

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name : METHAM Sodium

Company Name : SPE chemicals Co., Ltd

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization

Liquid

Ingredients Name	CAS	Proportion
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Metham sodium	137-42-8	42%
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3. HAZARDS IDENTIFICATION

Harmful in contact with skin and if swallowed.

Contact with acids liberates toxic gas.

Risk of serious damage to eyes.

4. FIRST AID MEASURES

Inhalation Remove affected person to fresh air until recovered.

Obtain medical advice.

Ingestion If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.

Skin Remove contaminated clothing and launder before re-use.

Wash affected areas thoroughly with soap and water.

If irritation persists, seek medical advice.

Eye If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes. Seek medical advice.

Advice to Doctor Treat symptomatically.

Avoid giving alcohol - may cause vomiting and shock.

5. FIRE FIGHTING MEASURES

Extinguishing Media Water fog, foam, carbon dioxide or dry chemical.

Specific Hazards Avoid contact with oxidants. Keep upwind.

Protective Equipment Breathable air apparatus must be worn if material is involved in fires especially in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal If possible, ring 1800 033 498 for specialist advice.

Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite).

Collect in sealed open top containers for disposal.

On-site disposal of concentrate is not acceptable.

Keep upwind.

If material has spilled onto soil, approach the task of collecting soil with care.

Any signs of eye irritation should be taken as a warning and the remainder of the operation should be carried out wearing breathable air apparatus and impermeable footwear and clothing.

Personal Protection For appropriate personal protective equipment (PPE), refer Section 8.

7. HANDLING AND STORAGE

Handling For personal protective equipment (PPE) and hygiene advice, refer Section 8.

Storage Store in the closed, original container in a dry, well ventilated area, as cool as possible.

Do not store for prolonged periods in direct sunlight.

Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits No exposure standards have been set for the active ingredient of the product or its decomposition product methylisothiocyanate. The product on decomposition can release

carbon disulphide. A limit has been set for carbon disulphide; TLV (TWA) 10ppm (31mg/m³), skin.

Personal Protective

Equipment

Harmful if absorbed by skin contact or swallowed. Poisonous if inhaled. Will damage the eyes, nose and throat and skin. Repeated exposure may cause allergic disorders. Interacts with alcohol - avoid alcohol on day(s) of use. Do not inhale vapour or spray mist. The fumes first cause smarting, then watering of eyes. This should be taken as a warning sign. The liquid can cause burns. Use and store in well ventilated areas.

When opening the container and preparing product for use, wear cotton overalls buttoned to the neck and wrist, a washable hat, apron (chemical resistant), elbow-length (nitrile, neoprene) gloves, chemical resistant footwear, a full facepiece respirator with organic vapour/gas cartridge or canister [or goggles and half facepiece respirator with organic vapour cartridge or canister].

When using the prepared product (spray)(foam), wear cotton overalls buttoned to the neck and wrist, a washable hat, elbow-length (nitrile, neoprene) gloves chemical resistant footwear, a full facepiece respirator with organic vapour/gas cartridge or canister [or goggles and half facepiece respirator with organic vapour cartridge or canister].

If clothing becomes contaminated with product or wet with spray, remove clothing immediately. If product or vapour on skin, immediately wash area with water. Do not re-use footwear until thoroughly aired. Do not wear leather articles, as they will absorb metham and cannot be effectively cleaned.

Do not use by hand directed spraying, including sprinkler can.

Do not treat potting soil by loose mixed method or via shredder.

Do not use by flood irrigation or overhead sprinkler systems.

Do not apply to waterlogged soil, or while water remains in furrows.

Do not treat soil in enclosed areas.

Ensure run-off does not get into dams, sewers or waterways and keep away from lawns or gardens.

Do not allow people into the treated area without safety equipment until the re-entry period is over.

Do not re-enter fields or greenhouses for 14 days. If it is necessary to enter earlier, wear the same protective equipment specified above.

Read the label.

Eng. Controls Natural ventilation only is required when handling the concentrate, although a

local exhaust should be provided if material is handled in other than a well ventilated situation.

On dilution, the product reacts to form methyl isothiocyanate, which is volatile and toxic. Forced ventilation and/or breathing protection is required (see personal protection section).

Once diluted, the product should be used immediately. Dilute solutions (spray solutions or rinsings) must not be kept.

Hygiene Measures After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

After each day's use, wash contaminated clothing and safety equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Amber to yellow-greenish liquid

Odour Pungent odour

Melting Point <-5°C

Solubility in Water Solubility of metham in water is 720 g/L @ 20°C

Boiling Point Approx 100°C

Specific Gravity

(H₂O=1)

1.209

Vapour Pressure Unknown

Flammability If a metham solution is acidified, it will release carbon disulphide, a toxic, volatile liquid, FP<-30°C, which will catch fire if the vapours come in contact with any surface at 100°C or higher. The flammable range for carbon disulphide vapour is 1 to 50%v/v in air.

