



Consumer Solutions

VORASURF™ Polyurethane Additives



A reliable supply of proven, high-quality materials

You need a supplier that can deliver the high-quality silicone surfactants you require, on time and in-spec – a supplier with the technical expertise needed to help you optimize your system, solve problems and develop innovative products for your customers. Known and trusted worldwide as a provider of silicone products and innovation, Dow brings you:

- Experience in the development, production and customization of silicone surfactants for polyurethane foam applications
- An extensive toolbox of proven Dow silicone surfactants for flexible, rigid and microcellular polyurethane foam
- Array of global resources, game-changing science and technical know-how
- An exceptional range of value-added polyurethane systems, components and additives

Collaborative innovation and problem-solving support

Understanding how a silicone surfactant will interact with your system is critical to your success. While other silicone suppliers may guard this knowledge, Dow is poised to readily share its deep understanding of silicone surfactant technology.

When you choose silicone surfactants from Dow, our team will work with you to ensure that you understand not only how the surfactant affects polyurethane foam formulation but also how you can maximize its ability to achieve desired foam characteristics. It's all part of our commitment to support innovation and growth across the polyurethane foam industry through the power of collaboration.

Explore our extensive toolbox of proven silicone surfactants

Silicone surfactants from Dow can increase the compatibility of your raw materials and decrease the surface tension of your polyurethane foam system. They improve emulsification and nucleation, prevent coalescence, and stabilize cell membranes.



| Continuous Conventional and Viscoelastic Foam | | | | | | | | | | |
|---|-------------------|---------------------------|---------------------------|---------------------|-------------------|---------------------------|--------------------|--------------------------|-------------|---|
| Surfactant | Processing Window | Effective Bulk Stabilizer | Good Mixing of Components | Fine Cell Structure | High Cell Opening | FR Compatible Surfactants | Viscoelastic Foams | Alternate Blowing Agents | Reduced VOC | Salient Features |
| VORASURF™ DC 5125 Additive | *** | *** | * | * | * | ** | | | | High bulk stabilizing surfactant used for soft, low-medium density foams |
| VORASURF™ DC 198 Additive | ** | ** | ** | ** | ** | * | x | x | | High efficiency silicone surfactant used for a wide variety of formulations |
| VORASURF™ DC 5188 Additive | * | * | *** | *** | *** | * | | | x | Excellent emulsifying surfactants for incompatible components in formulations and discontinuous applications |
| VORASURF™ DC 5950 Additive | *** | *** | ** | ** | *** | *** | x | | | Medium efficiency surfactant for a wide variety of formulations. Provides exceptional performance for FR foams and high density foams. |
| VORASURF™ DC 5943 Additive | *** | ** | *** | ** | ** | ** | | | x | Medium efficiency surfactant for a wide variety of formulations, from low to high densities |
| VORASURF™ DC 5160 Additive | *** | *** | * | * | * | ** | | | | High bulk stabilizing surfactant used for soft, low-medium density foams |
| VORASURF™ DC 5417 Additive | *** | *** | * | * | * | ** | | | x | High bulk stabilization surfactant used for soft, low-medium density foams |
| VORASURF™ DC 5810 Additive | ** | ** | *** | ** | *** | ** | | | x | Improved mixing of incompatible components in different formulations. High efficiency surfactant. Compatible with high filler content. |
| VORASURF™ DC 5900 Additive | *** | *** | * | ** | ** | ** | x | | | Excellent bulk stabilization and cell opening characteristics |
| VORASURF™ DC 5906 Additive | ** | *** | ** | *** | *** | ** | x | x | x | Excellent bulk stabilization and compatibility with different blowing agents. Surfactant applicable to a wide range of formulations. Compatible with high filler content. |
| VORASURF™ DC 5933 Additive | *** | ** | *** | ** | *** | * | | | x | High emulsification surfactant compatible with high PO containing polyols |
| VORASURF™ FF 5982 Additive | *** | *** | * | ** | ** | ** | x | x | | Medium efficiency surfactant, compatible with a wide range of formulations and CO ₂ blown foams |
| VORASURF™ DC 5986 Additive | ** | ** | ** | ** | *** | ** | x | x | x | Medium efficiency surfactant compatible with a wide range of formulations |
| VORASURF™ DC 5987 Additive | ** | *** | *** | ** | *** | ** | x | x | x | Surfactant compatible with a wide formulation range |
| VORASURF™ DC 5990 Additive | ** | ** | * | * | ** | *** | | | x | Excellent FR surfactant. Used in conjunction with flame retardants. |

