

MATERIAL SAFETY DATA SHEET

SPE CHEMICALS CO., LTD.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY IDENTIFICATION	CONTACT US
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2. COMPOSITION/INFORMATION ON INGREDIENTS

No.		WEIGHT(%)
1	5-chloro-2-methyl-4-isothiazolin-3-one	10-12
2	2-methyl-4-isothiazolin-3-one	3.0-5.0
	Total Active Ingredient	14.0 – 15.0
3	Magnesium nitrate	14-18
4	Magnesium chloride	8-10
5	Water	60-64
	PH, as produced	1.0 – 4.0
	Appearance	Colorless to yellow liquid
	Density	1.26 – 1.32

See Section 8, Exposure Controls/Personal Protection

3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

Inhalation
Skin Contact
Eye Contact

Inhalation

Inhalation of vapor or mist can cause the following:

- irritation of nose, throat, and lungs

Eye Contact

Material can cause the following:

- corrosion to eye-irreversible eye injury

Skin Contact

Skin irritation effects can be delayed for hours.

Material can cause the following:

- burns - corrosion to the skin - allergic contact dermatitis

Ingestion

Material is harmful if swallowed.

4.FIRST AID MEASURES

Inhalation

Move subject to fresh air.

Eye Contact

IMMEDIATELY flush eyes with a large amount of water for at least 15 minutes. Get prompt medical attention.

Skin Contact

Wash affected skin areas thoroughly with soap and water immediately after exposure. Remove and wash contaminated clothing thoroughly. Do not take clothing home to be laundered. Discard contaminated shoes, belts and other article made of leather. Get prompt medical attention.

Ingestion

If swallowed, give 2 glasses of water to drink. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

Note to Physician

MATERIAL IS CORROSIVE. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5.FIRE FIGHTING MEASURES

Flash Point	Not Applicable
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Unusual Hazards

Combustion has the potential to generate toxic fumes of the following:

-hydrogen chloride – nitrogen oxides – sulfur oxides

Extinguishing Agents

Use extinguishing media appropriate for surrounding fire.

Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

Special Procedures

Use water spray to cool containers exposed to fire. Minimize exposure. DO NOT breathe fumes. Contain run-off.

6.ACCIDENTAL RELEASE MEASURES

Personal Protection

Wear a NIOSH approved (or equivalent) respirator (with organic vapor/acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material.

MATERIAL IS CORROSIVE. Protective clothing, including chemical splash goggles, nitrile or butyl rubber length gloves, rubber apron, or clothing made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of this material. If material comes in contact with the skin during clean-up operation, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, first Aid Measures, for further information.

Procedures

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water. Contain and adsorb spills immediately with inert materials (e.g. clay, sand, earth, or vermiculite). Dike and

absorb as much of the spill as possible. Transfer the adsorbed material into a separate suitable waste container and cover immediately. Apply 10 volumes of a 10% freshly prepared aqueous sodium metabisulfite decontamination solution per estimated volume of material remaining on the floor (approximately 10% of originally spilled material). DO NOT add decontamination solution directly to waste container because this would cause the release of significant amounts of sulfur dioxide. Wait approximately 30 minutes and flush the solution on the floor into a chemicals sewer. Rinse and remove gloves, transfer gloves to the waste in compliance with local, state and federal laws; the recommended method of disposal is incineration.

7.HANDLING AND STORAGE

Storage Conditions

The maximum recommended storage temperature for this material is 40°C/104°F. The minimum recommended storage temperature for this material is -10°C/14°F. Store in a well ventilated area. The product as supplied evolves gas (largely carbon dioxide) slowly. To prevent in the original container when product is packaged in specially vented containers. Keep this product in the original container when not in use. Container must be stored and transported in an upright position to prevent spilling the contents through the vent.

Do not store this material in container made of the following:

- Steel

Handling Procedures

This material is corrosive. See SECTION 8, Exposure Controls/Personal Protection, Prior to handling.

Other

CONTAINERS HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container is emptied.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Information

No		WEIGHT(%)
1	5-Choro-2-methyl-4-isothiazolin-3-one	10-12
2	2-methyl-4-isothiazolin-3-one	3.0-5.0
3	Magnesium nitrate	14-18
4	Magnesium chloride	8-10
5	Water	60-64

Respiratory Protection

Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the-Exposure Limit Information- Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection must be followed. For concentrations up to 10 times the exposure limit, a NOISH approved (or equivalent) half –mask or full facepiece air purifying respirator equipped with cartridges for organic vapors and dust/mist pre-filters should be worn.

