


## Safety Data Sheet

**NISSO AMERICA INC.**

SDS No. Thiophanate Methyl 4.1 SC Fungicide

| <b>Section 1 Identification</b>                         |          |  |         |              |
|---|----------|--|---------|--------------|
| Product identifier                                      |          | <b>RENOVO Thiophanate Methyl 4.1 SC Fungicide</b>              |         |              |
| Other means of identification                           |          | Crop protection agents, fungicide, Suspension concentrate(SC)  |         |              |
| Recommended Use of the chemical and restrictions on use |          | Fungicide for agricultural use                                 |         |              |
| Distributor   | Name     | Nisso America Inc.   |         |              |
|   | Address  | 88 Pine Street, 14 <sup>th</sup> Floor, New York, NY 10005 USA |         |              |
|   | TEL. No. | 212-490-0350   | Fax No. | 212-972-9361 |
| Emergency   | TEL. No  | +1-703-741-5970 (CHEMTREC)                                     | Fax No. |              |

| <b>Section 2 Hazard(s) Identification</b> |   |
|---|---|
| Classification                            | Acute Toxicity-Oral: Hazard category 4<br>Acute Toxicity-Inhalation: Hazard category 4<br>Germ Cell Mutagenicity: Hazard category 2<br>Hazardous to the Aquatic Environment-Acute Hazard: Hazard category 3<br>Hazardous to the Aquatic Environment-Long-Term Hazard: Hazard category 1   |
| Signal word                               | Warning   |
| Hazard statement                          | H302 Harmful if swallowed<br>H332 Harmful if inhaled<br>H341 Suspected of causing genetic defects.<br>H402 Harmful to aquatic life.<br>H410 Very toxic to aquatic life with long lasting effects.   |
| Symbol                                    |   |
| Precautionary statement                   | <p><b>Prevention</b></p> <p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P261 Avoid breathing mist/vapours/spray.</p> <p>P264 Wash hands and face thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P273. Avoid release to the environment.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> |

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|   |  |
|---|--|
|   | <p><b>Response</b><br/> P301+P330+P312 IF SWALLOWED: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.<br/> P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell<br/> P308+P313 IF exposed or concerned: Get medical advice/attention.<br/> P391 Collect spillage.</p> <p><b>Storage</b><br/> P405 Store locked up.</p> <p><b>Disposal</b><br/> P501 Dispose of contents/container in accordance with local/national/international regulations.</p> |
| Description of any hazards not otherwise classified | None   |

| <b>Section 3 Composition/Information on Ingredients</b>  |            |  |
|--|------------|--|
| Chemical name<br>Common name and synonyms  | CAS No.    | Concentration                                  |
| <u>Active Ingredient</u><br>Dimethyl 4,4'-(o-phenylene)bis(3-thioallophanate) ;<br>{ 1,2-di-(3-methoxycarbonyl-2-thioureido)benzene } ;<br>{ Dimethyl [1,2-phenylenebis(iminocarbonothioyl)bis-carbamate] } ;<br>Thiophanate-methyl (ISO name) | 23564-05-8 | 42.6 w/w%<br>(41.3 w/w% a.i.)<br><br>(500 g/L) |
| <u>Inactive Ingredient</u><br>Sodium alkyl naphthalenesulfonate, formaldehyde condensate   | 68425-94-5 | 1.7 w/w%<br>(20 g/L)                           |
| Additives (surfactants and others)   | —          | 12.1 w/w%                                      |
| Water  |            | Balance  |

| <b>Section 4 First-Aid Measures</b>  |  |
|--|--|
| Eye contact  | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| Skin contact   | Remove contaminated clothing and shoes. Wash with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.   |
| Inhalation   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.   |
| Ingestion  | Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell.   |
| Most important symptoms/effects, acute and delayed                                   | Not available  |
| Indication of immediate medical attention and special treatment needed, if necessary | No specific antidote. Supportive care. Treatment based on judgment of physician in response to symptoms of patient.  |

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| <b>Section 5 Fire-Fighting Measures</b>                        |  |
|--|--|
| Suitable (and unsuitable) extinguishing media                  | This product is non-combustible.<br>Suitable extinguishing media: Dry chemicals, carbon dioxide, alcohol foam or water spray.<br>Unsuitable extinguishing media: Not known   |
| Specific hazards arising from the chemical                     | Thermal decomposition or combustion may produce carbon oxides, nitrogen oxides and sulfur dioxide.   |
| Special protective equipment and precautions for fire-fighters | Protective equipment<br>Wear self-contained breathing apparatus and complete personal protective equipment.<br>Precautions for fire-fighters<br>Move containers away from fire areas if it can be done without risk. If impossible to remove containers from fire zone, cool them with water spray.<br>Collect separately contaminated extinguishing water, do not allow to reach sewage or effluent system. Dispose of fire debris and contaminated extinguishing water in according with official regulations. |

