

Material Safety Data Sheet (MSDS)

Section 1: Chemical Product and Company Identification

Chemical Name: E57-160F Solventless Insulating Varnish

Synonyms / Trade Name: Varnish; solventless insulating varnish; unsaturated polyester insulating varnish

Chemical Formula: Mixture

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Section 2: Hazards Identification

Emergency Overview: Flammable liquid and vapour. Harmful if inhaled.

GHS Classification: Flammable Liquids, Category 3; Acute Toxicity — Inhalation, Category 4; Skin Corrosion/Irritation, Category 2; Reproductive Toxicity, Category 2; Specific Target Organ Toxicity — Repeated Exposure, Category 1; Hazardous to the Aquatic Environment — Acute Hazard, Category 2.

Label elements in accordance with GB 15258-2009 (General Rules for Preparation of Chemical Safety Labels)

Pictograms:



Signal Word: Danger

Hazard Statements: Flammable liquid and vapour. Harmful if inhaled. Causes skin and eye irritation. Prolonged or repeated exposure may cause organ damage. Harmful to aquatic life.

Precautionary Statements:

Prevention: Keep away from sparks, open flames and heat. No smoking. Keep container tightly closed and ground the container and receiving equipment. Use explosion-proof electrical, ventilation and lighting equipment and non-sparking tools. Take precautions against static discharge. Wear protective gloves, safety goggles and face protection.

Response: In case of fire, use foam, carbon dioxide, dry powder or sand. IF ON SKIN (or hair), immediately remove contaminated clothing and wash thoroughly with soap and clean water; shower. If inhaled, move to fresh air.

Storage: Store in a shaded, cool, dry and ventilated warehouse. Protect from sunlight and keep the container sealed.

Disposal: Consult national and local regulations before disposal, or dispose of by controlled

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incineration.

Physical and Chemical Hazards:

Physical and Chemical Hazards: Flammable. Vapour may form an explosive mixture with air. The product may undergo self-polymerization.

Health Hazards: Irritating to the eyes and upper respiratory tract. High concentrations may have a narcotic effect.

Acute Effects: High-concentration inhalation may cause eye pain, tearing, runny nose, sore throat, coughing, nausea, vomiting and dizziness. Eye contamination may cause burns.

Chronic Effects: Repeated exposure may cause headache, fatigue, nausea and abdominal distension. Frequent skin contact may cause roughness and chapping. Environmental Hazard:

Toxic to aquatic life.

Section 3: Composition / Information on Ingredients

Pure Substance	Mixture ■	
Ingredient	Concentration	CAS No.
Unsaturated polyester resin	70-75%	27837-75-8
Styrene	20-25%	100-42-5
Other ingredients	1-2%	Not specified

Section 4: First Aid Measures

Inhalation: Move the affected person to fresh air. Keep the airway open. If breathing is difficult, administer oxygen. If breathing stops, provide artificial respiration and seek medical attention.

Skin Contact: Remove contaminated clothing and wash the skin thoroughly with soap and clean water. Seek medical attention if irritation persists.

Eye Contact: Immediately hold the eyelids open and flush with running water or saline for at least 15 minutes. Seek medical attention.

Ingestion: Rinse the mouth, drink an appropriate amount of warm water and seek medical attention.

Section 5: Fire Fighting Measures

Extinguishing Media: Foam, carbon dioxide, dry powder or sand.

Special Hazards: Flammable. Vapour may form an explosive mixture with air and may react with oxidizing agents.

Firefighting Precautions: Firefighters shall wear respiratory protection and full protective clothing and fight the fire from upwind. Move containers to an open area if possible. Cool containers with water spray until the fire is completely extinguished. Evacuate immediately if a container emits abnormal sounds or shows abnormal signs.

Hazardous Combustion Products: Carbon monoxide and carbon dioxide.

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Section 6: Accidental Release Measures

Personal Precautions: Evacuate personnel from the contaminated area to the upwind side, isolate the area and strictly restrict access. Eliminate ignition sources. Emergency responders should wear self-contained positive-pressure respirators and anti-static work clothing. Stop the leak if this can be done safely.

Environmental Precautions: Prevent the released material from entering water bodies, sewers, basements or confined spaces.

Containment and Cleanup:

Small Spill: Absorb with sand or another non-combustible material.

Large Spill: Construct dikes or excavate a pit for containment. Cover with foam to reduce vapour hazards and transfer with explosion-proof equipment for recovery or disposal.

