

# BLUESIL RTV 3040 A U1

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| <b>Description</b> | <p><b>Bluesil™ RTV 3040</b> is a clear, high strength, addition cure silicone rubber compound. It is formulated to be used with multiple catalysts to cure overnight at room temperature or within hours at elevated temperature to give a variety of hardness. Its low viscosity makes the product easy to pour and quick to degas.</p> <p><b>Bluesil™ RTV 3040</b> is designed to serve the needs of the prototyper by reproducing intricate details and maintaining tight tolerances. In addition, <b>Bluesil™ RTV 3040</b> has been formulated to provide improved urethane resin resistance.</p> |
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| <b>Examples of applications</b> | <ul style="list-style-type: none"> <li>Conventional production and prototype molds</li> <li>Finished rubber parts</li> <li>Stereolithography (SLA) molds</li> </ul> |
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| <b>Key benefits</b> | Please consult your local ELKEM SILICONES sales office. |
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|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------|-------------------------------------|--------------------------------|--|-----------------------------------|---------------------|-----------------------|---------------------------------------------------|----------------------|----------|----------------------------------------|----------------------------------|--------|--|------------------------------------|--|--|----------------|-------------|--|
| Typical properties                                                                     | <table><tr><td colspan="2"><b>TYPICAL PROPERTIES – AS SUPPLIED</b></td><td><b>TYPICAL CATALYZED PROPERTIES</b></td></tr><tr><td colspan="2"><u>Part A – Base Component</u></td><td>Mixed at 24°C (75°F) and 50% R.H.</td></tr><tr><td>• <b>Appearance</b></td><td>Clear to Straw Yellow</td><td>• <b>Mixed Ratio</b>, A:B (Parts by weight) 10:1</td></tr><tr><td>• <b>Consistency</b></td><td>Pourable</td><td>• <b>Viscosity</b>, cP.(mPa.s) 40,000</td></tr><tr><td>• <b>Viscosity</b>, Cp. (mPa.s)</td><td>50,000</td><td></td></tr><tr><td colspan="2"><u>Part B – Catalyst Component</u></td><td></td></tr><tr><td>• <b>Color</b></td><td>Translucent</td><td></td></tr></table> | <b>TYPICAL PROPERTIES – AS SUPPLIED</b>           |                  | <b>TYPICAL CATALYZED PROPERTIES</b> | <u>Part A – Base Component</u> |  | Mixed at 24°C (75°F) and 50% R.H. | • <b>Appearance</b> | Clear to Straw Yellow | • <b>Mixed Ratio</b> , A:B (Parts by weight) 10:1 | • <b>Consistency</b> | Pourable | • <b>Viscosity</b> , cP.(mPa.s) 40,000 | • <b>Viscosity</b> , Cp. (mPa.s) | 50,000 |  | <u>Part B – Catalyst Component</u> |  |  | • <b>Color</b> | Translucent |  |
| <b>TYPICAL PROPERTIES – AS SUPPLIED</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>TYPICAL CATALYZED PROPERTIES</b>               |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <u>Part A – Base Component</u>                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mixed at 24°C (75°F) and 50% R.H.                 |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| • <b>Appearance</b>                                                                    | Clear to Straw Yellow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | • <b>Mixed Ratio</b> , A:B (Parts by weight) 10:1 |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| • <b>Consistency</b>                                                                   | Pourable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | • <b>Viscosity</b> , cP.(mPa.s) 40,000            |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| • <b>Viscosity</b> , Cp. (mPa.s)                                                       | 50,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <u>Part B – Catalyst Component</u>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| • <b>Color</b>                                                                         | Translucent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>TYPICAL PROPERTIES OF CURED RUBBER</b> , Cured 24 hours at 24°C (75°F) and 50% R.H. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Property</b>                                                                        | <b>Test Method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>CATA 3038</b>                                  | <b>CATA 3040</b> | <b>CATA 3045</b>                    |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Appearance</b>                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Clear to Straw Yellow                             |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Specific Gravity</b>                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.08                                              |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Work Life</b> , hours<br>(1)                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1                                                 | 1                | 1                                   |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Pot Life</b> , hours<br>(2)                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2                                                 | 2                | 2                                   |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Hardness</b> (Shore A)                                                              | ASTM D2240                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 36                                                | 38               | 45                                  |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Tensile Strength</b> , psi<br>(n/mm²)                                               | ASTM D412                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 900 (6.2)                                         | 920 (6.3)        | 915 (6.2)                           |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Elongation</b> (%)                                                                  | ASTM D412                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 340                                               | 340              | 205                                 |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Tear Resistance</b> , ppi (n/mm)                                                    | ASTM D624, Die B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 100 (17.5)                                        | 120 (21)         | 130 (23)                            |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Linear Shrinkage</b> (3) (%)<br>24 Hours                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | < 0.1                                             |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| 7 Days                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | < 0.1                                             |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |
| <b>Temperature Range</b> °C (°F)                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -54 to 204 (-65 to 400)                           |                  |                                     |                                |  |                                   |                     |                       |                                                   |                      |          |                                        |                                  |        |  |                                    |  |  |                |             |  |

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**NOTE:** Cure may be accelerated by curing at 40-65°C (120-150°F) for 3-4 hours. HEAT CURING MAY INCREASE SHRINKAGE.