*Low performance **Moderate performance ***High performance x = Attribute present in product
 Relative product performance listed in these tables is indicative of typical properties of these surfactants. However, the final performance of these surfactants is dependent on specific application formulations and application techniques

VORASURF™ Polyurethane Additives

| Conventional Box Foams | | | | | | | |
|----------------------------|-------------------|-------------------|---------------------------|---------------------|-------------------|---------------------------|--|
| Product Name | Rectangular Block | Cylindrical Block | Good Mixing of Components | High Filler Content | High Cell Opening | FR Compatible Surfactants | Salient Features |
| VORASURF™ DC 5933 Additive | *** | ** | *** | * | ** | * | High emulsification surfactant compatible with high PO containing polyols. Wide processing window for discontinuous process. |
| VORASURF™ DC 5417 Additive | *** | *** | ** | * | ** | * | Medium efficiency surfactant for a wide range of formulations in discontinuous process, both rectangular and cylindrical blocks. |
| VORASURF™ DC 5906 Additive | ** | *** | *** | *** | *** | ** | Good cell opening, provides excellent stabilization to cylindrical blocks. Compatible with high filler content. |
| VORASURF™ DC 5810 Additive | *** | *** | ** | *** | ** | *** | Improved mixing of incompatible components in different formulations. High efficiency surfactant forming finer and homogeneous cells. Compatible with high filler content. |
| VORASURF™ DC 5986 Additive | *** | *** | *** | ** | * | *** | Medium efficiency surfactant compatible with a wide range of formulations in continuous and discontinuous. Improves utilization of FR additives. |
| VORASURF™ DC 5950 Additive | *** | *** | * | ** | *** | *** | Medium/Low efficiency surfactant for densities from 45 to 100 kg/m ³ . Excellent mixing of components and FR additives. |

| TDI Viscoelastic Foams | | | | | |
|----------------------------|---------------------------------|---------------------|-------------------|---------|---|
| Product Name | Processing Window (Usage Range) | Fine Cell Structure | High Cell Opening | Low VOC | Type of Foam |
| VORASURF™ SZ 1959 Additive | * | *** | ** | | TDI Viscoelastic foam, Mechanical Froth |
| VORASURF™ SZ 1952 Additive | * | ** | *** | x | TDI Viscoelastic foam, Mechanical Froth |

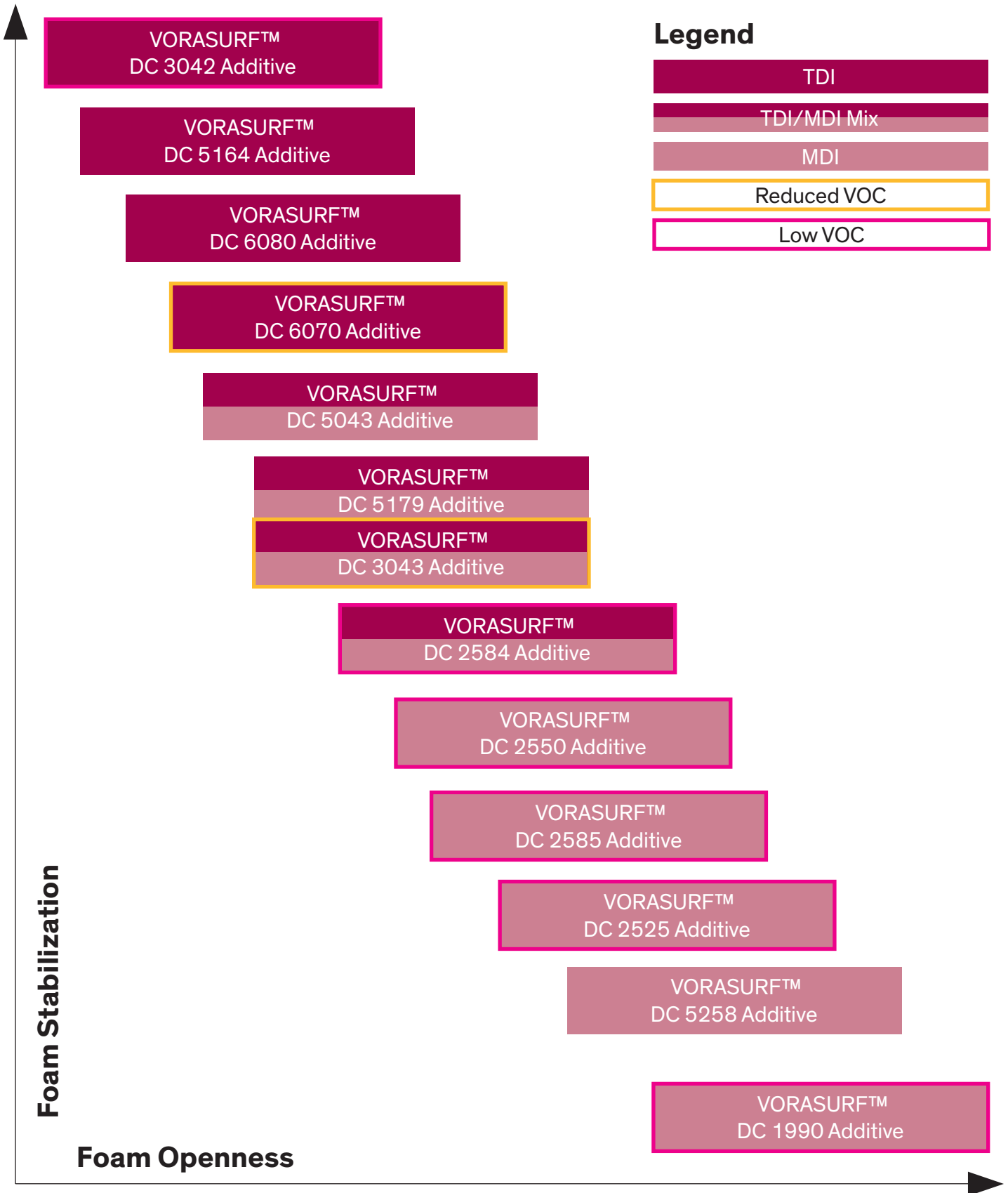
| HR Slab Foams | | | | | |
|----------------------------|-------------------|---------------------|-------------------|--------------------|---|
| Product Name | Processing Window | Fine Cell Structure | High Cell Opening | Bulk Stabilization | Type of Foam |
| VORASURF™ DC 5043 Additive | *** | *** | *** | ** | Wide latitude HR Slab surfactant with balanced nucleation and cell stabilization properties |

