

MATERIAL SAFETY DATA SHEET (MSDS)

E57-81H Environmentally Friendly Heat-Resistant Modified Unsaturated Polyester Resin

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SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	E57-81H Environmentally Friendly Heat-Resistant Modified Unsaturated Polyester Resin
Chemical Formula	Mixture
Manufacturer	Zhuhai Changxian New Material Technology Co., Ltd.
Address	Langwan Road, Fine Chemical Industrial Zone, Gaolan Port Economic Zone, Zhuhai City, China
Postal Code	519050
Email	18718861172@163.com
Fax	+86-755-26689087
Telephone	+86-755-26852598
Company Emergency Contact	+86-18718861172
National Emergency Hotline	+86-532-83889090

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview

Flammable liquids and vapors that may cause drowsiness or dizziness; inhalation is harmful.

GHS Classification

Flammable Liquids	Category 2
Skin Irritation / Corrosion	Category 2
Reproductive Toxicity	Category 2
Specific Target Organ Toxicity - Single Exposure	Category 3 (Narcotic Effects)
Specific Target Organ Toxicity - Repeated Exposure	Category 3 (Narcotic Effects)
Inhalation Hazard	Category 1
Hazardous to Aquatic Environment - Acute	Category 2

Label Elements (GB 15258-2009)

Signal Word: DANGER

Hazard Statements

- H225: Highly flammable liquid and vapor.
- H302: Harmful if swallowed.
- H332: Harmful if inhaled.
- H315: Causes skin irritation.
- H361: Suspected of damaging fertility or the unborn child.
- H336: May cause drowsiness or dizziness.
- H401: Toxic to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements

- P210: Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground and bond container and receiving equipment.
- P241: Use explosion-proof electrical, ventilating, and lighting equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264: Wash thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P273: Avoid release to the environment.
- P280: Wear protective gloves, protective clothing, eye protection, and face protection.

Response Statements

- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P370+P378: In case of fire: Use dry chemical, CO2, foam, or sand to extinguish.

Storage & Disposal Statements

- P403+P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Physical and Chemical Hazards

Flammable; its vapor can form an explosive mixture when mixed with air.

Health Hazards

Acute Toxicity	Inhalation of high concentrations of this product within a short period of time can cause significant irritation symptoms to the eyes and upper respiratory tract, such as headache, dizziness, and nausea.
Chronic Effects	Long-term exposure can cause neurasthenia syndrome. Prolonged skin contact can cause dryness, cracking, and dermatitis.
Irritation	Irritating to skin, eyes, and respiratory tract.
Sensitization	May cause allergic skin reactions.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	Concentration (wt%)	CAS Number
Environmentally friendly modified heat-resistant unsaturated polyester resin	50 - 60	25135-75-3
Environmentally friendly modified epoxy resin	15 - 25	Trade Secret
Stabilizer	0.5 - 1.5	80-43-3
High-purity environmentally friendly reactive diluent	15 - 25	Confidential
Additives	0.5 - 1.5	Trade Secret

SECTION 4: FIRST AID MEASURES

Skin Contact	Immediately remove contaminated clothing and rinse with plenty of running water for at least 15 minutes. Seek medical attention.
Eye Contact	Immediately lift eyelids and rinse thoroughly with plenty of running water or saline solution for at least 15 minutes. Seek medical attention.
Inhalation	Immediately move the person to fresh air. Keep the airway open. If breathing is difficult, administer oxygen. If breathing stops, immediately begin artificial respiration. Seek medical attention.
Ingestion	Drink plenty of warm water and induce vomiting. Seek medical attention.

Important Note: Rescue personnel should wear appropriate protective equipment to avoid injury.

SECTION 5: FIRE-FIGHTING MEASURES

Hazardous Characteristics	Flammable; poses a risk of combustion and explosion when exposed to open flames, high temperatures, or oxidizers.
Suitable Extinguishing Media	Dry powder, carbon dioxide, foam, or sand.
Unsuitable Extinguishing Media	Water jet (may spread the fire).
Fire-Fighting Precautions	Firefighters must wear gas masks and full protective suits and

	fight the fire from upwind. Avoid water flow impacting the leaked material to prevent it from entering sewers, surface water, and groundwater. After extinguishing the fire, clean up the site to prevent reignition.
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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions

- Immediately evacuate personnel from the contaminated area to a safe zone and isolate the area, strictly restricting access.
- Cut off ignition sources.
- Emergency responders are advised to wear self-contained positive pressure breathing apparatus and anti-static work clothes.
- Do not directly contact the leaked material.

Environmental Precautions

Prevent leaked materials from entering water bodies, sewers, basements, or confined spaces.

Methods for Containment and Cleaning Up

Small Spills	Absorb or adsorb with sand or other non-combustible materials. Alternatively, flush with plenty of water, and dilute the wash water before placing into the wastewater system.
Large Spills	Construct dikes or dig pits to contain the spill. Cover with foam to reduce vapor hazards. Transfer to tank trucks or other suitable containers using explosion-proof pumps. Transport to a waste treatment facility for disposal.

SECTION 7: HANDLING AND STORAGE

Handling Precautions

- Operate in a closed system with enhanced ventilation.
- Operators must be specially trained and strictly adhere to operating procedures.
- It is recommended that operators wear self-priming filter respirators (half-face masks) and anti-static work clothes.
- Keep away from sources of ignition. Smoking is strictly prohibited in workplaces with heat sources.
- Explosion-proof ventilation systems and equipment must be used.
- Prevent vapor leakage into the workplace air.
- Keep out of reach of flammable materials.
- Avoid contact with oxidizers and alkalis.
- Equip with appropriate types and quantities of fire-fighting equipment and leak emergency response equipment.
- Avoid inhaling high concentrations of pollutants.

