

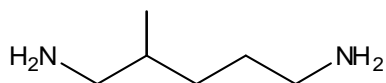
DYTEK[®] 2-Methylpentamethylenediamine (MPMD) (DYTEK[®] A amine)

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

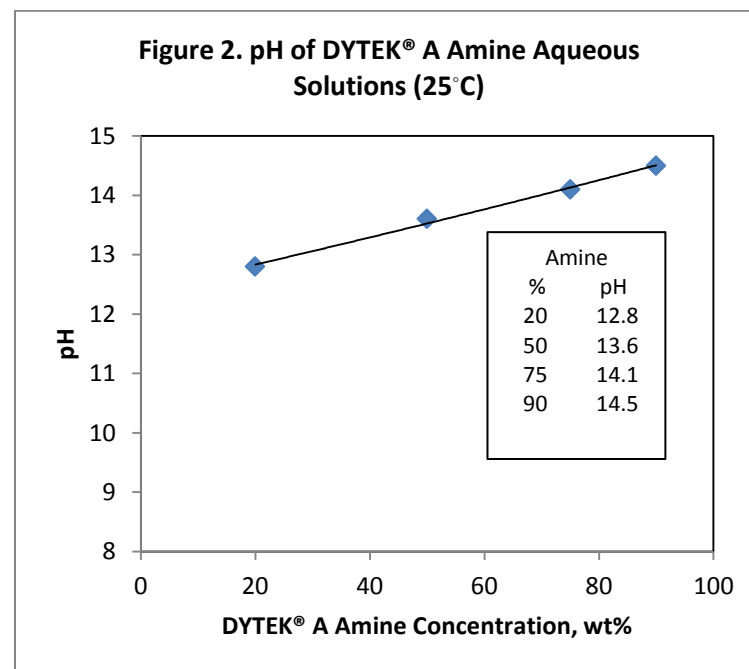
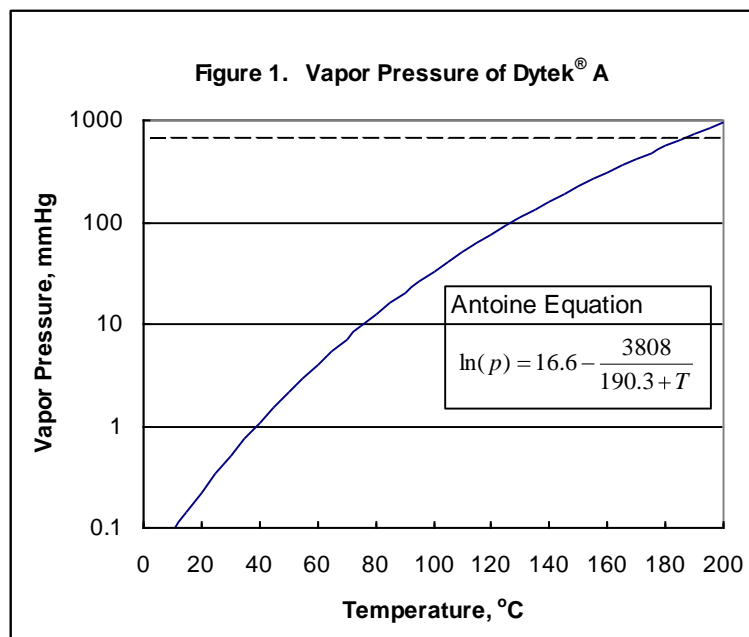
- Polyamide plastics, films, and fibers
- Polyamide adhesive and ink resins
- Epoxy curing agents
 - Coatings
 - Flooring, paving aggregates
 - Composites
 - Encapsulation
- Water treatment chemicals
 - Scale inhibitors
 - Corrosion inhibitors
- Polyurethanes
 - Isocyanates
 - Chain extenders
- Organic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

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