



Please read the entire document. This Material Safety Data Sheet contains important environmental, health and toxicology information for your employees, and anyone who will use, transport, store, dispose of or handle this product. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under WHMIS. If you resell this product, this MSDS must be given to the buyer or the information contained herein must be incorporated in your MSDS.

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Orthene® 75% Soluble Powder  
**PMRA REGISTRATION NUMBER:** 14225  
**SYNONYM(S):** NA

® Registered trademark of Monsanto Co.

<u>COMPANY</u>	<u>EMERGENCY TELEPHONE NUMBERS</u>	
Arysta LifeScience North America, LLC 15401 Weston Parkway, Suite 150 Cary, NC 27513	HEALTH EMERGENCY: <b>1-866-303-6952, or 1-651-632-8946</b>	SPILL EMERGENCY: <b>1-800-424-9300, or 1-703-527-3887</b>

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient(s)/ Hazardous Inert Ingredient(s)	CAS #	Exposure Limits*	% Weight	% Volume
Acephate: O, S-Dimethyl Acetylphosphoramidothioate	30560-19-1	<b>TWA<sup>a</sup></b> OSHA PEL <sup>b</sup> : None ACGIH TLV <sup>c</sup> : None NIOSH REL <sup>d</sup> : None	75	NA
Synthetic Amorphous Silica	7631-86-9	None	25	NA

Only the identities of the active ingredient(s) and any hazardous inert ingredients are listed. Specific information on all of this product's ingredients can be obtained by the treating medical professional or spill emergency responder for the management of exposures, spills, or safety assessments.

\*Source: *Guide to Occupational Exposure Values 2008*, published by ACGIH

<sup>a</sup>**TWA**: Time-weighted average exposure concentration for a conventional 8-hour (TLV, PEL) or up to a 10-hour (REL) workday and a 40-hour workweek.

<sup>b</sup>**OSHA PEL**: Occupational Safety and Health Administration Permissible Exposure Limits.

<sup>c</sup>**ACGIH TLV**: American Conference of Governmental Industrial Hygienists, Inc., Threshold Limit Values.

<sup>d</sup>**NIOSH REL**: National Institute for Occupational Safety and Health Recommended Exposure Limits.

**SECTION 3: HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

<b>CAUTION:</b>	-	<b>CAUSES EYE IRRITATION</b>
	-	<b>HARMFUL IF SWALLOWED</b>
	-	<b>AVOID CONTACT WITH EYES, SKIN OR CLOTHING</b>
	-	<b>AVOID BREATHING DUST OR SPRAY MIST</b>
	-	<b>KEEP OUT OF REACH OF CHILDREN</b>

**Acute Health Hazards**

**Signs and Symptoms of Poisoning:** This product contains a cholinesterase inhibitor. Signs and symptoms that may be seen, usually within several hours of exposure, include but are not limited to, headaches, dizziness, weakness, constriction of the pupil, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating, abdominal cramps, nausea, diarrhea and vomiting. Severe poisonings may result in incontinence, unconsciousness, convulsions and death.

**Eye:** Minimal eye irritation can be expected. The degree of injury will depend on the amount and duration of the contact and the speed and thoroughness of the first aid treatment.

**Skin:** This product is not expected to cause skin irritation to intact skin. Irritation may occur if exposed to broken/abraded skin. The degree of injury will depend on the amount and duration of the contact and the speed and thoroughness of the first aid treatment.

**Ingestion:** This product is expected to be slightly toxic if ingested. The degree of injury will depend on the amount of material ingested and the speed and thoroughness of the first aid treatment.

**Inhalation:** Based on an evaluation of the ingredients and/or similar products, this product is expected to be minimally toxic if inhaled. The degree of injury will depend on the amount of material inhaled and the speed and thoroughness of the first aid treatment.

**Chronic Health Hazards (Including Cancer):** High doses of Acephate Technical have produced cancer in mice, but there is no evidence that Acephate causes cancer in humans.

**Teratology (Birth Defects) Information:** There is no evidence that Acephate causes birth defects.

**Reproduction Information:** There is no evidence that Acephate causes reproductive effects in humans.

**SECTION 4: FIRST AID MEASURES**

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

**Skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Ingestion:** Induce vomiting and obtain medical attention or call a poison control center IMMEDIATELY. Do not give anything by mouth to an unconscious person.