Storage Precautions

Storage Conditions	Store in a cool, dark, and well-ventilated warehouse. Keep away from fire and heat sources. Keep containers tightly sealed.
Shelf Life	Generally six months from the date of production at temperatures below 25 degrees C.
Explosion-Proof Requirements	Warehouse lighting and ventilation systems must be explosion-proof. Switches shall be located outside the warehouse.
Other Requirements	The use of machinery and tools that may generate sparks is prohibited. The storage area should be equipped with spill response equipment.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	The production process is enclosed, and ventilation is enhanced.
Respiratory Protection	When the concentration in the air exceeds the standard, wear a self-priming filter respirator (half-face mask). During emergency rescue or evacuation, it is recommended to wear an air respirator.
Eye Protection	Wear chemical safety goggles.
Skin Protection	Wear anti-static work clothes.
Hand Protection	Wear rubber gloves.
Other Protective Measures	Smoking, eating, and drinking are prohibited at the work site. Shower and change clothes after work. Maintain good hygiene habits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale yellow to light brown transparent liquid, free of mechanical impurities.
Relative Density (g/cm³)	1.05 plus or minus 0.03
Viscosity (25 plus or minus 2 degrees C, s)	45 plus or minus 15
Flash Point (degrees C)	60
Critical Temperature (degrees C)	528
Upper Explosive Limit (%)	6.1
Lower Explosive Limit (%)	1.1

Main Applications:

Used in Class B, F, and H dry-type power transformers, reactors, as well as hoisting, frequency conversion, and refrigerant-resistant motors and electrical appliances for vacuum and atmospheric pressure impregnation insulation treatment.

SECTION 10: STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Incompatible Materials	Strong oxidizing agents, strong acids, strong bases.
Conditions to Avoid	High temperature, open flame, oxidizers.
Hazardous Polymerization	Will not occur.
Hazardous	Harmful fumes may be produced during combustion, such as

Decomposition Products	carbon monoxide and carbon dioxide.
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SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity	Dizziness and headache may occur.
Irritation	Irritating to skin, eyes, and respiratory tract.
Sensitization	May cause allergic skin reactions.
Subacute and Chronic Toxicity	No data available.
Mutagenicity	No data available.
Teratogenicity	No data available.
Carcinogenicity	No data available.

SECTION 12: ECOLOGICAL INFORMATION

LC50 (96h)	34.27 mg/L (Blackhead Carp)
Biodegradability	Easily and rapidly biodegraded.
Photo-oxidation Half-Life in Water	321 - 1284 hours.
Photo-oxidation Half-Life in Air	10 - 104 hours.
Potential Bioaccumulation	Based on the Kow value, this substance may have some bioaccumulation potential.
Soil Mobility	Based on Kow values, this substance may have some mobility.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Chemicals	Dispose of by incineration through licensed waste disposal contractors.
Contaminated Packaging	Return the containers to the manufacturer or dispose of them in accordance with relevant national and local regulations.
Disposal Considerations	Waste generation should be avoided or minimized as much as possible. Significant amounts of residual product waste are disposed of through licensed channels. The disposal of products, solutions, and their byproducts must comply with environmental protection, waste disposal regulations, and relevant local regulations.
Recommended Disposal Method	Before disposal, relevant national and local regulations should be consulted, and controlled incineration should be used.

SECTION 14: TRANSPORT INFORMATION

Dangerous Goods Number	33646
UN Number	3082
Proper Shipping Name	Environmentally Hazardous Substance, Liquid, N.O.S.
Hazard Class	Class 3 (Flammable Liquid)
Packing Group	II

Packaging Method	18 kg or 180 kg/drum
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Transport Precautions

- During transportation, the transport vehicle should be equipped with appropriate types and quantities of fire-fighting equipment and leakage emergency handling facilities.
- Transportation is best done in the early morning or late evening during summer.
- Tank trucks used for transportation should have grounding chains, and perforated baffles can be installed inside the tank to reduce vibration-generated static electricity.
- It is strictly forbidden to mix or transport this substance with oxidizers, acids, alkali metals, amines, or food chemicals.
- The goods should be protected from direct sunlight, rain, and high temperatures.
- During stops, they should be kept away from sources of fire, heat, and high-temperature areas.
- Vehicle exhaust pipes must be equipped with flame arresters.
- The use of machinery and tools that may generate sparks during loading and unloading is prohibited.
- During road transport, travel along designated routes and do not stop in residential areas or densely populated areas.
- Shunting is prohibited during railway transport.

SECTION 15: REGULATORY INFORMATION

- Occupational Disease Prevention and Control Law of the People's Republic of China
- Regulations on the Safety Management of Hazardous Chemicals
- Labor Protection Regulations for Workplaces Using Toxic Substances
- Regulations on the Administration of Precursor Chemicals
- International Conventions

SECTION 16: OTHER INFORMATION

Revision Date	January 5, 2025
Prepared By	Technical Department
Training Recommendation	Provide relevant training to users.

Disclaimer:

The above information is not specific to this product and is for reference only. We assume no responsibility for guarantees. We believe that, in general, the industrial safety and hygiene procedures suggested above are feasible. However, users still need to consider whether the above suggestions are appropriate in the specific circumstances of their application.