

SAFETY DATA SHEET

TROYSAN S89

Section 1. Identification

GHS product identifier : TROYSAN S89
Code : 20607
Other means of identification : Not available.
Product type : Liquid.
Material uses : Dry-film fungicide and algacide for coatings

Supplier's details : Troy Siam Company Limited
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 Ladkrabang Industrial Estate
 Lamplathew, Ladkrabang
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Section 2. Hazards identification

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 5
 SKIN CORROSION/IRRITATION - Category 2
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (respiratory tract) - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bladder, blood system) - Category 2
 AQUATIC HAZARD (ACUTE) - Category 1
 AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Section 2. Hazards identification

Hazard statements : May be harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause damage to organs. (respiratory tract)
May cause damage to organs through prolonged or repeated exposure. (bladder, blood system)
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Call a POISON CENTER or physician. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

EC number : Mixture.

| Ingredient name | % | CAS number | Classification |
|---------------------------------------------|----------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| diuron (ISO) | 19.1 | 330-54-1 | ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (respiratory tract) (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bladder, blood system) (oral) - Category 2 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 |
| 2-Benzimidazole carbamic acid, methyl ester | 9.9 | 10605-21-7 | AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 |
| Kaolin | ≥5 - ≤10 | 1332-58-7 | Not classified. |
| octhilinone (ISO) | 2.3 | 26530-20-1 | ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 |

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Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------|----------------------------------------------------------------------------------------------------------|
| diuron (ISO) | ACGIH TLV (United States, 3/2012). TWA: 10 mg/m ³ 8 hours. |
| Kaolin | ACGIH TLV (United States, 4/2014). TWA: 2 mg/m ³ 8 hours. Form: Respirable fraction |

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Dispersion]
- Color** : White. Off-white. [Light]
- Odor** : Aromatic.
- Odor threshold** : Not available.
- pH** : 6.5 to 8.5
- Melting point/freezing point** : <0°C (<32°F)
- Initial boiling point and boiling range** : 100°C (212°F)
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Upper/lower flammability or explosive limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.1
- Solubility** : Not available.
- Dispersibility properties** : Dispersible in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.

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Section 9. Physical and chemical properties

- SADT** : Not available.
- Viscosity** : Dynamic (room temperature): 2000 to 10000 mPa·s (2000 to 10000 cP)

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---------------------------------------------|---------------------------------|--------------------|------------------|----------|
| diuron (ISO) | LC50 Inhalation Dusts and mists | Rat | >5 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Dermal | Rat | >5 g/kg | - |
| | LD50 Dermal | Rat | >5000 mg/kg | - |
| | LD50 Oral | Rat | 1 g/kg | - |
| | LD50 Oral | Rat | 5000 mg/kg | - |
| | LD50 Oral | Rat | 4150 mg/kg | - |
| | LD50 Oral | Rat | 1017 mg/kg | - |
| 2-Benzimidazole carbamic acid, methyl ester | LC50 Inhalation Dusts and mists | Rat | >5.6 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | >2020 mg/kg | - |
| Kaolin | LD50 Oral | Rat | >10000 mg/kg | - |
| | LD50 Dermal | Rat | >5000 mg/kg | - |
| oethylinone (ISO) | LD50 Oral | Rat | >5000 mg/kg | - |
| | LC50 Inhalation Dusts and mists | Rat | 0.58 mg/l | 4 hours |
| | LC50 Inhalation Dusts and mists | Rat | 0.76 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | 311 mg/kg | - |
| | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Oral | Rat | 550 mg/kg | - |
| | LD50 Oral | Rat - Male, Female | 318 to 324 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---------------------------------------------|-----------------------------------------------|---------|-------|----------|-------------|
| 2-Benzimidazole carbamic acid, methyl ester | Eyes - Cornea opacity | Rabbit | 0 | - | - |
| | Skin - Primary dermal irritation index (PDII) | Rabbit | 0 | 24 hours | 72 hours |
| oethylinone (ISO) | Skin - Edema | Rabbit | 2 | - | - |

Sensitization

Section 11. Toxicological information

| Product/ingredient name | Route of exposure | Species | Result |
|--------------------------------------------------------------|-------------------|------------|-----------------|
| 2-Benzimidazole carbamic acid, methyl ester othilinone (ISO) | skin | Guinea pig | Not sensitizing |
| | skin | Mouse | Sensitizing |

Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|---------------------------------------------|------|----------------------------------------------------------------|----------|
| 2-Benzimidazole carbamic acid, methyl ester | - | Experiment: In vivo Subject: Mammalian-Animal Cell: Germ | Negative |

Carcinogenicity

Not available.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|---------------------------------------------|-------------------|-----------|-------------------|---------|-------------------|----------|
| 2-Benzimidazole carbamic acid, methyl ester | - | Negative | Negative | Rat | Oral: 2000 ppm | - |

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|--------------|------------|-------------------|-------------------|
| diuron (ISO) | Category 2 | Inhalation | respiratory tract |

Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|--------------|------------|-------------------|--------------------------|
| diuron (ISO) | Category 2 | Oral | bladder and blood system |

