SECTION I: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifier

Product name: Dovetail
EPA Registration Number: 94396-12

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use: Fungicide
Uses Advised Against: Activities contrary to label recommendations

1.3 Details of the supplier of the safety data sheet

Company: Aquatrols Corporation of America
1273 Imperial Way
Paulsboro, NJ 08066

Website: www.aquatrols.com

Phone number: (856) 537-6003

Email: jyichye@aquatrols.com

1.4 Emergency telephone

Phone number: CHEMTEL - (800) 255-3924
CHEMTEL INTERNATIONAL- +1-813-248-0585

SECTION II: Hazards Identification

2.1 Classification of the substance or mixture

Product description: -

Classification according to 29 CFR 1910.1200

Acute Toxicity – Dermal Category 4
Acute Toxicity – Inhalation (Gases) Category 2
Acute Toxicity – Inhalation (Vapors) Category 2
Acute Toxicity – Inhalation (Dust/Mists) Category 4
Skin Sensitization Category 1
Safety Data Sheet
In accordance to OSHA Standard 29 CFR 1910.1200

Revision: 1.1 US
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Germ Cell Mutation
Carcinogenicity

Category 2
Category 2

2.2 GHS label elements
DANGER
Hazards Statements: Harmful in contact with skin. Fatal if inhaled. May cause an allergic skin reaction.
Suspected of causing genetic effects.
Suspected of causing cancer.

Precautionary Statements - Prevention
Do not handle until all safety precautions have been read and understood
Wear cold insulating gloves/face shield/eye protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor if you feel unwell
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

2.3 Other hazards which do not result in classification
- Very toxic to aquatic life with long lasting effects
- Very toxic to aquatic life
- May be harmful in contact with skin
SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiophanate-methyl</td>
<td>23564-05-8</td>
<td>-</td>
<td>19.65%</td>
</tr>
<tr>
<td>3-(3,5-Dichlorophenyl)-2,4-dioxo-N-iso-propylimidazolidine-1-carboxamide</td>
<td>36734-19-7</td>
<td>-</td>
<td>19.65%</td>
</tr>
</tbody>
</table>

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

SECTION IV: FIRST AID MEASURES

4.1 Description of first aid measures

Protection of First-aiders: Use personal protective equipment.

Eye contact: Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact: Remove and wash contaminated clothing before re-use. Wash off immediately with soap and plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed.

Most Important Symptoms and Effects: May cause allergic skin reaction.
4.3 Indication of any immediate medical attention and special treatment needed

Note to physician: No information available.

SECTION V: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Carbon dioxide (CO2). Aquatic. Foam.

Unsuitable extinguishing media: No data available.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous decomposition products: Heat and fire may result in thermal decomposition and the release of hydrogen chloride and oxides of nitrogen, sulfur and carbon.

5.3 Advice for firefighters

Special protective equipment: Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Further information: Standard procedure for chemical fires. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION VI: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures.

Avoid contact with skin and eyes. Wear protective gloves/protective clothing and eye/face protection. Wash thoroughly after handling.
6.2 Environmental precautions

Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

6.3 Methods and materials for containment and cleanup

Methods of containment: Stop leak if safe to do so.
Dam up with sand or inert earth (do not use combustible materials).

Recovery: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

Decontamination/cleaning: Clean contaminated surface thoroughly.
Wash non-recoverable remainder with large amounts of water.
Recover the cleaning water for subsequent disposal.
Decontaminate tools, equipment and personal protective equipment in a segregated area.

Disposal: Dispose of in accordance with local regulations.

6.4 Reference to other sections

See Section VII for Handling and Storage.

SECTION VII: HANDLING AND STORAGE

7.1 Precautions for safe handling of the substance/mixture.

Technical measures: Provide adequate ventilation.

Advice on safe handling and usage: Avoid inhalation of vapor or mist.
Avoid contact with skin, eyes and clothing.
Keep out of reach of children.

Hygiene measures: Personal hygiene is an important workplace practice exposure control measure and the following general
measures should be taken when working with or handling this material:

1) Do not eat, drink or smoke when using this product.
2) Remove and wash contaminated clothing before re-use.
3) Wear suitable gloves and eye/face protection.
4) Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Recommended: Keep container tightly closed in a dry, cool, well-ventilated place. Keep out of reach of children.

Incompatible materials: Strong oxidizing agents.

