Material Safety Data Sheet

Section 1: Identification

Product Name： Chip Epoxy Bonding Adhesive Curing Agent **Other Names:** Epoxy Crystal King Hardener
Product Code：EP1001-B
(M)SDS Number: 2324
Recommended Use and Restrictions on Use: Cold mounting resin for metallographic sample preparation
Emergency Phone Number: 13814829868
Manufacturer / Supplier: Trojan (Suzhou) Materials Technology Co., Ltd.
Address: Building 26, No. 228, Gongtang Road, Luzhi Town, Wuzhong District, Suzhou, Jiangsu Province, China
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Section 2: Hazard(s) Identification

Classification according to GHS:

Acute Toxicity – Oral	Category 4	(H302)
Acute Toxicity – Dermal	Category4	(H312)
Acute Toxicity – Inhalation (Vapors)	Category2	(H331)
Skin Corrosion/Irritation	Category1 B	(H314)
Skin Sensitization	Category1	(H317)
Hazardous to the Aquatic Environment – Chronic	Category3	(H412)

Labeling Information：



Signal Word: Danger
Hazard Statements:
H302+H312 Harmful if swallowed, Harmful in contact with skin
H314 Causes severe skin burns and eye damage
H412 Harmful to aquatic life with long lasting effects

Precautionary Statements:

Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not breathe dust/fume/gas/mist/vapors/spray.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

Response:

In case of fire: Use appropriate extinguishing media.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice immediately.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.

IF ON SKIN: Remove contaminated clothing immediately. Wash with plenty of water and soap.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER/doctor.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Collect spillage and dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards:

No additional information available.

Section 3: Composition / Information on Ingredients

Name： Epoxy Crystal King Hardener

The table is as follows:

Chemical Name	EC No.	CAS No.	Weight-%
Imidazole	206-019-2	288-32-4	100%

Section 4: First-Aid Measures

General Advice: Show this Safety Data Sheet (SDS) to the attending physician. Seek medical attention immediately if necessary.

Description of necessary first-aid measures

Inhalation:

If breathing has stopped, perform artificial respiration immediately and seek medical attention. Move the victim to fresh air, avoiding direct skin contact. Use a barrier device such as a pocket mask with a one-way valve for mouth-to-mouth resuscitation. If breathing is difficult, provide oxygen

(administered by trained personnel). Immediate medical attention is required. Delayed pulmonary edema may occur. Do not use direct mouth-to-mouth resuscitation if the substance has been ingested or inhaled.

Skin Contact:

Seek immediate medical attention. Wash thoroughly with soap and plenty of water while removing contaminated clothing and shoes. May cause allergic skin reaction.

Eye Contact:

Seek immediate medical attention. Rinse cautiously with plenty of water for at least 15 minutes, including under the eyelids. Keep eyes wide open during rinsing. Do not rub affected area. If contact lenses are present and easy to remove, take them out and continue rinsing.

Ingestion:

Do not induce vomiting. Rinse mouth with water and drink plenty of water afterwards. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Self-protection of first-aiders:

Ensure that medical personnel are aware of the material involved and take appropriate precautions to protect themselves and prevent contamination. Avoid direct contact with skin, eyes, or clothing. Use barrier devices for resuscitation. Wear suitable personal protective clothing.

Most important symptoms and effects, both acute and delayed:

Burning sensation, irritation, itching, rash, urticaria. Delayed pulmonary edema and laryngeal edema may occur.

Protection of first-aiders:

Rescue operations should be carried out in a safe area while wearing Level C

Notes to physician:

This product is corrosive. Gastric lavage and induced vomiting are contraindicated. Check for possible perforation of the stomach or esophagus. Do not use chemical antidotes. Laryngeal edema with risk of asphyxia, significant hypotension, wet rales, frothy sputum, and high pulse pressure may occur. Allergic reactions may develop in susceptible individuals. Provide symptomatic treatment.

Section 5: Fire-fighting Measures

Suitable extinguishing media:

Chemical dry powder, carbon dioxide, water spray (fog), foam.

Specific hazards arising from the chemical:

This product may cause burns to eyes, skin, and mucous membranes. Thermal decomposition can lead to the release of irritating gases and vapors. The product is or contains sensitizing substances; skin contact may cause allergic reactions.

Special protective actions for fire-fighters:

1. Stay upwind to avoid exposure to toxic decomposition products.
2. Use water spray to cool fire-exposed tanks or containers.
3. Do not use a direct water jet as it is ineffective.

Special protective equipment for fire-fighters:

Firefighters should wear self-contained breathing apparatus (SCBA) and full protective firefighting gear.

Use appropriate personal protective equipment (PPE).

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

1. Restrict access until the spill area has been completely cleaned.
2. Cleanup should only be performed by trained personnel.
3. Avoid contact with skin, eyes, and clothing. Ensure adequate ventilation. Use appropriate personal protective equipment.
4. Evacuate personnel to safe areas. Keep people away from the spill/leak and position them upwind.

