

Material Safety Data Sheet (MSDS)	Document No.	Revision Date
	TF-P028-SDS	March 16, 2020

Part I: Chemical and Company Information

Chinese name: Insulation Varnish

Company name: Shenzhen Tongfang Electronic New Material Co.,Ltd.

Address: No.65 Bai Ge Hu Road,Guan Hu Community,Long Hua District,Shenzhen China

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Part II: Ingredient/Composition

Chemical name: TF-7200

No.	Product name	CAS. NO	Highest content
1	Epoxy resin	25085-99-8	45%
2	Auxiliaries	25550-51-0	5.0%
3	Solvent	108-88-3	50%

Part III: Hazard Overview

Hazard category: Class 3 flammable fluid.

Hazard type and sign:



Invasion way: Inhalation, ingestion and percutaneous absorption

Health hazard: High-concentration vapor may cause headache, nausea, drowsiness, uncoordinated action, unconsciousness, visual stimulation and skin irritation. The product will be absorbed by skin to the toxic dose and massive exposure will cause loss of consciousness and death. Ingestion or emesis may lead the product to the lung. Long-term exposure may hurt peripheral (hands and feet) nerves.

Explosion hazard: The product is flammable and its vapor can generate explosive mixtures together with air and cause combustion and explosion hazards if exposed to open fire and overheat.

Part IV: First Aid Measure

Skin exposure: 1. Take off the contaminated clothes, shoes and leather accessories (such as watchband and belt).
2. Thoroughly and gently rinse using water and non-abrasive soap for more than 5 minutes.
3. If the patient still feels irritating, seek medical advice immediately.

Eye exposure: 1. Lift the eyelids immediately and rinse eyes using slowly flowing warm water for 20 minutes.
2. If the patient still feels irritating, rinse eyes repeatedly.
3. Seek medical advice immediately.

Inhalation: 1. Remove pollution sources or move the patient to get fresh air.
2. In the case of respiratory arrest, artificial respiration should be performed by trained personnel immediately. In the case of cardiac arrest, perform cardiopulmonary resuscitation.
3. Seek medical advice immediately.

Ingestion: 1. If the patient is about to lose consciousness, has lost consciousness or has spasm, do not feed them food.
2. Do not promote emesis.

Material Safety Data Sheet (MSDS)	Document No.	Revision Date
	TF-P028-SDS	March 16, 2020

3. Feed the patient 240-300ml of water.
4. If the patient vomits, lean the body forward to reduce the risk of inhalation and feed them water repeatedly.
5. Seek medical advice immediately.

Part V: Fire-fighting Measure

Hazard characteristics: 1. Containers in a fire may be broken.

2. The product will gather in a confined space.

3. The density of its vapor is greater than air density, so it will spread farther and its liquid will float on the water to spread a fire.

Extinguishing method and extinguishing agent: Foam, dry powder and CO₂.

Precautions and measures for extinguishing: Do not put out a fire using water.

Part VI: Leakage Treatment

Emergency treatment: Cut off ignition sources. Evacuate personnel in the contaminated area to a safe place quickly, isolate them and strictly control their access. Emergency treatment personnel should wear self-contained positive pressure breathing apparatus and chemical protective clothing. Cut off leakage sources as far as possible and prevent leakage from entering confined spaces such as sewer and drainage ditch.

Minor leakage: Try to collect leakage in a closed container, absorb residual leakage using sandy soil, activated carbon or other inert materials, or rinse using emulsion made of incombustible dispersant. Dilute washing liquor and discharge them into the wastewater system.

Major leakage: Build a dike or dig a pit to collect leakage. Cover them with foam to reduce vapor hazard. Cool and dilute vapor using spray water and protect field personnel. Transfer leakage to tank car or special collector using explosion-proof pump and recycle or transport them to a disposal site.

