black. Overnight demold time is required.

**Catalog Number** | **Description** | **Availability** | **Net Wt Lbs. (Kg)**
--- | --- | --- | ---
055108 | Freeman 1060 Black | Quart Unit | 2.5 (1.1)
055109 | Freeman 1060 Red | Quart Unit | 2.5 (1.1)
055106 | Freeman 1060 Black | Gallon Unit | 10 (4.5)
055110 | Freeman 1060 Red | Gallon Unit | 10 (4.5)
055107A | Freeman 1060 Resin Only | 5 Gallon | 31.25 (14.2)
055107B | Freeman 1060 Black Hardener Only | 5 Gallon | 18.75 (8.5)
055111B | Freeman 1060 Red Hardener Only | 5 Gallon | 18.75 (8.5)
055116 | Freeman 1060 Resin Only | 55 Gallon | 460 (209.1)
055117 | Freeman 1060 Black Hardener Only | 55 Gallon | 280 (127.3)

**Freeman 1066 – Red, Black**
- Castable to 2" in Thickness
- 15-17 Min. Gel Time
- 65D Shore Hardness

Freeman 1066 is a 65 Shore D polyurethane elastomer specifically designed for highly abrasive resistant foundry tooling. Harder than our Freeman 1060, this product will not deflect as much under high pressure molding processes. Plus, it has increased rigidity in thin wall sections and is able to be machined or sanded without softening.

Freeman 1066 also features a fast demold time of two to four hours and a heat deflection temperature of 181°F.

**Catalog Number** | **Description** | **Availability** | **Net Wt Lbs. (Kg)**
--- | --- | --- | ---
055120 | Freeman 1066 Black | Gallon Unit | 9.75 (4.4)
055119 | Freeman 1066 Red | Gallon Unit | 9.75 (4.4)
055121 | Freeman 1066 Resin Only | 5 Gallon | 32.5 (14.8)
055122 | Freeman 1066 Black Hardener Only | 5 Gallon | 16.25 (7.4)
055118 | Freeman 1066 Red Hardener Only | 5 Gallon | 16.25 (7.4)
055123 | Freeman 1066 Resin Only | 55 Gallon | 420 (190.3)
055124 | Freeman 1066 Black Hardener Only | 55 Gallon | 210 (95.5)
055112 | Freeman 1066 Red Hardener Only | 55 Gallon | 210 (95.5)

To Order Call 1-800-321-8511
**Freeman 1070 – Off-White**  
- Castable to ½” in Thickness  
- 3 Min. Gel Time  
- 15-30 Min. Demold  
- 70D Shore Hardness  

This urethane elastomer is able to be hand mixed and poured to create parts that simulate injection molded plastic. Freeman 1070 is economical and features very low viscosity and low moisture sensitivity. A demold time of 15 to 30 minutes enables many parts to be poured in one day without the expenditure for a meter-mix machine.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Availability</th>
<th>Net Wt. Lbs. (Kg)</th>
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<tr>
<td>055500</td>
<td>Freeman 1070</td>
<td>Pint Unit</td>
<td>2 (0.9)</td>
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<td>055406</td>
<td>Freeman 1070</td>
<td>Gallon Unit</td>
<td>15.4 (7)</td>
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</table>

**Freeman 1080 – White**  
- Castable to ½” in Thickness  
- 20 Min. Gel Time  
- 2-4 Hr. Demold  
- 80D Shore Hardness  

This brilliant white, 80 shore D urethane elastomer offers a 20 minute gel time. This material feature a one to one mix ratio by volume, a low viscosity for pouring thin-walled parts, and sufficient time to degas. It can be demolded within two to four hours.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Availability</th>
<th>Net Wt. Lbs. (Kg)</th>
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<tr>
<td>055419</td>
<td>Freeman 1080</td>
<td>Pint Unit</td>
<td>2 (0.9)</td>
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<td>055412</td>
<td>Freeman 1080</td>
<td>Gallon Unit</td>
<td>16 (56.2)</td>
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<td>055411</td>
<td>Freeman 1080</td>
<td>5 Gallon Unit</td>
<td>80 (286.3)</td>
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**Freeman 1085 – Tan**  
- Castable to 1½” in Thickness  
- 6 Min. Gel Time  
- 30-120 Min. Demold  
- 70D Shore Hardness  

