

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

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### 1. IDENTIFICATION

Product name : MARSHAL STAR®

Other means of identification : Carbosulfan 480 g/L EC Insecticide  
MARSHAL® 4 EC

#### Manufacturer or supplier's details

Company : FMC LATINOAMERICA S.A.

Address : (SUCURSAL BOLIVIA)  
EQUIPETROL, AV. SAN MARTÍN,  
EDIF. AMBASSADOR P-19,  
SANTA CRUZ – BOLIVIA  
+591 (3) 337-7474

E-mail address : SDS-Info@fmc.com

Emergency telephone : 1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : CALL 800-10-6966, JAPANESE UNIVERSITY HOSPITAL  
POISON INFORMATION CENTER. SANTA CRUZ-BOLIVIA.

#### Recommended use of the chemical and restrictions on use

Recommended use : Can be used as insecticide only.  
Insecticide

Restrictions on use : Use as recommended by the label.

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### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 4

Skin corrosion/irritation : Category 3

Serious eye damage/eye irritation : Category 2A

Skin sensitization : Sub-category 1B

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## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)

Specific target organ toxicity - repeated exposure : Category 1

Aspiration hazard : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

### GHS label elements

Hazard pictograms :

Signal Word : DANGER

Hazard Statements :

H226 Flammable liquid and vapor.  
H301 + H331 Toxic if swallowed or if inhaled.  
H304 May be fatal if swallowed and enters airways.  
H312 Harmful in contact with skin.  
H316 Causes mild skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H351 Suspected of causing cancer.  
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:**  
P203 Obtain, read and follow all safety instructions before use.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P260 Do not breathe mist or vapors.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or with adequate ventilation.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

### Response:

P301 + P316 + P330 IF SWALLOWED: Get emergency medical help immediately. Rinse mouth.  
P303 + P361 + P353 + P317 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Get medical help.  
P304 + P340 + P316 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P316 IF exposed or concerned: Get emergency medical help immediately.  
P331 Do NOT induce vomiting.  
P333 + P317 If skin irritation or rash occurs: Get medical help.  
P337 + P317 If eye irritation persists: Get medical help.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P391 Collect spillage.

### Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

### Disposal:

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

### Other hazards which do not result in classification

Hazard Statements required by Andean Technical Manual for the Registration and Control of Chemical Pesticides for Agricultural Use (Resolution no. 2075):  
Harmful in contact with skin.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

# SAFETY DATA SHEET

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## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

### Components

Chemical name	CAS-No.	Concentration (% w/w)
carbosulfan (ISO)	55285-14-8	>= 30 - < 50
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	>= 30 - < 50

### 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this material safety data sheet to the doctor in attendance.  
Symptoms of poisoning may appear several hours later.  
Do not leave the victim unattended.
- If inhaled : Consult a physician after significant exposure.  
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : If on clothes, remove clothes.  
Wash off with soap and water.  
If symptoms persist, call a physician.  
Wash contaminated clothing before re-use.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
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 or if inhaled.  
May be fatal if swallowed and enters airways.  
Harmful in contact with skin.  
Causes mild skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Suspected of causing cancer.  
Causes damage to organs.  
Causes damage to organs through prolonged or repeated exposure.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

Contains a cholinesterase inhibitor. Symptoms may include nausea, diarrhea, vomiting, decreased appetite, indigestion, muscle cramps, fatigue, insomnia, dizziness, headache, and lack of energy.

Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.

Notes to physician : Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.  
Carbon oxides  
Sulfur oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen cyanide

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Use a water spray to cool fully closed containers.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
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 : Firefighters should wear protective clothing and self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.  
Ensure adequate ventilation.  
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.  
Evacuate personnel to safe areas.  
Use personal protective equipment.  
If it can be safely done, stop the leak.  
Do not touch or walk through the spilled material.