*Low performance **Moderate performance ***High performance x = Attribute present in product
 Relative product performance listed in these tables is indicative of typical properties of these surfactants. However, the final performance of these surfactants is dependent on specific application formulations and application techniques

| VORASURF™ Silicone Surfactants for HR Molded Foam | | | | | | | | | | |
|---|--|-----|---------|-----|--------------|---------------------------|----------------|------------------------------|--|---|
| Product Name | Foam System Stability | MDI | TDI/MDI | TDI | Low Emission | Co-Surfactant Recommended | Potency | Recommended Use Levels (pph) | Features and Description | |
| VORASURF™ DC 3042 Additive | ↑ Direction of decreasing foam system stability | - | - | XXX | ++ | ◇◇◇ | Very very high | 0.2-0.6 | Strongest TDI HR molded foam bulk stabilizing surfactant. Low emission alternative to VORASURF™ DC 5164 Additive. Best used in combination with cell regulating surfactant such as VORASURF™ DC 3043 Additive or VORASURF™ DC 2584 Additive. | |
| VORASURF™ DC 5164 Additive | | - | - | XXX | - | ◇◇◇ | Very High | 0.2-1.0 | Strong TDI HR molded foam stabilizing surfactant. Best when used in combination with cell regulating surfactant such as VORASURF™ DC 3043 Additive or VORASURF™ DC 2584 Additive. | |
| VORASURF™ DC 6080 Additive | | - | - | XXX | - | - | - | High | 0.5-1.0 | TDI HR molded silicone surfactant. Particularly recommended for low density foams and foams with high amounts of copolymer polyol. |
| VORASURF™ DC 6070 Additive | | - | XX | XXX | - | - | - | Medium-high | 0.5-1.0 | Reduced VOC alternative to VORASURF™ DC 6080 Additive. Particularly recommended for low density foams and foams with high amounts of copolymer polyol. |
| VORASURF™ DC 5043 Additive | | - | XXX | XX | - | - | - | Medium | 0.5-1.0 | Broad processing latitude surfactant for TDI and TDI/MDI based HR molded foam. Provides fairly balanced cell regulation and bulk stabilizing performance. |
| VORASURF™ DC 5179 Additive | | - | XX | ••• | - | - | - | High | 0.5-1.0 | Strongest cell regulating surfactant with modest stabilizing effect. Can be used alone but generally recommended to be used in combination with a bulk stabilizer like VORASURF™ DC 5164 Additive or VORASURF™ DC 3042 Additive. |
| VORASURF™ DC 3043 Additive | | - | XX | ••• | - | - | - | High | 0.5-1.0 | Strongest cell regulating surfactant with modest stabilizing effect. Reduced VOC alternative to VORASURF™ DC 5179 Additive. Can be used alone but generally recommended to be used in combination with a bulk stabilizer like VORASURF™ DC 5164 Additive or VORASURF™ DC 3042 Additive. |
| VORASURF™ DC 2584 Additive | | XX | XX | •• | + | - | - | Medium-high | 0.5-1.0 | Moderately low VOC, medium-to-high potency cell regulating surfactant suitable for standalone use in less stable MDI and MDI/TDI HR molded systems. |
| VORASURF™ DC 2585 Additive | | XXX | - | - | ++ | - | - | Medium | 0.5-1.0 | Low VOC surfactant designed to perform in a variety of MDI HR molded systems and NVH systems. Capable of producing finer cells while not reducing openness. |
| VORASURF™ DC 2550 Additive | | XXX | - | - | ++ | - | - | Medium | 0.5-1.0 | Low VOC, medium potency surfactant for MDI based HR systems. |
| VORASURF™ DC 2525 Additive | | XXX | - | - | +++ | - | - | Low-medium | 1 | Very low VOC, low-medium potency surfactant for MDI based HR systems. |
| VORASURF™ DC 5258 Additive | | • | • | • | - | - | ◇◇◇ | Low-medium | 0.5-1.0 | Low potency surfactant suitable for standalone use in MDI HR molded foams but best suited as a cell opening co-surfactant when used in conjunction with higher potency surfactants such as VORASURF™ DC 2584 Additive. |
| VORASURF™ DC 1990 Additive | | • | • | • | ++ | - | ◇◇◇ | Low-medium | 0.5-1.0 | Low emission alternative to VORASURF™ DC 5258 Additive. Low potency cell opening surfactant to be used in conjunction with cell regulator and/or bulk stabilizer. |

