

## Technical Data Sheet (TDS)

### - M.T.G (Monoeth)

Revision Date: 22 FEB 2026

#### 1. Product Overview

- **Product Name:** M.T.G (Monoeth)
- **English Name:** Thioglycolic Acid Derivative of Monoethanolamine Blend
- **CAS Number:** 126-97-6 (main component: Monoethanolamine); N/A (M.T.G complex)
- **Molecular Formula:** C<sub>2</sub>H<sub>7</sub> NO (Monoethanolamine)
- **Molecular Weight:** 61.08 g/mol (Monoethanolamine); Variable (M.T.G complex)
- **Form:** Colorless to pale yellow transparent liquid
- **Grade:** Cosmetic Grade / Industrial Grade

M.T.G (Monoeth) is a high-purity functional complex synthesized by modifying monoethanolamine with thioglycolic acid, with monoethanolamine as the core active component. The product integrates excellent chelating ability, mild pH adjustment performance, emulsification and corrosion inhibition effects, and has good compatibility with most water-based and oil-based raw materials. It has low thioglycolic acid residue, moderate alkalinity, and mild performance, and is widely used in cosmetics (perm agents, depilatories, skin care products), metal surface treatment (corrosion inhibitor), textile printing and dyeing (metal ion chelating agent) and other fields. It complies with EU REACH, US FDA and Chinese industrial/cosmetic safety standards.

#### 2. Technical Specifications (Complies with Industrial/Cosmetic Standard)

Item	Specification
Appearance	Colorless to pale yellow transparent liquid, no sediment/impurity
Total Active Content (M.T.G)	≥ 90.0%
Monoethanolamine Purity	≥ 85.0%
Thioglycolic Acid Residue	≤ 0.5%
pH Value (25°C)	8.0 ~ 10.0
Density (25°C)	1.01 ~ 1.05 g/cm <sup>3</sup>
Viscosity (25°C)	20 ~ 50 mPa·s
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Total Bacterial Count	≤ 100 CFU/mL
E. coli	Negative
Water Solubility	Fully miscible with water at any ratio
Temperature Stability	Stable at 0 ~ 40°C (active content retention ≥ 95%)
pH Compatibility	Stable in pH 6.0 ~ 11.0 system (performance retention ≥ 90%)

#### 3. Product Advantages

1. **Multi-functional Integration:** Integrates chelation, pH adjustment, emulsification and corrosion inhibition, one product for multiple uses, simplifying formulation and production processes.
2. **Mild & Low Residue:** Ultra-low thioglycolic acid residue (≤0.5%), moderate alkalinity, mild performance, low irritation, suitable for cosmetic grade application.
3. **Strong Chelating Ability:** Effectively chelates metal ions (Ca<sup>2+</sup>, Mg<sup>2+</sup>, Fe<sup>3+</sup>, Cu<sup>2+</sup>, etc.), prevents scale formation and metal ion-catalyzed degradation of raw materials.
4. **Excellent Compatibility:** Miscible with most cosmetics/industrial raw materials (surfactants, plant extracts, polymers, solvents), no adverse reactions, easy to compound.
5. **Stable Performance:** Good thermal and chemical stability, no easy degradation under normal storage and use conditions, long-term performance retention.
6. **Precise pH Adjustment:** Moderate alkalinity, can accurately adjust the pH of the system, and maintain the pH stability of the formulation for a long time.

#### 4. Application Fields



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- **Cosmetic Industry:** Perm agents, depilatories (pH adjuster/chelating agent); skin care products, hair care products (emulsifier/metal ion chelator); nail care products (softener).
- **Metal Surface Treatment:** Corrosion inhibitor for carbon steel, copper, aluminum and other metals; chelating agent for metal cleaning solution, preventing metal surface oxidation.
- **Textile Printing & Dyeing:** Chelating agent for dyeing bath, chelates metal ions in water and dyes, improves dyeing uniformity and color fastness; pH adjuster for textile finishing solution.
- **Daily Chemical Industry:** Emulsifier/pH adjuster for hand sanitizers, laundry detergents and dishwashing liquids; chelating agent for water-based cleaning agents.
- **Other Fields:** Water treatment (scale inhibitor for low-hardness water); adhesive industry (pH adjuster for water-based adhesives).

## 5. Usage Methods

### Recommended Dosage (Adjust according to grade and application scenario)

- **Cosmetic Industry:** 1.0 ~ 5.0% of total formulation (perm agents/depilatories); 0.5 ~ 2.0% (skin care/hair care products); 2.0 ~ 4.0% (nail care products).
- **Metal Surface Treatment:** 2.0 ~ 8.0% of total formulation (corrosion inhibitor/cleaning solution); 1.0 ~ 3.0% (metal surface finishing solution).
- **Textile Printing & Dyeing:** 0.5 ~ 3.0% of total formulation (dyeing bath); 1.0 ~ 4.0% (finishing solution).
- **Daily Chemical Industry:** 0.3 ~ 1.5% of total formulation (cleaning products/adhesives).

### Key Application Tips

1. **Direct/Diluted Addition:** Can be added directly to the formulation system, or diluted with deionized water (1:5 ~ 1:10) for uniform addition; stir evenly at room temperature (20 ~ 30°C).
2. **Temperature Control:** Avoid heating above 60°C for a long time during formulation to prevent active component degradation and performance loss.
3. **Compatibility Note:** Avoid mixing with strong acids (pH < 3) and strong oxidants (e.g., hydrogen peroxide, potassium permanganate) to prevent violent chemical reactions.
4. **pH Adjustment:** When used as a pH adjuster, add dropwise and test the pH in real time to avoid excessive addition leading to excessive system alkalinity.

## 6. Packaging & Storage

### Packaging Specifications (Sealed HDPE/Stainless Steel Packaging)

- 500 mL/1 L HDPE plastic bottle (laboratory/R&D/small-batch use)
- 25 L food/cosmetic grade HDPE plastic drum (cosmetic/daily chemical small-scale use)
- 200 L industrial HDPE plastic drum/stainless steel drum (metal treatment/textile bulk use)
- 1000 L IBC ton barrel (large-scale industrial project use)
- Custom packaging available according to customer requirements.

### Storage Conditions

1. Store in a **cool, dry, well-ventilated warehouse** at 5 ~ 30°C; avoid direct sunlight, high temperature (>35°C) and freezing (<0°C).
2. Keep the container tightly sealed to prevent moisture evaporation, contamination and active component oxidation.

## 7. Safety & Protection

1. The product is alkaline and has mild corrosivity to skin and eyes; avoid direct contact with skin, eyes and respiratory tract during operation.
2. **Recommended PPE:** Acid-alkali resistant nitrile rubber gloves, chemical safety goggles, anti-corrosive lab coat and face shield (for large-scale handling); wear a gas mask if mist is generated.
3. **Accident Treatment:**
  - Skin Contact: Immediately remove contaminated clothing and rinse the affected area with plenty of running water for 15 ~ 20 minutes; consult a physician if redness, burns or irritation occurs.
  - Eye Contact: Pry open the eyelids and rinse with plenty of clean running water for at least 20 minutes; consult an ophthalmologist **immediately** (do not rub eyes).
  - Inhalation (mist): Move to fresh air immediately, keep the respiratory tract unobstructed; give oxygen if breathing is difficult, consult a physician immediately.