Section 7: Handling and Storage

Handling Precautions: Use closed handling with adequate local exhaust and general ventilation. Operators shall be specially trained and follow operating procedures. Wear a filter respirator (half mask) and anti-static work clothes. Keep away from ignition sources and heat; smoking is prohibited. Use explosion-proof ventilation, lighting and equipment, and non-sparking tools. Prevent vapour release into workplace air. Avoid contact with oxidizing agents and alkalis. Keep appropriate fire-fighting and spill-response equipment available.

Storage Precautions: Store in a shaded, cool and well-ventilated warehouse away from ignition sources and heat. Protect from sunlight and ultraviolet light. Keep containers tightly closed. Use explosion-proof lighting and ventilation, and do not use spark-producing equipment or tools. Shelf life: six months when stored in sealed containers below 40°C.

Section 8: Exposure Controls / Personal Protection

Monitoring Method: Methods for determination of toxic substances in workplace air.

Engineering Controls: Use a closed production process and provide adequate ventilation.

Respiratory Protection: Wear a filter respirator (half mask) when exposed to high concentrations. Use an air-supplied respirator for emergency response or evacuation.

Eye Protection: Wear chemical safety goggles.

Body Protection: Wear anti-static protective work clothing.

Hand Protection: Wear rubber gloves.

Other Protection: No smoking, eating or drinking in the workplace. Maintain good personal hygiene and wash after work.

Section 9: Physical and Chemical Properties

Appearance and State: Yellow transparent liquid.

Viscosity (Tu-4 cup, 25°C): 18-22 s. Relative Density (25°C): 0.99±0.02.

Flash Point: 20°C. Ignition Point: 36°C. Boiling Point: 142°C. Saturated Vapour Pressure: 35 mmHg at 26.0°C.

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Explosive Limits: 1.0-7.0 vol%.

Main Uses: Impregnation of transformers from EI-35 to EI-105.

Section 10: Stability and Reactivity

Stability: Slow polymerization may occur under normal conditions.

Incompatible Materials: Strong oxidizing agents.

Conditions to Avoid: Heat and contact with strong oxidizing agents or incompatible materials.

Polymerization Hazard: Contact with strong oxidizing agents or incompatible materials may cause fire or explosion.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

Section 11: Toxicological Information

Acute Toxicity: Styrene — inhalation LC50, rat, 24,000 mg/m³/4 h.

Skin Corrosion/Irritation: Rabbit dermal, 500 mg — mild irritation.

Serious Eye Damage/Irritation: Rabbit eye, 100 mg — severe irritation.

Respiratory or Skin Sensitization: No data available.

Mutagenicity: No data available. Carcinogenicity: Limited evidence in humans and inadequate evidence in animals according to the source MSDS.

Reproductive Toxicity: Developmental effects were reported in rats following exposure during gestation. Aspiration Hazard: No data available.

Section 12: Ecological Information

Ecotoxicity: LC50 4.9 mg/L (96 h), fathead minnow.

Persistence and Degradability: Readily biodegradable.

Abiotic Degradability: Photo-oxidation half-life in air: 0.9-7.3 h.

Bioaccumulative Potential: BCF 13.5, goldfish.

Mobility in Soil: Based on the Kow value, some mobility in soil may occur.

Section 13: Disposal Considerations

Waste Chemical: Dispose of by controlled incineration in accordance with applicable regulations.

Contaminated Packaging: Return containers to the manufacturer or dispose of them in accordance with national and local regulations.

Disposal Precautions: Avoid or minimize waste generation where possible. Significant quantities of residual product shall be handled by a licensed waste disposal contractor.

Disposal of the product, solutions and by-products shall comply with environmental protection, waste disposal and applicable local regulations.

Disposal Method: Consult national and local regulations before disposal.

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Section 14: Transport Information

Packing Group: II

Packaging Method: 20 L pail; 200 L drum

Transport Precautions: Vehicles shall carry suitable fire-fighting and spill-response equipment.

Protect from sunlight, rain and high temperatures. Keep away from ignition sources and heat.

Prevent static discharge and do not use spark-producing equipment during loading or unloading. Follow prescribed transport routes and applicable regulations.

Section 15: Regulatory Information

The following laws, regulations, rules and standards provide for the management of this chemical.

Law of the People's Republic of China on Prevention and Control of Occupational Diseases.

Regulations on the Safety Management of Hazardous Chemicals.

Regulations on Labour Protection in Workplaces Using Toxic Substances.

Regulations on the Administration of Precursor Chemicals.

Applicable international conventions.

Section 16: Other Information

Preparation and Revision Information: 2025.01.05 — Technical Department.

Training Recommendations: Provide relevant training to users.

Disclaimer: The above information is not a product specification and is provided for reference only; no warranty is assumed. The recommended industrial safety and hygiene procedures are considered practicable under normal conditions. Users remain responsible for determining whether these recommendations are appropriate for their specific conditions of use.