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use.  
Collect as much of the spill as possible with a suitable absorbent material.  
Pick up and transfer to properly labeled containers.  
Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.  
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).  
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapors/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Take precautionary measures against static discharges.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Open drum carefully as content may be under pressure.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : No smoking.  
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.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type	Control parame-	Basis
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# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version 1.0      Revision Date: 10.02.2025      SDS Number: 50000358      Date of last issue: -  
Date of first issue: 10.02.2025

		(Form of exposure)	ters / Permissible concentration	
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH

### Personal protective equipment

- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
- 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 : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Protective measures : Plan first aid action before beginning work with this product.
- 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.  
Contaminated work clothing should not be allowed out of the workplace.  
Remove and wash contaminated clothing and gloves, including the inside, before re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : liquid
- Color : brown
- Odor : hydrocarbon-like
- Odor Threshold : No data available
- pH : No data available
- Melting point/freezing point : No data available

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

Initial boiling point and boiling range : No data available

Flash point : 46 - 48 °C  
Method: closed cup

Evaporation rate : No data available

Flammability (liquids) : Flammable

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 0,992 g/cm<sup>3</sup>

Solubility(ies)  
Water solubility : emulsifiable

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

Molecular weight : Not applicable

Particle size : No data available



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according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

### 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 reactions	:	Vapors may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks. Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Toxic if swallowed or if inhaled.  
Harmful in contact with skin.

#### Product:

Acute oral toxicity	:	LD50(Rat): 69 mg/kg
Acute inhalation toxicity	:	LC50(Rat): 0,5375 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Estimated data  LC50(Rat): 2,15 mg/l Exposure time: 1 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50(Rabbit): > 2.900 mg/kg  Assessment: The component/mixture is moderately toxic after single contact with skin. Remarks: Resolution no. 2075

#### 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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Acute oral toxicity : LD50 (Rat, female): 3.492 mg/kg  
Method: OECD Test Guideline 401

LD50 (Rat, male): 6.984 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 6,193 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3.160 mg/kg  
Assessment: The component/mixture is minimally toxic after single contact with skin.

### **Skin corrosion/irritation**

Causes mild skin irritation.

#### **Product:**

Result : slight irritation

#### **Components:**

##### **carbosulfan (ISO):**

Species : Rabbit  
Result : slight irritation

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Mild skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

#### **Product:**

Result : Irritation to eyes, reversing within 21 days

#### **Components:**

##### **carbosulfan (ISO):**

Species : Rabbit  
Result : slight irritation

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Species	:	Rabbit
Result	:	No eye irritation

### **Respiratory or skin sensitization**

#### **Skin sensitization**

May cause an allergic skin reaction.

#### **Respiratory sensitization**

Based on available data, the classification criteria are not met.

#### **Product:**

Result	:	Probability or evidence of low to moderate skin sensitization rate in humans
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Remarks	:	Causes sensitization.
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#### **Components:**

##### **carbosulfan (ISO):**

Test Type	:	Buehler Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

### **Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

#### **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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

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

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Genotoxicity in vitro : Test Type: in vitro DNA damage and/or repair study  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: reverse mutation assay  
Metabolic activation: with and without metabolic activation  
Result: negative

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration.  
Species: Rat (male and female)  
Application Route: Inhalation  
Result: negative

### **Carcinogenicity**

Suspected of causing cancer.

#### **Product:**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

#### **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 - Assessment : Weight of evidence does not support classification as a carcinogen

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

### Reproductive toxicity

Based on available data, the classification criteria are not met.

#### 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 - Assessment	: Weight of evidence does not support classification for reproductive toxicity

##### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Effects on fertility	: Test Type: Three-generation study Species: Rat Application Route: inhalation (vapor) Fertility: NOAEC Mating/Fertility: 7,5 mg/l Result: negative Remarks: Based on data from similar materials
Effects on fetal development	: Species: Mouse Application Route: inhalation (vapor) General Toxicity Maternal: LOAEC: 500 part per million Symptoms: Maternal effects.

### STOT-single exposure

May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Causes damage to organs.

#### Product:

Assessment	: The substance or mixture is classified as specific target organ toxicant, single exposure, category 1.
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# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

### 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.

#### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Assessment	:	May cause respiratory irritation., May cause drowsiness or dizziness.
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### **STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

### Product:

Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.
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### 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.

#### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
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### **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

#### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Species	:	Rat, male and female
NOAEC	:	0,8 - 0,9 mg/l
Application Route	:	Inhalation
Test atmosphere	:	vapor

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

Remarks : Based on data from similar materials

Species : Rat, male  
NOAEL : 600 mg/kg  
Application Route : Oral  
Remarks : Based on data from similar materials

### Aspiration toxicity

May be fatal if swallowed and enters airways.

#### Product:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

#### Components:

##### **carbosulfan (ISO):**

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

##### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

May be fatal if swallowed and enters airways.

### Further information

#### Product:

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.  
Concentrations substantially above the TLV value may cause narcotic effects.  
Solvents may degrease the skin.

