MARSHAL 25 ST



Version **Revision Date:** SDS Number: Date of last issue: -

2022/01/10 50000359 Date of first issue: 2022/01/10 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

Product name MARSHAL 25 ST

Other means of identification MARSHAL 25 STD

> Carbosulfan 25 wt% DS MARSHAL 25 DS

Recommended use of the chemical and restrictions on use

Recommended use : Can be used as insecticide only.

Restrictions on use Use as recommended by the label.

Manufacturer or supplier's details

Company FMC Agro Philippines, Inc.

Address 5th Avenue cor. 26th Street,

Bonifacio Global City, Taguig City NCR 1634

Telephone +63279443400

National Poison Control Cen-

U.P. PGH, Padre Faura, Manila (+63) 2 8524 1078 East Avenue, Quezon City (+63) 2 8928 0611 Southern Philippines Medical Center (+63) 82 227 2731

(formerly Davao Medical Center Davao City)

Emergency telephone For leak, fire, spill or accident emergencies, call:

+(63) 2-395-3308 (CHEMTREC)

Medical emergency:

All other countries: +1 651 / 632-6793 (Collect)

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) Category 3

Acute toxicity (Inhalation) Category 2

Specific target organ toxicity - :

single exposure

Category 1 (Nervous system, Bladder, Gastro-intestinal sys-

tem, Blood)

Specific target organ toxicity -

repeated exposure

Category 1 (Nervous system, Bladder, Gastro-intestinal sys-

tem, Blood)

Short-term (acute) aquatic Category 1

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hazard

Long-term (chronic) aquatic

hazard

Category 1

GHS label elements

Hazard pictograms







Signal Word : Danger

Hazard Statements : H301 Toxic if swallowed.

H330 Fatal if inhaled.

H370 Causes damage to organs (Nervous system, Bladder,

Gastro-intestinal system, Blood).

H372 Causes damage to organs (Nervous system, Bladder, Gastro-intestinal system, Blood) through prolonged or repeated

exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P260 Do not breathe dust.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment. P284 Wear respiratory protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a

POISON CENTER/ doctor. Rinse mouth.

P304 + P340 + P310 IF INHALED: Remove person to fresh air

and keep comfortable for breathing. Immediately call a

POISON CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor. P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container

tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Other hazards which do not result in classification

Dust can form an explosive mixture in air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
carbosulfan (ISO)	55285-14-8	>= 25 -< 30
C.I. Basic Violet 1	8004-87-3	>= 1 -< 2.5

4. FIRST AID MEASURES

General advice : Move out of dangerous area.

Consult a physician.

Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later.

Do not leave the victim unattended.

If inhaled : Call a physician or poison control center immediately.

If unconscious, place in recovery position and seek medical

advice.

In case of skin contact : If skin irritation persists, call a physician.

If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution.

Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.

Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician. Take victim immediately to hospital.

Most important symptoms and effects, both acute and

delayed

Toxic if swallowed. Fatal if inhaled.

Causes damage to organs.

Causes damage to organs through prolonged or repeated

exposure.

Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO2)

Dry chemical

Foam

Unsuitable extinguishing

media

High volume water jet

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Specific hazards during fire

fighting

Do not allow run-off from fire fighting to enter drains or water

courses.

Hazardous combustion prod-

ucts

Carbon oxides Sulfur oxides

Nitrogen oxides (NOx)

Specific extinguishing meth-

ods

Collect contaminated fire extinguishing water separately. This

must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

Special protective equipment :

for fire-fighters

Wear self-contained breathing apparatus for firefighting if nec-

essary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- :

tive equipment and emer-

gency procedures

Use personal protective equipment.

Avoid dust formation. Avoid breathing dust.

Ensure adequate ventilation.

Evacuate personnel to safe areas.

Environmental precautions : Pr

Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform

respective authorities.

Methods and materials for

containment and cleaning up

Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against

fire and explosion

Avoid dust formation.

Provide appropriate exhaust ventilation at places where dust

is formed.

Advice on safe handling : Avoid formation of respirable particles.

Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national

regulations.

Conditions for safe storage : Pre

Prevent unauthorized access.

Keep container tightly closed in a dry and well-ventilated

place.

Containers which are opened must be carefully resealed and

kept upright to prevent leakage.

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Observe label precautions.

Electrical installations / working materials must comply with

the technological safety standards.

