

Technical Bulletin

XTJ-568

XTJ-568 is a polyetherdiamine of approximately 219 molecular weight. It is designed to be a slower epoxy curing agent than conventional polyetheramines for applications such as fabrication of large composite parts where longer pot life is desirable. In laboratory testing (200g sample at room temperature), a formulation containing XTJ-568 and IPDA exhibited lower exotherm during cure than a similar formulation containing a conventional low molecular weight polyetheramine.

APPLICATIONS

- Epoxy curing

BENEFITS

- Longer pot life than most other polyetheramine curing agents
- Lower exotherm than other low molecular weight polyetheramines
- Good cured resin 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

DOT/TDG Classification	Amines, liquid, corrosive, N.O.S. (aliphatic polyetheramine)
HMIS Code	3-1-0
CAS Number	Proprietary
US, TSCA	Listed
Canadian WHMIS Classification	E
Canada, DSL	Listed
European Union, EINECS/ELINCS	Notified
Australia, AICS	Not Listed
Japan, ENCS	Not Listed
Korea, ECL	Not Listed
China, IECSC	Not Listed

Typical Physical Properties

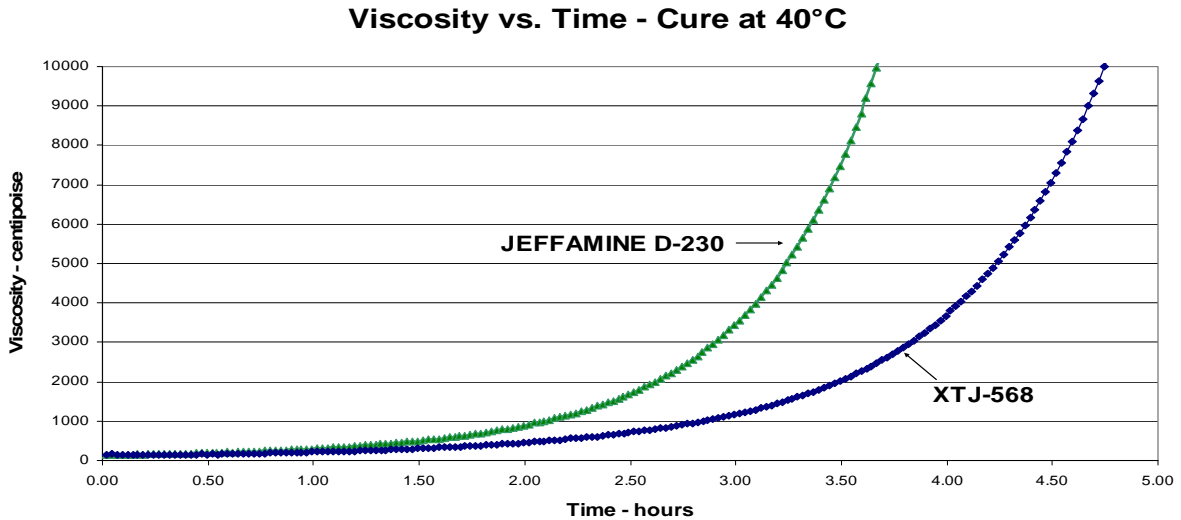
Amine hydrogen equivalent weight, g/eq	55
Density, g/ml, 25°C	0.943
Density, lb/US gallon, 25°C	7.87
Flash point, PMCC, °C / °F	121 / 250
Viscosity, cP, 25°C	7

EPOXY CURING WITH XTJ-568

XTJ-568 should be mixed thoroughly with the resin (29 phr with a standard liquid resin). The initial mix viscosity is approximately 600 cP; Figure 1 compares viscosity development with XTJ-568 and with JEFFAMINE® D-230 polyetheramine. Typical cured resin properties for a liquid epoxy resin cured with XTJ-568 are as follows (heat cure, 2 hr 80°C + 3 hr 125°C):

<u>Property</u>	<u>Typical Value</u>
Glass transition temperature, °C	96
Flexural strength, psi (MPa)	16,200 (112)
Flexural modulus, psi (MPa)	409,000 (2820)
Tensile strength, psi (MPa)	9,400 (65)
Elongation to break, %	8.8
Hardness, Shore D	84

Figure 1: Viscosity Development Comparison with Single Curing Agent (200-gram mass)



EPOXY CURING WITH FORMULATED HARDENER SYSTEMS

Tests have also been conducted with formulated hardener systems designed for WTG applications. Figures 2 – 4 illustrate and compare cure characteristics (viscosity build and exotherm) of two conventional hardener systems and a blend of XTJ-568 with isophorone diamine (IPDA) with a low viscosity diluted resin.

