

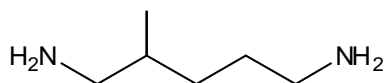
DYTEK[®] 2-Methylpentamethylenediamine (MPMD) (DYTEK[®] A amine)

2-Methylpentamethylenediamine (MPMD)



Product Description

The methyl-branched, 5-carbon chain of DYTEK[®] A amine provides its derivatives with unique properties such as lower viscosity, greater flexibility, and better compatibility.



With diacids, DYTEK[®] A amine forms high molecular weight polyamide polymers and copolymers with lower melting points and less crystallinity than polymers made with hexamethylenediamine. Many of its resins are transparent.

DYTEK[®] A amine can improve flexibility and lengthen open times of polyamide hot-melt adhesives.

The two primary amine groups exhibit differential reactivity.

Epoxy curing agents produced from DYTEK[®] A amine have low adduct viscosities and can be used to incorporate flexibility into resin formulations.

Applications

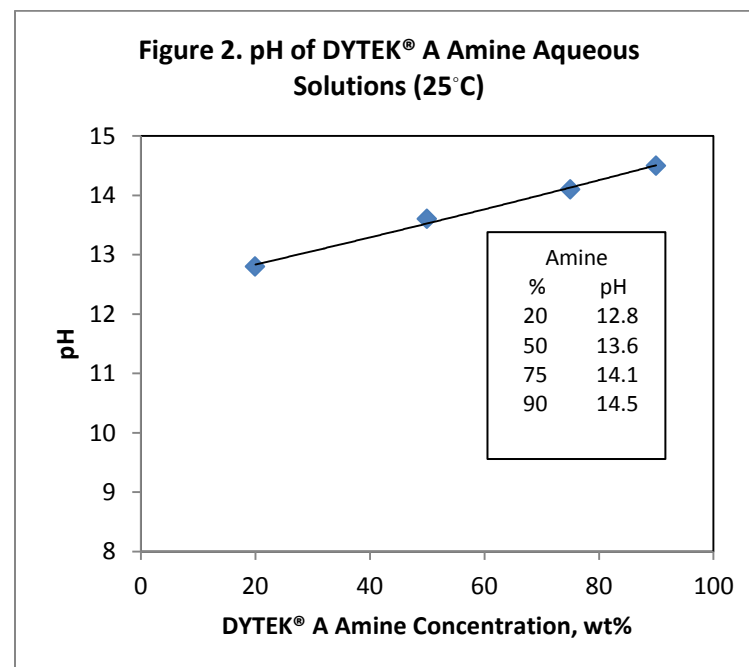
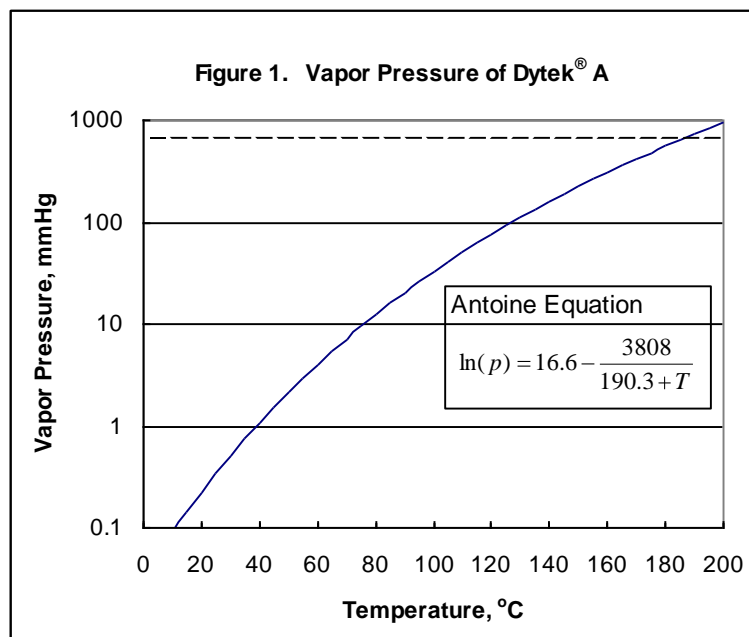
- Polyamide plastics, films, and fibers
- Polyamide adhesive and ink resins
- Epoxy curing agents
 - Coatings
 - Flooring, paving aggregates
 - Composites
 - Encapsulation
- Water treatment chemicals
 - Scale inhibitors
 - Corrosion inhibitors
- Polyurethanes
 - Isocyanates
 - Chain extenders
- Organic synthesis
 - Agrichemicals
 - Pharmaceuticals

Typical Composition (wt %)

