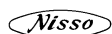


<b>Section 1 Chemical Product and Company Identification</b>				
Product Name	<b>THIOPHANATE-METHYL ULV (TOPSIN M ULV)</b>			
Chemical Name	Suspension concentrate (ultra low volume formulation) containing thiophanate-methyl as active ingredient			
Primary Use	Fungicide for agricultural use			
Distributor	Name			
	Address			
	TEL. No.		Fax No.	
Manufacturer	Name	Nippon Soda Co., Ltd.		
	Address	2-1, 2-Chome, Ohtemachi, Chiyoda-ku, Tokyo 100-8165, Japan		
	TEL. No.	+81-3-3245-6041	Fax No.	+81-3-3245-6287
Emergency	TEL. No	+1-800-424-9300(CHEMTREC)	Fax No.	
Date Prepared	Aug. 6, 2010	Date Revised		

<b>Section 2 Hazardous Identification</b>			
Route of Entry	Skin :yes	Inhalation : yes	Ingestion : yes
Emergency Overview	Pale brown viscous liquid with a faint odor as sulfur-containing compounds. Stable in normal condition. Harmful if inhaled. May cause mild eye irritation. Suspected of causing genetic defects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.		
Potential Health Effects			
Eye	Mild irritant.		
Skin	Very slight irritant. Dermal sensitization is negative.		
Inhalation	Harmful if inhaled.		
Ingestion	Low acute oral toxicity.		
Signs and Symptoms	Not available.		
Chronic	The data for active ingredient is following. NOEL(mouse) : 16mg/kg/day(male), 64 mg/kg/day(female) NOEL(rat) : 8.8 mg/kg/day(male), 10.2 mg/kg/day(female)		
Target Organs	Not available.		
Other Comments	Micronucleus test was positive (active ingredient).		

<b>Section 3 Composition/Information on Ingredient</b>				
Component	%	Exposure Limits		
		OSHA PEL (mg/m <sup>3</sup> )	ACGIH TLV (mg/m <sup>3</sup> )	NIOSH REL (mg/m <sup>3</sup> )
<u>Active Ingredient</u> Dimethyl 4,4'-(o-phenylene)bis(3-thioallophanate) ; { 1,2-di-(3-methoxycarbonyl-2-thioureido)benzene } ; { Dimethyl [1,2-phenylenebis(iminocarbothioyl)bis-carbamate] } ; (CAS No.23564-05-8)	50.0	Not listed.	Not listed.	Not listed.



Thiophanate-methyl (ISO name)				
<u>Inactive Ingredient</u> Glycerin(CAS No.56-81-5)	12.0	15 (total dust) 5 (respirable dust)	10	Not listed.
Additives (Surfactant etc)	4.6	Not listed.	Not listed.	Not listed.
Water	53.4	Not listed.	Not listed.	Not listed.

**Section 4 First Aid Measures**

Eye	Immediately flush eyes with plenty of water for at least 15minutes. Call a physician.
Skin	Immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Call a physician if irritation develops or persists. Wash clothing before reuse.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell
Ingestion	Do not induce vomiting without medical advice. Wash out mouth with water and get immediate medical aid. Never give anything by mouth to an unconscious person.
Note to Physicians	Not known.

**Section 5 Fire Fighting Measures**

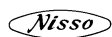
Flammable Properties	Not flammable.
Unusual Fire & Explosion Hazards	Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, sulfur oxides and nitrogen oxides.
Extinguishing Media	Water spray, foam, dry chemicals, carbon dioxide.
Fire Fighting Instructions	Protective equipment Wear self-contained breathing apparatus and complete personal protective equipment. Fire-Fighting procedure Move containers away from fire area if it can be done. If impossible to remove containers from fire zone, cool them with water spray.

**Section 6 Accidental Release Measures**

Protective equipment	Wear personal protective equipment. Refer to Section 8 for personal protective equipment.
Personal precaution	Avoid breathing fume.
Environment precaution	Prevent from releasing it to the environment as this product is harmful to aquatic organisms.
Cleaning procedure	Obey all Federal, State or local regulations for health & safety and environmental protection when the accidental release is treated. Sweep up, place in a bag and hold for waste disposal. Wash spill site with soap and plenty of water after the recovery of material was completed. Do not discharge to river, sea, lake, waterway or sewer systems directly.

**Section 7 Handling and Storage**

Handling	Wear personal protective equipment. Refer to Section 8 for personal protective equipment. Handle as a combustible organic liquid. Avoid breathing fume. Use only in a well ventilated areas, or chemical fume hood.
----------	--



	Avoid release to environment. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep out of the reach of children.
Storage	Keep in container tightly closed. Store in cool dark place. Keep away from oxidizing agents.

**Section 8 Exposure Control/Personal protection**

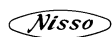
Specific Engineering Controls	Use general and/or local exhaust ventilation to control exposure levels below airborne exposure limits. Provide safety shower and eyewashes.		
Personal Protection Equipment			
Respiratory	Use NIOSH/MSHA-approved respiratory protection when handling.	Gloves	Rubber gloves
Eye/Face	Use safety goggles.	Footwear	Working shoes with socks.
Clothing	Wear protective clothing.	Others	None

**Section 9 Physical and Chemical Properties**

Appearance	Pale brown viscous liquid.	Odor	Faint sulfur odor.
Density	Not applicable.	Specific Gravity (H <sub>2</sub> O=1)	1.10~1.30 (20/4°C)
Melting Point	Not applicable.	Boiling Point	Not available.
Vapor Density (air=1)	Not applicable.	Vapor Pressure	Not available.
Evaporation Rate (Ethyl acetate=1)	Not applicable.	pH (20% aq./20°C)	6.0-9.0
Solubility in water	Insoluble but dispersible.	Solubility in solvent	Not available.
Log Po/w	1.44 (active ingredient)		
Flash Point	Not applicable.	Autoignition Temp.	Not applicable.
Dust Explosion Limit	Not applicable.		