For those unlikely situations where may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a NOISH approved (or equivalent) self-contained breathing apparatus in the pressure –demand mode or a full facepiece airline respiration in the pressure-demand mode with emergency escape provision.

See SECTION 6, Accidental Release Measure, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

Eye Protection

Use chemical splash goggles and face shield. Eye protection worn must be compatible with respiratory protection system employed.

Hand Protection

NOTE: Material is a potential skin sensitizer.

The glove(s) listed below provide protection against permeation:

- Nitrile
- Butyl rubber

Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other Production

Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Engineering Controls (Ventilation)

Use local exhaust ventilation with a minimum capture velocity of 150 ft/min, (0.75 m/sec.) at the point of dust or mist evolution.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color	Yellowish
State	Liquid
Odor Characteristic	Pungent odor
PH	1.0 to 4.0
Viscosity	1.6 mPa/s
Vapor Density (Air = 1)	0.62
Vapor Pressure	0.0027 mmHg Component No.1
Melting Point	-33°C/-27°F
Boiling Point	100°C/212°F
Solubility in Water	100%

NOTE: Vapor Pressure for Component No.2 = 4.4×10^{-5} mmHg

See Section 5, Fire Fighting Measures

10. STABILITY AND REACTIVITY

Instability

This material is considered stable under specified condition of storage, shipment and /or use. See SECTION 7, Handling And Storage, for specified conditions.

Hazardous Decomposition Products

Thermal decomposition may yield the following:

- hydrogen chloride-sulfur dioxide – oxides of nitrogen

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

Avoid contact with the following:

- oxidizing agents-reducing agents-amines-mercaptans

11. TOXICOLOGICAL INFORMATION

Acute Data

Acute Oral LD50 – rat: 457 mg/kg product

Dermal LD50 – rabbit: 660mg/kg product

Skin Irritation – rabbit: Corrosive (product)

Eye Irritation – rabbit: Corrosive (product)

Acute 4 Hr Inhalation – rat: 0.33mg/L ai

Carcinogenicity Data

Carcinogenicity: Non –carcinogenic in both a mouse dermal and rat oral carcinogenicity study.

Mutagenicity Data

Mutagenicity: Collective data indicate non-mutagenic

Reproductive/Teratology Data

Teratogenicity: Not teratogenic

Sensitization Data

Sensitization: Skin sensitizer

12.ECOLOGICAL INFORMATION

Fate in the Environment

Octanol/Water Coefficient = 0.401 (log P) for Component No.1

Octanol/Water Coefficient = 0.486 (log P) for Component No.2

Biodegradation (aquatic metabolism):

Component No.1 t 1/2 aerobic = 4.8 hr

Component No.1 t 1/2 aerobic = 17.3 hr

Component No.2 t 1/2 aerobic = 9.1 hr

Environmental Toxicity

Acute fish 96 Hr LC50, Rainbow Trout: 0.19 mg/L ai

Acute fish 96 Hr LC50, Bluegill Sunfish: 0.28 mg/L ai

Acute Daphnia 48 Hr EC50:0.16 mg/L ai

Acute Algal EC50, Selenastrum: 18 ug/L ai

Acute Algal EC50, Skeletonema: 3 ug/L ai

Activated Sludge Respiration Inhibition EC50:4.5 mg/L ai

13.DISPOSAL CONSIDERATIONS

Procedure

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

US DOT Hazard Class

CORROSIVE MATERIAL

This classification is the primary hazard class only.

15. OTHER INFORMATION

Beijing Tianqing Chemicals Co., Ltd. Hazard Rating		Scale
Toxicity	3	4=EXTERME
Fire	0	3=HIGH
Reactivity	0	2=MODERATE
Special	-	1=SLIGHT
		0=INSIGNIFICANT

HMIS Hazard Ratings

HMIS Hazard Rating: HEALTH = 3, FLAMMABILITY = 0, REACTIVITY = 0.

PERSONAL PROTECTION: See Section 8, Exposure

Controls/Personal Protection for recommended

Handling of material as supplied; check with supervisor for your actual use condition.

Scale: 0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Severe

*= Chronic Effects (See Section 3, Hazards Identification)

91.00981110

ABBREVIATIONS:

BAC = Butyl acetate

Italics denote a revision from previous MSDS in this area.

The information contained herein relates only to the specific material identified. SPE Chemicals Co., Ltd. believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, expressed or implied, is made as to the accuracy, reliability, or completeness of information. SPE Chemicals Co., Ltd urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.