

Syngenta Crop Protection, Inc.
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **BRAVO ULTREX** Product No.: A12836A
 EPA Signal Word: Danger
 Active Ingredient(%): Chlorothalonil (82.5%) CAS No.: 1897-45-6
 Chemical Name: Tetrachloroisophthalonitrile
 Chemical Class: Chlorinated Benzonitrile Fungicide
 EPA Registration Number(s): 50534-201-100 **Section(s) Revised: 14**

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Material | OSHA PEL | ACGIH TLV | Other | NTP/IARC/OSHA Carcinogen |
|----------------------------|--|---|---|--------------------------|
| Kaolin Clay | 15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable) | 2 mg/m ³ TWA (respirable) | 10 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)** | No |
| Crystalline Silica, Quartz | 10 mg/m ³ /(%SiO ₂ +2) (respirable dust) | 0.1 mg/m ³ (respirable silica) | Not Established | IARC Group 2A |
| Chlorothalonil (82.5%) | Not Established | Not Established | 0.1 mg/m ³ TWA (skin sensitizer; possible respiratory sensitizer) *** | IARC Group 2B |

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

3. HAZARDS IDENTIFICATION
Symptoms of Acute Exposure

An extremely severe irritant to eyes. May cause severe skin irritation and contact dermatitis. A mild skin sensitizer.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Fine granular brown solid
 Odor: Slight

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: 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 Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: 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 Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons having a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

| | | |
|------------------------------|-------------------------|-------------------------|
| Flash Point (Test Method): | Not Applicable | |
| Flammable Limits (% in Air): | Lower: % Not Applicable | Upper: % Not Applicable |
| Autoignition Temperature: | Not Applicable | |
| Flammability: | Not Flammable | |

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

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|---------------|--|
| Ingestion: | Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling. |
| Eye Contact: | Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. |
| Skin Contact: | Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear. |
| Inhalation: | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|---------------------------|
| Appearance: | Fine granular brown solid |
| Odor: | Slight |
| Melting Point: | 482°F |
| Boiling Point: | > 662°F |
| Specific Gravity/Density: | 0.74 g/cm ³ |
| pH: | 8 - 10 |
| <u>Solubility in H₂O</u> | |
| Chlorothalonil: | 0.81 mg/l @ 77°F (25°C) |

Vapor Pressure

| | |
|-----------------|---|
| Chlorothalonil: | 5.7 x 10 ⁽⁻⁷⁾ mmHg @ 77°F (25°C) |
|-----------------|---|

10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|---|
| Stability: | Stable under normal use and storage conditions. |
| Hazardous Polymerization: | Material is not known to polymerize. |
| Conditions to Avoid: | None known. |
| Materials to Avoid: | None known. |
| Hazardous Decomposition Products: | Can decompose at high temperatures forming toxic gases. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

| | | |
|---------------------|------------------------------------|--------------------------|
| Ingestion: | <u>Practically Non-Toxic</u> | |
| | Oral (LD50 Rat) : | > 5000 mg/kg body weight |
| Dermal: | <u>Slightly Toxic</u> | |
| | Dermal (LD50 Rabbit) : | > 2000 mg/kg body weight |
| Inhalation: | <u>Moderately Toxic</u> | |
| | Inhalation (LC50 Animal | Not Available |
| | Not Available) : | |
| Eye Contact: | Severely Irritating (Rabbit) | |
| Skin Contact: | Not Available | |
| Skin Sensitization: | A skin sensitizer in animal tests. | |

Reproductive/Developmental Effects

| | |
|-----------------|---|
| Chlorothalonil: | No evidence of adverse developmental effects in rabbit and rat studies. |
|-----------------|---|

Chronic/Subchronic Toxicity Studies

| | |
|-----------------|---|
| Chlorothalonil: | In dogs, 1 years administration caused a significant decrease in body weight gain and |
|-----------------|---|

increases in absolute liver and kidney weights.
Neurotoxicity: No evidence in regulatory studies.

Carcinogenicity

Chlorothalonil: No evidence of carcinogenicity in dogs after administration for up to one year. Treatment related increases in the incidence of renal tubular adenoma and carcinoma were observed in rats and male mice. Squamous cell adenomas and carcinomas were also observed in the forestomach of both species. The forestomach tumors seen in rodent studies are not relevant to human health, as humans do not possess an anatomical equivalent of the rodent forestomach. The relevance of renal tumors to human health is unclear, although metabolism data suggest that the dog, a species that is resistant to chlorothalonil-induced renal injury, may be more representative of humans than the rat. IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Other Toxicity Information

Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in the diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established in rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.

Toxicity of Other Components

Kaolin Clay

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

Target Organs

Active Ingredients

Chlorothalonil: Lung, eye, kidney

Inert Ingredients

Kaolin Clay: Lung

12. ECOLOGICAL INFORMATION

Summary of Effects

Chlorothalonil:
Toxic to fish.

Eco-Acute Toxicity

Chlorothalonil: Bees LC50/EC50 > 181 ug/bee
Invertebrates (Water Flea) LC50/EC50 0.068 ppm
Fish (Trout) LC50/EC50 0.04 ppm
Fish (Bluegill) LC50/EC50 0.06 ppm
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,200 ppm
Birds (8-day dietary - Mallard Duck) LC50/EC50 > 5,200 ppm

Eco-Chronic Toxicity

Chlorothalonil: Not Available

Environmental Fate

Chlorothalonil:
No data available for the formulation. The information presented here is for the active ingredient, chlorothalonil. A thorough review of environmental information is not possible in this document.
Low bioaccumulation potential. Not persistent in soil or water. Low mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Not regulated by DOT.

B/L Freight Classification

Fungicides, NOIBN, o/t poison

Comments

International Transportation

(Water): Environmentally Hazardous Substance, Solid, N.O.S. (chlorothalonil, 82%), Class 9, UN3077, PGIII, Marine Pollutant

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Chlorothalonil (82.5%) (CAS No. 1897-45-6)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 3
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 3
Flammability: 1
Reactivity: 0

| | |
|---|----------|
| 0 | Minimal |
| 1 | Slight |
| 2 | Moderate |
| 3 | Serious |
| 4 | Extreme |

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/24/2000

Revision Date: 04/11/2003

Replaces: 09/20/2002

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : SCP-955-00308G

End of MSDS