

Products & Applications

VESTAMIN[®] IPD
VESTAMIN[®] TMD



vesta**min**



VESTAMIN® IPD/VESTAMIN® TMD

Curing agents for epoxy resin systems

The products VESTAMIN IPD and VESTAMIN TMD are aliphatic and cycloaliphatic diamines from isophorone chemistry.

A major use of these products is base amines for the manufacturing of curing agents for use in epoxy resin systems. These diamines are also used as chain extender for PUR systems and as raw material of polyamides. They are colorless liquids with low viscosity and a characteristic weak amine odor.

Product

| | Delivery state | Characteristics | Applications |
|--------------|----------------|--|---|
| VESTAMIN IPD | liquid, 100% | Isophorone diamine, cycloaliphatic diamine | Main component for curing agent formulations, cold and heat curing of epoxy resin systems |
| VESTAMIN TMD | liquid, 100% | Trimethyl hexamethylene diamine, aliphatic diamine | Main component for curing agent formulations, cold and heat curing of epoxy resin systems |

Specification

| Property | VESTAMIN IPD | VESTAMIN TMD | Unit | Test Method |
|--|---------------|----------------|----------|--------------------|
| Purity | at least 99.7 | at least 99.4 | % by wt. | gas chromatography |
| Appearance | clear liquid | clear liquid | – | visual |
| Color | max.15 (APHA) | max. 15 (APHA) | – | DIN EN ISO 6271 |
| Water content | max. 0.2 | max. 0.2 | % by wt. | Karl Fischer |
| Aminonitrile | < 0.15 | < 0.15 | % by wt. | gas chromatography |
| Secondary and tertiary amino compounds | < 0.15 | < 0.15 | % by wt. | gas chromatograph |
| Saturated primary cyclic diamines | – | max. 0.3 | % by wt. | gas chromatography |

General chemical and physical coefficients

| Property | VESTAMIN IPD | VESTAMIN TMD | Unit | Test Method |
|--|---------------|---------------|--------------------|-----------------|
| Viscosity (23°C) | 16 | 6 | mm ² /s | DIN 51 562 |
| Molecular weight | 170.3 | 158.3 | g/mol | – |
| Amine value | 660 | 710 | mg KOH/g | DIN 16 945 |
| H-active-equivalent | 42.6 | 39.6 | g/val | – |
| Solidification | 10 | - 80 | °C | ISO 1392 |
| Boiling pt. (1013hPa) | 247 | 232 | °C | DIN 53 171 |
| Vapor pressure (20°C) | 0.02 | 0.02 | hPa | internal method |
| Flash point | 117 | 110 | °C | DIN ISO 2719 |
| Relative density, d ₄ ²⁰ | 0.920 – 0.925 | 0.865 – 0.870 | g/cm ³ | DIN 51 757 |

Packaging, storage, safety and handling

Packaging: VESTAMIN IPD and VESTAMIN TMD non-returnable drums 1-ton IBCs, road tankers and rail tank waggons, cans.

Storage: The products are stable for at least one year when stored at temperatures below 25 °C without exposure to light and humidity. VESTAMIN IPD tends to crystallize at temperatures below 15 °C. As partial precipitation can cause a change in the isomer ratio of VESTAMIN IPD in the liquid phase, it is necessary to completely liquify the entire contents by warming and stirring.

Safety and handling: Please refer to our Safety Data Sheet/Material Safety Data Sheet.

Application Areas

Construction

Industrial floors in chemical plants, power plants, aircraft hangars, parking garages, dairies, breweries, and other segments of the food processing industry

Industrial floors

Mortar consisting of two-component epoxy resin system and colored resin loading

- covering for high-tech requirements
- layers between 4 to 10 mm thick
- highly resistant to mechanical and chemical attack
- moisture proof

Primer for ordinary and less absorbent concrete and floor surfaces

Two-component epoxy resin systems with Low-viscosity, e.g., to improve wetting

- permanent high adhesive strength
- long pot life
- excellent wetting
- can be applied to slightly damp substrates
- pore-sealing
- very good penetrating and hardening effect
- cures quickly
- processes above + 5 °C

Artificial resin floors with layers over 6 mm thick and repair mortar

Low-viscosity, two-component epoxy resin systems for mixing with silica sands

- very high firmness
- high filler content
- shock-resistant
- layers over 6 mm thick

