1. Identification

Product identifier: ORTHENE® Turf, Tree & Ornamental WSP

Other means of identification:
- SDS number: 373
- Product registration number: 5481-8971
- Synonyms: Orthene® 75 S Soluble Powder (Insecticide)

Recommended use: Organophosphate insecticide.

Recommended restrictions:
- See product label for restrictions.
- No other uses are advised.
- Keep out of the Reach of Children!

EPA Registration number: EPA: 5481-8971

Manufacturer/Importer/Supplier/Distributor information

Manufacturer:
- AMVAC Chemical Corporation
- Address: 4695 MacArthur Court Suite 1200 Newport Beach, CA 92660 United States
- Telephone: AMVAC Chemical Corp 949-260-1200
- Telephone: AMVAC Chemical Corp 949-260-6270 (FAX)
- E-mail: CustServ@Amvac-Chemical.com
- Medical: 888-681-4261
- CHEMTREC® (USA+Canada): 800-424-9300
- Product Use: 888-462-6822
- CHEMTREC® (Outside USA): 1+703-527-3887

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Acute toxicity, oral Category 4

Environmental hazards:
- Hazardous to the aquatic environment, long-term hazard Category 2

OSHA defined hazards: Not classified.

Label elements:

Signal word: Warning

Hazard statement:
- Harmful if swallowed.
- Toxic to aquatic life with long lasting effects.

Precautionary statement:

Prevention:
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.

Response:
- If swallowed: Call a poison center/doctor if you feel unwell.
- Rinse mouth.
- Collect spillage.

Storage:
- Store away from incompatible materials.
Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
This is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced in section 15. The pesticide label also includes other important information, including directions for use.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acephate</td>
<td>(O,S-Dimethylacetylphosphoramido thioate)</td>
<td>30560-19-1</td>
<td>75</td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact**
Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs. Get medical advice/attention if you feel unwell.

**Most important symptoms/effects, acute and delayed**
Dusts may irritate the respiratory tract, skin and eyes.

**Indication of immediate medical attention and special treatment needed**
This product is an Organophosphate (OP) Insecticide. Do not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste. Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. In the USA and other countries, contact your local or national poison control center for more information. The following antidotes are generally accepted: atropine and oximes. Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information**
Do Not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

**Suitable extinguishing media**
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.
6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up
This product is miscible in water. Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. If bags are unbroken, pick them up and place them into a storage container for use according to the label or for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid the generation of dusts during clean-up. Prevent entry into waterways, sewer, basements or confined areas. Clean surface thoroughly to remove residual contamination.

Environmental precautions
Never return spills to original containers for re-use.

7. Handling and storage

Precautions for safe handling
Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. OSHA Table Z-3 (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrated amorphous silica (CAS 112926-00-8)</td>
<td>0.8 mg/m³</td>
<td>TWA</td>
</tr>
<tr>
<td>Hydrated amorphous silica (CAS 112926-00-8)</td>
<td>20 mppcf</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. NIOSH: Pocket Guide to Chemical Hazards</th>
<th>Value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrated amorphous silica (CAS 112926-00-8)</td>
<td>6.0 mg/m³</td>
<td>TWA</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Hand protection
For prolonged or repeated skin contact use suitable protective gloves.

Other
Wear suitable protective clothing.

Respiratory protection
Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards
Not available.

General hygiene considerations
Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical properties

Appearance
   White powder in a water-soluble pouch

Physical state
   Not available.

Form
   Liquid. Powder.

Color
   White

Odor
   Strong cabbage-like odor

Odor threshold
   Not established

pH
   4.7 5% in water

Melting point/freezing point
   Not available

Initial boiling point and boiling range
   Not applicable

Flash point
   Not available.

Evaporation rate
   Not applicable

Flammability (solid, gas)
   Not available.

Upper/lower flammability or explosive limits
   
   Flammability limit - lower (%)
   - Not available.

   Flammability limit - upper (%)
   - Not available.

   Explosive limit - lower (%)
   - Not available.

   Explosive limit - upper (%)
   - Not available.

