



**SAFETY DATA SHEET**  
**Carbofuran 350 g/L FSC (Furadan®)**

**SDS # :** FO000042-A  
**Revision date:** 2018-08-22  
**Format:** AP  
**Version** 1

**Section 1: PRODUCT AND COMPANY IDENTIFICATION**

**Product Name** Carbofuran 350 g/L FSC (Furadan®)

**Product Code(s)** FO000042-A

**Recommended Use:** Insecticide.

**Restrictions on Use:** Use as recommended by the label.

**Manufacturer/Supplier**  
FMC Corporation  
Agricultural Solutions  
2929 Walnut Street  
Philadelphia, PA 19104  
General Information:  
Phone: (215) 299-6000  
E-Mail: msdsinfo@fmc.com

Telephone: 86 21 20675888  
Telefax: 86 21 20675858

**Emergency telephone** 86 532 8388 9090

**Section 2: HAZARDS IDENTIFICATION**

**GHS - Classification**

Acute toxicity - Oral	Category 2
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 3
STOT - single exposure	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

**Label Elements**



**Signal Word**

**Danger**

**Hazard Statements**

H300 - Fatal if swallowed  
H332 - Harmful if inhaled

H316 - Causes mild skin irritation  
H370 - Causes damage to organs  
H372 - Causes damage to organs through prolonged or repeated exposure  
H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P271 - Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor  
P321 - Specific treatment (see supplemental first aid instructions on this label)  
P330 - Rinse mouth  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P332 + P313 - If skin irritation occurs: Get medical advice/ attention  
P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor

**Precautionary Statements - Storage**

P405 - Store locked up

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container according to label directions

**Other Information**

None known

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS-No	Weight %
Carbofuran	1563-66-2	33.3

**Section 4: FIRST AID MEASURES**

<b>Inhalation</b>	Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
<b>Skin Contact</b>	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.
<b>Eye Contact</b>	Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	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.
<b>Most important symptoms and effects, both acute and delayed</b>	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.
<b>Protection of first-aiders</b>	Use personal protective equipment. See Section 8 for more detail.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	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.

## Section 5: FIRE FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	No information available
<b>Specific Hazards Arising from the Chemical</b>	Thermal decomposition can lead to release of irritating gases and vapors.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate and post spill area. Wear protective gloves/clothing and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways.
<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	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.

## Section 7: HANDLING AND STORAGE

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
<b>Storage</b>	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.
<b>Materials to avoid</b>	Strong oxidizing agents, Strong acids, Strong bases.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits

Component	China	Japan	Korea	Australia	Taiwan
Carbofuran 1563-66-2 ( 33.3 )			TWA: 0.1 mg/m <sup>3</sup>	TWA 0.1 mg/m <sup>3</sup>	STEL 0.3 mg/m <sup>3</sup>

<b>Engineering measures</b>	Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.
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### Personal protective equipment

<b>Respiratory Protection</b>	The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.
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<b>Hand Protection</b>	Wear chemical protective gloves made of materials such as nitrile or neoprene.
<b>Eye/Face Protection</b>	For dust, splash, mist or spray exposure, wear chemical protective goggles.
<b>Skin and Body Protection</b>	Wear long-sleeved shirt, long pants, socks, and shoes.
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Purple Liquid
<b>Odor</b>	No information available
<b>Color</b>	No information available
<b>Odor threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	Not flammable
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	No information available
<b>Solubility(ies)</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available
<b>Density</b>	1.11 g/cm <sup>3</sup> @ 25°C
<b>Bulk density</b>	No information available

## Section 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Not applicable
<b>Stability</b>	Stable under recommended storage conditions.
<b>Hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Heat, flames and sparks.
<b>Incompatible products</b>	Strong oxidizing agents, Strong acids, Strong bases.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx), Nitrogen oxides (NOx), Methyl isocyanate.

## Section 11: TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Numerical measures of toxicity - Product Information

<b>LD50 Oral</b>	25 mg/kg (rat)
<b>LD50 Dermal</b>	> 4000 mg/kg (rat)

<b>LC50 Inhalation</b>	1.83 mg/L 4 hr (rat)
<b>Skin corrosion/irritation</b>	Mildly irritating (rabbit).
<b>Serious eye damage/eye irritation</b>	Non-irritating (rabbit).
<b>Sensitization</b>	Did not cause sensitization on laboratory animals: mice.

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

<b>Mutagenicity</b>	Carbofuran: Not genotoxic in laboratory studies.
<b>Carcinogenicity</b>	Carbofuran: No evidence of carcinogenicity from animal studies
<b>Reproductive toxicity</b>	Carbofuran: No toxicity to reproduction in animal studies.
<b>Developmental toxicity</b>	Carbofuran: Not teratogenic in animal studies.
<b>STOT - single exposure</b>	Causes damage to organs. See listed target organs below.
<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
<b>Target organ effects</b>	Nervous System, Acetylcholinesterase Inhibition.
<b>Neurological effects</b>	Carbofuran: Chronic exposure to animals has caused decreased cholinesterase activity (erythrocyte, plasma, and/or brain).
<b>Aspiration hazard</b>	No information available.

## Section 12: ECOLOGICAL INFORMATION

### Ecotoxicity

Very toxic to aquatic life with long lasting effects.

<b>Carbofuran (1563-66-2)</b>				
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

**Birds:** Quail, LD50 = 12 mg/kg

**Daphnia:** Daphnia magna EC50 (48 h) = 0.01 ml/L

**Bees:** LD50 (48 h), oral = 0.106 µg a.i. /bee  
 LD50 (48 h), contact = 0.038 µg a.i. /bee

**Fish:** Rainbow trout, LC50 (96 h) = 362.5 µg/L  
 Sunfish, LC50 (96 h) = 125.7 µg/L

**Algae:** Chlorella vulgaris EI50 (96 h) = 2.049 ppm  
 NOEC = 0.234 ppm

**Earthworms:** LC50 (14 d) = 201.0 mg/kg

**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.

**Other Adverse Effects** No information available.

## Section 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**

Dispose of in accordance with federal, state and local regulations.

## Section 14: TRANSPORT INFORMATION

**IMDG/IMO**

<b>UN/ID no</b>	UN2992
<b>Proper Shipping Name</b>	Carbamate pesticides, liquid, toxic, n.o.s. Carbofuran
<b>Hazard class</b>	6.1
<b>Packing Group</b>	II
<b>EmS No.</b>	F-A, S-A
<b>Marine Pollutant</b>	Yes

**ICAO/IATA**

<b>UN/ID no</b>	UN2992
<b>Proper Shipping Name</b>	Carbamate pesticides, liquid, toxic, n.o.s. Carbofuran
<b>Hazard class</b>	6.1
<b>Packing Group</b>	II
<b>Marine Pollutant</b>	Yes

## Section 15: REGULATORY INFORMATION

**International Inventories**

A food, food additive, drug, cosmetic, or device, when manufactured, processed or distributed in commerce for use as a food, food additive, drug, cosmetic, or device may not be subject to local notification requirements. Check local regulations for more information.

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

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

## Section 16: OTHER INFORMATION

**Prepared By:**

FMC Corporation

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**Revision note**

Initial Release.

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**End of Safety Data Sheet**