Technical Bulletin

JEFFAMINE® T-403 Polyetheramine

JEFFAMINE T-403 polyetheramine is characterized by repeating oxypropylene units in the backbone. As shown by the structure, JEFFAMINE T-403 is a trifunctional primary amine having an average molecular weight of approximately 440. Its amine groups are located on secondary carbon atoms at the ends of aliphatic polyether chains.

APPLICATIONS
• Epoxy curing agent
• Anti-sag agent for polyurethanes

BENEFITS
• Low color and vapor pressure
• Completely miscible with a wide variety of solvents, including water
• Improves flexibility and strength

SALES SPECIFICATIONS

<table>
<thead>
<tr>
<th>Property</th>
<th>Specifications</th>
<th>Test Method*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless to pale yellow with slight haze</td>
<td>ST-30.1</td>
</tr>
<tr>
<td>Color, Pt-Co</td>
<td>50 max.</td>
<td>ST-30.12</td>
</tr>
<tr>
<td>Primary amine, % of total amine</td>
<td>90 min.</td>
<td>ST-5.34</td>
</tr>
<tr>
<td>Total acetylats, meq/g</td>
<td>6.5 min. – 7.1 max.</td>
<td>ST-31.39</td>
</tr>
<tr>
<td>Total amine, meq/g</td>
<td>6.1 min. – 6.6 max.</td>
<td>ST-5.35</td>
</tr>
<tr>
<td>Water, wt%</td>
<td>0.25 max.</td>
<td>ST-31.53, 6</td>
</tr>
</tbody>
</table>

*Methods of Test are available from Huntsman Corporation upon request.

ADDITIONAL INFORMATION

Regulatory Information
DOT/TDG Classification: Corrosive liquids, toxic, N.O.S. (polyoxypropylenetriamine)
HMIS Code: 3-1-0
CAS Number: 39423-51-3
US, TSCA: Listed
Canadian WHMIS Classification: D1B, E
Canada, DSL: Listed
European Union, EINECS/ELINCS: Polymer Exempt
Australia, AICS: Listed
Japan, ENCS: Contact Huntsman Regulatory
Korea, ECL: Listed
China, IECSC: Listed

Typical Physical Properties
AHEW (amine hydrogen equivalent wt.), g/eq: 81
Viscosity, cSt, 25°C (77°F): 72
Density, g/ml (lb/gal), 25°C: 0.978 (8.12)
Flash point, PMCC, °C (°F): 196 (385)
Refractive index, nD20: 1.46
pH, 5% aqueous solution: 11.6
Refractive index, nD20: 1.46
Vapor Pressure, mmHg/°C: 1/181

Japan, ENCS: Contact Huntsman Regulatory
Korea, ECL: Listed
China, IECSC: Listed
TOXICITY AND SAFETY
For additional information on the toxicity and safe handling of this product, consult the Material Safety Data Sheet (Safety Data Sheet in Europe) prior to use of this product.

HANDLING AND STORAGE
Materials of Construction
At temperatures of 75-100°F (34-38°C)

- Tanks  Carbon steel
- Lines, valves  Carbon steel
- Pumps  Carbon steel
- Heat exchange Surfaces  Stainless steel
- Hoses  Stainless steel, polyethylene, polypropylene, and TEFLON®
- Gaskets, packing  Polypropylene or TEFLO®N (elastomers such as neoprene, Buna N, and VITON® should be avoided)
- Atmosphere  Nitrogen or dry air

At temperatures above 100°F (38°C)

- Tanks  Stainless steel or aluminum
- Lines, Valves  Stainless steel
- Pumps  Stainless steel or Carpenter 20 equivalent
- Atmosphere  Nitrogen

JEFFAMINE® T-403 polyetheramine may be stored under air at ambient temperatures for extended periods. A nitrogen blanket is suggested for all storage, however, to reduce the effect of accidental exposure to high temperatures and to reduce the absorption of atmospheric moisture and carbon dioxide. It should be noted that pronounced discoloration is likely to occur at temperatures above 140°F (60°C), whatever the gaseous pad.

Cleanout of lines and equipment containing JEFFAMINE T-403 polyetheramine can be accomplished using warm water and steam. In the event of spillage of this product, the area may be flushed with water. The proper method for disposal of waste material is by incineration with strict observance of all federal, state, and local regulations.

AVAILABILITY
JEFFAMINE T-430 polyetheramine is available in tank cars, tank wagons, 55-gallon (208L) drums of 440 pounds (200kg) net weight, and 5-gallon (19L) cans. Samples are available in North America and Asia by contacting our sample department at 1-800-662-0924. Samples in other locations, including Europe, are available by contacting any Huntsman Corporation sales office.