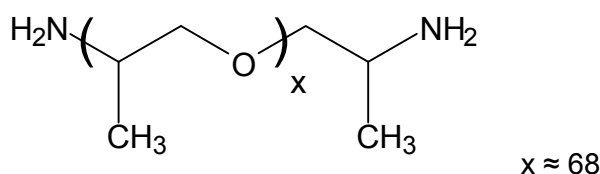


**Technical Bulletin****JEFFAMINE<sup>®</sup> D-4000 Polyetheramine**

**JEFFAMINE<sup>®</sup> D-4000** polyetheramine is characterized by repeating oxypropylene units in the backbone. As shown by the representative structure, JEFFAMINE D-4000 polyetheramine is a difunctional, primary amine with average molecular weight of about 4000. The primary amine groups are located on secondary carbon atoms at the end of the aliphatic polyether chains.



- APPLICATIONS**
- Key ingredient in the formulation of polyurea RIM
  - Co-curing agent in epoxy systems which require increased flexibility and toughness
  - General polymer flexibilizer

- BENEFITS**
- Relatively low viscosity, color and vapor pressure
  - Improved flexibility from high molecular weight polyether backbone
  - Increase peel strength

**SALES SPECIFICATIONS**

<u>Property</u>	<u>Specifications</u>	<u>Test Method*</u>
Appearance	Colorless to pale yellow liquid with slight haze permitted	ST-30.1
Color, Pt-Co	75 max.	ST-30.12
Conversion, total amine as % of total acetylatables	95 – 98	ST-5.22
Primary amine, % of total amine	95 min.	ST-5.34
Total amine, meq/g	0.44 – 0.52	ST-5.22
Water, wt%	0.25 max.	ST-31.53, 6

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

**ADDITIONAL INFORMATION****Regulatory Information**

DOT/TDG Classification	Amines, liquid, corrosive, n.o.s. (polyoxypropylenediamine)
HMIS Code	3-1-0
CAS Number	9046-10-0
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 Properties**

AHEW (amine hydrogen equivalent wt.), g/eq	1000
Equivalent wt. with isocyanates, g/eq	2000
Viscosity, cSt, 25°C (77°F)	877
Density, g/ml, 25°C (77°F)	0.994
Density, lb/gal, 25°C (77°F)	8.29
Flash point, PMCC, °C (°F)	227 (440)

## 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 (24-38°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 TEFLON® (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® D-4000 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 D-4000 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 D-4000 polyetheramine is available in tank cars, tank wagons, and 55-gallon (208L) drums. 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

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