Part VII. Operation and Storage

Precautions about operation:

1. The product is flammable liquid, which should be disposed of using personal protective equipment. Workers should be trained properly on hazard and safe use of relevant substances.
2. Remove all ignition sources and keep far away from heat and incompatibles.
3. The working area should be marked with "No smoking".
4. If all barrels, containers and pipelines need to be grounded, they must be in contact with bare metals.
5. If blending is not conducted in a closed system, the containers used for blending and conveying equipment and containers used for receiving should conduct equipotential connection.
6. Empty barrels, containers and pipelines may still have dangerous residues, so welding, cutting, drilling or other hot work cannot be conducted before they are removed.
7. Ventilation systems and equipment in the workplaces that do not produce spark should be explosion-proof.
8. Keep aisles and exits unobstructed.
9. Fog drop or vapor cannot be produced during operation, operation should be conducted in the designated well-ventilated area, the minimum dose should be adopted and the operation area should be separated from the storage area.
10. The product cannot be used cooperatively with incompatibles (such as strong oxidant).
11. Adopt containers made from compatibles and avoid splashing during sub-package.

Material Safety Data Sheet (MSDS)	Document No.	Revision Date
	TF-P028-SDS	March 16, 2020

12. Do not pressurize and deliver liquids out of containers using air or inert gas.
13. Unless the blending area is isolated using fire resisting construction, blending cannot be conducted in the storage area.
14. Adopt approved flammable liquid containers and blending equipment.
15. Do not pour the contaminated liquids back to the original container.
16. Containers should be labeled and should be kept airtight when left unused to avoid damage.
17. The operation area should be furnished with appropriate fire hydrants and equipment for removal of leakage.

Precautions about storage:

1. The product should be stored in a cool, dry and well-ventilated place and far away from direct sunlight, heat sources, ignition sources and incompatibles.
2. Storage equipment should be made from fireproof materials.
3. Ventilation systems, explosion-proof equipment and safe electrical systems that do not produce spark should be adopted.
4. Flooring made from impermeable materials should be adopted to avoid being absorbed by flooring.
5. Build a slope or a doorsill or dip a hole at the door to drain leakage to a safe place;
6. The storage area should be labeled clearly and barrier-free and is accessible for designated or trained personnel only.
7. The storage area should be separated from the working area. Keep far away from elevators, buildings, room exits or main passages.
8. Appropriate fire hydrants and equipment for removal of leakage should be installed near the storage area.
9. Regularly inspect whether containers are damaged or leak.
10. Inspect whether all new containers are labeled properly and damaged.
11. Limit the storage quantity.
12. The product should be stored in appropriate and labeled containers and kept airtight to avoid stacking and damage.
13. Leakage should be stored in containers made from incompatibles.
14. Empty barrels should be stored separately and kept airtight.
15. Barrels should be grounded and undergo equipotential connection with other equipment.
16. All barrels used to store flammable liquids should be furnished with relief valve and vacuum relief valve.
17. The product should be stored at the temperature recommended by the chemical manufacturer or supplier.
When necessary, temperature alarm may be installed to warn again too high or too low temperature,
18. The product cannot be stored indoors in a large quantity and should be stored in an isolated fireproof building as are as possible.
19. Exhaust pipe of storage tank should be furnished with flame arrester.
20. Storage tanks should be placed the ground, with the entire bottom sealed to prevent seepage and surrounded by a dike to avoid overflow.

Part VIII: Exposure Contact/Personal Protection

Engineering control: 1. Grounded ventilation systems that do not produce spark should be adopted and separated from other ventilation systems.

2. Air outlet should be led out of the window.

3. Sufficient fresh air should be supplied to supplement air exhausted from the exhaust system.

Material Safety Data Sheet (MSDS)	Document No.	Revision Date
	TF-P028-SDS	March 16, 2020

Respiratory system protection: Wear protective mask.

Eye protection: Wear safety goggles and face shield.

Body protection: Full-body protective clothing and work shoes made from the aforesaid materials.

Hand protection: Impervious gloves made from nitrile rubber, fluorinated elastomer, chlorinated polyethylene or chloroprene rubber.

