

Technical Bulletin

JEFFAMINE[®] D-205 Amine

JEFFAMINE[®] D-205 amine is a difunctional primary amine with oxyalkylene units. It is designed to be a low amine hydrogen equivalent weight polyetherdiamine with slower curing speed than conventional polyetheramines. It is well fit for applications where low viscosity, low exotherm and longer pot life are desirable.

- APPLICATIONS**
- Reaction with epoxy resins
 - Reaction with isocyanates
 - Reaction with carboxylic acids

- BENEFITS**
- Low viscosity, color, and vapor pressure
 - Lower exotherm and longer pot life than other low molecular weight polyetheramines
 - Excellent mechanical properties
 - Relatively high glass transition temperature

SALES SPECIFICATIONS

<u>Property</u>	<u>Specifications</u>	<u>Test Method*</u>
Appearance	Colorless to light yellow with slight haze	ST-30.1
Color, Pt-Co	75 max.	ST-30.12
Primary amine, % of total amine	93 min.	ST-5.34
Total acetyltables, meq/g	9.0 – 9.5	ST-31.39
Total amine, meq/g	8.6 min	ST-5.35
Water, wt%	0.25 max.	ST-31.53, 6

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

ADDITIONAL INFORMATION

Regulatory Information

See SDS for all regulatory information.

Shelf Life

The product should retain its conformance to sales specifications for a period of at least two years from date of manufacture if the product is stored at less than 100°F (38°C) in its undamaged, unopened, factory packaged container.

In general, the user should determine the suitability of any chemical compound, no matter what the shelf life or length of time of storage. Each user should conduct a sufficient investigation to establish the suitability of any product for his intended use.

Typical Properties

Amine hydrogen equivalent weight, g/eq	58
Flash point, PMCC, °C / °F	121 / 250
Density, g/ml, 25°C	0.943
Density, lb/US gallon, 25°C	7.87
Viscosity, cP, 25°C	7

EPOXY CURING WITH JEFFAMINE® D-205 Amine

When combined with a general purpose diglycidyl ether of bisphenol A (DGEBA) liquid epoxy resin, JEFFAMINE® D-205 amine is used at a slightly lower level than JEFFAMINE® D-230 amine and gel time is around four hours longer than that with the D-230 amine system. Typical cured resin properties for a standard DGEBA liquid epoxy resin with JEFFAMINE® D-205 amine or JEFFAMINE® D-230 amine are compared in the following table.

Formulation	A	B
DGEBA epoxy resin, EEW = 185-192	100	100
JEFFAMINE® D-205 amine	29	-
JEFFAMINE® D-230 amine	-	32
Liquid Property		
Brookfield viscosity, cP (23°C)	600	600
Gel time, minutes (100 g mass cured at RT)	864	644
Properties of Cured 3-mm Castings (cured 2 hours at 80°C + 3 hours at 125°C)		
Glass transition temperature, °C	96	90
Tensile strength, MPa	65	67.6
Elongation at break, %	8.8	9.6
Flexural strength, MPa	112	108
Flexural modulus, GPa	2.82	3.13
Hardness, Shore D	84	77

TOXICITY AND SAFETY

For additional information on the toxicity and safe handling of this product, consult the Safety Data Sheet 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® elastomer
Gaskets, packing	Polypropylene or TEFLON® elastomer (materials such as neoprene, Buna N, and VITON® elastomer 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-205 amine 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-205 amine 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-205 amine is available in bulk and totes and in drums of 410 pounds (186 kilograms) net weight. Small samples can be obtained by contacting any Huntsman Performance Products sales office.

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