

MATERIAL SAFETY DATA SHEET**ZINC FORMALDEHYDE SULPHOXYLATE (SAFOLIN)****1. Identification of Substance and Manufacturer****1.1 Product details**

Product name	:	Zinc Formaldehyde Sulphoxylate
Other Name	:	Safolin, ZFS
CAS No.	:	24887-06-7
Molecular Formula	:	Zn(HSO ₂ .CH ₂ O) ₂
Molecular Weight	:	255.58 gm/mol
Reach Registration No	:	01-2120770256-52-0000
Relevant identified uses	:	Discharge printing on Polyester, Nylon and other synthetic fibers. As a redox catalyst in Emulsion Polymerization of Ethylene vinyl acetate (EVA) monomer.

1.2 Company details**TRANSPEK – SILOX INDUSTRY PRIVATE LIMITED**

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Contact Person: Factory Manager

2. Hazard identification**2.1 Classification according to regulation (EC) 1272/2008 [EU-GHS/CLP]****OSHA hazard category**

Skin and / or eye irritant.

	NFPA Rating	HMIS Rating
Health	1	1
Flammability	0	0
Reactivity	0	0

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2.2 Labeling elements according Regulation (EC) No 1272/2008 [CLP]

Pictogram



GHS07



GHS08



GHS09

Signal word

: Warning.

Hazard statements

 : H302- Harmful if swallowed.
 : H319- Causes serious eye irritation.
 : H341- Suspected of causing genetic defect
 : H412- Harmful to aquatic life with long lasting effects

 Precautionary statements
 (*Prevention*)

 : P201 – Obtain special instructions before use..
 : P202 – Do not handle until all safety precautions have been read
 and understood.
 : P264 – Wash thoroughly after handling.
 : P270 – Do not eat, drink or smoke when using this product.
 : P273 – Avoid release to the environment.
 : P281 + P280 – Use protective gloves / eyes protection / face
 protection.

 Precautionary statements
 (*Response*)

 : P301 +312 – ***If swallowed***, Call a POISON CENTER or
 doctor/physician if feel unwell.
 : P302 – Harmful if swallowed
 : P304 + P340 – ***If inhaled***, Remove victim to fresh air area and
 keep in at rest in a comfortable position. Call a
 DOCTOR if feels unwell.
 : P341 – Suspected of causing genetic defects
 : P308 + P313+330 – ***If exposed or concerned***: Get medical
 advice. Rinse well
 : P305 + P351 + P338 – ***If in eye***, Rinse cautiously with water for
 several minutes, remove contact lenses, if present
 & easy to do. Continue rinsing
 : P337+P313 – If eye irritation persists, Get medical
 advice/attention
 : P361 – Suspected of damaging fertility or the unborn child
 : P410 – Very toxic to aquatic life with long lasting effects

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Precautionary statements : P405 – Store locked up

(Storage)

Precautionary statements : P501 – Dispose of contents / container to hazardous or special waste collection area or in accordance regulations.

Supplemental Hazard information (EU) : EUH032 – Contact with acids liberates toxic gas.

2.3 Other Hazards:

The substance does not meet the criteria for a PBT or vPvB substance. Not P and not vP based on readily biodegradability. Not B and not vB based on log Kow <= 4.5. ZFS is T. No other hazards identified according to Regulation (EC) 1907/2006.

3. Composition / Information on ingredients

According to regulation 1994 / 2012 OSHA Hazard communication standard: 29 CFR Part 1910.1200

CAS No.	Content	Substance Name	EINECS / EC No
24887 – 06 – 7	≥ 95 %	Zinc Formaldehyde Sulfoxylate	246 – 515 – 6

4. First-aid measures

4.1 • **General advice:** Consult a physician. Show this MSDS to the doctor.

• **In case of skin contact:** Wash off with soap and plenty of water, Consult a physician

• **If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration, consult a physician.

• **In case of eye contact:** Remove contact lenses and irrigate exposed eyes with copious amounts of water for at least 15 minutes. If irritation, pain, swelling, lacrimation, or photophobia persist after 15 minutes of irrigation, the patient should be seen in a healthcare facility

• **If swallowed:**

Rinse mouth with water, Avoid to give anything by mouth to an unconscious person, consult a physician.

• **Note to physician:**

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

4.2 Symptoms and effects, both acute and delayed

Harmful if swallowed. Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child. Very toxic to aquatic life..

4.3 Indication of immediate medical attention and special treatment needed

See section 4.1.

