HIGH-PERFORMANCE POLYMERS AND ENGINEERING THERMOPLASTICS GERMANY

Products supplied

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Brenntag GmbH is the German subsidiary of the Brenntag Group, the global market leader in chemicals and ingredients distribution. We connect our suppliers and customers in value-adding partnerships.

**Brenntag Polymers**

We develop, produce and market compounds in engineering thermoplastics and high-performance polymers and are a product development partner for customer-specific material solutions.

**Our polymers expertise – More than distribution**

In addition to our distribution range for products from other leading manufacturers and brands, our customers also have some 700 products at their disposal that we have developed ourselves. Our expertise and support extends from product development, via application and processing consultancy, right through to readiness for the market. Working in close cooperation with our customers, we develop individual materials that are precisely tailored to their subsequent use.

**Your benefit: Our combined know-how**

We have specialist know-how in the fields of metal substitution, thermally conductive compounds, drinking water and food-compatible compounds, and detectable and tribologically optimised compounds. Our thermoplastics are individually adjustable and have proved successful for numerous applications in a wide range of sectors, including the automotive and E&E segments, lighting applications, architecture, building and construction, sports and leisure, industry, medicine, etc.

We support you in the implementation of your ideas. You benefit from the advantages of a local and regional market presence with the network of a globally operating company. This enables us to deal with your needs quickly, and guarantee you the best logistical and technical support.
## Our Products