Other protection:

1. Take of the contaminated clothes as quickly as possible after work, reuse them after cleaning or abandon them, and notify cleaning personnel of hazard of contaminant.
2. Smoking or eating and drinking are strictly prohibited in the workplace.
3. Thoroughly wash hands after disposing of the product.
4. Carry out effective management of internal affairs.

Part IX: Physical and Chemical Properties

Density (20°C): 0.92±0.02	Odor: Low odor
Flash point: -2.5°C	Volatility: General

Part X: Stability and Reactivity

Stability: Stable at 0-25°C

Prohibited substance: Strong oxidant

Conditions to be avoided: Static electricity, spark and open fire.

Decomposition products: Carbon monoxide and carbon dioxide.

Part XI: Toxicology

Acute toxicity: Inhalation: 1. With extremely low toxicity, the product mainly inhibits nervous centralis and can cause dizziness, giddiness and nausea.

2. High concentration may result in loss of consciousness.

3. Vapor may irritate nose and throat.

Skin: Mild skin irritation may be caused if skin is exposed to liquid.

Eye: Vapor and liquid will cause eye irritation.

Ingestion: 1. Sore throat, nausea and diarrhea will be caused.

2. The product may be sucked back into the lung when the patient swallows it or vomits, and consequently serious lung irritation, lung tissue damage or death may be caused.

Chronic toxicity: Dermatitis may be caused by long-term exposure.

Local effect: ---

Sensitization: ---

Special effect: ---

Part XII: Ecology

Ecotoxicology: Lowly toxic product has no related information.

Biodegradability: Disposed of by environmental protection company.

Non-biodegradability: The product will mainly evaporate when released to soil or water.

Bioaccumulation: Unlikely.

Material Safety Data Sheet (MSDS)	Document No.	Revision Date
	TF-P028-SDS	March 16, 2020

Part XIII: Waste Disposal

Waste property: Hazardous waste.

Waste disposal method:

1. Wastes should be disposed of as stipulated by local government.
2. Waste solvents should be stored in labeled closed container for ease of disposal and recycling.
3. Empty barrels and wastes cannot be abandoned arbitrarily and should be disposed of by recycling plant according to relevant regulations.

Part XIV: Transportation

Packing mark: Flammable

Precautions about transportation: The product should be protected from direct sunlight during transportation and should be transported as per the specified route.

Part XV: Regulatory Information

The following laws and regulations stipulate safe use, storage, transportation, handling, classification and labeling of chemicals:

GB 16483-2008 *Material Safety Data Sheet*

GB 205PZ-2006 *Safety rules for classification, precautionary labeling and precautionary statements of chemicals*

GB 15258 *General rules for preparation of precautionary label for chemicals*

Safety Management Regulations on Hazardous Chemicals (passed in the 144th executive meeting of the State Council on February 16, 2011);

Regulations on Production Safety License (passed in the 34th executive meeting of the State Council on January 7, 2004).

Part XVI: Other Information

References:

1. Zhou Guotai, *Material Safety Data Sheet*, Chemical Industry Press, 1997
2. Jointly edited by Toxic Chemical Management Office of the State Environmental Protection Administration and Beijing Research Institute of Chemical Industries, *Handbook of Toxicity, Regulation and Environmental Data on Organic Chemicals*, China Environmental Science Press, 1992
3. Canadian Center for Occupational Health and Safety, CHEMINFO Database, 1989
4. Canadian Center for Occupational Health and Safety, RTECS Database, 1989

Prepared on: March 16, 2020

Prepared by: QC Department

Reviewed by: SHENZHEN TONGFANG ELECTRONIC NEW MATERIAL CO., LTD.

Other information: “---” means no relevant medical reports or information.

Note:

1. This MSDS is for reference only and cannot be used as a basis for assuming legal responsibility;
2. While using the product, please establish the best procedure or control method according to technological requirements in order to ensure quality stability.