

SAFETY DATA SHEET
MARSHAL 25 STD INSECTICIDE

SDS # : 0305-A
Revision date: 2018-02-19
Format: NA
Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name MARSHAL 25 STD INSECTICIDE

Other means of identification

Product Code(s) 0305-A

Synonyms CARBOSULFAN (FMC 35001): 2,3-dihydro-2,2-dimethyl-7-benzofuranyl [(dibutylamino)thio]methylcarbamate (CAS name); 2,3-dihydro-2,2-dimethylbenzofuran-7-yl (dibutylaminothio)methylcarbamate (IUPAC name)

Active Ingredient(s) Carbosulfan

Chemical Family Carbamate Pesticide

Alternate Commercial Name Eltra™; Marshal® 250 DS; Posse® 25 ST(D); Marshal 25 DS

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 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 2

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

H301 - Toxic if swallowed
H330 - Fatal if inhaled
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure



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
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment

Precautionary Statements - Response

P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor
P321 - Specific treatment (see supplemental first aid instructions on label)
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
P330 - Rinse mouth
P391 - Collect spillage

Precautionary Statements - Storage

P405 - Store locked up

Precautionary Statements - Disposal

P501 - Dispose of contents/container according to label directions

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 %
Carbosulfan	55285-14-8	25
Diethylene glycol	111-46-6	1-5

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact	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.
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 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.
Indication of immediate medical attention and special treatment needed, if necessary	This product contains a reversible cholinesterase inhibitor. Atropine sulfate is antidotal. 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	Foam. Carbon dioxide (CO ₂). Dry chemical. Soft stream or water fog only if necessary.
Specific Hazards Arising from the Chemical	Thermal decomposition can lead to release of irritating and toxic gases and vapors. Finely dispersed particles can form explosive mixtures in air.
Explosion data	
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.
Protective equipment and precautions for firefighters	Isolate fire area. Evaluate downwind. Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Remove all sources of ignition. 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. Keep out of waterways.
Methods for Containment	Use a wet sweeping compound or water to prevent dust formation.
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	None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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.
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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	Protective gloves
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	Red
Odor	Phenolic
Odor threshold	No information available
pH	7-9 (1% solution) @25°C
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	19 - 23 lb/cu ft
Specific gravity	No information available

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	Contact with aqueous acids may produce carbofuran.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks
Incompatible materials	None known.
Hazardous Decomposition Products	Burning produces obnoxious and toxic fumes: Carbon oxides (COx), sulfur oxides, nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	107 mg/kg (rat)
LD50 Dermal	> 2,000 mg/kg (rat)
LC50 Inhalation	0.1 mg/L 4 hr (rat)

Serious eye damage/eye irritation	Minimally irritating.
Skin corrosion/irritation	Non-irritating.
Sensitization	Non-sensitizing

Information on toxicological effects

Symptoms	No information available.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Effects are expected to be similar to those that are seen with acute toxicity.
Mutagenicity	Carbosulfan: Did not show mutagenic effects in animal experiments.
Carcinogenicity	Carbosulfan: Did not show carcinogenic effects in animal experiments. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH).
Neurological effects	Carbosulfan: Chronic exposure of laboratory animals has caused decreased cholinesterase activity (erythrocyte, plasma, and/or brain).
Reproductive toxicity	Carbosulfan: No toxicity to reproduction in animal studies.
Developmental toxicity	Carbosulfan: Not teratogenic in animal studies.
STOT - single exposure	May cause 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	Central Nervous System (CNS), kidney, Liver, Respiratory System, Gastrointestinal tract (GI).
Neurological effects	Carbosulfan: 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
Carbosulfan 55285-14-8		Group 2A		

Legend:

IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

Carbosulfan (55285-14-8)				
Active Ingredient(s)	Duration	Species	Value	Units
Carbosulfan	48 h EC50	Crustacea	1.5	µg/L
	72 h EC50	Algae	47	mg/L
	96 h LC50	Fish	0.015	mg/L
	21 d NOEC	Crustacea	3.2	µg/L
	21 d NOEC	Fish	3.0	µg/L

Persistence and degradability

Carbosulfan: Non-persistent. Readily hydrolyzed. Not readily biodegradable.

Bioaccumulation

Carbosulfan: The substance has a potential for bioconcentration.

Mobility

Carbosulfan: Slightly mobile; not 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
Hazard class	6.1
Packing Group	II
Marine Pollutant	Carbosulfan.
Description	UN2757, Carbamate pesticide, solid, toxic (Carbosulfan), 6.1, PG II, Marine Pollutant, RQ

TDG

The "Marine Pollutant" marking is only applicable when shipped by vessel, and is not applicable when shipped only by road or rail in Canada.

UN/ID no	UN2757
Hazard class	6.1
Packing Group	II
Marine Pollutant	Carbosulfan.
Description	UN2757, Carbamate pesticide, solid, toxic (Carbosulfan), 6.1, PG II, Marine Pollutant

ICAO/IATA

UN/ID no	UN2757
Hazard class	6.1
Packing Group	II
Special Provisions	Mark: Carbamate pesticide, solid, toxic (carbosulfan), UN 2757

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UN/ID no	UN2757
Hazard class	6.1
Packing Group	II
EmS No.	F-A, S-A
Marine Pollutant	Carbosulfan
Description	UN2757, Carbamate pesticide, solid, toxic (Carbosulfan), 6.1, PG 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:

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):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Carbosulfan 55285-14-8	1000 lb 454 kg	

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
Carbosulfan 55285-14-8	X		
Diethylene glycol			X

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111-46-6			
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International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Carbosulfan 55285-14-8			X			X		
Diethylene glycol 111-46-6	X	X	X	X	X	X	X	X

Mexico - Grade

Severe risk, Grade 4

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

D1B - Toxic materials
D2A - Very toxic materials
D2B - Toxic materials

**16. OTHER INFORMATION**

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

Revision date: 2018-02-19
Reason for revision: (M)SDS sections updated

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End of Safety Data Sheet