Vapor pressure
   1.70E-06 mm Hg @ 24°C (acephate)

Vapor density
   Not available.

Relative density
   Not available.

Solubility(ies)
   
   Solubility (water)
   - Soluble

Auto-ignition temperature
   Not available.

Decomposition temperature
   Not available.

Viscosity
   Not available.

Other information
   
   Bulk density
   - 28 - 32 lbs/ft³

   Percent volatile
   - Not applicable

10. Stability and reactivity

Reactivity
   The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
   Material is stable under normal conditions.

Possibility of hazardous reactions
   Hazardous polymerization does not occur.

Conditions to avoid
   Contact with incompatible materials.

Incompatible materials
   Strong oxidizing agents. Alkaline compounds.

Hazardous decomposition products
   No hazardous decomposition products are known. This product may emit hazardous fumes of hydrogen chloride, carbon oxides, and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS when these conditions are present.

11. Toxicological information

Information on likely routes of exposure
   
   Inhalation
   - Dust may irritate respiratory system. Prolonged inhalation may be harmful.

   Skin contact
   - Dust or powder may irritate the skin.

   Eye contact
   - Dust may irritate the eyes.

   Ingestion
   - Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics

Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORTHENE® Turf, Tree &amp; Ornamental WSP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dermal</td>
<td>rabbit</td>
<td>&gt; 10 g/kg Tox Cat IV</td>
</tr>
<tr>
<td>oral</td>
<td>rat</td>
<td>1447 mg/kg male; Tox Cat III</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1030 mg/kg female; Tox Cat III</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Irritation Corrosion - Skin

, Tox Cat IV
Result: irritant
Species: rabbit
Organ: skin
Severity: Slight

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Irritation Corrosion - Eye

, Tox Cat III
Result: irritant
Species: rabbit
Organ: eye
Severity: Minimal

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Skin sensitization

, Not a sensitizer
Species: guinea pig
Organ: skin

Germ cell mutagenicity Acephate Technical has been shown to have a weak potential to cause mutations when tested at high doses in microbes or cultured cells. However, the results of most in vivo assays indicate that Acephate Technical does not cause mutations in whole animals. Overall, Acephate is not considered to be a mutagenic hazard.

Carcinogenicity There was an increase in liver carcinoma and adenoma observed in female mice only when fed diets containing the highest dose level of Acephate Technical throughout their entire lifetime. Male mice and rats showed no carcinogenic effects at any dose level tested. EPA has classified Acephate as a Group C (possible human carcinogen).

IARC Monographs. Overall Evaluation of Carcinogenicity

Hydrated amorphous silica (CAS 112926-00-8) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.
Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity
Toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acephate (O,S-Dimethylacetylphosphoramidothioate) (CAS 30560-19-1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea EC50</td>
<td>Water flea (Daphnia magna)</td>
<td>&gt; 50 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Rainbow trout, donaldson trout</td>
<td>2.36 - 3 mg/l, 96 hours</td>
</tr>
<tr>
<td>(Oncorhynchus mykiss)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
Acephate (O,S-Dimethylacetylphosphoramidothioate) -0.85

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal methods/information).

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

Read safety instructions, SDS and emergency procedures before handling.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not established. Not applicable.
15. Regulatory information

US federal regulations

This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.
This is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARD TO HUMANS AND DOMESTIC ANIMALS.
CAUTION! Harmful if swallowed.

ENVIRONMENTAL HAZARDS
This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. This product and its degradate are highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

Classified hazard categories
Acute toxicity (any route of exposure)

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
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<td>Acephate (O,S-Dimethylacetylphosphoramidothioate)</td>
<td>30560-19-1</td>
<td>75</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.
International Inventories

Country(s) or region | Inventory name | On inventory (yes/no)*
--- | --- | ---
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: May-17-2015
Revision date: Jul-09-2018

References

ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version #

3.0

HMIS® ratings

Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

Disclaimer

This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user’s responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

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NFPA is a trademark of the National Fire Protection Association, Inc.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.