

Material Safety Data Sheet (MSDS)

Section 1: Chemical and Company Identification

Product name: M988 Environmentally Friendly Conformal Coating

Trade names: Moisture-proofing agent; protective coating

Chemical formula: Mixture

Company: Zhuhai Changxian New Material Technology Co., Ltd.

Address: Langwan Road, Fine Chemical Industry Zone, Gaolan Port Economic Zone, Zhuhai, China

Postal code: 519050

Email: szwkb@changxiankeji.com

Fax: +86-755-26689087

Telephone: +86-755-26852596 +86-755-26852597 +86-755-26864069

Company emergency telephone: +86-13802269905

National emergency telephone: +86-532-83889090

Section 2: Hazards Identification

Emergency overview: Flammable liquid and vapor.

GHS hazard classification: Flammable liquids, Category 2.

Label elements according to GB 15258-2009 (General Rules for Preparation of Precautionary Labels for Chemicals)

Pictograms:



Hazard symbol: Flammable

Signal word: Danger

Hazard statement: Flammable liquid and vapor.

Precautionary statements:

Prevention: Keep away from ignition sources and heat. Protect from light and store in a cool, well-ventilated place. Keep container tightly closed. Use explosion-proof lighting and ventilation equipment. Do not use spark-producing machinery or tools. Take precautions against static discharge.

Response: In case of fire, use foam, carbon dioxide or dry chemical. Cool fire-exposed containers with water spray until the fire is extinguished. IF ON SKIN (or hair): Immediately remove contaminated clothing. Wash thoroughly with soap and water; shower.

Storage: Store in a cool, well-ventilated warehouse, protected from light and away from ignition sources and heat. Keep container tightly closed.

Disposal: Consult applicable national and local regulations before disposal, or dispose of by incineration.

Material Safety Data Sheet (MSDS)

Physical and chemical hazards:

Flammable. Vapors may form explosive mixtures with air and may ignite or explode when exposed to open flames or high heat.

Health hazards: Central nervous system depressant. Exposure may initially cause excitation followed by depression. Prolonged exposure to high vapor concentrations may cause headache, dizziness and nausea and may irritate the eyes, nose and throat. Prolonged skin contact may cause dryness, cracking and dermatitis.

Section 3: Composition / Information on Ingredients

Substance ☐

Mixture ☒

Component	Concentration (% w/w)	CAS No.
Silicone-modified acrylic resin	40-50	9003-01-4
Alcohol solvents	30-40	64-17-5; 67-63-0
Glycol ether solvent	5-10	107-98-2
Additives	1-3	Not specified

Section 4: First Aid Measures

Inhalation: Immediately move the exposed person to fresh air.

Skin contact: Remove contaminated clothing. Wash skin thoroughly with soap and water.

Eye contact: Immediately lift the upper and lower eyelids and rinse with running water or saline for at least 15 minutes. Seek medical attention.

Ingestion: Rinse mouth with water. Seek medical attention.

Section 5: Firefighting Measures

Extinguishing media: Foam, carbon dioxide, dry chemical or sand/earth.

Specific hazards: Flammable. Vapors form explosive mixtures with air. May react with oxidizing agents.

Firefighting precautions and protection: Firefighters must wear protective respirators and full protective firefighting clothing. Fight fire from upwind. Move containers to an open area if possible. Cool fire-exposed containers with water spray until the fire is extinguished.

Withdraw immediately if containers emit unusual sounds or show abnormal signs.

Hazardous combustion products: Carbon monoxide and carbon dioxide.

Material Safety Data Sheet (MSDS)

Section 6: Accidental Release Measures

Personal precautions: Evacuate personnel from the contaminated area to an upwind location. Isolate the area and strictly restrict access. Eliminate ignition sources. Emergency responders should wear positive-pressure self-contained breathing apparatus and antistatic clothing. Stop the leak if possible.

Environmental precautions: Prevent entry into bodies of water, sewers, basements or confined spaces.

Methods and materials for containment and cleanup:

Small spills: Adsorb or absorb with sand, earth or other noncombustible materials.

Large spills: Contain with dikes or a collection pit. Cover with foam to reduce vapor hazards.

Section 7: Handling and Storage

Handling precautions: Use closed systems with adequate local exhaust and general ventilation. Operators must receive specific training and follow operating procedures. A filtering half-face respirator and antistatic work clothing are recommended. Keep away from ignition sources and heat. Smoking is prohibited. Use explosion-proof ventilation systems and equipment. Prevent vapor release into workplace air. Avoid contact with oxidizing agents and alkalis. Provide suitable firefighting and spill response equipment. Avoid inhalation of high vapor concentrations.

Storage precautions: Store in a cool, well-ventilated warehouse, protected from light and away from ignition sources and heat. Keep container tightly closed. Shelf life is six months from the date of manufacture when stored in sealed containers at 5-25°C. Use explosion-proof lighting and ventilation, with switches outside the warehouse. Do not use spark-producing machinery or tools. Provide spill response equipment in the storage area.

Section 8: Exposure Controls / Personal Protection

Occupational exposure limits: No standard established in China.

Biological exposure limits: No standard established.

Monitoring methods: Methods for determination of toxic substances in air.

Engineering controls: Enclosed production processes and general ventilation. Provide safety showers and eyewash facilities.

Respiratory protection: No special protection is generally required. A filtering half-face respirator may be worn for prolonged exposure or exposure to high concentrations.