Further information on stor-

age stability

Keep in a dry place.

No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust

ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Particulates type

Hand protection

Material : Wear chemical resistant gloves, such as barrier laminate,

butyl rubber or nitrile rubber.

Remarks : The suitability for a specific workplace should be discussed

with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water

Tightly fitting safety goggles

Skin and body protection : Dust impervious protective suit

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Avoid contact with skin, eyes and clothing.

When using do not eat or drink. When using do not smoke.

Wash hands before breaks and immediately after handling

the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Color : purple

Odor : phenol-like

pH : 7 - 9 (25 °C)

Concentration: 10 g/l

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Melting point/range : No data available

Boiling point/boiling range : Not applicable

Self-ignition : No data available

Vapor pressure : Not applicable

Density : 19 - 23 lb/scf

Solubility(ies)

Water solubility : Not applicable

Partition coefficient: n-

octanol/water

log Pow: 3.32

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reac-

tions

No decomposition if stored and applied as directed.

Dust may form explosive mixture in air.

Conditions to avoid : Exposure to moisture.

Protect from frost, heat and sunlight.

Incompatible materials : Contact with water or humid air

Incompatible with strong bases and oxidizing agents.

Hazardous decomposition

products

Contact with aqueous acids may produce carbofuran.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Toxic if swallowed. Fatal if inhaled.

Product:

Acute oral toxicity : LD50 (Rat): 147 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 0.14 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

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Components:

carbosulfan (ISO):

Acute oral toxicity : LD50 (Rat, female): 185 mg/kg

Acute inhalation toxicity : LC50 (Rat, female): 0.15 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

C.I. Basic Violet 1:

Acute oral toxicity : LD50 (Rat): 413 mg/kg

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit

Result : No skin irritation

Components:

carbosulfan (ISO):

Species : Rabbit

Result : slight irritation

C.I. Basic Violet 1:

Species : Rabbit Result : Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species : Rabbit

Result : No eye irritation

Components:

carbosulfan (ISO):

Species : Rabbit

Result : slight irritation

C.I. Basic Violet 1:

Species : Rabbit Result : Eye irritation

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Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Routes of exposure : Skin contact Species : Guinea pig

Result : Does not cause skin sensitization.

Components:

carbosulfan (ISO):

Test Type : Buehler Test Species : Guinea pig

Method : OECD Test Guideline 406
Result : Not a skin sensitizer.

C.I. Basic Violet 1:

Remarks : No data available

Germ cell mutagenicity

Not classified based on available information.

Components:

carbosulfan (ISO):

Genotoxicity in vitro : Test Type: reverse mutation assay

Test system: Salmonella typhimurium

Result: negative

Test Type: reverse mutation assay Test system: Escherichia coli

Result: negative

Test Type: gene mutation test Test system: Chinese hamster cells

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster cells

Result: negative

Genotoxicity in vivo : Test Type: chromosome aberration assay

Species: mice Result: negative

C.I. Basic Violet 1:

Genotoxicity in vitro : Remarks: No data available

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Genotoxicity in vivo : Remarks: No data available

Carcinogenicity

Not classified based on available information.

Components:

carbosulfan (ISO):

Species : Mouse Exposure time : 2 Years

NOAEL : 2.5 mg/kg bw/day

Result : negative

Species : Rat Exposure time : 2 Years

NOAEL : 1 mg/kg bw/day

Result : negative

Carcinogenicity - Assess-

ment

: Weight of evidence does not support classification as a car-

cinogen

C.I. Basic Violet 1:

Remarks : No data available

Reproductive toxicity

Not classified based on available information.

Components:

carbosulfan (ISO):

Effects on fertility : Test Type: Three-generation study

Species: Rat

Application Route: Oral

General Toxicity Parent: NOAEL: 1.2 mg/kg bw/day

Fertility: NOAEL: 1.2 mg/kg bw/day

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: Oral

General Toxicity Maternal: NOAEL: 2 mg/kg bw/day

Developmental Toxicity: NOAEL: 2

Result: negative

Test Type: Embryo-fetal development

Species: Rabbit Application Route: Oral

General Toxicity Maternal: NOAEL: 5 mg/kg bw/day

Developmental Toxicity: NOAEL: 10

Result: negative

Reproductive toxicity - As-

sessment

Weight of evidence does not support classification for repro-

ductive toxicity

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C.I. Basic Violet 1:

Effects on fertility : Remarks: No data available

Effects on fetal development : Remarks: No data available

STOT-single exposure

Causes damage to organs (Nervous system, Bladder, Gastro-intestinal system, Blood).