Environmental precautions:

1. Ventilate the spill area.
2. Remove all sources of ignition.
3. Notify relevant occupational safety, health, and environmental authorities.
4. Prevent further leakage or spillage if it can be done safely. Do not discharge into the environment. Prevent entry into soil, subsoil, drains, or waterways.

Methods and materials for containment and cleaning up:

1. Do not touch spilled material.
2. Prevent spillage from entering sewers or confined spaces.
3. If safe, stop or reduce leakage.
4. Contain the spill with earth, sand, or other inert, non-combustible materials that will not react with the product.
5. For small spills: absorb with inert absorbent materials that will not react with the substance. Place contaminated absorbents in a properly labeled, sealed container.
6. For large spills: contact fire department, emergency response units, and supplier for assistance.

Section 7: Handling and Storage

Precautions for safe handling:

1. Keep away from sparks, open flames, and other sources of ignition. Post “No Smoking” signs in the work area.
2. Emergency equipment for fire extinguishing and spill response must be readily available.
3. Avoid contact with skin, eyes, and clothing. If ventilation is inadequate, wear appropriate respiratory protection. Handle product only in closed systems or with adequate local exhaust ventilation.
4. Do not eat, drink, or smoke when using this product. Remove contaminated clothing before reuse only after thorough cleaning.

Conditions for safe storage, including any incompatibilities:

1. Store in a cool, dry, well-ventilated place, protected from direct sunlight. Keep away from heat, ignition sources, and incompatible materials.

2. Keep container tightly closed. Store in a dry, cool, and well-ventilated area. Protect from moisture. Storage area must be locked.
3. Keep out of reach of children. Store separately from other materials.

Specific end uses / Handling notes:

1. Avoid contact with skin, eyes, and clothing. Wear suitable gloves and eye/face protection.
2. Wash thoroughly after handling. Avoid direct exposure to skin and eyes.
3. Do not eat, drink, or smoke when using this product. Remove and wash contaminated clothing and gloves (inside and out) before reuse. Contaminated work clothing must not be taken offsite.
4. Regular cleaning of equipment, work area, and clothing is recommended. Wash hands immediately after use and before breaks.
5. For industrial use only.

Section 8: Exposure Controls / Personal Protection

Occupational Exposure Limits：

Substance	CAS	Source	Limit
Imidazole	288-32-4	GBZ 2.1—2019	MAC： PC-TWA： PC-STEL：

Biological limit values: Not available

Monitoring Methods:

- GBZ/T 160.1 ~ GBZ/T 160.81-2004: Methods for determination of toxic substances in workplace air (series standard).
- EN 14042: Workplace atmospheres — Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Engineering Controls:

- Work areas should be separated from other operations.
- Handle in closed systems to prevent leakage.
- Ensure adequate ventilation.
- Install automatic alarm systems and emergency exhaust facilities.
- Provide emergency evacuation routes and designated hazard areas.
- Establish red warning lines, warning signs, and safety instructions in Chinese; provide communication and alarm systems.
- Provide safety showers and eyewash stations.

Personal Protective Equipment (PPE):

- Respiratory Protection: If airborne concentrations exceed exposure limits, wear a suitable filter-type respirator (half mask). For emergency rescue or evacuation, use a self-contained breathing apparatus (SCBA).
- Hand Protection: Wear oil-resistant rubber gloves.
- Eye Protection: Wear chemical safety goggles.
- Skin and Body Protection: Wear chemical-resistant protective clothing.

Section 9: Physical and Chemical Properties

Basic physical and chemical properties： **Basic Information** **Appearance：** Liquid **Color：** Amber **Odor：** Mild **Odor Threshold：** Not determined
PH： Not determined
Melting Point / Freezing Point： Not determined **Boiling Point / Range：** Not determined
Flash Point： >93 °C (>199.4 °F)
Flammability (solid, gas)： Non-flammable
Decomposition Temperature： Not determined
Auto-ignition Temperature： Product is not self-igniting
Explosion Risk： Product does not present an explosion hazard
Vapor Pressure： Not determined
Density： Not determined **Relative Density：** **Vapor Density：** >1 **Evaporation Rate：** <BuAc
Solubility in Water： Slightly soluble
Partition Coefficient (n-octanol/water)： Not determined
Viscosity： **Dynamic：** Not determined **Kinematic：** Not determined
Volatile Organic Compounds： 0.00 %
Other Information： No additional relevant information

Section 10: Stability and Reactivity

Chemical Stability： Stable under normal conditions. **Explosion Data:** ● Sensitivity to mechanical impact: None ● Sensitivity to static discharge: None
Possibility of Hazardous Reactions: Hazardous reactions: Will not occur under normal handling Hazardous polymerization: Will not occur
Conditions to Avoid： Prolonged exposure to air or moisture **Incompatible Materials：** Strong acids, strong bases, strong oxidizing agents
Hazardous Decomposition Products： Thermal decomposition may produce carbon oxides (CO, CO_2)