**Section 10 Stability and Reactivity**

Chemical Stability	Stable	<input checked="" type="checkbox"/>	<u>If unstable, condition to avoid unstable reaction.</u> Stable in normal conduction.
	Unstable	<input type="checkbox"/>	
Hazardous Polymerization	May occur	<input type="checkbox"/>	<u>If polymerization may occur, condition to avoid it.</u>
	Will not occur	<input checked="" type="checkbox"/>	
Reactivity	May react with strong oxidizing agents.		



Incompatible materials	Oxidizing agents, strong acids or bases.
Hazardous Decomposition Product	CO, CO <sub>2</sub> , SO <sub>x</sub> , NO <sub>x</sub> .
Others	Avoid high temperature.

**Section 11. Toxicological Information**

## Effect of Acute Exposure

## Acute Toxicity

Oral (rat) LD<sub>50</sub> 5000 mg/kg(male), 3800 mg/kg(female)Oral (mouse) LD<sub>50</sub> 3416 mg/kg(male), 3271 mg/kg(female)Dermal(rat) LD<sub>50</sub> >5000 mg/kg(male, female)Inhalation(rat) LD<sub>50</sub> Not available

(The following data is for Thiophanate-Methyl)

Inhalation(rat) LC<sub>50</sub>(4hr) 1.7mg/L(male)、1.9mg/L(female)

## Sensitization(skin):

Negative

## Irritation:

Eyes(rabbit): Mild

Dermal(rabbit): Very slight

Mutagenicity  
(Active ingredient)Ames test :  
NegativeUDS test :  
NegativeChromosomal aberration test:  
NegativeMicronucleus test :  
Positive

## Carcinogenicity

NTP : no

IARC : no

ACGIH Regulated: no

## Subacute Toxicity (Active ingredient)

90-days repeated dose test

NOEL(rat) : 13.9mg/kg/day: 90days

## Chronic Toxicity and Carcinogenicity (Active ingredient)

Chronic toxicity/Carcinogenicity test(2years)

NOEL(mouse) : 16mg/kg/day(male), 64mg/kg/day(female)

NOEL(rat) : 8.8mg/kg/day(male), 10.2 mg/kg/day(female)

## Teratogenicity (Active ingredient)

Teratogenicity(rat) : Negative

Teratogenicity (rabbit) : Negative

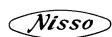
## Reproductive Toxicity (Active ingredient)

3 generations reproductive test(rat) :

Reproductive Toxicity : Negative

**Section 12 Ecological Information**

## Environmental Fate



Bio-Degradability (Active ingredient) : Not good degradability.	
Bio-Accumulative Potential (Active ingredient) : Since the value of logPo/w is low, it is estimated that bio-accumulative potential is low.	
Ecological Toxicity	
Acute Toxicity to aquatic organisms	
Acute Toxicity to Fish :	LC <sub>50</sub> (Carp) 82 mg/L (96hrs)
Acute Toxicity to Daphnia:	EC <sub>50</sub> (Daphnia Magna) 19.3 mg/L (48hrs)
Acute Toxicity to Algae:	ErC <sub>50</sub> (Green Algae) >1000 mg/L (72hrs)

**Section 13 Disposal Considerations**

- 1) Mix the material with sawdust or combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
- 2) Do not discharge into waterway or sewer systems unless permission has been obtained by the local authority and suitable dilution has been established.
- 3) Contaminated empty containers must be disposed of as chemical waste.
- 4) Obey all Federal, State and local regulations concerning health & safety and environmental protection.

**Section 14 Transport Information**

International marine transportation(IMDG)  
Not classified as dangerous goods in IMDG  
Marine pollutant: Not applicable

ICAO/IATA Dangerous Goods Regulations  
Not classified as dangerous goods in ICAO/IATA-DGR.

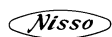
DOT Regulations  
Not classified as dangerous goods in DOT Regulations.

Emergency Response Guide No. 171

**Section 15 Regulatory Information**

TSCA	Not listed(CAS No. : 23564-05-8 (Not applicable(pesticide))) Listed(CAS No.: 56-81-5)
OSHA	Not listed(CAS No. : 23564-05-8) Listed(CAS No.: 56-81-5)
SARA	Listed(CAS No. : 23564-05-8) Not listed(CAS No.: 56-81-5)
CERCLA	Listed(CAS No. : 23564-05-8) Not listed(CAS No.: 56-81-5)
Others	None

**Section 16 Other Information**



Label Information

NFPA Rating : Health ; **1** Flammability; **1** Instability; **0**

Revised Information

ENCS(JAPAN)	Not listed(CAS No. : 23564-05-8 (Not applicable(pesticide))) Listed(CAS No.: 56-81-5)
EINECS(EU)	Listed(CAS No. : 23564-05-8, 56-81-5)
DSL(Canada)	Listed(CAS No. : 23564-05-8, 56-81-5)
IECSC(China)	Listed(CAS No. : 23564-05-8, 56-81-5)

Revised Information

This MSDS was prepared according to ANSI Z400.1-2003

This information is taken from sources or based upon data believed to be reliable.  
 However, Nippon Soda Co., LTD. makes no warranty as to the absolute correctness or  
 sufficiency of any of the foregoing or that additional or other measures may not be required  
 under particular conditions.