Figure 2: Viscosity Development Comparison with Formulated Curing Agent at 40°C (200-gram mass)

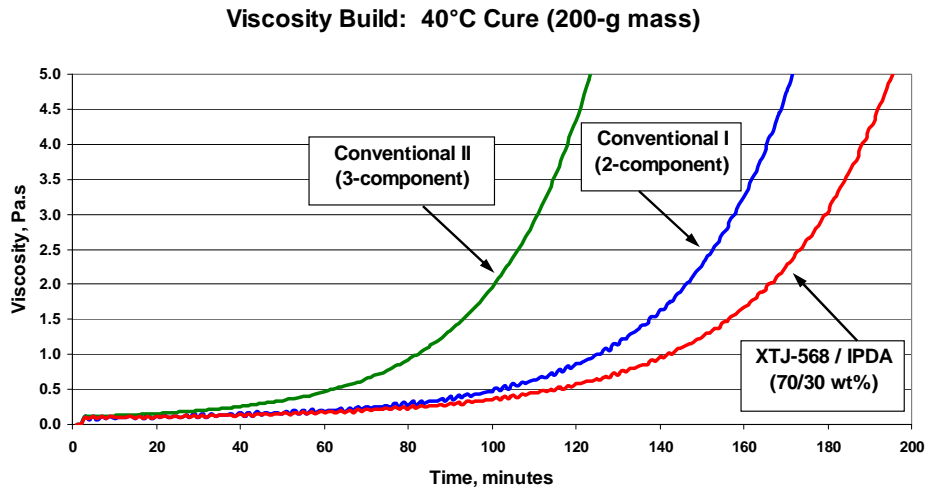


Figure 3: Viscosity Development Comparison with Formulated Curing Agent at Room Temperature (200-gram mass)

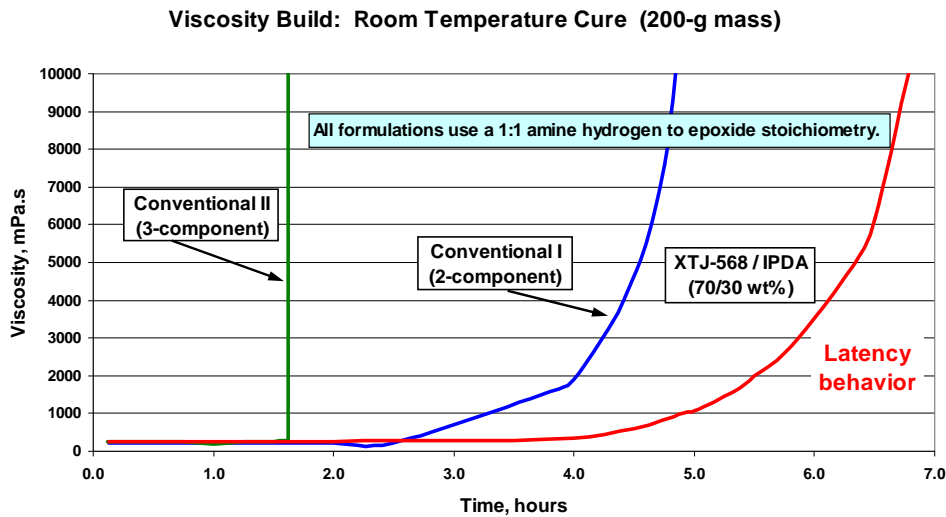
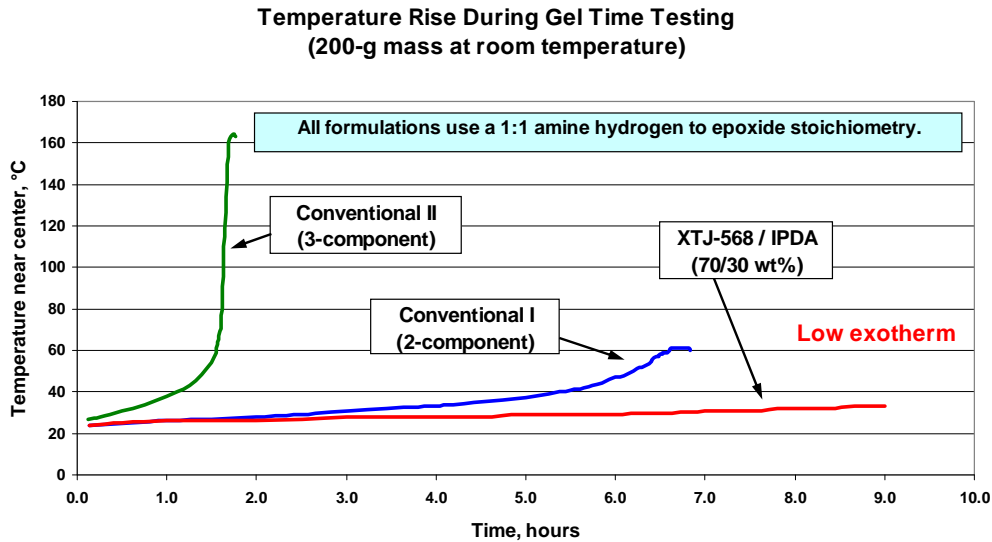


Figure 4: Exotherm During Room Temperature Cure Using Formulated Hardener Systems



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 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

¹VITON® and TEFLON® are registered trademarks of Dupont.

XTJ-568 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 XTJ-568 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

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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