

MATERIAL SAFETY DATA SHEET

BRAVADO FUNGICIDE

Page 1 of 4

Issue Date: 01/01

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Product

BRAVADO FUNGICIDE

EPA Reg. No. 60063-9-54705

Common Name: Liquid fungicide.

Chemical Description: Chlorothalonil (Tetrachloroisophthalonitrile).

TSCA/CAS No.: This primary CAS number is 1897-45-6.

Manufactured For

Lawn & Garden Products, Inc.

P. O. Box 35000

Fresno, CA 93745-5000

Emergency Phone Numbers

Emergency Telephone: DAYS: (559) 499-2100 EVES.: (559) 435-2163

CHEMTREC (24-Hour Emergency Number): (800) 424-9300

EPA National Response Center: (800) 424-8802

SECTION 2. HAZARDOUS INGREDIENTS

CHEMICAL	CAS NO.	%	TLV OR PEL	RQ (lbs)
Chlorothalonil (Tetrachloroisophthalonitrile)	1897-45-6	29.6%	N.E*	N.P.*

* N.E. - Not Established.

* N.P. - Not Pertinent.

SECTION 3. EMERGENCY/HAZARDS OVERVIEW

White liquid with slight odor. May cause irritation to eyes and skin. May produce temporary allergic side effects characterized by redness of eyes, mild bronchial irritation and redness or rash to exposed skin. Nonflammable and non-reactive. Not D.O.T. regulated.

HEALTH: 1 REACTIVITY: 0 FLAMMABILITY: 0 ENVIRONMENT: 1
(0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme)

SECTION 4. FIRST AID

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids apart to ensure flushing of the entire eye surface. Seek medical attention immediately.

Skin: Wash with plenty of soap and water. Remove contaminated clothing and footwear. Seek medical attention if irritation develops.

Ingestion: If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: Remove person from contaminated area to fresh air or employ proper respiratory protection until adequate ventilation or other control measure is restored. If symptoms develop, seek medical attention.

NOTE TO PHYSICIAN: Persons having temporary irritation symptoms respond to treatment with antihistamines or steroid creams and/or systemic steroids.

SECTION 5. FIRE AND EXPLOSION HAZARDS

Flash Point:	Nonflammable.
Test Method:	Not applicable.
LEL Flammable Limits:	Not applicable.
UEL Flammable Limits:	Not applicable.
Autoignition Temperature:	Not applicable.
Flammability Classification:	Noncombustible.
Known Hazardous Products of Combustion:	Not known.
Properties that Initiate/Contribute to Intensity of Fire:	None.
Potential For Dust Explosion:	None.
Reactions that Release Flammable Gases or Vapors:	Not known.
Potential For Release of Flammable Vapors:	None.
Unusual Fire & Explosion Hazards:	May decompose under fire conditions emitting toxic and irritant gases (i.e. hydrogen chloride) to the respiratory tract.
Extinguishing Media:	Carbon dioxide, foam, dry chemical or water.
Special Firefighting Procedures:	Wear positive pressure, self-contained breathing apparatus and goggles. Avoid smoke inhalation. Contain any liquid runoff.

SECTION 6. SPILLS AND LEAKS

Containment:	Prevent product spillage from entering drinking water supplies or streams.
Clean Up:	Collect liquid or absorb onto absorbent material and package for proper disposal.
Evacuation:	Not necessary.

SECTION 7. STORAGE AND HANDLING

Storage:	Store in plastic or stainless steel container in a cool, well-ventilated, dry place at temperatures above 40°F. Do not store in contact with aluminum or copper. Do not store near food or feeds. Do not stack pallets more than two (2) high.
Transfer Equipment:	Transfer product using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc.
Work/Hygienic Practices:	Keep out of reach of children. Avoid contact with eyes, skin and clothing. Wash skin and hands thoroughly after using. Remove and wash contaminated clothing before reuse. Keep children and pets off treated area until dry.