Components:

carbosulfan (ISO):

Target Organs : Nervous system, Bladder, Gastro-intestinal system, Blood
Assessment : The substance or mixture is classified as specific target organ

toxicant, single exposure, category 1.

STOT-repeated exposure

Causes damage to organs (Nervous system, Bladder, Gastro-intestinal system, Blood) through

prolonged or repeated exposure.

Components:

carbosulfan (ISO):

Target Organs : Nervous system, Bladder, Gastro-intestinal system, Blood
Assessment : The substance or mixture is classified as specific target organ

toxicant, repeated exposure, category 1.

Repeated dose toxicity

Components:

carbosulfan (ISO):

Species : Rat

NOAEL : 2 mg/kg bw/day

Application Route : Oral Exposure time : 90 days

Species : Dog

NOAEL : 1.6 mg/kg bw/day

Application Route : Oral Exposure time : 6 months

Aspiration toxicity

Not classified based on available information.

Components:

carbosulfan (ISO):

The substance does not have properties associated with aspiration hazard potential.

Further information

Product:

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Remarks : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

carbosulfan (ISO):

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.015 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.0015 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (microalgae)): > 20

mg/l

Exposure time: 96 h

M-Factor (Acute aquatic tox-

icity)

100

Toxicity to fish (Chronic tox-

icity)

: NOEC (Pimephales promelas (fathead minnow)): 0.00828

mg/l

Exposure time: 21 d

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0.0032 mg/l

Exposure time: 21 d

M-Factor (Chronic aquatic

toxicity)

10

Toxicity to terrestrial organ-

isms

(Apis mellifera (bees)): 1.035 µg/bee

Remarks: Oral

(Apis mellifera (bees)): 0.18 µg/bee

Remarks: Contact

LD50 (Anas platyrhynchos (Mallard duck)): 10 mg/kg

C.I. Basic Violet 1:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.047 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 420 mg/l

Exposure time: 48 h

Remarks: Toxic to aquatic organisms.

M-Factor (Acute aquatic tox-

icity)

10

M-Factor (Chronic aquatic : 10

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toxicity)

Persistence and degradability

Components:

carbosulfan (ISO):

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 28 % Exposure time: 28 d

Stability in water : Remarks: Hydrolyzes readily.

Bioaccumulative potential

Components:

carbosulfan (ISO):

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 990

Remarks: Can accumulate in aquatic organisms.

Partition coefficient: n-

octanol/water

log Pow: 7.42

C.I. Basic Violet 1:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-

octanol/water

Remarks: No data available

Mobility in soil

Components:

carbosulfan (ISO):

Distribution among environ-

mental compartments

Remarks: immobile

Other adverse effects

Product:

Additional ecological infor-

mation

An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water

courses or the soil.

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Do not contaminate ponds, waterways or ditches with chemi-

cal or used container.

Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

Dispose of as unused product. Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 2757

Proper shipping name : CARBAMATE PESTICIDE, SOLID, TOXIC

(Carbosulfan)

Class : 6.1 Packing group : II Labels : 6.1

IATA-DGR

UN/ID No. : UN 2757

Proper shipping name : Carbamate pesticide, solid, toxic

(Carbosulfan)

Class : 6.1
Packing group : II
Labels : Toxic
Packing instruction (cargo : 676

aircraft)

Packing instruction (passen: 669

ger aircraft)

Environmentally hazardous : yes

IMDG-Code

UN number : UN 2757

Proper shipping name : CARBAMATE PESTICIDE, SOLID, TOXIC

(Carbosulfan)

Class : 6.1
Packing group : II
Labels : 6.1
EmS Code : F-A, S-A
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Priority Chemical List (PCL) : Not applicable

Chemical Control Order (CCO) : Not applicable

The ingredients of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not

on the Canadian DSL nor NDSL.

2,3-DIHYDRO-2,2-DIMETHYLBENZOFURAN-7-YL (DIBUTYLAMINTHIO)METHYLCARBAMATE

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI: On the inventory, or in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI: Not in compliance with the inventory

16. OTHER INFORMATION

Date format : yyyy/mm/dd

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule;

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ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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