Eye protection: Wear safety goggles.

Body protection: Wear antistatic work clothing.

Hand protection: Wear general protective gloves.

Other protection: No smoking, eating or drinking in the workplace. Maintain good personal

Material Safety Data Sheet (MSDS)

hygiene.

Section 9: Physical and Chemical Properties

Appearance: Transparent yellow liquid

Relative density at 25°C: 0.88 ± 0.02

Viscosity at 25°C (Tu-4 cup, s): 12-18

Flash point (°C): 14

Auto-ignition temperature (°C): 365

Non-volatile content (%): 28.5 ± 2

Recommended thinner: X-98

Recommended curing conditions: 60-80°C for 3-5 minutes, followed by curing at room temperature.

Time to achieve optimum properties at room temperature: 7 days.

Main uses: Moisture protection of printed circuit boards and electronic components.

Section 10: Stability and Reactivity

Stability: Stable.

Incompatible materials: Strong oxidizing agents and strong acids.

Conditions to avoid: Open flames, excessive heat and static electricity.

Hazardous polymerization: Will not occur.

Decomposition products: Carbon monoxide and carbon dioxide.

Section 11: Toxicological Information

Name	Result	Species	Dose	Exposure
Ethanol	LC50, inhalation	Rat	20,000 ppm	10 h
Ether ester solvent	LC50, inhalation	Rat	1,500 ppm	7 h

Conclusion / Summary

Skin irritation or corrosion: Rabbit, dermal, 20 mg/24 h: moderate irritation.

Eye irritation or corrosion: Rabbit, ocular, 500 mg: severe irritation.

Respiratory or skin sensitization: No data available.

Mutagenicity: No established information.

Carcinogenicity: IARC carcinogenicity evaluation: Group 1 (alcoholic beverages), carcinogenic to humans.

Reproductive toxicity: Oral or intravenous administration at different doses and stages of pregnancy in rats, mice and livestock produced developmental abnormalities involving the nervous, genitourinary and respiratory systems and facial development. Inhalation hazard: No

Material Safety Data Sheet (MSDS)

hazard.

Section 12: Ecological Information

Ecotoxicity: Ethanol, LC50 9,268-14,221 mg/L (Daphnia, 48 h); ether ester solvent, LC50 >10,000 mg/L (sunfish, 96 h).

Persistence and degradability: Aerobic biodegradation: 6.5-26 h; anaerobic biodegradation: 26-104 h.

Abiotic degradability: Photo-oxidation half-life in water: 8,020 to 3.20×10^5 h; photo-oxidation half-life in air: 12.2-122 h.

Bioaccumulative potential: Low bioaccumulation potential is predicted based on the Kow value.

Mobility in soil: Mobility is predicted based on the Kow value.

Section 13: Disposal Considerations

Waste chemicals: Dispose of by incineration.

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

Product disposal: Avoid or minimize waste generation wherever possible. Significant quantities of residual product waste should be handled by a licensed waste disposal contractor.

Dispose of surplus and non-recyclable products through such a contractor. Disposal of the product, solutions and by-products must comply with environmental protection and waste disposal legislation and applicable local regulations.

Disposal precautions: Consult applicable national and local regulations.

Section 14: Transport Information

Packing group: II

Dangerous goods number: 32198

Packaging: 4 L pail or 20 L drum.

Transport precautions: Equip vehicles with suitable firefighting and spill response equipment.

In summer, transport preferably in the morning or evening. Tank vehicles must have grounding chains; perforated baffles may be fitted inside tanks to reduce static from agitation.

Do not transport with oxidizing agents, acids, alkali metals, amines or food-grade chemicals.

Protect from sunlight, rain and high temperatures. When stopping, keep away from ignition sources, heat and high-temperature areas. Vehicle exhaust pipes must have flame arresters.

Do not use spark-producing machinery or tools for loading or unloading. Follow designated road routes and avoid stopping in residential or densely populated areas. Loose shunting is

Material Safety Data Sheet (MSDS)

prohibited during rail transport.

Section 15: Regulatory Information

The following laws, regulations, rules and standards contain provisions governing this chemical.

PRC Law on Prevention and Control of Occupational Diseases - Classification and Catalogue of Occupational Diseases: Not listed.

Regulations on the Safe Management of Hazardous Chemicals - Catalogue of Hazardous Chemicals: Listed. Catalogue of Explosive Precursor Hazardous Chemicals: Not listed. Catalogue of Hazardous Chemicals Subject to Priority Supervision: Not listed. GB 18218-2018, Identification of Major Hazard Installations for Hazardous Chemicals (Table 1): Listed. Category: Flammable liquids; threshold quantity: 500 t. Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used - Catalogue of Highly Toxic Substances: Not listed.

Regulations on the Administration of Precursor Chemicals - Classification and Catalogue of Precursor Chemicals: Not listed.

International conventions - Stockholm Convention: Not listed. Rotterdam Convention: Not listed. Montreal Protocol: Not listed.

Section 16: Other Information

Preparation / revision: January 5, 2025 - Technical Department

Training advice: Provide relevant training for users.

Disclaimer: The above information is for reference only and does not constitute product specifications or any warranty. The recommended industrial safety and hygiene procedures are believed to be appropriate under normal conditions. Users must determine whether these recommendations are suitable for their particular conditions of use.