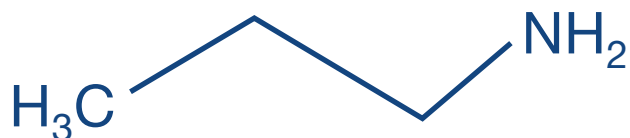


FlexaTramTM

PROPYLAMINES

FlexaTram™-NNP

n - PROPYLAMINE



Applications/uses

As a catalyst

- Hardeners for epoxy resins
- For chemical reactions, polymerization reactions and condensation reactions

As a solvent

- For organic synthesis as a solvent or reactive solvent
- As an alkaline developing agent in the photographic industry

As an intermediate

- **Pharmaceuticals:** Antidiabetics (chlorpropamide), anesthetics, antibiotics and antiseptics
- **Rubber chemicals:** Rubber processing, e.g. vulcanization accelerators and antioxidants as well as stabilizers
- **Textile and leather:** Antistatic and impregnating agents
- **Gasoline and lubricant sector:** Manufacture of anticaking agents as an additive component
- **Agro-Chemicals:** Synthesis of herbicides, fungicides

Other uses

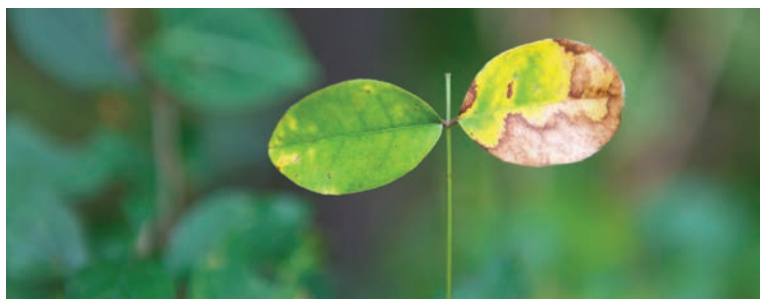
- Corrosion inhibitors, emulsifiers (ampho-teric surfactants) for water treatment and Oil & Gas
- Flotation aids for mining
- Detergents and ion exchange resins
- N-propyl isocyanate for coatings

Specifications and properties

Characteristics	FlexaTram-NNP
Assay, wt. %	98 minimum
Water, wt. %	0.5 maximum
Properties	Typical values, units
Molar mass	59.11 g·mol ⁻¹
Appearance	Colorless liquid
Odor	Fishy, ammonia like
Density	719 mg mL ⁻¹
Melting point	-83.00°C; -117.40°F
Boiling point	47 to 51°C; 116 to 124°F
Solubility in water	Miscible
log P	0.547
Vapor pressure	33.01 kPa (at 20°C)
Acidity (pKa)	10.71
Refractive index (nD)	1.388
Flash point	-30°C (-22°F)

FlexaTram™-DNP

DI-n-PROPYLAMINE



Applications/uses

Rubber accelerator

- Making dithiocarbamate based ultra fast rubber accelerators

Pharmaceuticals

- FlexaTram-DNP can be used as an intermediate for medical products

Textile chemicals

- Retains colorfastness by anchoring dye stuff to the fabric during washing

Production of zeolite

- Controlling the crystallinity of zeolite

Electronics industry

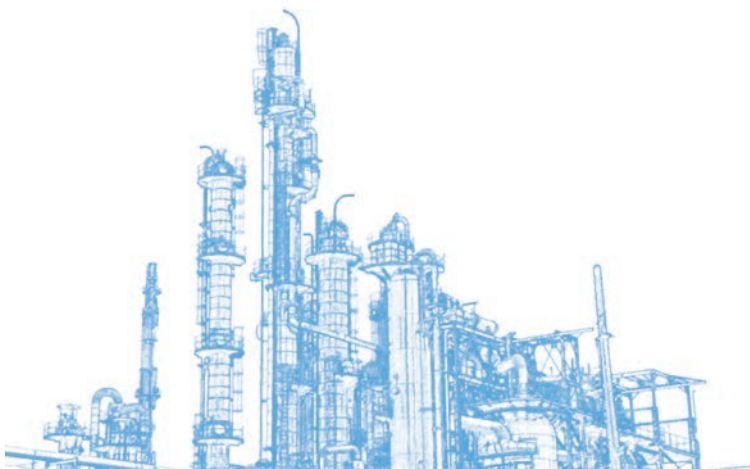
- FlexaTram-DNP can be used as an intermediate for compounds used in electroplating and metal finishing of electrical and electronic components

Agricultural

- **Dinitroaniline herbicide:** such as Trifluralin (Treflan®, alpha, alpha, alphatri-fluoro-2, 6-dinitro-N,N-di-n-propyl-p-toluidine) and oryzalin (Surflan®, 3,5-dinitro-N, N-di-n-propylsulfanilamide)
- **Carbamate herbicide:** such as EPTC (Eptam®, Sethyl-di-n-propyl thiocarbamate)

Specifications and properties

Characteristics	FlexaTram-DNP
Assay, wt. %	98 minimum
Color, APHA	50 maximum
Water, wt. %	0.5 maximum
Properties	Typical values, units
Molecular formula	C ₆ H ₁₅ N
Molecular weight	101.19 g/mol
Appearance	Colorless liquid
Auto ignition temperature	260°C
Boiling point	109.3°C
Density @ 20°C	0.74 g/cm ³
Dissociation constant, pKa	11
Flash point closed cup	7°C
Freezing point (1013 hPa)	-40°C
Vapor pressure @ 20°C	24.3 hPa
@ 40°C	70.0 hPa
Viscosity @ 25°C	0.517 mPa·s
Water solubility @ 20°C	Partially soluble (46.4 g/L)



About Ascend

Headquartered in Houston, Texas, Ascend Performance Materials is one of the world's largest fully integrated producers of nylon 6,6 resin. As the world's only large-scale converter of acrylonitrile to adiponitrile, Ascend is uniquely positioned for the production of dozens of amines, acids, esters and intermediates used in a variety of end applications. Our integrated manufacturing processes allow us to produce a wide range of specialty chemicals. Ascend's specialty chemicals are used in hundreds of brand-name adhesives, coatings, cleansers and detergents. Ascend manufactures chemicals at its facilities in Alabama, Florida and Texas.

For more information on our specialty chemicals visit us at ascendmaterials.com/specialtychemicals

inspiring everyday

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