10. STABILITY AND REACTIVITY

Hazardous Reaction Avoid oxidising agents, acids and heavy metal salts. Metham sodium is stable in concentrated solution, but unstable when diluted, decomposition being promoted by oil, acids and heavy metal salts. The solution is corrosive to brass, copper and iron. The activity of metham sodium is due to the formation of methyl isothiocyanate in contact with soil.

Methyl isothiocyanate is a volatile, highly toxic material, its presence is detected by its extremely irritating effects on eyes, causing copious tear formation. May emit toxic fumes of cyanide and nitrogen oxides if material is involved in fires or subjected to extreme heat. Also decomposes in acids with release of carbon disulphide.

Carbon disulphide is toxic and highly flammable.

CARBON DISULPHIDE WILL CATCH FIRE IF IN CONTACT WITH ANYTHING HOTTER THAN 100°C.

11. TOXICOLOGICAL INFORMATION

Inhalation As the concentrated product, it is relatively stable and non-volatile.

A serious hazard - irritant to mucous membranes.

In dilution and in use in soil, the product forms methyl isothiocyanate, which is volatile and toxic by inhalation and skin absorption. Its presence is detected by eye irritation (tear formation) rather than by odour.

Effects are headaches, dizziness, irritation of eyes, throat and lungs.

Skin effects may also occur. Some affected persons have been recorded as progressing to irritant-induced asthma.

Ingestion The concentrate is harmful if swallowed.

A serious hazard if accidentally swallowed.

Skin Prolonged contact with the concentrate may cause burns.

A serious hazard - may cause irritation, burns, dermatitis.

Persons who have had dermatitic effects from contact with the product should avoid working with the product in future.

Eye A serious hazard leading to crying, inflammation of the eye and conjunctivitis.

Prolonged contact with the product can result in serious damage to eyes.

Chronic Effects Somnolence, cardiac and respiratory disorders.

Repeated exposures may cause allergic disorders.

Acute Toxicity - Oral LD50 (male rats) 1800 mg/kg for metham sodium

LD50 (female rats) 1700 mg/kg for metham sodium

LD50 (mice) 285 mg/kg for metham sodium

Note: Some reports place the LD50 (oral, rat) as low as 450 mg/kg, and for mice at 50 mg/kg.

The Therapeutic Goods Administration uses a value of 650 mg/kg (oral, rat).

Acute Toxicity -Dermal

LD50 (rabbits) 1300 mg/kg

Acute Toxicity -Inhalation

LC50 (rat) (4hr) >4.7 mg/l for pure ingredient.

Human Effects Acute Over Exposure:

Gastro-enteritis with possibility of shock and renal lesions.

12. ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment

The product is a marine pollutant for sea transport.

Other Precautions Do not contaminate dams, waterways or sewers with this product or the containers which have held this product.

Environ. Protection Persistence / Degradability

In soil, rapidly decomposes to methyl isothiocyanate, which is volatile and quickly evaporates. Methyl isothiocyanate is a lachrimator, causing stinging and watering of the eyes.

Acute Toxicity - Fish The following is data for the active ingredient, metham sodium.

LC50 (96 hr) for guppy is 4.2 mg/l.

LC50 (96 hr) for bluegill sunfish is 0.39 mg/l.

LC50 (96 hr) for rainbow trout is 0.079 mg/l.

Acute Toxicity - Others

Dietary LC50 (5 days) mallard duck and Japanese quail is >5000 mg/kg

Not toxic to bees.

13. DISPOSAL CONSIDERATIONS

Product Disposal On site disposal of the concentrated product is not acceptable.

Container Disposal Do not use this container for any other purpose.

Wash out the container and dispose of it in a manner which is approved under local regulations.

Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.

14. TRANSPORT INFORMATION

U.N. Number 3006

Proper Shipping Name

TOXIC LIQUID, BASIC, ORGANIC- (Metham Sodium)

DG Class 6.1

Packing Group III

15. REGULATORY INFORMATION

Risk Phrase R21/22 Harmful in contact with skin and if swallowed.

R31 Contact with acids liberates toxic gas.

R41 Risk of serious damage to eyes.

Safety Phrase S2 Keep out of reach of children.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

Poisons Schedule S6

Hazard Category Harmful, Irritant

Packaging &

Labelling

POISON

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

16. OTHER INFORMATION

Revisions Highlighted The MSDS was changed for the following reason:- New information indicates that the

product should be classified as corrosive, rather than toxic. The product is corrosive to skin, eyes, mucous membranes. The change is from Class 6.1 to 8. The flash point value has been removed. Testing shows that, while a minor flash can be expected at 75°C, the product does not continue to burn and is not combustible.