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<th>POLYMER</th>
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| PA      | ALAMID®      | BRENNTAG®    | High toughness and hardness  
          |              |              | Very good abrasion resistance  
          |              |              | High heat resistance  
          |              |              | Good chemical resistance  
          |              |              | Wide spectrum of fillers and reinforcing materials |
| PA 6    | ALAMID®      | BRENNTAG®    | Magnetically detectable compounds  
          | PA 66       |              | Suitable for use in the food industry  
          |              |              | Conformity to regulation 10/2011 (EU), FDA 21 CFR  
          |              |              | Enable maximum process reliability  
          |              |              | Individual color settings or conductive combinations possible |
| PA 66   | AQUAFORCE®   | BRENNTAG®    | Metal substitute  
          |              |              | Compounds specifically for use in drinking water segment  
          |              |              | Excellent mechanical properties  
          |              |              | Glass fiber reinforcements from 30% to 60%  
          |              |              | Very good thermoplastic processability |
| All polymers in the field of engineering thermoplastics and high-performance thermoplastics | LEIS® Spezialcompounds | BRENNTAG® | Development and production of customized materials:  
          |              |              | - Definition of requirements profile  
          |              |              | - Fixing of specifications for “your” material  
          |              |              | - Precise implementation of your requirements  
          |              |              | - Compounds geared exactly to your applications |
| PA 6    | NYLAFORCE®   | BRENNTAG®    | Metal substitute  
          | PA 66       |              | High glass reinforcement (up to 70%) in the feed-up process  
          |              |              | (enables extremely careful incorporation of the glass fibers)  
          |              |              | Better processing properties than partially aromatic polyamides  
          |              |              | No PA 6 / PA 66 on the market with comparable mechanical values |
| PA 6    | NYLAFORCE®   | BRENNTAG®    | Metal substitute  
          | PA 66       |              | Specifically for applications subjected to high dynamic load  
          |              |              | Tensile strength of up to 320 MPa  
          |              |              | High elasticity modulus and thus high dimensional stability  
          |              |              | Very high elasticity, outstanding elongation |
| PBT PET | TECOUR®      | BRENNTAG®    | High heat resistance, stiffness and hardness  
          |              |              | Can be subjected to high dynamic loads  
          |              |              | Extremely favorable slip and abrasion behavior  
          |              |              | Good chemical resistance  
          |              |              | Low tendency to stress cracking and good dimensional stability |
| PA 6    | THERMOFORCE®| BRENNTAG®    | Thermally conductive compounds  
          | PA 66       |              | Electrically conductive or electrically insulating  
          | PPS         |              | Optimum heat dissipation  
          | PBT         |              | Maximum design freedom and complex design possibilities  
          |              |              | Multi-functional use, significant cost and weight reduction |
| PA 66   | TRIBOFORCE®  | BRENNTAG®    | Tribologically optimized compounds  
          | PPS         |              | Ideal sliding/slipping/bearing products for extreme demands  
          | PEEK        |              | Exceptional resistance to wear and tear  
          |              |              | Low coefficients of friction  
<pre><code>      |              |              | Outstanding dimensional stability |
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| PA 12   | VESTAMID®    | EVONIK       | - Very low water absorption  
- Exceptionally high impact strength  
- High resistance to chemicals  
- Excellent abrasion resistance  
- Low coefficient of sliding friction  
- Excellent fatigue resistance |
| PA 12-Elastomers | VESTAMID®    | EVONIK       | - Good chemical and solvent resistance  
- Excellent low-temperature impact strength  
- High elasticity and good resilience  
- Low temperature dependence of the mechanical properties  
- No volatile or migrating plasticizers |
| PA 612  | VESTAMID®    | EVONIK       | - Low coefficients of sliding friction  
- Advantages over PA 12:  
  - higher heat deflection temperature  
  - better tensile and flexural strength  
  - excellent rebound resilience |
| Biopolyamide 610, 1010, 1012 | VESTAMID® Terra | EVONIK       | - Based on renewable raw materials  
- Favorable CO₂ balance  
- High-performance plastics  
- Can compete with established polyamides |
| PA 12 (USP Class VI)  
PA PACM 12 (USP Class VI) | VESTAMID® Care  
TROGAMID® Care | EVONIK       | - High bursting strength and high toughness  
- Outstanding chemical resistance  
- Good mechanical properties  
- Non-toxic  
- Resistance to body fluids |
| PA PACM 12 (transparent) | TROGAMID®   | EVONIK       | - Glass-clear, high transparency  
- High mechanical strength  
- High heat resistance and toughness  
- Good chemical resistance  
- Low shrinkage on processing |
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| PBT           | VESTODUR®    | EVONIK       | ■ Low water absorption, therefore exact shape retention  
                                 |              | ■ High strength and hardness  
                                 |              | ■ Good sliding friction behavior, low abrasion  
                                 |              | ■ Good electrical properties  
                                 |              | ■ No tendency to stress fractures                                                                 |
| Copolyamide   | VESTAMELT®   | EVONIK       | ■ Economical, gentle on fabrics, also with  
                                 | melt adhesive|              | ■ difficult-to-bond surfaces  
                                 |              | ■ Good resistance when washing and dry-cleaning  
                                 |              | ■ Steam and solvent-resistant                                                                 |
| PMMA          | PLEXIGLAS®   | RÖHM         | ■ Maximum light transmission (92%)  
                                 | glass-clear  |              | ■ Very good UV resistance  
                                 | and colored  |              | ■ High surface hardness  
                                 |              | ■ Types with excellent impact strength  
                                 |              | ■ Types with very good light scattering effect                                                                 |
| MBS           | CYROLITE®    | RÖHM         | ■ High transparency  
                                 |              |              | ■ High impact strength even at low temperatures  
                                 |              |              | ■ Resistant to EtO gas and gamma rays  
                                 |              |              | ■ High chemical resistance  
                                 |              |              | ■ Easy to bond, also with PVC                                                                 |
| SBS SEBS SEPS | Novaprene®   | Novaco       | ■ Outstanding rubber-like properties  
                                 |              | GmbH        | ■ Materials in hardresses from  
                                 |              |              | ’Shore A 10° to Shore D 60°’  
                                 |              |              | ■ Excellent elongation at break and tear strength  
                                 |              |              | ■ Very good tactile and optical properties  
                                 |              |              | ■ Virtually no intrinsic odor                                                                 |
| Polyoxymethylene Copolymer | SABIC® POM | SABIC | ■ High strength and stiffness  
                                 |              |              | ■ Superior chemical resistance  
                                 |              |              | ■ Low friction coefficient (self lubricating)  
                                 |              |              | ■ Excellent wear properties  
                                 |              |              | ■ Good dimensional stability and ease of machining |
Brenntag Polymers in brief

- Innovative development partner for your projects
- Decades of compounding experience
- More than 700 products from our own development work
- Own production processes (feed-up process)
- State-of-the-art compounding facilities
- Cooperation with other, well-known global market leaders
- Flexible demand adjustment, fast reaction times
- Networked in regional and global markets
- Cross-industry solutions

Our Core Competencies

- Compound Development
- Individual Material Solutions
- Metal Substitution
- Thermally conductive Compounds
- Compounds for the Food Industry
- Detectable Compounds
- Tribologically optimized Compounds
- Drinking Water Compounds

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