**Inhalation:** Move person to fresh air. If person is not breathing, call 9-1-1 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**Notes to Physicians/First Aid Providers:** This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.

## SECTION 5: FIRE FIGHTING MEASURES

<b>Flammable Limits in Air (% by volume):</b>		
	<b>Upper:</b>	NDA
	<b>Lower:</b>	NDA
<b>Flash Point:</b>		
	<b>Method Used:</b>	NA
<b>Autoignition Temperature:</b>		
<b>LEL/UEL:</b>		
<b>NFPA Hazard Classification:</b>		
	<b>Health:</b>	1
	<b>Flammability:</b>	1
	<b>Reactivity:</b>	NDA
	<b>Other:</b>	None
<b>Extinguishing Media:</b>		
Foam, CO <sub>2</sub> , dry chemical, water-fog		
<b>Special Fire Fighting Procedures:</b>		
Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse.		
<b>Hazardous Combustion Products:</b>		
Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and phosphorous. Incomplete combustion can produce carbon monoxide.		

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### EMERGENCY PHONE NUMBERS

**Exposure Calls (PROSAR): 1-866-303-6952 or 1-651-632-8946 (International)**

**Spill Calls (CHEMTREC): 1-800-424-9300 or 1-703-527-3887**

#### **For Spills on Land:**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water. Clean up spill immediately. Vacuum or sweep up material and place in a disposable container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a disposable container.

#### **For Spills in Water:**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. This material will quickly dissolve in water. Notify and consult with appropriate regulatory authorities. Clean up spill immediately. Absorb spill with inert material. Vacuum or sweep up and place into a disposable container.

## SECTION 7: HANDLING AND STORAGE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Read entire label. Use strictly in accordance with label precautionary statements and directions. Keep pesticide in original container. Store in a cool, dry place. Protect from excessive heat or direct sunlight. Do not contaminate food or foodstuffs. Do not store or transport near feed or food.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Eye Protection:** Do not get this material in your eyes. The use of chemical safety eyewear is recommended when handling this material.

**Respiratory/Ventilation Requirements:** Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. If needed, use MSHA/NIOSH approved respirator for pesticides.

**Skin Protection:** Avoid skin contact by wearing suitable protective clothing, gloves, and eye/face protection. Remove contaminated clothing and wash before re-wearing.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White powder
<b>Odor:</b>	Strong cabbage-like odor
<b>Physical State:</b>	Solid
<b>pH:</b>	5.0
<b>Boiling Point:</b>	NA
<b>Melting Point:</b>	NA
<b>Freezing Point</b>	NA
<b>Vapor Pressure:</b>	Non-volatile
<b>Vapor Density:</b>	NA
<b>Specific Gravity:</b>	NDA
<b>Evaporation Rate:</b>	NA
<b>Solubility:</b>	Soluble in water. Moderately soluble in alcohol and acetone. Slightly soluble in aromatic solvents
<b>Percent Solids by Weight:</b>	NDA
<b>Percent Volatile:</b>	NDA
<b>Volatile Organic Compounds (VOC):</b>	NDA
<b>Molecular Weight:</b>	NDA
<b>Viscosity:</b>	NDA

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at room temperatures below 180°F (82°C)
<b>Hazardous Polymerization:</b>	Will not occur
<b>Flash Point:</b>	NDA
<b>Flammable Point:</b>	NDA
<b>Auto Ignition:</b>	NDA
<b>Incompatibility With Other Materials:</b>	Avoid contact with alkaline materials.
<b>Hazardous Decomposition Products:</b>	Contact with alkaline materials including hypochlorite oxidants, may produce noxious gases.

**SECTION 11: TOXICOLOGICAL INFORMATION****Acute (Product Specific Information):**

**Eye Irritation:** Transient irritation (rabbit); completely clear within 1-14 days post-exposure.

**Skin Irritation:** Rabbit: Moderate skin irritation to abraded skin. No skin irritation to intact skin.

**Skin Sensitization:** Orthene® 75 S Soluble Powder is not a skin sensitizer.

**Dermal Toxicity:** The dermal LD<sub>50</sub> of Acephate Technical in rabbits is > 10 g/kg.

**Oral Toxicity:** The oral LD<sub>50</sub> in male rats is 1,494 mg/kg.

**Inhalation Toxicity:** The 1-hour LC<sub>50</sub> in rats is > 12.1 mg/L.

**Subchronic Toxicity:** The most significant treatment related effect of Acephate Technical is a decrease in plasma, RBC, and brain cholinesterase activity.