- Not applicable ••• Strongly Recommended as co-surfactant •• Recommended as co-surfactant • Can be used as co-surfactant
 XXXX Strongly recommended for application XX Recommended for application X Can use for application +++ Very low VOC ++ Low VOC + Low VOC at use levels 5

VORASURF™ Silicone Surfactants for HR Molded Foam



| Shoe Sole, Microcellular and Mechanical Froth Foams | | | | | |
|---|------------------------|-----------------------|---------------|------------------|---|
| Product Name | High-Density Shoe Sole | Low-Density Shoe Sole | Microcellular | Mechanical Froth | Description |
| VORASURF™ DC 193 Additive | X | | X | | General-purpose surfactant for rigid foam applications; surfactant for footwear (shoe sole) and integral skin applications |
| VORASURF™ SZ 1605 Additive | X | | | | Surfactant for insulation panels and spray foam; surfactant for footwear (shoe sole) applications |
| VORASURF™ TF 1771 Additive | X | X | X | | Newly engineered surfactant designed for a wide range of shoe sole applications |
| VORASURF™ SZ 1952 Additive | | | | X | High efficiency. Non-hydrolysable mechanical froth foam surfactant |
| VORASURF™ SZ 1959 Additive | | | | X | High efficiency. Non-hydrolysable mechanical froth foam surfactant leading to fine cells and high frothing efficiency |
| VORASURF™ DC 1990 Additive | | | X | | Silicone surfactant designed for general use in microcellular foam applications |
| VORASURF™ SF 2937 Additive | | | X | | General-purpose surfactant for rigid foam; surfactant for microcellular foam |
| VORASURF™ DC 3042 Additive | X | X | X | | Bulk stabilizing surfactant for use in microcellular applications; provides uniform cell structure, good surface appearance, and improved dimensional stability |
| VORASURF™ DC 3043 Additive | X | X | X | | Bulk stabilizing surfactant for use in all microcellular applications |
| VORASURF™ TF 3607 Additive | X | | | | Surfactant for ester slabstock foam and TDI/MDI HR molded foam systems; surfactant for urethane elastomer foam and footwear (shoe sole) applications |
| VORASURF™ DC 5043 Additive | | | X | | Surfactant for TDI HR molded and slabstock foam applications; surfactant for microcellular foam |



