

**LAWN ORNAMENTAL, AND VEGETABLE FUNGICIDE
CONTAINS DACONIL^R
MATERIAL SAFETY DATA SHEET**

Manufacturer's Name & Address

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I. NOMENCLATURE

Product Name: LAWN, ORNAMENTAL AND VEGETABLE FLOWABLE FUNGICIDE CONTAINS DACONILR
EPA Reg. No.829-287 Synonyms: Chlorothalonil, Tetrachloroisophthalonitrile, Daconil^R, Bravo^R

II. HAZARDOUS INGREDIENTS

The substances listed below are those identified as hazardous chemicals under the criteria of OSHA Hazard Communication Standard (29 CFR 1910.1200)

COMPONENT.	Nominal %	CAS No.	Exposure limits
Tetrachloroisophthalonitrile	12.5%	1897-45-6	ACGIH-TLV not established OSHA- PEL not established

III. PHYSICAL PROPERTIES

Boiling Point, 760 mm Hg: >100^oC (Lowest boiling component) Melting Point: Not applicable
Freezing Point -4oC (25oF) Specific gravity (H₂O=1): 1.06 Vapor density (Air=1): Not determined
Vapor pressure: Chlorothalonil 5.72 x 10⁻⁷ @ 25oC Product: Approximately 23 mm Hg @ 25o C
Solubility in H₂O: Chlorothalonil 0.6-1.2 ppm Product: Dispersible in water
% Volatiles by volume: 89% Evaporation rate (butyl acetate=1): Not determined
Appearance and odor: milk like liquid, light gray, slight musty odor. Density at 20oC: 8.8 lbs/gal pH: 6.1

IV. FIRE AND EXPLOSION DATA

Flash point: Nonflammable , Autoignition Temperature: Not applicable, Flammable limits in Air, % by volume: Noncombustible.
Extinguishing Media: Carbon dioxide, foam, dry chemical or water.
Special Fire Fighting Procedures: Self contained breathing apparatus should be provided for firefighters.
Unusual Fire and Explosion Hazard: May decompose under fire condition emitting gases and vapors (i.e. hydrogen chloride) which may be toxic and irritating to the respiratory tract.

V. HEALTH HAZARD INFORMATION**Emergency and First Aid Procedures**

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. Wash clothing and decontaminate footwear before use. Seek medical attention if irritation persists.
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.
Ingestion: If swallowed. Contact physician or poison control center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Never induce vomiting or give anything by mouth to an unconscious person.. Seek medical attention.
Notes to Physician. Persons having temporary skin irritation symptoms may respond to treatment with topical steroid creams.
Health Hazard Data* Data submitted in this part was determined from similar mixtures containing four times the active ingredient.(Re. Bravo 720 and Daconil 2787)) No revision for the reduction in concentration has been applied to the data as given. Oral LD50 > 9000 mg/kg (rat) Dermal LD50: >2000 mg/kg (rabbit)
Inhalation (4 -hour) LC50: >7.16 mg/L (nominal concentration; Rat) (Re. Daconil 2787)
Primary Dermal Irritation Index:: 0.6/8.0 (rabbit)- mild irritant
Primary Eye Irritation: Eye irritant (rabbit); reversible corneal, iridal and conjunctival effects; maximum mean score (24 hour)=19.8/110
Dermal Sensitization (Guinea pig) indicates the product is a weak sensitizing agent.
Effects of Exposure
Inhalation: Harmful if inhaled. May cause irritation to the respiratory tract.
Skin Contact: Mildly irritating to skin. May be a skin sensitizer.
Skin Absorption: Harmful if absorbed through the skin. Not readily absorbed through the intact skin.
Eye Contact: Human experience indicates that this may cause mild to severe irritation, depending on the degree of exposure. No evidence of permanent damage has been found.
Ingestion: May cause irritation of the gastrointestinal tract following ingestion of large amounts

Effects of Chronic Overexposure: 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 (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. In addition, numerous mutagenicity studies have been conducted which further demonstrate that these compounds are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established on rats and mice.

Comprehensive dietary and worker exposure studies have shown exposure to 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.

Listed as a carcinogen by:	IARC	NTP	OSHA
Chlorothalonil	No	No	No

VI. REACTIVITY DATA:

Condition Contributing to Instability: Under normal use conditions, this product is stable.

Incompatibility: Not known.

Hazardous Decomposition Products: May decompose under fire condition emitting gasses and vapors (i.e. hydrogen chloride) which may be toxic and irritating to the respiratory tract.

Condition Contributing to Hazardous Polymerization: Material is not known to polymerize.

VII. SPILL OR LEAK PROCEDURES

Steps to be taken if material is released or spilled. This product is toxic to fish. Keep out of lakes, streams or ponds. Stop leaks. Contain spill by diking. Recover as much as possible. Soak up small spills or residual material with inert absorbent material. Place in closed labeled containers to await proper disposal. Flush area with large amounts of water. Persons performing this work should wear personal protective equipment and clothing. (Refer to section 8)

Neutralizing Chemicals: None required.

Waste disposal method: Use spilled material if possible, otherwise, dispose in accordance with all Federal, State, and local health and pollution regulations.

VIII. SPECIAL PROTECTION

Ventilation Requirements: Good industrial hygiene practice dictates that indoor work areas be isolated and provided with adequate exhaust ventilation. For outside operations, work upwind.

Specific Personal Protective Equipment: Respiratory: NIOSH-approved dust or pesticide respirator.

Eyes: Chemical goggles or face shield. Gloves: Protective rubber gloves to minimize skin contact. Special precautions should be taken so product can not get inside gloves.

Other Clothing and Equipment: Protective clothing consisting of long sleeve shirt and long pants, should be worn when handling or applying this product. Clothing should be changed at least daily. Persons exposed routinely to the active material should shower prior to leaving work each day. Do not wear contaminated clothing. Safety shower and eyewash stations should be available in all areas where this product is stored and/or handled. Contaminated clothing should be removed and washed thoroughly before re-use. Store and wash contaminated clothing separately.

IX. SPECIAL PRECAUTIONS

Environmental Hazards: This product is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, 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 wash waters. Do not apply when weather conditions favor drift from treated areas. Apply only to areas specified on the label.

Storage and Disposal: Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Storage: Store in original container in a cool locked storage area. Protect from excessive heat.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray mixture or rinsate is a violation of Federal law. If these wastes can not 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.

Container Disposal: Follow label instructions or Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Hazard Materials Identification System (HMIS) Rating (NPCA—HMIS 1984)

2 Health, 0 Flammability, 0 Reactivity

X. TRANSPORTATION INFORMATION Not regulated by DOT(Land) DOT shipping name: not applicable

Freight classification: Fungicides Liquid NMFC 102120

XI. SELECTED REGULATORY INFORMATION

SARA Title III

313 Inventory ingredients: Chlorothalonil (12.5%)

312 Hazards classification acute and chronic health

*See section V for health hazard information

Notice: The data in this material Safety Data sheet relates only to the specific material designated herein and does not relate to the use in combination with any other material or in any process. This information is given without warranty or representation. Information is based on data we believe to be correct as of the date hereof. This information is furnished solely for your consideration, investigation, and verification. Before using any product READ THE LABEL.

LAST REVISED: OCTOBER, 1995