2-Methylpentamethylenediamine	99.0
Methylcyclopentanediamine	0.6
2-Ethyltetramethylenediamine	0.3
Water	0.02
Color (APHA)	2
Appearance	Clear and free of suspended materials

General Information

CAS Registry Number	15520-10-2	
CAS Name	1,5-Pentanediamine, 2-Methyl	
Molecular Weight	116.2	
Amine Value, mg KOH/g	967	
Amine Equivalent Weight	58	
H-Equivalent Weight	29	
Specific Gravity, 25°C (77°F)	0.86	
Viscosity, cP, 25°C (77°F)	2.63	
Surface Tension, dyn/cm, 24°C (77°F)	34.9	
Vapor Pressure (see Figure 1)		
Boiling Point, °C (°F)	193 (379)	
Freezing Range, °C (°F)	-50 to -60 (-58 to -76)	
Flash Point, (CC), °C (°F)	83 (181)	
Refractive Index, n_D , 25°C (77°F)	1.4588	
Hansen Solubility Parameters		
Overall	δ	10.4
Nonpolar	δ_D	8.2
Polar	δ_p	3.1
H-Bonding	δ_H	5.5
Partition Coefficient, K_{ow}	0.8	
Solubility in Water	Miscible	
pH, 5% Aqueous Solution, 25°C	12.1	
pK_{a1} , 25°C (77°F)	11.2	
pK_{a2} , 25°C (77°F)	10.0	
Heat of Vaporization, ΔH_v , 193°C, cal/g	92.8	
Heat of Combustion, ΔH_c , cal/g	9100	
Critical Properties: T_c , °C	383	
Critical Properties: V_c , mL/g·mol	424	
Critical Properties: P_c , atm	35.3	



Shipping

Shipping Name: Amines, Liquid, Corrosive, N.O.S
(2-Methylpentamethylenediamine)

Hazard Class: 8 (Corrosive Material)

UN Number: 2735

Packaging Group: I

DOT/IMO Label: Corrosive

Packaging

	Net Weight (lbs/kg)
Railcar	140,000/63,500
Tank truck	42,000/19,000
ISO containers	40,000/18,100
HDPE Drums	375/170.1
EU Drums	175 kg

Store DYTEK[®] A amine under nitrogen padding. Extended storage of DYTEK[®] A amine in unlined carbon steel vessels may cause color formation. Teflon[®] fluoropolymer or graphite is preferred for gaskets and packings.

For Samples and Information:

INVISTA[™] Specialty Intermediates • (800) 231-0998
www.DYTEK.INVISTA.com

This Product Data Sheet contains selected information about a specific INVISTA product, or group of products, and particular uses of the same. It relates only to the identified product and any identified uses, and is based on information available as of the date hereof. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. THIS PRODUCT DATA SHEET DOES NOT CONTAIN A COMPLETE STATEMENT OF, AND DOES NOT CONSTITUTE A REPRESENTATION, WARRANTY OR GUARANTY WITH REGARD TO, A PRODUCT'S CHARACTERISTICS, USES, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THE SUITABILITY, SAFETY, EFFICACY, HAZARDS OR HEALTH EFFECTS OF THE PRODUCT, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCT, EXCEPT TO THE EXTENT REQUIRED BY THE RELEVANT LAW AND REGULATIONS. Purchasers and users of the product are responsible for determining that the product is suitable for the intended use and that their workers and the general public are advised of any risks resulting from such use. Nothing contained in this Product Data Sheet shall be construed to modify any of the commercial terms pursuant to which the product was sold by INVISTA including, but not limited to, terms and conditions addressing each party's respective rights and obligations with regard to warranties, remedies and indemnification.

If purchasers and users believe or have reason to believe that the Product Data Sheet or other information provided to them by INVISTA is inaccurate or in any way insufficient for any purpose, they should immediately notify INVISTA of the same, and of the basis for their belief (for example, studies, data, reports of incidents, etc.) so that INVISTA can determine whether modification or supplementation of the Product Data Sheet, or other measures, are appropriate. Failure of purchasers and users to timely provide such notice shall be deemed a waiver by purchasers and users of any and all claims, demands or causes of action, including causes of action based on an alleged failure to warn, for personal injury or damage to the environment or property arising from or attributable to the use of product.

This disclaimer shall be effective to the extent allowed by law. Should any provision be deemed to be ineffective or unenforceable, that provision shall be deemed severed from the disclaimer and the remaining provisions shall continue to have full force and effect.

INVISTA and DYTEK[®] amines, nitriles and boron products are registered trademarks of INVISTA. Copyright© 2012 INVISTA. All rights reserved.