| <b>Section 6 Accidental Release Measures</b>                         |   |
|--|---|
| Personal precautions, protective equipment, and emergency procedures | Refer to Section 8 for personal protective equipment.<br>Avoid contact with skin, eyes and clothing.<br>Avoid breathing the mist or vapor.  |
| Environmental precautions  | Prevent form entering into drains, ditches or rivers because this product is very toxic to aquatic life with long lasting effects.  |
| Methods and materials for containment and cleaning up                | Sweep up, place in a closed container and hold for waste disposal.<br>Ventricle area, and wash spill site with soap and plenty of water after material pick-up is complete. Obey Federal, State or local regulations for health and environment protection to discharge treated water to sea, river or lakes etc. |

| <b>Section 7 Handling and Storage</b> |   |
|---------------------------------------|---|
| Precautions for safe handling         | Refer to Section 8 for personal protective equipment.<br>Keep out of the reach of children.<br>Avoid contact with skin, eyes and clothing.<br>Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.<br>Avoid breathing mist/vapours/spray.<br>Wash hands and face thoroughly after handling.<br>Do not eat, drink or smoke when using this product.<br>Use only in a well-ventilated area, or chemical fume hood.<br>Keep away from food, drink and animal feeding stuffs.<br>Avoid release to the environment.<br>IF exposed or concerned: Get medical advice/attention. |
| Conditions for safe storage           | Keep container tightly closed. Store in a cool, dry, well-ventilated place.<br>Keep away from foods, drink and animal feedingstuffs.<br>Keep away from direct sunlight, oxidizing agents.<br>Store locked up.   |

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| <b>Section 8 Exposure Controls/Personal protection</b>                |  |          |  |
|---|--|----------|--|
| Control parameters  | Not applicable.  |          |  |
| Appropriate engineering controls                                      | Use general and/or local exhaust ventilation to control vapor/mist.<br>Provide safety showers and eyewashes. |          |  |
| Individual protection measures, such as personal protective equipment |  |          |  |
| Respiratory   | Suitable respirator for organic vapor  | Gloves   | Gloves such as rubber or polyvinyl chloride. |
| Eye/Face  | Safety goggles.  | Footwear | Boots  |
| Clothing  | Working wear with long sleeves.  | Others   | None   |

| <b>Section 9 Physical and Chemical Properties</b> |                                    |                 |                       |   |
|---|------------------------------------|-----------------|-----------------------|---|
| Appearance  | Light beige-tan liquid             |                 | Odor                  | Faint specific odor                                       |
| Relative density                                  | 1.17-1.23 g/cm <sup>3</sup> (20°C) |                 | pH                    | 5-7 (1% in water)   |
| Melting Point                                     | Not applicable.                    |                 | Boiling Point         | Not available.  |
| Vapor Density (air=1)                             | Not applicable.                    |                 | Vapor Pressure        | <1.3 × 10 <sup>-5</sup> Pa at 25°C (as active ingredient) |
| Evaporation Rate (Ethyl acetate=1)                | Not applicable.                    |                 | Surface Tension       | 41.1 mN/m (20°C, 25%)                                     |
| Solubility in water                               | Dispersible                        |                 | Solubility in solvent | Not available.  |
| Log Po/w  | 1.44 (as active ingredient)        |                 | Viscosity             | 500-900 mPa · s<br>(20°C, No.2 rotor, 30rpm)              |
| Flash Point                                       | No flash point up to 100°C         |                 | Autoignition Temp.    | Not combustible   |
| Explosion limit                                   | Lower limit                        | Not applicable. | Upper limit           | Not applicable.   |

| <b>Section 10 Stability and Reactivity</b> |  |   |  |
|--|--|---|--|
| Reactivity                                 | This product is stable in normal handling and storing condition. |   |  |
| Chemical Stability                         | Unstable   | x | If unstable, condition to avoid unstable reaction.<br>Oxidizing agents, strong acids or bases. |
|  | Stable   |   |  |
| Possibility of hazardous reactions         | Hazardous polymerization does not occur..                        |   |  |

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|                                  |  |
|----------------------------------|--|
| Conditions to avoid              | High temperature.                          |
| Incompatible Materials           | No substance known that should be avoided. |
| Hazardous decomposition Products | No hazardous reaction and product known.   |

### Section 11. Toxicological Information

#### Acute Toxicity

Oral ( rat ) : LD<sub>50</sub> 1000 mg/kg(female)  
 Dermal ( rat): LD<sub>50</sub> > 2000 mg/kg (male, female)  
 Inhalation (rat) : LC<sub>50</sub> 2.25 mg/L(4hr) (male, female)

#### Skin corrosion/irritation

Dermal (rabbit): Not irritant

#### Serious eye damage/irritation

Eyes (rabbit): Not irritant

#### Respiratory or skin sensitization

Dermal (guinea pig): Negative  
 Respiratory: Not available

#### Germ cell mutagenicity (as active ingredient)

Ames test: Negative  
 Chromosomal aberration test : Negative  
 Rec-Assay: Negative  
 UDS test: Negative  
 Micronucleou test : Positive

This product was classified as hazard category 2 because the content of thiophanate-methyl for hazard category 2 is  $\geq 1.0\%$ .

