

MATERIAL SAFETY DATA SHEET

FURADAN® 5 G (GR) INSECTICIDE



MSDS Ref. No: 1563-66-2-6
Version: Global
Date Approved: 06/12/1998
Revision No: 10

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 91/155/EEC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: FURADAN® 5 G (GR) INSECTICIDE

PRODUCT CODE: 3214; 3061

ACTIVE INGREDIENT: Carbofuran

CHEMICAL FAMILY: Carbamate Pesticide

MOLECULAR FORMULA: C₁₂H₁₅NO₃ (carbofuran)

SYNONYMS: FMC 10242; 2,3-dihydro-2,2-dimethyl-7-benzofuranyl methylcarbamate; IUPAC: 2,3-dihydro-2,2-dimethylbenzofuran-7-yl methylcarbamate

ALTERNATE TRADENAME(S): Carbisip; Furadan 5 G; Furadan 5% G; Furadan 50 g/kg GR; Overdyn

MANUFACTURER

FMC CORPORATION
Agricultural Products Group
1735 Market Street
Philadelphia, PA 19103 USA

Emergency Telephone Numbers:

Emergency Phone (FMC)
800-331-3148 (U.S.A. & Canada)
Emergency Phone (FMC)
716-735-3765 (Reverse charges)
CHEMTREC (800) 424-9300 (U.S.A. & Canada)
(202) 483-7616 (All other countries)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt.%</u>	<u>PEL/TLV</u>	<u>EC No.</u>	<u>EC Class</u>
Carbofuran	1563-66-2	5	0.1 mg/m ³	006-026-00-9	R26/28
Silica, quartz	14808-60-7	>83	0.1 mg/m ³ (resp dust)	None	None
Silica, amorphous	7631-86-9	<0.55	0.1 mg/m ³ 0.1 mg/m ³	None	None
Surfactant Blend	0000-00-0	<0.34	None	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- IMMEDIATE CONCERNS:**
- Purple granules with a slightly phenolic odor.
 - Slightly combustible. Will burn if ignited. May support combustion at elevated temperatures.
 - Thermal decomposition and burning may form toxic by-products.
 - For large exposures or fire, wear personal protective equipment.
 - Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.
 - Moderately toxic if swallowed, and expected to be highly toxic if inhaled.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from either swallowing or absorption through the skin, and may result from breathing the dust. Conditions of increased temperature and humidity may aid skin absorption of this product, and therefore, promote increased toxicity. Symptoms of overexposure include headache, light-headedness, weakness, abdominal cramps, nausea, excessive salivation, perspiration, blurred vision, tearing, pin-point pupils, blue skin color, convulsions, tremor and coma.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

4. FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

SKIN: Wash with plenty of soap and water.

INGESTION: Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor immediately.

NOTES TO MEDICAL DOCTOR: This product has low toxicity if absorbed through the skin. It is moderately toxic if swallowed, and is expected to be highly toxic if inhaled. It is non-irritating to the skin, and minimally irritating to the eyes. This product

contains a granular material (sand) that may cause mechanical irritation to the eyes. This product contains carbofuran, a reversible cholinesterase inhibitor. Atropine sulfate is antidotal. Support respiration as needed with removal of secretions, maintenance of a patent airway and, if necessary, artificial ventilation. If cyanosis is absent: Adults - start treatment by giving 2 mg atropine intravenously or intramuscularly, if necessary, and repeat with 0.4 - 2.0 mg atropine at 15 minute intervals until atropinization occurs (tachycardia, flushed skin, dry mouth, mydriasis); Children under 12 - initial dose = 0.05 mg/kg body weight and repeat dose = 0.02 - 0.05 mg/kg body weight. Use of oximes such as 2-PAM is controversial. Observe patient to insure that these symptoms do not recur as atropinization wears off. If in eyes, instill one drop of homatropine. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

EXPLOSION HAZARDS: Slightly combustible. This material may support combustion at elevated temperatures.