Freeman 1085 is an economical, tan colored urethane elastomer that is suitable for creating prototype injection molded parts. This product is easy to use because of it's one to one mix ratio by weight or volume and low moisture sensitivity. It does not require degassing, possesses a low viscosity for easy pouring, and can be cast to 1½” thick.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Availability</th>
<th>Net Wt. Lbs. (Kg)</th>
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<tr>
<td>055502</td>
<td>Freeman 1085</td>
<td>Pint Unit</td>
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<td>055127</td>
<td>Freeman 1085</td>
<td>Gallon Unit</td>
<td>15.2 (33.4)</td>
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<td>055125</td>
<td>Freeman 1085 Resin Only</td>
<td>5 Gallon</td>
<td>38 (83.6)</td>
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<tr>
<td>055128</td>
<td>Freeman 1085 Hardener Only</td>
<td>5 Gallon</td>
<td>38 (83.6)</td>
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</table>

**Freeman 1090 – Clear**  
- Castable to 3” in Thickness  
- 20 Min. Gel Time  
- 16 Hr. Demold  
- 80D Shore Hardness  

Freeman 1090 is a water clear urethane elastomer that is ideal for creating parts which require near-perfect clarity. This product features a one to one mix ratio (by volume) and low mixed viscosity which makes it excellent for pouring thin-walled parts.

**Note:** Part thickness greatly affects the curing rate of Freeman 1090. Thin-walled parts may require a post cure. Permit the material to solidify at room temperature and then heat cure the part in the mold at 110 to 150F for two to six hours. After cooling, the part is ready to demold.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Availability</th>
<th>Net Wt. Lbs. (Kg)</th>
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<tr>
<td>055417</td>
<td>Freeman 1090</td>
<td>Pint Unit</td>
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<tr>
<td>055415</td>
<td>Freeman 1090</td>
<td>Gallon Unit</td>
<td>15.2 (33.4)</td>
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</table>

**Freeman Color Tints**

A highly concentrated coloring tint for urethane and epoxy resin systems. For urethanes, mix thoroughly into the part B or Polyol side before combining with part A. For epoxies, add to the resin side before combining with the hardener. 0.2% to 0.5% by weight can produce deep colors. May be used with clear epoxies and urethanes to obtain a transparent color.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Color</th>
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<tbody>
<tr>
<td>055420</td>
<td>Freeman Color Tints</td>
<td>Yellow</td>
<td>2 oz. (56.7 g)</td>
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<td>055421</td>
<td>Freeman Color Tints</td>
<td>Green</td>
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<td>055422</td>
<td>Freeman Color Tints</td>
<td>Blue</td>
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<td>Freeman Color Tints</td>
<td>Red</td>
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<td>055424</td>
<td>Freeman Color Tints</td>
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<td>Freeman Color Tints</td>
<td>Black</td>
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<td>Freeman Color Tints</td>
<td>Orange</td>
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<td>055428</td>
<td>Freeman Color Tints</td>
<td>Brown</td>
<td>2 oz. (56.7 g)</td>
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To Order Call 1-800-321-8511
Freeman Polyurethane Elastomers Specifications

<table>
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<tr>
<th>Flexible Urethanes</th>
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<tbody>
<tr>
<td>Freeman 1035</td>
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<tr>
<td>Freeman 1040</td>
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<th>Semi-Rigid Urethanes</th>
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<tr>
<td>Freeman 1060</td>
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<tr>
<td>Freeman 1066</td>
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<tbody>
<tr>
<td>Freeman 1070</td>
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<tr>
<td>Freeman 1080</td>
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<tr>
<td>Freeman 1085</td>
<td>1:1</td>
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<td>Freeman 1090</td>
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<thead>
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<th>ASTM</th>
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*Dependent upon mass.
**The maximum service temperature may be far above Deflection Temperature depending on the application and the stress of the plastic at high temperature.

Fourteen strategic North American locations and worldwide distribution

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- 1101 Moore Rd., Avon, OH 44011
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- Tel 440-934-1902
- Fax 440-934-7200

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  - Mt. Joy, PA 17552
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