SECTION 8. PERSONAL PROTECTIVE EQUIPMENT

Eyes:	Chemical dust/splash goggles or full-face shield to prevent eye contact. As a general rule, do not wear contact lenses when handling.
Skin:	Long-sleeved shirt, long pants, and rubber gloves.
Respiratory:	Not normally needed. If use generates an aerosol mist or respiratory irritation, use NIOSH-approved dust/mist respirator (such as 3M #8710).
Ventilation:	Recommended but no TLV established.

SECTION 9. PHYSICAL AND CHEMICAL DATA

Appearance:	White liquid.
Odor:	Slight odor.
pH:	5 – 8.
Vapor Pressure:	Not available.
Vapor Density (Air = 1):	Not determined.
Boiling Point:	100°C (> 212°F) (lowest boiling component.)
Freezing Point:	-5°C (23°C).
Water Solubility:	Dispersible in water.
Density:	9.67 lbs./gal.
Evaporation Rate:	Not determined.
Viscosity:	Not available.
% Volatile by Vol.:	65
Octanol/Water Partition Coefficient:	Not available.
Saturated Vapor Concentration:	Not available.

SECTION 10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Not known.
Incompatibility:	Not known.
Hazardous Decomposition Products:	May decompose under fire conditions emitting gases and vapors (i.e. hydrogen chloride) which may be toxic and irritating to the respiratory tract.
Hazardous Polymerization:	Material not known to polymerize.

SECTION 11. POTENTIAL HEALTH EFFECTSAcute Effects:

Eyes:	Human experience indicates that this product may cause mild to severe irritation, depending on degree of exposure. No evidence of permanent damage has been found. Maximum mean Draize score (24 hours) for rabbits = 23.3/110 and for monkeys = 25.3/110.
Skin:	Mild irritation. Not readily absorbed through skin. Rarely causes an allergic reaction. Dermal LD ₅₀ (rabbit): > 2,000 mg/kg. Draize 1.3/8.0.
Ingestion:	May cause irritation of the gastrointestinal tract following ingestion of large amounts. Oral LD ₅₀ (rat): 4,200 mg/kg.
Inhalation:	May cause irritation to the respiratory tract. Inhalation (4-hour) LC ₅₀ (rat): > 7.16 mg/L (nominal concentration).
<u>Subchronic Effects:</u>	None known.

SECTION 11. POTENTIAL HEALTH EFFECTS (Continued)

Chronic Effects: Repeated excessive dermal exposure may cause marked skin irritation and may increase the possibility of allergic reactions. Studies on rats and mice have suggested that technical chlorothalonil, 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 from which threshold levels have been established on 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 many years has not demonstrated any increase in oncogenic potential to humans.

SECTION 12. ECOLOGICAL INFORMATION

Algal/Lemna Growth Inhibition: Not known.
Toxicity to Fish and Invertebrates: Toxic.
Toxicity to Plants: Not known.
Toxicity in Birds: Not known.

SECTION 13. DISPOSAL

Do not contaminate lakes, streams, ponds, estuaries, oceans or other waters by discharge of waste effluents or equipment washwaters. Dispose of waste effluents according to state and local regulations. Also, chemical additions or other alterations of this product may invalidate any disposal information in this MSDS. Therefore, consult local waste regulators for proper disposal. Do not discharge.

SECTION 14. TRANSPORTATION

D.O.T.: Not D.O.T. Regulated.
Other Shipping Description: Insecticides or Fungicides, Liquid.
NMFC Item 102120, LTL Class 60

SECTION 15. REGULATORY INFORMATION

CERCLA: None.

SARA TITLE III, Section 313 Toxic Chemicals: Chlorothalonil (29.6%).

Proposition 65: ATTENTION: This product contains chlorothalonil which is a chemical known to the State of California to cause cancer.

SECTION 16. OTHER

All information appearing in this document was based on data provided by third party sources and was compiled to comply with the Federal Hazard Communication Standard and the California Hazardous Substances Information and Training Act. The information is believed to be accurate as of the preparation date, but is not warranted as being the final authority in the use of this product. This information does not purport to be legal or medical advice.