
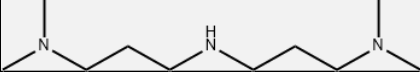
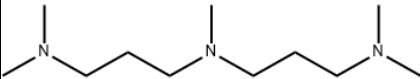
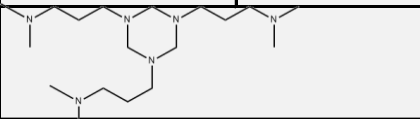
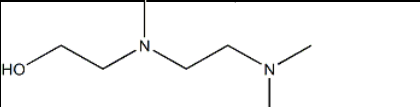
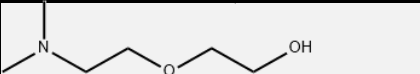
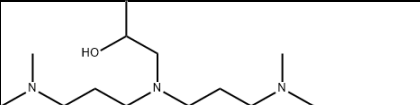

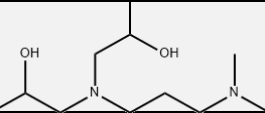
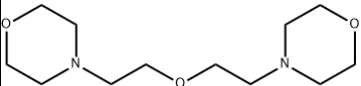

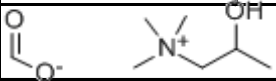
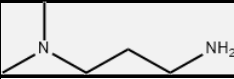
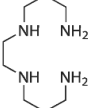



Green Amines' Polyurethane Catalysts & Specialty Amines

| Products | Comparable Products | | Product Characteristics and Applications | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|--|---|---------|-----|-----|---------|-------------------------|---|--|------------------------|-------------------------------|-------------|---------------------|------------------------------|-----------|----------------|----------|-----------|----------|------------|------------|
| Green Amines | Evonik | Huntsman | Characteristics | | | | | | Flexible Foams | | | Flexible & Rigid Foams | | Rigid Foams | | | | CASE | | | | | |
|  | | | Foaming | Balancing | Gelling | MDI | TDI | TDI/MDI | Flexible Slabstock Foam | Microcellular/Integral Skin Molded Foam | Flexible and Semi-flexible Molded Foam | Spray | Energy Absorbing (NVH/Impact) | Bunstock | High Density Molded | Pour-in-place/PUR Lamination | Appliance | PIR Boardstock | Coatings | Adhesives | Sealants | Elastomers | Shoe Soles |
| | GAC®-15 | POLYCAT® 15 | JEFFCAT® Z-130 | | • | | • | | • | • | • | • | • | | • | • | | | | | | | |
| |  | | CAS: 6711-48-4 | Non-emissive, isocyanate-reactive, balanced urethane/urea reaction catalyst. It promotes the surface cure/ reduces skinning property and improves surface appearance. | | | | | | | | | | | | | | | | | | | |
| | GAC®-77 | POLYCAT® 77 | JEFFCAT® ZR-40 | | | • | • | | • | • | • | • | • | • | | • | | • | | | | | |
| |  | | CAS: 3855-32-1 | Balanced gelation and blowing catalyst that can promote open cells in some applications. It is used in all-water-blown TDI or TDI/MDI high resilience (HR) foam and in TDI/MDI- or MDI-based, cold-cure molded polyurethane cushioning foam systems. | | | | | | | | | | | | | | | | | | | |
| | GAC®-41 | POLYCAT® 41 | JEFFCAT® TR-90 | | | • | • | • | • | | | | | | | • | • | • | • | | | | |
| |  | | CAS: 15875-13-5 | Moderately active trimerization catalyst with excellent blowing capability. Excellent performance in water co-blown rigid systems. Recommended for use as a co-catalyst with other polyurethane and polyisocyanurate catalysts. | | | | | | | | | | | | | | | | | | | |
| | GAC®-T | DABCO® T | JEFFCAT® Z-110 | | | • | • | • | • | • | • | • | • | • | | | | | | | | | |
| |  | | CAS: 2212-32-0 | Non-emissive amine which is more selective to the urea (blowing) reaction. Due to its reactive hydroxyl group, it readily reacts into the polymer matrix. It can be used in flexible and rigid polyurethane systems where a smooth blowing profile is required. | | | | | | | | | | | | | | | | | | | |
| | GAC®-DMAEE | POLYCAT® 37 | JEFFCAT® ZR-70 | • | | | • | | • | | • | • | • | | | | • | | | • | • | • | • |
|  | | CAS: 1704-62-7 | Non-emissive amine used in a range of applications, including low density, water blown, open cell spray polyurethane foam (SPF) and a variety of flexible foams. | | | | | | | | | | | | | | | | | | | | |
| GAC®-50 | | JEFFCAT® ZR-50 | | • | | • | • | • | • | • | • | • | • | | | • | | | | | | | |
|  | | CAS: 67151-63-7 | Low emission catalyst with balance and versatility. Applications include ester based slabstock flexible foam, microcellulars, elastomers, RIM & RRIM and rigid packaging foam. | | | | | | | | | | | | | | | | | | | | |

