

SAFETY DATA SHEET
FURADAN® 85 DB (TK) INSECTICIDE

SDS # : 3792-A
Revision date: 2018-03-28
Format: NA
Version 1.05



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name FURADAN® 85 DB (TK) INSECTICIDE

Other means of identification

Product Code(s) 3792-A

Synonyms CARBOFURAN (FMC 10242): 2,3-dihydro-2,2-dimethylbenzofuran-7-yl methylcarbamate (IUPAC name); 2,3-dihydro-2,2-dimethyl-7-benzofuranyl methylcarbamate (CAS name)

Active Ingredient(s) Carbofuran

Chemical Family Carbamate Pesticide

Alternate Commercial Name Carbofuran

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label.

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527 3887 (CHEMTREC - Alternate)

Medical Emergencies:
1 800 / 331-3148 (ProPharma Group - U.S.A. & Canada)
1 651 / 632-6793 (ProPharma Group - All Other Countries - Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 1

Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1


GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
H300 - Fatal if swallowed
H312 - Harmful in contact with skin
H330 - Fatal if inhaled
H350 - May cause cancer
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure

Physical Hazards
May form combustible dust concentrations in air



Precautionary Statements - Prevention

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P271 - Use only outdoors or in a well-ventilated area
- P284 - Wear respiratory protection
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

- P320 - Specific treatment is urgent (see supplemental first aid instructions on this label)
- P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor
- P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P363 - Wash contaminated clothing before reuse
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P310 - Immediately call a POISON CENTER or doctor
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
- P330 - Rinse mouth

Precautionary Statements - Storage

- P405 - Store locked up
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

- P501 - Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical Family** Carbamate Pesticide.

Chemical name	CAS-No	Weight %
Carbofuran	1563-66-2	85
Naphthalenesulfonate, sodium	1321-69-3	1-5
Hydrated amorphous silica	10279-57-9	1-5
Crystalline silica, quartz	14808-60-7	0.1-1

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Drink 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Symptoms of exposure may include headache, light-headedness, weakness, abdominal cramps, nausea, excessive salivation, perspiration, blurred vision, tearing, pin-point pupils, excessive respiratory secretions, cyanosis, convulsions, generalized tremor and coma.
Indication of immediate medical attention and special treatment needed, if necessary	This product contains 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 ensure 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

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific Hazards Arising from the Chemical Hazardous Combustion Products	Thermal decomposition can lead to release of irritating gases and vapors. Powdered material may form explosive dust-air mixtures Carbon oxides (COx), Nitrogen oxides (NOx), Methyl isocyanate, Sulfur dioxide.
Explosion data Sensitivity to Mechanical Impact Sensitivity to Static Discharge	Not sensitive. Static electricity might be sufficient to ignite dust clouds. Possibility of ignition will depend on the minimum ignition energy (MIE) and the type of operations undertaken with the material. MIE values are not provided in this SDS.

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.

Other For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.

Methods for Containment Use a wet sweeping compound or water to prevent dust formation. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean and neutralize spill area, tools and equipment for a minimum contact of one hour with vinegar-alcohol solution, then by bleach soap and water. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

7. HANDLING AND STORAGE

Handling Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

Storage Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Keep/store only in original container.

Incompatible products No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Carbofuran (1563-66-2)	TWA: 0.1 mg/m ³	-	TWA: 0.1 mg/m ³	Mexico: TWA 0.1 mg/m ³
Crystalline silica, quartz (14808-60-7)	TWA: 0.025 mg/m ³	TWA: 50 µg/m ³	IDLH: 50 mg/m ³ TWA: 0.05 mg/m ³	Mexico: TWA 0.1 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Carbofuran (1563-66-2)	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ inhalable fraction and vapor	TWA: 0.1 mg/m ³
Crystalline silica, quartz (14808-60-7)	TWA: 0.025 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.10 mg/m ³ respirable	TWA: 0.025 mg/m ³

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	For dust, splash, mist or spray exposure, wear chemical protective goggles.
Skin and Body Protection	Wear long-sleeved shirt, long pants, socks, and shoes.
Hand Protection	Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.
Respiratory Protection	For dust, splash, mist or spray exposures wear a full-face air-supplying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization)
Hygiene measures	Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.
General information	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Powder
Physical State	Dry powder
Color	Beige
Odor	Phenolic
Odor threshold	No information available
pH	No information available
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	Not applicable
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	15 - 18 lb/cu ft
Specific gravity	0.24- 0.29 g/mL
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.

Incompatible materials No information available.
Hazardous Decomposition Products Carbon oxides (COx), Nitrogen oxides (NOx), Methyl isocyanate, Sulfur dioxide.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral 6 mg/kg (rat)
LD50 Dermal > 2000 mg/kg (rabbit)
LC50 Inhalation 0.029 mg/L 4 hr (Calculated Estimated Acute Toxicity - EAT) (rat)

Serious eye damage/eye irritation Non-irritating. Absorption through the mucous membranes of the eyes could be highly toxic.
Skin corrosion/irritation May cause slight irritation. With dermal exposure to carbofuran, conditions of increased temperature and humidity facilitate skin absorption and, therefore, promote increased toxicity.

