

Technical Data Sheet (TDS) - Ellaplex-I

Revision Date: 20 FEB 2026

1. Product Overview

- **Product Name:** Ellaplex-I (Isophorone Diamine Sesquimaleate 50%)
- **English Name:** Isophorone Diamine Sesquimaleate 50% Aqueous Solution
- **CAS Number:** 2855-13-2 (base material); N/A (composite salt)
- **Formula:** 50% Isophorone Diamine Sesquimaleate + 50% Purified Water
- **Molecular Weight:** Variable (organic amine salt mixture)
- **Product Characteristics:** Ellaplex-I is a waterborne epoxy curing agent with low odor, low volatility and excellent compatibility with waterborne epoxy emulsions. It is prepared by the reaction of isophorone diamine and maleic acid, and the 50% aqueous solution has good storage stability and film-forming properties. It can realize room temperature curing of waterborne epoxy systems, and the cured film has excellent adhesion, chemical resistance and water resistance. The product is non-flammable, low-toxic, and compliant with industrial environmental protection standards, suitable for various waterborne epoxy application scenarios.

2. Technical Specifications (Complies with Industrial Standards)

Item	Specification
Appearance	Clear to pale yellow transparent liquid, no sediment
Assay (Active Salt)	49.0 ~ 51.0%
pH Value (25°C)	6.0 ~ 8.0
Color (APHA)	≤ 100
Density (25°C)	1.10 ~ 1.16 g/cm ³
Viscosity (25°C)	20 ~ 50 mPa·s
Free Isophorone Diamine	≤ 1.0%
Water Content	49.0 ~ 51.0%
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Insoluble Matter in Water	≤ 0.1%
Storage Stability (25°C, 12 months)	No delamination, no sediment, assay change ≤ 1.0%
Curing Performance	Room temperature curing (25°C), curing time 24 ~ 48h

3. Product Advantages

1. **Waterborne & Environmental Friendly:** 50% aqueous solution, no organic solvent, low VOC, meets national and international environmental protection emission standards.
2. **Low Odor & Low Volatility:** Effectively reduces the pungent odor of traditional amine curing agents, improves the construction environment.
3. **Excellent Compatibility:** Good miscibility with various waterborne epoxy emulsions, no delamination or flocculation after mixing.
4. **Superior Curing Performance:** Realizes room temperature curing, the cured film has high hardness, excellent adhesion to concrete/metal and chemical resistance.
5. **Good Storage Stability:** No delamination or sediment under normal storage conditions, shelf life up to 12 months.
6. **Wide Application:** Adaptable to different waterborne epoxy formulations, suitable for coatings, adhesives, primers and other products.

4. Application Fields

- **Waterborne Epoxy Coatings:** Industrial floor coatings, architectural anti-corrosion coatings, concrete sealing coatings, wood coatings.
- **Epoxy Adhesives:** Waterborne epoxy structural adhesives, construction adhesives, composite material adhesives.
- **Concrete Treatment:** Concrete priming, floor leveling materials, concrete reinforcement coatings.
- **Industrial Maintenance:** Steel structure anti-corrosion maintenance coatings, equipment surface protective coatings.

- **Other Fields:** Waterborne epoxy ink binders, composite material resin curing agents, textile finishing agents.

5. Usage Methods

Mixing Ratio (adjust according to formulation and application requirements)

- **Waterborne Epoxy Floor Coatings:** Ellaplex-I : Waterborne epoxy emulsion = 1:2 ~ 1:4 (mass ratio)
- **Concrete Primers:** Ellaplex-I : Waterborne epoxy emulsion = 1:4 ~ 1:6 (mass ratio)
- **Waterborne Epoxy Adhesives:** Ellaplex-I : Waterborne epoxy emulsion = 1:1.5 ~ 1:3 (mass ratio)

Construction & Curing

1. Mix Ellaplex-I with waterborne epoxy emulsion in the specified ratio, stir evenly at low speed (300 ~ 500 rpm) for 3 ~ 5 minutes to avoid foam generation.
2. Add pigments, fillers or additives as needed, and stir evenly for secondary dispersion.
3. Construct by brushing, rolling or spraying; the recommended construction temperature is 10 ~ 35°C, and the relative humidity is ≤ 80%.
4. Room temperature curing (25°C) for 24h to form a film, 48h to reach the basic performance, and 7 days to reach the optimal performance.

Notes

- Do not mix with strong acids, strong oxidants or other amine curing agents at will.
- The mixed epoxy system has a pot life of 4 ~ 8h (25°C), and it is recommended to use it up within the pot life.
- Avoid construction in low temperature (< 10°C) or high humidity (> 80%) environment to prevent curing defects.

6. Packaging & Storage

Packaging Specifications

- 25 L HDPE sealed plastic drum (small batch industrial use)
- 200 L HDPE sealed plastic drum (bulk industrial use)
- 1000 L IBC ton barrel (large-scale project use)
- Custom packaging is 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 and freezing.
2. Keep the container tightly sealed to prevent moisture evaporation and contamination; avoid contact with air for a long time.
3. Store separately from strong acids, strong oxidants, organic solvents and food raw materials; isolation distance ≥ 1m.
4. **Shelf Life:** 12 months (unopened, under the specified storage conditions); use it as soon as possible after opening, and seal the remaining product tightly.

Transportation

1. Classified as **non-hazardous chemical raw material**, transported by ordinary closed vehicles, no open transportation.
2. Avoid collision, extrusion and leakage of packaging during transportation; prevent direct sunlight and high temperature (transport temperature ≤ 35°C).
3. Do not transport with strong acids, strong oxidants, flammable and explosive materials; load and unload gently.

7. Safety & Protection

1. The product is a mild irritant; avoid direct contact with skin, eyes and mucous membranes during operation.
2. **Recommended PPE:** Nitrile rubber gloves, chemical safety goggles, anti-splash apron; wear a dust mask if there is mist splashing.
3. In case of skin contact: Rinse the affected area with plenty of running water for 10 ~ 15 minutes; if irritation occurs, apply neutral skin care cream.
4. In case of eye contact: Rinse eyes with plenty of clean running water for 15 minutes (pry open the eyelids); consult an ophthalmologist immediately if redness and pain persist.