1. Time required to double initial catalysed viscosity (3) 8x8x0.25 in (20.3x20.3x0.64 cm) molded sheet, cured at room temperature
2. Time at which material gels NOTE: Cure at elevated temperatures may cause modification of rubber properties and increase shrinkage Please note: The typical properties listed in this bulletin are not intended for use in preparing specifications for any particular application of **Bluesil™** silicone materials. Please contact our Technical Service Department for assistance in writing specifications.

Please note: The typical properties are not intended for use in preparing specifications. Please contact our local Sales Department for assistance in writing specifications.

## Instruction of use

1. Stir the base (Part A) well before use (except when machine dispensing)
2. Shake the catalyst container (Part B) well before use.
3. Weigh the desired amount of base into a clean mixing container. Tip the container and roll the base all the way around the side wall up to two inches from the top. This will prevent the catalyst from becoming absorbed into the container. It is recommended that the container be filled to not more than 1/3 the container depth to allow sufficient room for expansion during the deaeration procedure.
4. Weigh the proper amount of catalyst into the container. Mix the base and catalyst together by stirring with a stiff, flat ended metal spatula until a uniform color is obtained. Scrape the container walls and bottom well to insure a thorough mix.
5. Place the container into a vacuum chamber and evacuate the entrapped air from the mixture using a vacuum pump capable of achieving 29 inches of mercury vacuum. The mixture will rise, crest and then collapse in the container. Interruption (bumping) of the vacuum may be necessary to prevent overflowing the container. Keep the mixture under full vacuum for 2-3 minutes after the material has receded in the container.
6. Bleed air slowly into the vacuum chamber. When the chamber is at atmospheric equilibrium, remove the cover plate and take out the container.
7. Pour the desired material slowly in a steady stream from one end of the mold box so that the material flows evenly over the pattern. This should minimize entrapment of air bubbles under the flowing material. A "print" coat may be poured first over the pattern which will also help reduce the possibility of entrapping air on the pattern and in the cured rubber. A mold release (petroleum jelly) may be applied on the pattern first to improve release.
8. Allow the rubber to cure for 16-24 hours at 75±5°F (24°C) before removing the cured rubber mold from the pattern. For best results, allow the mold to air cure an additional 24 hours before using it in production. Full cure is achieved in 3-7 days

## MIXED PROCESSING PROPERTIES WILL BE AFFECTED BY TEMPERATURE VARIATIONS

- A decrease in work life and pot life may be expected to occur at temperatures exceeding 75°F (24°C). Room temperature curing moldmaking rubbers are particularly sensitive to higher temperatures. Refrigeration of the base (Part A) prior to use in hot environments has shown to improve the handling properties of these materials.
- Lower temperatures will increase the work life and pot life of this material. Cure temperatures below 68°F (20°C) are not recommended, and have been found to cause a reduction in final cure hardness and physical properties.

This system contains a platinum CATALYST, which may be inhibited by materials found in some organic polymer systems, chlorinated solvents, and some substrates. Especially troublesome materials are: amine cured epoxies, sulfur cured organic rubber systems such as natural rubber, polysulfide rubber, latex rubber and adhesives, sulfur containing modeling clays, PVC coated surfaces, and tin catalyzed silicone RTV rubbers. A patch test to determine compatibility is recommended when doubts exists.

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| <b>Regulation</b>             | Please consult your local ELKEM SILICONES sales office.                                                                                                                                                                                                                                                                     |
| <b>Limitations</b>            | Please consult your local ELKEM SILICONES sales office.                                                                                                                                                                                                                                                                     |
| <b>Packaging</b>              | <ul style="list-style-type: none"><li>• BLUESIL RTV 3040 A U1 is available in<ul style="list-style-type: none"><li>○ Drum of 200 KG (441 LB)</li><li>○ Pail of 20 KG (44.1 LB)</li><li>○ Piece of 1 PC</li></ul></li></ul>                                                                                                  |
| <b>Storage and shelf life</b> | When stored in its original packaging:<br>BLUESIL RTV 3040 A U1 may be stored for up to 18 months from its date of manufacturing. Comply with the storage instructions and expiration date marked on the packaging. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications. |
| <b>Safety</b>                 | Please consult the Safety Data Sheet of:<br>BLUESIL RTV 3040 A U1                                                                                                                                                                                                                                                           |

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