| Products | | Comparable Products | | Product Characteristics and Applications | | | | | | | | | | | | | | | | | | | |
|---|----------------|---------------------|--|--|---------|-----|-----|---------|-------------------------|---|--|------------------------|-------------------------------|-------------|---------------------|------------------------------|-----------|----------------|----------|-----------|----------|------------|------------|
| Green Amines | Evonik | Huntsman | Characteristics | | | | | | Flexible Foams | | | Flexible & Rigid Foams | | Rigid Foams | | | | CASE | | | | | |
|  | | | Foaming | Balancing | Gelling | MDI | TDI | TDI/MDI | Flexible Slabstock Foam | Microcellular/Integral Skin Molded Foam | Flexible and Semi-flexible Molded Foam | Spray | Energy Absorbing (NVH/Impact) | Bunstock | High Density Molded | Pour-in-place/PUR Lamination | Appliance | PIR Boardstock | Coatings | Adhesives | Sealants | Elastomers | Shoe Soles |
| GAC®-DPA | DABCO® NE1050 | JEFFCAT® DPA | | | • | | | | • | • | • | • | • | | | • | | | | | | | |
|  <div>CAS: 63469-23-8</div> | | | Low emission catalyst with good gellation and flowability. Used in ether based slabstock flexible foam, HR molded flexible foam, microcellulars, elastomers, RIM & RRIM and rigid packaging foam. | | | | | | | | | | | | | | | | | | | | |
| GAC®-DMDEE | DABCO® DMDEE | JEFFCAT® DMDEE | • | | | • | | • | • | | | • | | | | | | | • | • | • | | |
|  <div>CAS: 6425-39-4</div> | | | Isocyanate stable, amine blowing catalyst particularly suitable for one- and two-component rigid foam sealant systems as well as flexible slabstock foams. It provides system stability in moisture-cured polyurethane systems (CASE). | | | | | | | | | | | | | | | | | | | | |
| GAC®-A33 | DABCO® 33-LV | JEFFCAT® TD-33A | | | • | • | • | • | • | • | • | | • | | • | • | | | • | • | • | • | |
|  <div>CAS: 280-57-9</div> | | | Strong urethane reaction (gelation) catalyst for multipurpose use. It is 33% triethylenediamine and 67% dipropylene glycol. It offers low viscosity. It is used in adhesive and sealant applications. | | | | | | | | | | | | | | | | | | | | |
| GAC® TMR-2 | DABCO® TMR-2 | | | | • | | | | | | | | • | • | | | • | • | | | | | |
|  <div>CAS: 62314-25-4</div> | | | Strong amine-based, delayed action trimerization catalyst. It provides a uniform and controlled rise profile compared to potassium-based catalysts. It promotes the polyisocyanurate trimerization reaction. | | | | | | | | | | | | | | | | | | | | |
| GAC®-DMAPA | | JEFFCAT® DMAPA | | | • | • | | • | • | • | • | • | • | | • | • | | | | | | | |
|  <div>CAS: 109-55-7</div> | | | An amine that has a catalytic effect. Applications include rigid packaging foam, microcellular materials, elastomers and ether-based slabstock flexible foam. | | | | | | | | | | | | | | | | | | | | |
| GAC®-N4 Amine | Ancamine® 2655 | | | | | | | | | | | | | | | | | | | | | | |
|  <div>CAS: 10563-26-5</div> | | | N4 Amine is a tetramine, meaning it contains four amine functional groups (-NH2) within its molecule. This characteristic makes it a valuable crosslinker in various industrial applications. | | | | | | | | | | | | | | | | | | | | |
| Custom manufacturing as requested | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

| Products | Comparable Products | | Product Characteristics and Applications | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|----------|--|-----------|---------|-----|-----|----------------|-------------------------|---|--|-------|-------------------------------|----------|---------------------|------------------------------|-----------|----------------|----------|-----------|----------|------------|------------|
| Green Amines | Evonik | Huntsman | Characteristics | | | | | Flexible Foams | | | Flexible & Rigid Foams | | Rigid Foams | | | | CASE | | | | | | |
|  | | | Foaming | Balancing | Gelling | MDI | TDI | TDI/MDI | Flexible Slabstock Foam | Microcellular/Integral Skin Molded Foam | Flexible and Semi-flexible Molded Foam | Spray | Energy Absorbing (NVH/Impact) | Bunstock | High Density Molded | Pour-in-place/PUR Lamination | Appliance | PIR Boardstock | Coatings | Adhesives | Sealants | Elastomers | Shoe Soles |

Green Amines: www.greenamines.com/en

Polyurethane catalysts: www.greenamines.com/en/index.php?m=content&c=index&a=lists&catid=29

Specialty amines: www.greenamines.com/en/index.php?m=content&c=index&a=lists&catid=27

Contact: Francis Su, Foreign Trade Manager

Mobile/WeChat: +86 13917364302

E-Mail: sf@greenamines.com