Section 11: Toxicological Information

Routes of Exposure： Inhalation, skin contact, eye contact, ingestion.
Symptoms: **Inhalation：** No specific test data available. Inhalation of corrosive substances may cause toxic pulmonary edema, which can be fatal. May cause respiratory tract irritation. **Eye Contact：** No specific test data available. Causes burns. Corrosive to eyes and may cause severe damage, including blindness. Irreversible eye damage possible. **Skin Contact：** No specific test data available. Corrosive; causes burns. May be absorbed through skin in harmful amounts. Harmful by skin contact. **Ingestion：** No specific test data available. Causes burns (based on component data). May cause severe burns to the upper digestive and respiratory tracts, with symptoms such as vomiting or diarrhea with dark blood clots. Possible fall in blood pressure. Brown or yellow spots may appear around the mouth. Throat swelling may lead to shortness of breath and suffocation. Aspiration into lungs may cause severe lung injury and can be fatal.
Toxicological Effects: **Symptoms：** Redness, burning sensation, potential blindness; coughing and/or wheezing; itching, rash, hives. **Acute Toxicity：** LD_{50} (oral, rat): 10,000 – 11,400 mg/kg. **Skin Corrosion/Irritation：** Classified as corrosive; causes burns. **Serious Eye Damage/Irritation：** Classified as corrosive; risk of severe eye damage. **Respiratory or Skin Sensitization：** May cause allergic skin reaction. **Germ Cell Mutagenicity：** No data available. **Carcinogenicity：** No data available. **Reproductive Toxicity：** No data available. **STOT – Single Exposure：** No data available. **STOT – Repeated Exposure：** No data available. **Aspiration Hazard：** No data available.

Section 12: Ecological Information

Ecotoxicity: Harmful to aquatic life with long lasting effects
Persistence and Degradability: Readily biodegradable
Bioaccumulative Potential: Not bioaccumulative
Mobility in Soil: No data available
Other Adverse Effects: No data available
Ecotoxicity： /

Section 13: Disposal Considerations

Waste Disposal Methods:

1. Recover and recycle if possible.
2. If recycling is not feasible, dispose of by incineration in accordance with local regulations.
3. Do not dispose of into sewers or waterways.
4. Solidified product may be handled as general industrial waste; liquid product must not be disposed of as general waste.

Contaminated Packaging: Dispose of in accordance with local/regional/national/international regulations.

Section 14: Transport Information

Proper Shipping Name: No special regulations for container <110 gal

International Transport Regulations: 1. Road Traffic Safety Rules, Article 84 2. International Maritime Dangerous Goods Code (IMDG) 3. Taiwan Railway Dangerous Goods Transportation Rules
UN Number: UN3263
Transport Hazard Class： 8
Packaging classification: III
Marine Pollutant： /
Special Precautions for Transport: None

Others

IMDG/IMO	
UN Number	UN3263
Proper Shipping Name	Corrosive solid, basic, organic, n.o.s.
Transport Hazard Class	8
Packing Group	III
Marine Pollutant	Not applicable
Special Provisions	None
EmS-number	F-A, S-B
Bulk Transport According to MARPOL 73/78	No data available
RID	
UN Number	UN3263
Proper Shipping Name	Corrosive solid, basic, organic, n.o.s.
Transport Hazard Class	8
Packing Group	III
Environmental Hazards:	Not applicable
Special Provisions	None
Classification Code	C7
ADR	
UN Number	UN3263

Proper Shipping Name	Corrosive solid, basic, organic, n.o.s.
Transport Hazard Class	8
Packing Group	III
Environmentally Hazardous	Not applicable
Special Provisions	None
Classification Code	C7
Tunnel Restriction Code	(E)
IATA	
UN Number	UN3263
Proper Shipping Name	Corrosive solid, basic, organic, n.o.s.
Transport Hazard Class	8
Packing Group	III
Environmentally Hazardous	Not applicable
Special Provisions	None
ERG Code	8L

Section 15: Regulatory Information

Applicable Regulations:

The following laws, regulations, rules, and standards apply to the management of this chemical:

Component: 1,3-Cyclohexanedimethanamine

CAS No.: 2579-20-6

People's Republic of China Regulations:

Occupational Disease Prevention Law: Not listed in the Catalog of Occupational Hazard Factors (2015)

Regulations on the Safety Management of Hazardous Chemicals: Not listed in the Catalogue of Hazardous Chemicals (2015)

List of Explosive Precursors (2017): Not listed

Key Regulated Hazardous Chemicals: Not listed in the first and second batches of key regulated hazardous chemicals

Measures for Environmental Management Registration of Hazardous Chemicals (Trial): Not listed in the Key Environmental Management Hazardous Chemicals Catalogue

Regulations on the Administration of Narcotic Drugs and Psychotropic Substances:

Narcotic drugs list: Not listed

Psychotropic substances list: Not listed

Measures for the Environmental Management of New Chemical Substances: Listed in the Inventory of Existing Chemical Substances in China (2013)

Section 16: Other Information

References	
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