FIRE FIGHTING PROCEDURES: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxides, and methyl isocyanate.

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a bleach or caustic/soda ash solution. Follow this by washing with a strong soap and water solution. Absorb, as above any excess liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed wastes according to the method outlined in Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Store in a cool, dry, well-ventilated place. Do not use

or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For dust exposure, wear chemical protective goggles or a face shield.

RESPIRATORY: For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

PROTECTIVE CLOTHING: Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

WORK HYGIENIC PRACTICES: Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

GLOVES:

Wear chemical protective gloves made of materials such as rubber or neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

COMMENTS: Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Slightly phenolic

APPEARANCE: Purple granules

MOLECULAR WEIGHT: 221.26 (carbofuran)

WEIGHT PER VOLUME: 85 - 89 lb/cu ft. (1360 - 1420 g/L)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.

STABILITY: Stable

POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

DERMAL LD₅₀: >10200 mg/kg (rabbit)

ORAL LD₅₀: 119 mg/kg (rat)

INHALATION LC₅₀: 0.10 mg/L/1 hour (rat) (carbofuran)

ACUTE EFFECTS FROM OVEREXPOSURE: This product has low toxicity if absorbed through the skin. It is moderately toxic if swallowed, and is expected to be highly toxic if inhaled. It is non-irritating to the skin, and minimally irritating to the eyes. Dust generated from granule pulverization during shipping and handling may be toxic if inhaled. With dermal exposure to this product, conditions of increased temperature and humidity facilitate skin absorption and, therefore, promote increased toxicity. Carbofuran is a reversible cholinesterase inhibiting pesticide which elicits symptoms in humans typical of cholinesterase inhibition including headaches, light-headedness, weakness, abdominal cramps, nausea, excessive salivation, perspiration and blurred vision. More severe signs of cholinesterase inhibition include tearing, pin-point pupils, excessive respiratory secretions, cyanosis, convulsions, generalized tremor and coma. Excessive exposure may result in death. Excessive exposure to dust may irritate the respiratory system, skin and eyes.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. In studies with laboratory animals, carbofuran did not cause reproductive toxicity, teratogenicity, or carcinogenicity. Chronic exposure of carbofuran to laboratory animals has caused decreased cholinesterase activity (erythrocyte, plasma, and/or brain). An overall absence of genotoxicity has been demonstrated in mutagenicity testing with carbofuran. Repeated overexposure to crystalline silica for extended periods has caused acute silicosis. IARC has classified crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1). NTP has classified respirable crystalline silica (quartz, cristobalite and tridymite) as "reasonably anticipated to be carcinogenic".

CARCINOGENICITY

<u>Chemical Name</u>	<u>NTP Status</u>	<u>IARC Status</u>	<u>OSHA Status</u>	<u>Other</u>
Silica, quartz	Anticipated	Listed	Not listed	(ACGIH) Not Listed

12. ECOLOGICAL INFORMATION

MARINE POLLUTANT #1: Carbofuran is not a marine pollutant at less than 10%

NAERG: 151

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311 HAZARD CATEGORIES (40 CFR 370): Immediate, Delayed

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):

The threshold planning quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs. This product contains the following ingredients with a TPQ of less than 10,000 lbs.:
None

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372): This product contains the following ingredients subject to Section 313 reporting requirements:
(carbofuran)

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

 Carbofuran

SECTION 302.4 REPORTABLE QUANTITY (40 CFR 355)

<u>Chemical Name</u>	<u>RQ</u>
Carbofuran	10 lbs.

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT):

<u>Chemical Name</u>	<u>Wt. %</u>	<u>RQ</u>
Carbofuran	5	10 lbs.

COMMENTS: Australian Hazard Code : 3XE

U.S. EPA Hazardous Waste Number : P127 (carbofuran)

U.S. EPA Signal Word : WARNING

16. OTHER INFORMATION

Carbisip, Furadan, Overdyn and FMC Logo - FMC Trademarks

Section(s) Revised : New Format