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

| | | | | | |
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Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| Product/ingredient name | Result | Species | Dose | Exposure |
|---------------------------------------------|------------------------|---------|------------|----------|
| 2-Benzimidazole carbamic acid, methyl ester | Sub-acute LOAEL Dermal | Rabbit | 2000 mg/kg | 10 days |

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|------------------------------|---------------|
| Oral | 4295.2 mg/kg |
| Dermal | 13521.7 mg/kg |
| Inhalation (dusts and mists) | 25.22 mg/l |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---------------------------------------------|----------------------------------------|------------------------------------------------|----------|
| diuron (ISO) | Acute EC50 0.022 mg/l | Algae | 96 hours |
| | Acute EC50 2 mg/l Fresh water | Crustaceans - Simocephalus serrulatus - LARVAE | 48 hours |
| | Acute EC50 1.4 mg/l | Daphnia | 48 hours |
| | Acute EC50 1000 µg/l Fresh water | Daphnia - Ceriodaphnia dubia - Neonate | 48 hours |
| | Acute LC50 3.2 mg/l | Fish | 48 hours |
| | Acute LC50 7.4 mg/l | Fish | 48 hours |
| | Acute LC50 14.7 mg/l | Fish | 96 hours |
| | Acute LC50 25 mg/l | Fish | 72 hours |
| | Acute LC50 0.5 ppm Fresh water | Fish - Morone saxatilis - LARVAE | 96 hours |
| | Chronic NOEC <5 µg/l Fresh water | Aquatic plants - Lemna minor | 7 days |
| Chronic NOEC 1000 µg/l Marine water | Crustaceans - Palaemon serratus - Zoea | 48 hours | |
| 2-Benzimidazole carbamic acid, methyl ester | EC50 >1000 mg/l | Micro-organism | 3 hours |
| | NOEC 0.5 mg/l | Algae - Selenastrum capricornutum | - |

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Section 12. Ecological information

| | | | |
|----------------------------------|--------------------------------|-----------------------------------|----------|
| octhiline (ISO) | NOEC 0.0133 mg/l | Crustaceans - Chironomus riparius | 28 days |
| | NOEC 0.0015 mg/l | Daphnia - Daphnia magna | 21 days |
| | NOEC 0.01 mg/l | Daphnia - Daphnia magna | 21 days |
| | NOEC 0.011 mg/l | Fish | 79 days |
| | NOEC >1000 mg/l | Micro-organism | - |
| | Acute EC50 1.3 mg/l | Algae - Selenastrum capricornutum | 72 hours |
| | Acute EC50 0.15 mg/l | Daphnia | 48 hours |
| | Acute LC50 0.83 mg/l | Fish | 96 hours |
| | Acute EC50 0.084 mg/l | Algae | 72 hours |
| | Acute EC50 0.32 mg/l | Daphnia | 48 hours |
| | Acute EC50 107 ppb Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute EC50 30.2 mg/l | Micro-organism | 3 hours |
| | Acute LC50 0.18 mg/l | Fish | 96 hours |
| | Acute LC50 0.047 mg/l | Fish | 96 hours |
| Chronic NOEC 74 ppb Marine water | Daphnia - Daphnia magna | 21 days | |
| Chronic NOEC 8.5 ppb | Fish - Pimephales promelas | 35 days | |

Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-------------------------|------------------------------------------------------------|-----------------------------|------|----------|
| diuron (ISO) | 301F Ready Biodegradability - Manometric Respirometry Test | 0 % - Not readily - 22 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---------------------------------------------|-----------------------------------|------------|------------------|
| diuron (ISO) | Fresh water >100 days, pH 7, 22°C | - | Not readily |
| 2-Benzimidazole carbamic acid, methyl ester | - | - | Not readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------------------|--------------------|-----|-----------|
| diuron (ISO) | 2.87 | - | low |
| 2-Benzimidazole carbamic acid, methyl ester | 1.51 | - | low |
| octhiline (ISO) | 2.45 | - | low |

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

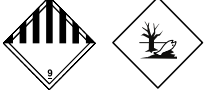
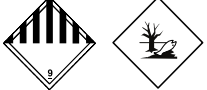
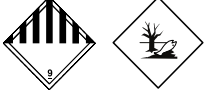
Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and

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Section 13. Disposal considerations

contact with soil, waterways, drains and sewers.

Section 14. Transport information

| | UN | IMDG | IATA/ICAO |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UN number | UN3082 | UN3082 | UN3082 |
| UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Benzimidazole carbamic acid, methyl ester, diuron (ISO)) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Benzimidazole carbamic acid, methyl ester, diuron (ISO)) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Benzimidazole carbamic acid, methyl ester, diuron (ISO)) |
| Transport hazard class(es) | 9  | 9  | 9  |
| Packing group | III | III | III |
| Environmental hazards | Yes. | Yes. | Yes. |
| Additional information | This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. | This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Emergency schedules (EmS) F-A, S-F | This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8. |

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

International lists

National inventory

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS):** All components are listed or exempted.
Japan inventory (ISHL): Not determined.
- Malaysia** : Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.

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Version : 2.03 11/12

Section 15. Regulatory information

- Republic of Korea** : All components are listed or exempted.
Taiwan : All components are listed or exempted.
United States : All components are listed or exempted.

Section 16. Other information

History

- Date of printing** : 4/3/2018
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Version : 2.03
- Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations
- References** : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.