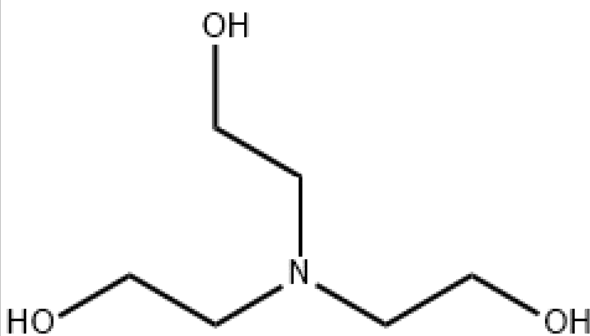


## CERTIFICATE OF ANALYSIS

### Product Features

|   |                   |   |
|---|-------------------|---|
|  | CAS No.           | 102-71-6  |
|   | Product name      | Triethanolamine   |
|   | Abbreviation      | TEA   |
|   | Appearance        | Clear, colorless to light yellow oily liquid                                  |
|   | Purity(HPLC)      | ≥99%  |
|   | Molecular formula | C <sub>6</sub> H <sub>15</sub> NO <sub>3</sub>                                |
|   | Molecular weight  | 149.19  |
|   | Package           | In fluoride bottle/fluoride drums/plastic drums/IBC Tank, etc.                |
|   | Storage           | Preserve in a well-closed container and keep in cool, dry place, avoid light. |

Triethanolamine is also known as trihydroxyethylamine, amino triethanol. At low temperature, it becomes colorless or light yellow cubic crystal. Miscible with water, methanol, acetone. Soluble in benzene, ether, slightly soluble in carbon tetrachloride, n-heptane. Strong base, combined with proton, can be used for condensation reaction.

### Application

- Analytical chemistry in triethanolamine can be used as a gas-liquid chromatography fixed solution, for the separation of pyridine and methyl substituent. In complexation titration and other analyses, it can be used as a masking agent for interfering ions. In addition, with hydrochloric acid can also be formulated into a certain pH value of the buffer solution.
- Triethanolamine is mainly used in the manufacture of surfactants, liquid detergents, cosmetics and so on. It is one of the components of cutting fluid and antifreeze. It is used as an activator in the polymerization of nitrile rubber, and as a vulcanization activator of natural rubber and synthetic rubber. It can also be used as emulsifier of oil, wax, pesticide, etc., humidifier and stabilizer of cosmetics, softener of textile, anti-corrosion additive of lubricating oil.
- Triethanolamine can absorb gases such as carbon dioxide and hydrogen sulfide, and in the purification of industrial gases such as coke oven gas, it can remove acidic gases.



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## Company Profile

- Heynova (Shanghai) New Material Technology co., Ltd. located in Shanghai is a technologically innovative company with integrated development of R&D, production and sales of high-end Electronic Materials and Specialty Polymer Materials. Meanwhile we are the agent of PI Resin, PI Engineering Plastics and 3D Printing materials.
- **As technology R&D**, the company has maintained close cooperation with a number of domestic research institutes for a long time, focusing on the design of the molecular structure of electronic materials, with a number of invention patents, the core formulations and processes independently controllable, with the ability to customize the development of the materials.
- **As production and supply**, our company has cooperative production bases in Shandong, Jiangsu, Sichuan and Northeast China, which can produce materials from gram to tonnage level, and has all the capabilities of small, medium and large-scale production.

## Business Classification

- **Polyimide Materials:** Including PI Monomers, PI Resin, PI Engineering Plastics. PI monomers are mainly Dianhydride and Diamine special monomers, which have been widely used in the production of colorless and transparent Flexible Polyimide Films, Flexible Display Materials, 5G New Materials, Photosensitive Polyimide and Semiconductor Materials, New Energy Automobile Special Insulating Materials, Aerospace Composites, and many other high-tech field products.
- **Photoresist Materials:** Including Photoresist monomer, PAG, PAC, Photoinitiators, Solvents and so on. At present, our company's Photoresist Monomer is mainly based on KrF, ArF Gel monomer, focusing on the provision of Display Photoresist, Semiconductor Photoresist and special Photoresist materials for Semiconductors, Panels, PCB and other fields.
- **OLED Display Materials:** Specialized in providing OLED Display Intermediate materials for cell phones, TVs, flat panels, wearable devices, in-vehicle devices and other fields.
- **Lithium Battery Materials:** Specialized in providing Lithium Battery Diaphragm materials for transportation, electric power storage, mobile communication, new energy storage, aerospace military and other fields.
- **3D Printing Materials:** Specialized in providing 3D Printing Organic Resin materials and high-end Metal materials for aerospace, marine, nuclear industry, medical and other fields.
- **Customized services:** We can customize the development of products according to customer needs, and continuously optimize the material properties and key indicators, developed in collaboration with customers, established the direct channel of "R & D - Validation - Mass production".