## 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 toxicity) : 100

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

Toxicity to fish (Chronic toxicity) : NOEC: 0,00828 mg/l  
Exposure time: 21 d  
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0032 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to terrestrial organisms : 1,035 µg/bee  
Species: Apis mellifera (bees)  
Remarks: Oral

0,18 µg/bee  
Species: Apis mellifera (bees)  
Remarks: Contact

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

### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 4,5 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

LL50 (Pimephales promelas (fathead minnow)): 8,2 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4,5 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3,1 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 15,41 mg/l  
Exposure time: 40 h  
Test Type: Growth inhibition  
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models



# SAFETY DATA SHEET

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## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

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(CAESAR models), etc.

Toxicity to fish (Chronic toxicity) : NOELR: 2,6 mg/l  
Exposure time: 14 d  
Species: Pimephales promelas (fathead minnow)  
Method: OECD Test Guideline 204  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 2,6 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

### Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

### Persistence and degradability

#### Components:

##### **carbosulfan (ISO):**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 28 %  
Exposure time: 28 d

Stability in water : Remarks: Hydrolyzes readily.

##### **Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Biodegradability : Concentration: 49,2 mg/l  
Result: Inherently biodegradable.  
Biodegradation: 77,05 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

### Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: No data available

#### Components:

##### **carbosulfan (ISO):**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 990  
Remarks: Can accumulate in aquatic organisms.

Partition coefficient: n-octanol/water : log Pow: 5,37  
pH: 8

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

Method: OECD Test Guideline 107

### Mobility in soil

#### Components:

##### **carbosulfan (ISO):**

Distribution among environmental compartments : Remarks: Slightly mobile in soils

Stability in soil :

### Other adverse effects

#### Product:

Additional ecological information : 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.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : It is prohibited to reuse, bury, burn, or sell containers. Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommended volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, puncture the container on its base without damaging the label. In all cases, take the empty containers to collection points indicated by the local empty containers program.

## 14. TRANSPORT INFORMATION

### International Regulations

UNRTDG

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

UN number : UN 2991  
Proper shipping name : CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE  
(Carbosulfan, Solvent naphtha (petroleum), light aromatic)

Class : 6.1  
Subsidiary risk : 3  
Packing group : III  
Labels : 6.1 (3)  
Environmentally hazardous : yes

### IATA-DGR

UN/ID No. : UN 2991  
Proper shipping name : CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE  
(Carbosulfan, Solvent naphtha (petroleum), light aromatic)

Class : 6.1  
Subsidiary risk : 3  
Packing group : III  
Labels : Toxic, Flammable Liquids  
Packing instruction (cargo aircraft) : 663  
Packing instruction (passenger aircraft) : 655  
Environmentally hazardous : yes

### IMDG-Code

UN number : UN 2991  
Proper shipping name : CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE  
(Carbosulfan, Solvent naphtha (petroleum), light aromatic)

Class : 6.1  
Subsidiary risk : 3  
Packing group : III  
Labels : 6.1 (3)  
EmS Code : F-E, S-D  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

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.

## 15. REGULATORY INFORMATION

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

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

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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.02.2025	50000358	Date of first issue: 10.02.2025

---

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.  carbosulfan (ISO)
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

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### 16. OTHER INFORMATION

Revision Date	:	10.02.2025
Date format	:	dd.mm.yyyy

#### Further information

# SAFETY DATA SHEET

according to the Globally Harmonized System



## MARSHAL STAR®

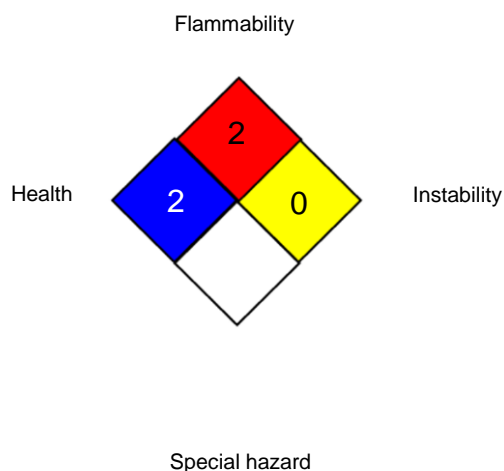
Version  
1.0

Revision Date:  
10.02.2025

SDS Number:  
50000358

Date of last issue: -  
Date of first issue: 10.02.2025

### NFPA:



### HMIS® IV:

HEALTH	*	4
FLAMMABILITY		2
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

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; 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 Sub-

# SAFETY DATA SHEET

according to the Globally Harmonized System



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---

stances 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

### Disclaimer

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