VORASURF™ Polyurethane Additives

| Rigid Foam | | | | | | | | |
|----------------------------|----------|---------------------|---------------|-----------|------------------|------------|----------------|---|
| Product Name | Bunstock | High-Density Molded | Pour-in-Place | Appliance | Lamination Board | Spray Foam | PIR Boardstock | Description |
| VORASURF™ DC 193 Additive | X | X | X | X | X | X | X | General-purpose surfactant for rigid foam applications; surfactant for footwear (shoe sole) and integral skin applications |
| VORASURF™ DC 197 Additive | | X | | | | X | | Silicone surfactant for use in high-density rigid, molded, and spray foam |
| VORASURF™ SZ 1605 Additive | | X | X | | | X | | Surfactant for insulation panels and spray foam; surfactant for footwear (shoe sole) applications |
| VORASURF™ RF 1718 Additive | | | | X | X | X | | General surfactant for hydrocarbon and water-blown rigid foam systems |
| VORASURF™ TF 1771 Additive | | | | | X | X | | General surfactant for all water-blown and HFC rigid foam systems |
| VORASURF™ RF 1777 Additive | | | | X | X | | | Silicone surfactant for hydrocarbon-blown rigid foam systems |
| VORASURF™ SF 2936 Additive | | | X | X | | | | Surfactant for cold storage and construction insulated panel systems |
| VORASURF™ SF 2937 Additive | X | X | X | X | X | X | | General-purpose surfactant for rigid foam; surfactant for microcellular foam |
| VORASURF™ SF 2938 Additive | | | X | X | X | X | X | Surfactant for PUR/PIR insulation panels, hydrocarbon-blown appliance systems, and water-blown spray foam; suitable with bio-based polyols |
| VORASURF™ SF 2945 Additive | | | X | | X | | | Surfactant for construction panel applications |
| VORASURF™ DC 5000 Additive | | | X | | | | | Highly efficient, cell opening surfactant for rigid polyurethane foams |
| VORASURF™ DC 5098 Additive | X | | X | | | | | Isocyanate-compatible silicone surfactant for use in a variety of rigid foam applications |
| VORASURF™ DC 5103 Additive | X | X | X | X | X | X | X | General-purpose surfactant for rigid foam applications; improved product clarity and reduced melting point compared to DC 193 |
| VORASURF™ DC 5350 Additive | | | | | | X | | Silicone surfactant for bulk stabilization of water-blown spray polyurethane foam |
| VORASURF™ DC 5357 Additive | | | X | X | X | | | Surfactant for appliance and insulation panels, including pour-in-place applications; application in HFC-blown appliance formulations" |
| VORASURF™ RF 5374 Additive | | | X | X | | | | Surfactant for pentane-blown rigid foam systems |
| VORASURF™ RF 5382 Additive | | | X | X | | | | Newly engineered surfactant with improved system compatibility in pentane-blown appliance formulations |
| VORASURF™ RF 5575 Additive | | | | X | X | X | | General surfactant for hydrocarbon and water-blown rigid foam systems |
| VORASURF™ DC 5585 Additive | | | | | | | X | Silicone surfactant for polyisocyanurate foam systems, including flexible faced applications |
| VORASURF™ DC 5588 Additive | X | | | | X | | | High-efficiency silicone surfactant for rigid lamination and bunstock foam |
| VORASURF™ DC 5604 Additive | X | X | X | X | X | X | X | General-purpose rigid foam surfactant for use in polyurethane and polyisocyanurate foams; gives enhanced aesthetics to pentane-blown appliance applications |

| Polyester Foam | |
|----------------------------|--|
| Product Name | Description |
| VORASURF™ DC 1990 Additive | Surfactant for polyester flexible slabstock foam applications with low emission requirements; can be used in flexible molded foam for cell opening and for rigid foam applications |
| VORASURF™ TF 3607 Additive | Surfactant for ester slabstock foam and TDI/MDI HR molded foam systems; surfactant for urethane elastomer foam and footwear (shoe sole) applications |
| VORASURF™ FF 5526 Additive | Surfactant for polyester slabstock foam |

Global resources and local support

Dow has an extensive network of sales, application engineering, product development, manufacturing, and delivery capabilities around the globe. You can depend on us for a readily available supply of consistent, high-quality silicone surfactants and technical support when and where you need it.

The Dow brand has earned a reputation for quality, consistency, and dependability in dozens of industries around the globe. This includes many of the industries you serve, such as: construction, transportation, textiles, appliances, consumer goods, electronics and packaging.

For product information, samples, and sales or technical support, visit consumer.dow.com.



Learn how much we can do to help you create polyurethane foam products that perform better, smarter, safer and more efficiently at consumer.dow.com.

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