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- *Suitable extinguishing media:*
In case of fire, use Water, Dry chemical powder , Foam.
- *Unsuitable extinguishing media:* Carbon dioxide as the chemical has its own oxygen supply.

5.2 Special hazards arising from the substance:

- *Hazards during fire – fighting:*
May liberate gases SO₂, CO, CO₂, metallic oxides, formaldehyde and unidentified organic compounds.

5.3 Precautions for fire-fighters:

- *Protective equipment:*
Wear self contained breathing apparatus, tight protective clothing, rubber boots and thick rubber gloves for fire fighting

5.4 Further information:

Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

6. Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- *Eyes:* Wear safety goggles.
- *Skin:* Wear appropriate nitrile or rubber gloves, apron and safety shoes. Avoid contact with skin, eyes and clothing.
- *Inhalation:* Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Wear respiratory protection.
- *Other:* Ensure adequate ventilation, Evacuate personnel to safe areas. Keep unprotected persons away.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains & sub soil/ soil. Discharge into the environment must be avoided.

6.3 Method for containment and cleaning up

Do not flush with water. Pick up spillage into suitable containers, close it properly and arrange at suitable place. Dispose of all the waste and clean up material under valid legal waste regulations.

Spillage should be handled by trained cleaning personnel properly equipped with respiratory and eye protection with an electrically protected vacuum cleaner or by brush. Do not flush with water. Keep in suitable, closed containers for disposal.

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7. Handling and storage
7.1 Precautions for safe handling

Ensure good ventilation / exhaustion at work place. Keep containers tightly sealed. Store in cool and dry place. Closed containers should be opened in well – ventilated area. Avoid dust.

Avoid contact with skin, eyes and clothing. Wash hands with soap and water and other exposed areas with water after handling. Handle empty containers with care.

7.2 Precautions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids and oxidants.

Product is air and moisture sensitive. Keep away from heat. Protect from temperature above 50 °C.

7.3 Specific end uses

Redox catalyst, discharge printing.

8. Exposure controls and personal protection
8.1 Control parameters: Compound with occupational exposure limits.

Product produced SO₂ gas due to decomposition.

Material	Source	Type	ppm	mg / m ³
Sulphur dioxide	OSHA	PEL	5	13
		STEL	5	13
		TWA	2	5
	ACGIH TLV	STEL	5	
		TWA	5	

The product does not contain any relevant quantity of materials with critical values that have to be monitored at the work place.

- Additional information / advice about design of technical systems:*

Provide local exhaust ventilation to control vapors / mists.

Use properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minutes.

8.2 Exposure controls:

- General protective hygienic measures:*

Keep away from foodstuffs, beverages and food, Instantly remove any solid and impregnated garments, Wash hands during breaks and at the end of the work, Maintain an ergonomically appropriate working environment, Handle in accordance with safety practice.

- Personal protective equipments*

Eye/face protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU) or BIS.

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Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications / standards.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wear safety shoes.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU) or BIS.

9. Physical and chemical properties

a. Physical state at 20 °C	Crystalline powder
b. Colour	White
c. Odour	Product specific
d. pH of 10% solution	3.5 – 5.2
e. Melting point/range	150 ⁰ C (Decomposition)
f. Boiling point	Not determined
g. Flash point	No data available.
h. Density	2.27 g/cm ³ .
i. Water solubility	500 g/L at 20 °C
j. Auto-ignition temperature (°C)	No data available
k. Explosion lower/upper limit %	No data available
l. Partition coefficient n- octanol / water at 20 °C	Log Pow < -3 calculated
m. Evaporation rate	The product is non volatile solid.
n. Vapour pressure	No data available
o. Viscosity	Not applicable as product is solid

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10. Stability and reactivity

- 10.1 Reactivity:** Not inherently chemically reactive. Reacts vigorously with acids and oxidizers. Corrosion to metals.
- 10.2 Stability:** Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions:** Reacts with acids to release toxic gases like sulfur dioxide, hydrogen sulfide, formaldehyde. Reacts violently with Oxidizing agent.
- 10.4 Material to avoid / Incompatible material:** Acids, oxidizing agents, low flash point material.
- 10.5 Condition to avoid:** Avoid humidity, temperature Above 50⁰ C
- 10.6 Hazardous decomposition products:** Sulfur dioxide (SO₂)

11. Toxicological information**11.1 Primary routes of exposure:**

Routes of entry for compounds are ingestion and inhalation but may also include eye and skin contact.