Sensitization No information available

Information on toxicological effects

Symptoms This substance is a reversible cholinesterase-inhibiting pesticide, which elicits symptoms in humans typical of cholinesterase inhibition including headache, 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 cholinesterase inhibition may result in death.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity Chronic exposure to silica dust may increase the risk of developing pneumoconiosis or silicosis, chronic diseases affecting the lungs, characterized by labored breathing, cough, reduction of work capacity, reduction of lung capacity, heart enlargement and failure
Mutagenicity Carbofuran: Not genotoxic in laboratory studies.
Carcinogenicity Carbofuran: No evidence of carcinogenicity from animal studies.
Neurological effects Carbofuran: Chronic exposure of laboratory animals has caused decreased cholinesterase activity (erythrocyte, plasma, and/or brain).
Reproductive toxicity Carbofuran: No toxicity to reproduction in animal studies.
Developmental toxicity Carbofuran: Not teratogenic in animal studies.
STOT - single exposure Causes damage to organs. See listed target organs below.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
Target organ effects Nervous System, Acetylcholinesterase Inhibition
Neurological effects Carbofuran: Chronic exposure of laboratory animals has caused decreased cholinesterase activity (erythrocyte, plasma, and/or brain).
Aspiration hazard No information available.

Chemical name	ACGIH	IARC	NTP	OSHA
Crystalline silica, quartz 14808-60-7	A2	Group 1	Known	X

Legend:

- ACGIH (American Conference of Governmental Industrial Hygienists)
- A2 - Suspected Human Carcinogen
- IARC (International Agency for Research on Cancer)
- Group 1 - Carcinogenic to Humans
- NTP (National Toxicology Program)
- Known - Known Carcinogen
- OSHA (Occupational Safety and Health Administration of the US Department of Labor)
- X - Present

12. ECOLOGICAL INFORMATION

Ecotoxicity

Carbofuran (1563-66-2)				
Active Ingredient(s)	Duration	Species	Value	Units
Carbofuran	48 h EC50	Crustacea	0.75	mg/L
	72 h EC50	Algae	19	mg/L
	96 h LC50	Fish	0.18	mg/L
	21 d NOEC	Crustacea	0.23	µg/L
	96 h NOEC	Algae	3.2	mg/L
	21 d NOEC	Fish	5.22	µg/L

Persistence and degradability Carbofuran: Non-persistent. Does not readily hydrolyze. Not readily biodegradable.

Bioaccumulation Carbofuran: The substance does not have a potential for bioconcentration.

Mobility Carbofuran: Moderately mobile; expected to reach groundwater.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

Contaminated Packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN2757
Proper Shipping Name Carbamate pesticide, solid, toxic
Hazard class 6.1
Packing Group II
Reportable Quantity (RQ) Carbofuran is in an "RQ" quantity when this material meets or exceeds 11.54 pounds per package.
Marine Pollutant Description Carbofuran.
 UN2757 Carbamate pesticides, solid, toxic (Carbofuran), 6.1, II, Marine Pollutant, RQ

TDG

UN/ID no UN2757
Proper Shipping Name Carbamate pesticide, solid, toxic
Hazard class 6.1
Packing Group II
Description UN2757, Carbamate pesticide, solid, toxic (Carbofuran), 6.1, II, Marine Pollutant, RQ

ICAO/IATA

UN/ID no UN2757
Proper Shipping Name Carbamate pesticide, solid, toxic
Hazard class 6.1
Packing Group II
Description UN2757, Carbamate pesticide, solid, toxic (Carbofuran), 6.1, II, RQ

IMDG/IMO

UN/ID no UN2757
Proper Shipping Name Carbamate pesticide, solid, toxic
Hazard class 6.1
Packing Group II
EmS No. F-A, S-A

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Revision date: 2018-03-28
Version 1.05

Description UN2757, Carbamate pesticide, solid, toxic (Carbofuran), 6.1, II, Marine Pollutant, RQ

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Carbofuran - 1563-66-2	1563-66-2	85	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Carbofuran 1563-66-2	10 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

*Fatal if swallowed or inhaled. Harmful if absorbed through the skin. Do not breathe dust.
 This product is toxic to fish, birds and other wildlife*

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Carbofuran 1563-66-2	X	X	X
Crystalline silica, quartz 14808-60-7	X	X	X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Carbofuran 1563-66-2	X	X	X	X	X	X	X	X
Naphthalenesulfonate, sodium 1321-69-3	X	X	X	X	X	X	X	X
Hydrated amorphous silica 10279-57-9		X			X		X	
Crystalline silica, quartz 14808-60-7	X	X	X	X	X	X	X	X

Mexico - Grade Serious risk, Grade 3

Chemical name	Carcinogen Status	Mexico
Carbofuran		Mexico: TWA 0.1 mg/m ³
Crystalline silica, quartz		Mexico: TWA 0.1 mg/m ³

WHMIS Statement

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

WHMIS Hazard Class D1A - Very toxic materials
 D2A - Very toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards 4	Flammability 1	Instability 0	Special Hazards -
HMIS	Health Hazards 3*	Flammability 1	Physical hazard 0	Personal Protection X

*Indicates a chronic health hazard.

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2018-03-28
Reason for revision: (M)SDS sections updated

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Prepared By:

FMC Corporation

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End of Safety Data Sheet