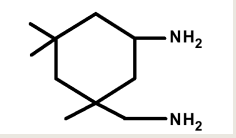
Product information

VESTAMIN® IPD

ISOPHORONE DIAMINE
3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE



GENERAL DESCRIPTION

VESTAMIN IPD is a cycloaliphatic diamine, based on isophorone chemistry. It is a mixture of two stereo-isomers of 3-aminomethyl-3,5,5- trimethylcyclohexylamine, and is a colorless low viscosity liquid with a faint amine odor.

SPECIFICATION

Property	Value	Unit	Test method*
Purity	≥ 99.7	% by wt.	gas chromatography
Appearance	clear liquid	-	visual
Color	max. 15 (APHA)	-	DIN EN ISO 6271
Water content	max. 0.2	% by wt.	Karl-Fischer
Aminonitrile	< 0.15	% by wt.	gas chromatography
Secondary and tertiary amino compounds	< 0.15	% by wt.	gas chromatography

PROPERTIES

VESTAMIN IPD can be used in all typical amine reactions, such as reaction with carboxylic acid, phosgene, aldehydes, ketones and epoxies. It is miscible in all proportions at room temperature with a wide range of compounds such as water, alcohols, esters, ethers, ketones as well as many aliphatic, aromatic and halogenated hydrocarbons.

VESTAMIN IPD is a diamine with a special structure due to the multiple alkyl substituted cyclohexane ring, amino groups with different reactivity and cis-trans configuration. When compared to other commercially available amines, differences become apparent in the properties of its derivatives and polymer compounds.

* DIN, ISO or ASTM methods describe our analytical procedures in general. The actual methods used internally are more precise and can be obtained upon request.

** Modified by using a solution of 30% salicylic acid in methanol under cooling.

EVONIK
Leading Beyond Chemistry

APPLICATION

VESTAMIN IPD is used to produce hardeners for solventless, room temperature curing epoxies and as a hardener in heat cured epoxies.

Hardeners based on VESTAMIN IPD have low viscosity, low tendency to form carbamates, and humidity resistance. Epoxy systems cured with VESTAMIN IPD based hardeners exhibit excellent chemical resistance, high heat distortion temperatures, and color stability. VESTAMIN IPD has large application in epoxy-based self-leveling and trowelable flooring systems, and various civil engineering applications such as paving, concrete protection and repair. Other applications include coatings for superior corrosion protection of metal, adhesives and anchoring compounds.

VESTAMIN IPD has many other uses based on amine chemistry, such as the production of non-crystalline specialty polyamides with high hardness and optical transparency. It also is used as a chain extender in polyurethanes and as an intermediate in dyes.

GENERAL CHEMICAL AND PHYSICAL COEFFICIENTS

Property	Value	Unit	Test method
Viscosity	19	mm^2/s	DIN 51 562, OECD 114
Molecular weight	170.3	g/mol	-
Amine value	660	mg KOH/g	DIN 16 945
H-active equivalent	42.6	g/val	
Solidification	8	°C	OECD 102
Boiling pt (1013 hPa)	253	°C	OECD 103
Vapor pressure (20 °C)	0.02	hPa	OECD 104
Flash point	117	°C	DIN 51758
Relative density, d^{20}	0.9*1	g/cm^3	OECD 109

TRANSPORT AND PACKAGING

Europe: VESTAMIN IPD is supplied in 25 kg non-returnable cans and 180 kg non-returnable drums respectively and in bulk. As a result of the existing exceptional approval to the appendix C/GGVE and GGVS we can also deliver this product to European users in rail tank wagons and road tankers provided, however, that such transport is covered by special bilateral agreement concerning appendix I/RID (CIM) or ADR.

NAFTA: VESTAMIN IPD is supplied in 7.7 and 35 pound non-returnable cans, 397 pound non-returnable drums, and 2000 pound returnable totes. It is also available in bulk.

Asia: VESTAMIN IPD is supplied in 180 kg non-returnable steel drums as well as in road tankers.

*1 Mohr´s balance
*2 Internal method
*3 The freezing point varies with isomer content, ranging from -17,7 to +65,4°C

EVONIK
Leading Beyond Chemistry

STORAGE

VESTAMIN IPD is slightly hygroscopic and tends to form carbamates by reaction with atmospheric CO_2. It should be stored free from moisture and carbon dioxide in glass, stainless steel and similar containers. Carbon steel is adequate under normal circumstances but the use of aluminum should be avoided. VESTAMIN IPD is stable for at least one year when stored in original containers at temperatures below 25 °C.

VESTAMIN IPD crystallizes below 15 °C. It is necessary to completely liquify the entire contents of the container by warming to a maximum of 60 °C and mix thoroughly before use.

SAFETY AND HANDLING

For information on toxicity and handling, consult our Material Safety Data Sheet for this product.

SPECIAL NOTE

Further information about handling VESTAMIN IPD can be taken from our brochure "VESTAMIN IPD / VESTAMIN TMD - Properties and Handling" (brochure no. 43.01.065ew).

Marl, June 10, 2018; This data sheet replaces all former issues.

EVONIK OPERATIONS GMBH
Business Line Crosslinkers
Paul-Baumann-Str. 1
45764 Marl
Germany

EVONIK CORPORATION
Business Line Crosslinkers
299 Jefferson Road,
Parsipanny, NJ 07054-0677
USA

EVONIK SPECIALTY CHEMICALS (SHANGHAI) CO., LTD.
Business Line Crosslinkers
55, Chundong Road
Xinzhuang Industry Park
Shanghai, 201108
China

www.evonik.com/crosslinkers
For contact in your country, please visit: www.evonik.com/crosslinkers-contact

EVONIK
Leading Beyond Chemistry