#### Carcinogenicity (as active ingredient)

Rat: Negative  
 Mouse: Negative

|                    | NTP         | IARC Monograph | OSHA        |
|--------------------|-------------|----------------|-------------|
| Thiophanate-methyl | Not listed. | Not listed.    | Not listed. |

#### Reproductive toxicity (as active ingredient)

##### Reproductive toxicity

3generations reproductive test(rat): Negative

##### Tetratogenicity

Negative (rat)  
 Negative (rabbit)

STOT-single exposure: Not available.

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STOT-repeated exposure (as active ingredient):

Chronic Toxicity

NOAEL (rat) : 8.8mg/kg/day(male), 10.2 mg/kg/day(female) (2 years)

NOAEL (mouse): 98.6 mg/kg/day(male), 28.7 mg/kg/day(female) (1.5 years)

Aspiration hazard: Not available

Others: Not available

### Section 12 Ecological Information

Ecotoxicity

Acute Toxicity to Fish : LC<sub>50</sub>(*oncorhynchus mykiss*) : > 100 mg/L(96hr)

Acute Toxicity for Daphnia: EC<sub>50</sub>(*Daphnia magna*) : 11 mg/L(48hr)

Acute Toxicity for Alga: ErC<sub>50</sub> (*P.subcapitata*): 88.3 mg/L(72hr)

NOEC (*P.subcapitata*) : 10 mg/L(72hr)

Hazardous to the Aquatic Environment-Acute Hazard:

This product was classified as hazard category 3 based on the above data.

Hazardous to the Aquatic Environment-Long term hazard:

This product was classified as hazard category 1 because the content of Thiophanate-methyl for hazard category 1 is  $\geq 25\%$ .

Persistence and degradability

Bio-degradability : Not good degradability (Thiophanate-Methyl).

Bioaccumulative potential

Since the value of logPo/w is low, it is estimated that bio-accumulative potential is low (Thiophanate-Methyl).

Mobility in soil

Not available.

Other adverse effects

Not available.

### Section 13 Disposal Considerations

Dispose of contents/container in accordance with local/national/international regulations.

### Section 14 Transport Information

International marine transportation(IMDG)

UN No. 3082

Class 9

Proper shipping name Environmentally Hazardous Substance, liquid, n. o. s.  
(Thiophanate-methyl mixture)

Packing Group III

Marin pollutant Applicable

DOT Regulations

Proper Shipping Name Environmentally Hazardous Substance, liquid, n. o. s.

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|  |   |
|--|---|
| (Thiophanate-methyl mixture)                   |   |
| Hazard Class                                   | 9   |
| Identification No.                             | UN 3082   |
| Packing Group :                                | III   |
| Marin pollutant                                | Applicable  |
| Emergency Response Guide No.                   | 171   |
| ICAO/IATA Dangerous Goods Regulations          |   |
| UN No.   | 3082  |
| Class  | 9   |
| Proper shipping name                           | Environmentally Hazardous Substance, liquid, n. o. s.<br>(Thiophanate-methyl mixture) |
| Packing Group                                  | III   |
| Environmentally hazardous                      | Applicable  |
| Special precautions for use<br>Not applicable. |   |

### Section 15 Regulatory Information

|                                      |   |
|--------------------------------------|---|
| Substance                            | Thiophanate-methyl (CAS No. 23564-05-8) |
| TSCA                                 | Not listed((Not applicable(pesticide))  |
| OSHA (highly hazardous chemicals)    | Not listed                              |
| SARA (extremely hazardous substance) | Listed                                  |
| CERCLA (Hazardous Substance)         | Listed                                  |
| Others                               | None                                    |

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Harmful if absorbed through the skin or if swallowed.

Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

### Section 16 Other Information

|  |
|--|
| Label Information  |
| NFPA Rating : Health ; <b>1</b> Flammability; <b>0</b> Instability; <b>0</b> |

## *Safety Data Sheet*

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| Regulatory Information in other area                        |   |              |              |
|---|---|--------------|--------------|
| Substance   | Thiophanate-methyl (CAS No. 23564-05-8) |              |              |
| ENCS(JAPAN)   | Not listed (Not applicable (pesticide)) |              |              |
| EINECS(EU)  | Listed (245-740-7)                      |              |              |
| DSL(Canada)   | Listed                                  |              |              |
| IECSC(China)  | Listed                                  |              |              |
| South Korea (ECL)   | Listed                                  |              |              |
| Revised Information   |   |              |              |
| This SDS was prepared according to ANSI Z400.1/Z129.1-2010. |   |              |              |
| Date Prepared   | September 6, 2013                       | Date Revised | July 3, 2015 |

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