Storage stability

Storage temperature: No data available.

7.3 Specific end use(s)

See Section I

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

General comments

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Exposure limits: Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is
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preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Protective measures: Ensure that eyewash stations and safety showers are close to workstation. Emergency equipment immediately accessible, with instructions for use. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

Eye protection: Eye contact should be prevented through the use of safety glass with side-shields. If splashes are likely to occur, wear Goggles.

Hand protection: Chemical resistant gloves.


Respiratory protection: Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134.

Hygiene measures: Personal hygiene is an important workplace practice exposure control measure and the following general measures should be taken when working with or handling this material:

5) Do not eat, drink or smoke when using this product.
In accordance to OSHA Standard 29 CFR 1910.1200

6) Remove and wash contaminated clothing before re-use.
7) Wear suitable gloves and eye/face protection.
8) Wash hands before breaks and immediately after handling the product.

SECTION IX: CHEMICAL AND PHYSICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid Emulsion</td>
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<tr>
<td>Color:</td>
<td>White</td>
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<tr>
<td>Odor:</td>
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<tr>
<td>pH</td>
<td>6</td>
</tr>
<tr>
<td>Melting Point/Freezing point:</td>
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<td>Boiling Point/Range:</td>
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<tr>
<td>Vapor pressure:</td>
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<td>Bulk density:</td>
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<td>Partition n-octanol/water:</td>
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<td>Autoignition temperature:</td>
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<td>Viscosity:</td>
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<tr>
<td>Explosive properties:</td>
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</tr>
<tr>
<td>Oxidizing properties:</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2 Other information
Not applicable

SECTION X: STABILITY AND REACTIVITY

10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4 Conditions to avoid
Keep away from heat and sources of ignition. Keep away from flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Carbon oxides.

SECTION XI: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

**Acute toxicity**
Acute oral toxicity: LD50 > 5000 mg/kg rat
Acute inhalation toxicity: LC50 – 1.8 mg/l (4 hr)
Acute dermal toxicity: LD50 > 2000 mg/kg rabbit

**Skin corrosion/irritation**
Skin irritation: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Serious eye damage/eye irritation**
Eye irritation: May cause irritation.

**Respiratory or skin sensitization**
Sensitization: Repeated or prolonged contact may cause allergic reactions in very susceptible persons.
Inhalation: May be harmful if inhaled.

**Mutagenicity**
Genotoxicity in vitro: no data available.
Genotoxicity in vivo: no data available.

**Carcinogenicity**

Carcinogenicity: Iprodione (technical grade) = Produced benign testicular tumors in rats and benign liver and ovary tumors in mice when tested at a maximum tolerated dose.

Iprodione is not considered to be a neurotoxicant and was not mutagenic or genotoxic based published information available.

Iprodione did not cause reproductive toxicity in multigenenration studies in rats.

Information indicates that iprodione is not a primary developmental toxicant.

Thiophanate methyl: Repeated or long term administration produced effects on the thyroid, liver, or kidneys in rats, mice or dogs. An increased evidence of liver tumors was observed in mice and thyroid tumors were observed in male rats following long term oral exposure. No effects were seen on the ability of male or female rats to reproduce when exposed orally for 2 successive generations. No birth defects were observed in the offspring of rats exposed orally during pregnancy. In rabbits, developmental toxic effects were noted at maternally toxic doses.

**Toxicity for reproduction and development**

Toxicity to reproduction/fertility: No effects were observed on reproduction when exposed orally to rats, for two successive generations.

Developmental toxicity/teratogenicity: No genetic changes were observed in tests using animal cells.

**SECTION XII: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Acute aquatic toxicity: Thiophanate methyl

- Carp 96 hr LC50 = >100 mg/L
- Fiddler crab 96 hr LC50 = >560 mg/L
- Bluegill 96 hr LC50 = 15.8 mg/L
- Daphnid 48 hr EC50 = 15.6 mg/L
- Shrimp 96 hr LC50 = 25.1 mg/L
- Trout 96 hr LC50 = 2.2 mg/L
- Oyster 96 hr LC50 = 4.6 ppm
Highly toxic to catfish

59.71% of the mixture consists of components(s) of unknown hazards to the aquatic environment

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Does not bioaccumulate

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide</td>
<td>3</td>
</tr>
<tr>
<td>36734-19-7</td>
<td></td>
</tr>
</tbody>
</table>

12.4 Other adverse effects
No data available

SECTION XIII: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Advice on disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Contaminated containers: Refer to product label.