Concrete coatings

Two-component epoxy resin system with special fillers

- high resistant concrete coating
- ideal for wet operations (such as quartz sand strewing operation)
- smooth surface/easy to clean
- resistant to abrasion and chemicals

Protection and repair of concrete (repair systems)
Sewage plants, collection basins, sealing cracks, grouting cracks, anticorrosive repair

Injection resin systems

Two-component epoxy resin systems

- frictional bond
- resistant to alkaline materials
- good mechanical properties
- low viscosity

Adhesives, anchoring compounds, Aircraft construction, construction industry, e.g., in segment construction and anchorings

Two-component frictional epoxy-based bonding coat (old concrete and new concrete)

- frictional bond
- resistant to alkaline media
- good mechanical properties

Composites

Rotor blades for wind mills, pipes, high-performance boats, leaf springs, pump cases, semi-finished products, sport articles, formula 1 motor racing, printed circuit boards

Two-component epoxy resin systems

- high mechanical strength
- improved mechanical properties
- good temperature performance
- resistant to impact stress
- hot-water resistant
- resistant to chemicals
- good corrosion resistance



Coatings

Systems for heavy corrosion protection, Chemical plants, shipbuilding, bridges, scaffolding, steel pipes, tanks, „off-shore“ sector, water works such as locks

Anticorrosive primer and intermediate coat

Two-component epoxy resin primer that can be used in combination, e.g., with PUR top coats

- excellent chemical resistance
- high density
- salt-waterproof
- ideal for wastewater management and steel waterworks

Heavy corrosion protection in thick layers

Two-component epoxy system that can be used in combination, e.g., with PUR top coats

- excellent chemical resistance
- high solid density
- salt-waterproof
- ideal for wastewater management and steel water works

Doming

Two-component epoxy resin systems for print finishing

- good mechanical properties
- excellent chemical resistance
- resistant to abrasion

Electrical & Electronics

Filling compounds for the electrical industry
Encapsulation of electronic circuits and ignition coils, casings, switches

Two-component epoxy resin systems

- high temperature resistance
- high impact strength
- high electrical resistance

Special Applications

Polyamides

high-voltage switch casings, filter cups for water treatment, metering devices, inspection glasses, flowmeters, liquid-level indicators

Amorphous, transparent high performance plastics

- crystal-clear, optical transparency
- high mechanical stability
- high thermostability
- high viscosity
- good chemical resistance compared to other plastics
- good electrical properties
- low molding shrinkage

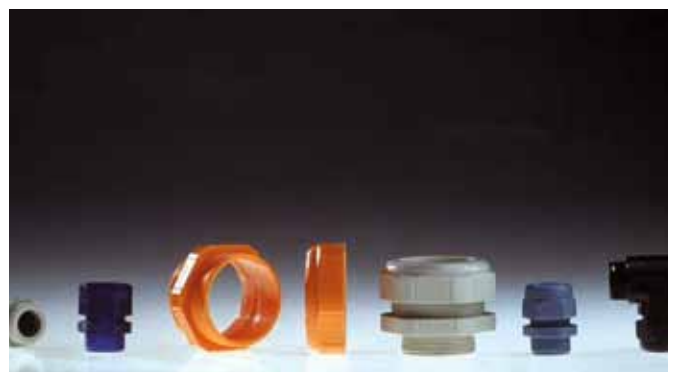
Chain extender for PUR systems

wood paints, plastic paints, industrial paints, printing inks, coating for leather and artificial leather

PUR dispersions for coating of wood and plastics.

Solvent-free and solvent-borne thermoplastic PUR

- UV resistant
- good compatible with isocyanate prepolymers
- good resistance against hydrolysis
- flexibility adjustable in a wide range



Evonik Degussa Corporation

Coatings & Additives
379 Interpace Parkway
Parsippany, NJ 07054-0677
USA

PHONE +1 973 541-8462

FAX +1 973 541-8460

* = registered trademark of Evonik Degussa GmbH

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.



EVONIK
INDUSTRIES

Evonik Degussa GmbH

Coatings & Additives
Paul-Baumann-Straße 1
45764 Marl
Germany

PHONE +49 2365 49-02

FAX +49 2365 49-5030

vesta@evonik.com

www.evonik.com/crosslinkers

Evonik. Power to create.