11.2 Information on toxicological effects

- **Acute toxicity :**
 - Oral: LD50 = 1100 mg/kg bw (Zn)
 - Dermal: LD50 = 2000 mg/kg (Zn)
 - Inhalation: LC50 = 1975 mg/m³ (Zn)
- **Skin corrosion/irritation:** rabbit: non-irritant (OECD Guideline 404)
- **Serious eye damage/eye irritation:** No irritation with the exception of a slight eye irritation was observed
- **Respiratory or skin sensitization:** No adverse effect observed
- **Germ cell mutagenicity:** Mutagenic category 2
- **Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. Not listed by OSHA/NTP/IARC.

- **Reproductive toxicity:** Reproductive toxicity, Category 2 (H361d)
- **Specific target organ toxicity - single exposure:** no data available
- **Specific target organ toxicity - repeated exposure:** no data available
- **Aspiration hazard:** no data available
- **Potential health effects**
 - **Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
 - **Ingestion:** Harmful if swallowed.
 - **Skin:** May be harmful if absorbed through skin. May cause skin irritation.
 - **Eyes:** May cause eye irritation.
- **Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been

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thoroughly investigated.

- **Additional Information:** RTECS: Not available

12. Ecological information
12. Toxicity:

	Tropic level	Endpoint	mg/l
Short-term	Fish	96-h LC50	> 10.000 (Zn)
Short-term	Daphnia	48-h LC50	50 (Zn)
Short-term	Algae	72-h EC50 growth rate	220 (Zn)
Short-term	Microorganisms	EC10 or NOEC	> 100 µg/l
Long-term	Freshwater Fish	LC 50	10.000 (Zn)
Long-term	Daphnia	EC/LC 50	50 (SFS)
Long-term	Algae	NOEC	10 (SFS)
Long-term	Microorganisms	EC/LC 50	≥ 1000 (SFS)

12.2 Persistence and degradability:

Persistence: Recovery Rate (20°C, 5d) in % : 68 (pH 4); 77 (pH 7).

Half-life for hydrolyses (estimation): 7.5 d (pH 4); 7.2 (pH 7).

Substance is not resistant against hydrolysis. The substance is readily biodegradable

12.3 Bioaccumulative potential: Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

12.4 Mobility in soil: log Kd (solids-water in soil): 2.2 (Zn)

12.5 Results of PBT and vPvB assessment: ZFS is not a PBT nor a vPvB

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12.6 Other adverse effects: ZFS is not expected to contribute to ozone depletion, ozone formation, global warming or acidification

Absorbable organically bound halogen (AOX) : This product contains no organically bound halogen.

13. Disposal considerations**13.1 Waste treatment method**

13.1. Waste treatment methods :Waste disposal according to national/local legislation is sufficient

13.1.1. Non-hazardous wastes: Waste disposal according to national/local legislation is sufficient

13.1.2. Hazardous wastes : Waste disposal according to national/local legislation is sufficient

Suitable disposal: Keep separate and dispose of to Hazardous waste incineration plants operated according to Council Directive 2008/98/EC on waste, Directive 2000/76/EC on the incineration of waste and the Reference Document on the Best Available Techniques for Waste Incineration of August 2006 or Hazardous landfills operated under Directive 1999/31/EC.

13.1.3. Consumer, service-life, and end-of-life waste: can be disposed at municipal waste incineration plants or landfills as non-hazardous consumer waste unless if regulated separately.

Contaminated packaging: Do not reuse empty containers. Dispose of as unused product. Recommend crushing, puncturing, or other means to prevent unauthorized use of used containers as per comply with local regulations for disposal

The information offered in this section is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the product and alter the waste classification and proper disposal methods.

14. Transportation information

Not classified as hazardous under transport regulations (ADR / RID / ADNR / IMDG/ ICAO / IATA)

15. Regulatory information

Hazard Statement: Refer section 2.2

Precautionary Statement: Refer section 2.2

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1 Worldwide Chemical Inventories

EINECS (EU): conform

TSCA (USA): listed

DSL(Canada): listed

AICS (Australia): listed

ENCS (Japan): listed

ECL(Korea): KE- 35527

PICCS (Philippines): listed

IECSC(China): listed

15.1.2 Other regulatory information: None.

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Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

*We support worldwide **Responsible care** initiative. We value and care our employees, customers, suppliers and neighbors and the protection of the environment.*

*Our commitment to **Responsible care** is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our product and minimizing the impact of our operations on society and the environment during manufacturing, storage, transport, use and disposal of our products.*

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-----End of MSDS-----