SECTION XIV: TRANSPORT INFORMATION

14.1 DOT
When shipped in containers less than or equal to 5 gallons the product is Not regulated. When shipped in packages greater than 5 gallons the following description will apply:

UN/ID No.: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s (Thiophanate methyl)
Hazard Class: 9
In accordance to OSHA Standard 29 CFR 1910.1200

Packing Group: PGIII
Reportable Quantity: 10 lbs. (Thiophanate methyl)

14.2 ICAO

UN/ID No.: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s (Thiophanate methyl)
Hazard Class: 9
Packing Group: PGIII

14.3 IATA

UN/ID No.: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s (Thiophanate methyl)
Hazard Class: 9
Packing Group: PGIII

14.4 IMDG

UN/ID No.: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s (Thiophanate methyl)
Hazard Class: 9
Packing Group: PGIII
Environmental Hazards: This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

14.6 Special precautions for use
No additional information available

14.6.1 Ground transport
No additional information available

14.6.2 Sea transport
No additional information available.

14.6.3 Air transport
No additional information available

14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code
Not applicable.
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:

**Signal Word:** CAUTION
**Ventilation Control:** Pesticide applicators and workers: These workers must refer to the product labeling an directions for use in accordance with EPA Worker Protection Standard 40 CFR Part 170.

Harmful if swallowed. Causes moderate eye irritation. Keep out of reach of children.

**15.1 Safety legislation specific for the substance or mixture**

**15.1.1 EU-Regulations**
No restrictions according to Annex XVII of REACH. Does not contain REACH candidate substances.

**15.1.2 Federal regulations**

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

**CERCLA**
Not applicable

<table>
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<tr>
<th>Chemical Name</th>
<th>RQ</th>
<th>CERCLA EHS RQs</th>
<th>RQ</th>
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<tbody>
<tr>
<td>Thiophanate methyl</td>
<td>10 lb</td>
<td></td>
<td>RQ 10 lb final RQ</td>
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<tr>
<td>23564-05-8</td>
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<td></td>
<td>RQ 4.54 kg final RQ</td>
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**CERCLA**

<table>
<thead>
<tr>
<th>Component</th>
<th>RQ</th>
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<td>Thiophanate methyl</td>
<td>10 lb</td>
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<td>23564-05-8 (19.65)</td>
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</table>
Safety Data Sheet
In accordance to OSHA Standard 29 CFR 1910.1200

SARA Product RQ RCRA

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA-D Series Wastes</th>
<th>RCRA-P Series Wastes</th>
<th>RCRA-U Series Wastes</th>
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<tr>
<td>Thiophanate methyl</td>
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<td>23564-05-8 (19.65)</td>
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15.2 Pesticide Information

State Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide</td>
<td>36734-19-7</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>(19.65)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prop 65 Pictogram :

WARNING!

Prop 65 Warning Statement: WARNING!

California Proposition 65: This product can expose you to chemicals including those listed below, which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov15.2

<table>
<thead>
<tr>
<th>Component</th>
<th>California Prop 65</th>
<th>Non-additive, corrosive chemical type</th>
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<tbody>
<tr>
<td>Thiophanate methyl</td>
<td>Female Reproductive</td>
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<tr>
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<tr>
<td>36734-19-7 (19.65)</td>
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<td></td>
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</tbody>
</table>

State Right-to-Know
Not applicable

SECTION XVI: OTHER INFORMATION

NFPA HEALTH 1 FLAMMABILITY 0 INSTABILITY 0 PHYSICAL HAZARD -
More information

Abbreviations

ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
EC50: Effective Dose 50%
CLP: Classification, Labelling and Packaging
CAS: Chemical Abstract Service
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
IATA-DGR: International Air Transport Association Dangerous Goods Regulations
GHS: Globally Harmonized System (GHS) of Labelling Chemical Products
REACH: Registration, Evaluation, Authorization and Restriction of Chemical Products

Preparation Date: 04 15 2019
Version: 1.0
Previous version: Not applicable
Reason for revision: New SDS

The information in this SDS, to our knowledge, is accurate at the data of publication. This information is intended as a guide for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a guarantee or indication of quality. The information relates only to the specific material and may not be valid in combination with other products or used in any process, unless specified in the text.