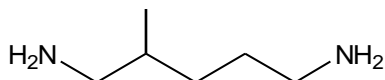


DYTEK® A Amine

2-Methylpentamethylenediamine
(MPMD)



EPOXY APPLICATIONS:

Industrial and Marine coatings:

DYTEK® A amine provides good metal adhesion, chemical & corrosion resistance, and toughness for demanding industrial and marine applications.

Decorative coatings: DYTEK® A amine imparts a high gloss, low blush, uniform finish and improves UV stability compared to alternative amines.

Low-temperature curative: DYTEK® A amine's low viscosity and fast cure rate make it an excellent choice for low temperature application and curing.

Accelerator: When used with slower curatives like polyether- or cyclo-aliphatic amines, small amounts of DYTEK® A amine can reduce gel time while maintaining key mechanical properties of final product.

POLYURETHANE AND POLYUREA:

DYTEK® A amine is used as a chain extender in polyurethane applications. Differential reactivity due to the methyl substituent influences cross-linking and crystallinity.

DYTEK® A amine derivatives such as secondary amines, aspartic esters, ketoimines and aldimines can be used as curatives in polyurea systems.

The diisocyanate from DYTEK® A amine can impart unique properties to elastomer and sealant formulations.

HOT MELT ADHESIVES:

DYTEK® A amine can be used as an alternative to hexamethylene diamine to lower melting point, improve thermal stability and flexibility, and allow for more open time. Aldimine derivatives can be used in moisture-cured polyurethane reactive hot melts.

HIGH PERFORMANCE POLYAMIDES:

DYTEK® A amine acts as a crystallinity disruptor, making polymers more amorphous and slower to crystallize. Potential benefits include lower melting point, improved surface appearance, reduced gelling, reduced melt and quench temperatures, reduced water absorption, improved dye uptake, and increased abrasion resistance.

In addition, DYTEK® A amine may allow for more versatility in polymer composition such as reducing the amount of isophthalic acid needed to maintain transparency or reducing total cost by allowing use of lower cost acids, such as terephthalic acid.

OTHER APPLICATIONS:

Neutralizing or buffering agent: Typically does not produce insoluble salts.

Metalworking fluids: Suppresses iron and amine discoloration, improves corrosion resistance and provides effective pH control, extends life by reducing formation of dark color and sediment.

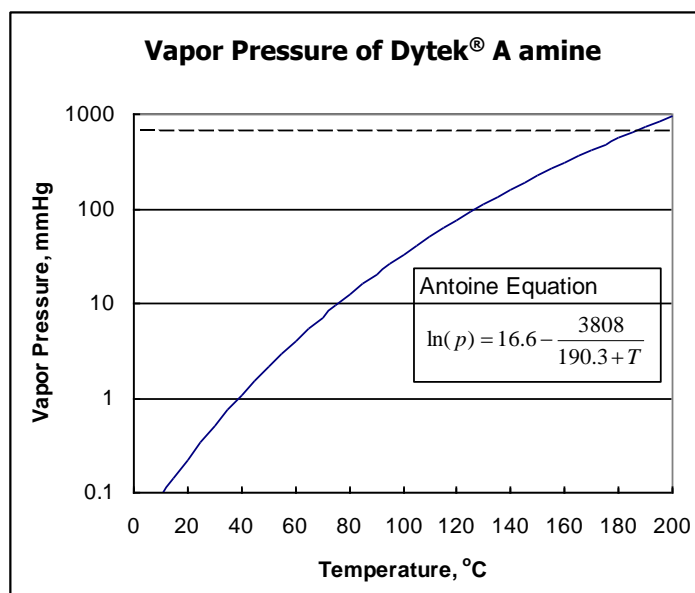
Typical Composition (wt %)

| | |
|-------------------------------|---------------------------------------|
| 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, 22.6°C (73°F) | 2.63 | |
| Surface Tension, dyn/cm, 24°C (77°F) | 34.9 | |
| Vapor Pressure (see Figure 1) | | |
| Boiling Point, °C (°F) | 192 (378) | |
| Freezing Range, °C (°F) | -56 to -60 (-68 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

Refer to the Safety Data Sheet.

Packaging

Railcar
 Tank truck
 ISO containers
 Steel Drums

Net Weight (lbs/kg)

140,000/63,500
 42,000/19,000
 40,000/18,100
 375/170

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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