Four-Week Dietary (rat) LOEL = 0.5 mg/kg/day (decreased brain cholinesterase activity).

13-Week Dietary (rat) LOEL = 0.12 mg/kg/day (decreased brain cholinesterase activity).

Four-Week Nose-Only Inhalation (rat) NOEL = 1 mg/m<sup>3</sup> (decreased brain cholinesterase activity).

21-Day Dermal (rat) NOEL = 50 mg/kg/day (no decrease in plasma, RBC, or brain cholinesterase activity).

**Chronic/Carcinogenicity:** When mice were fed diets containing Acephate throughout their entire lifetime (dose levels for mice = 50, 250, 100 ppm), a compound-related increase in liver weight, together with liver carcinoma (a commonly occurring cancer in mice) occurred in high dose-females. These changes were not observed in the males at any dose level or in low- or mid-dose females. When rats were fed diets containing Acephate throughout their entire lifetime (dose levels for rats = 5, 50, 700 ppm), there was no treatment related increase in tumors at any site. The most significant treatment-related effect was a decrease in cholinesterase activity of plasma, RBC, and brain.

**Teratology/Developmental Toxicity:** No product toxicology data available. Developmental toxicity/teratology tests with both rats and rabbits using Acephate Technical show there is no evidence that Acephate causes birth defects.

**Reproduction:** No product toxicology data available. When male and female rats were fed Acephate Technical continuously for two generations through weaning of the third generation (dose levels: 0, 25, 50, 500 ppm), animals in the mid- and high-dose groups demonstrated compound-related effects on reproductive performance. The 50 ppm dose was judged to be a maternal and reproductive no-effect level.

**Mutagenicity:** No product toxicology data available. Acephate Technical has been shown to have a weak potential to cause mutations when tested in microbes or cultured cells and in some studies using mice. However, the results of most live animal studies indicate that Acephate does not cause mutations in whole animals.

**SECTION 12: ECOLOGICAL INFORMATION****Avian Toxicity (based upon technical material):**

Acephate is moderately toxic to birds.

Acute Toxicity:

Mallard Duck Oral LD<sub>50</sub>: 350 mg a.i./kg

Pheasant Oral LD<sub>50</sub>: 140 mg a.i./kg

Chickens Oral LD<sub>50</sub>: 852 mg a.i./kg

**Reproductive Toxicity:**

Mallard Duck Dietary NOEL: 5 ppm &lt; NOEL &lt; 20 ppm

Bobwhite Quail Dietary NOEL: 20 ppm &lt; NOEL &lt; 80 ppm

**Aquatic Organism Toxicity:**

Acephate is practically non-toxic to freshwater fish. The 96-hour LC<sub>50</sub> values for Orthene® 75 S Soluble Powder are:

Bluegill:	2,050 ppm
Black Bass:	1,725 ppm
Catfish:	2,230 ppm
Mosquito Fish:	6,650 ppm
Goldfish:	9,550 ppm
Crayfish:	750 ppm (120-hr)

**Other Non-Target Organism Toxicity:**

Acephate is highly toxic to honeybees.

48-hour contact LD<sub>50</sub> = 0.3 µg a.i./bee96-hour oral LD<sub>50</sub> = 0.2 µg a.i./bee

### SECTION 13: DISPOSAL CONSIDERATIONS

Check governmental regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

### SECTION 14: TRANSPORT INFORMATION

DOT :	Not regulated
ICAO :	Not regulated
IATA :	Not regulated
IMDG/IMO :	Not regulated

### SECTION 15: REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### SECTION 16: OTHER INFORMATION

<b>Reason for issue:</b>	Changes to Transportation Information (Section 14)
<b>Prepared by:</b>	Ashley R. Brown
<b>Issue date:</b>	03/25/2013
<b>Supersedes date:</b>	04/22/2010
<b>MSDS number:</b>	00190

The information in this MSDS is based on data available to us as of the issue date given herein, and believed to be correct. Contact Arysta LifeScience North America LLC at (919) 678-4900 to determine if additional data and information have become available since the issue date.

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