# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

#### **SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : MARSHAL STAR®

Manufacturer or supplier's details

Company : FMC QUÍMICA DO BRASIL LTDA.

Address : AVENIDA DR. JOSÉ BONIFÁCIO

COUTINHO NOGUEIRA 150 - 1º ANDAR - JARDIM MADALENA,

CAMPINAS SP BRASIL TELEFONE: (19) 2042.4500

Emergency telephone : Brazil: 0800 34 35 450 (24 hours)

+55-2139581449 (CHEMTREC)

Medical Emergency Number : 0800 7010 450

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.

#### **SECTION 2. HAZARDS IDENTIFICATION**

GHS Classification in accordance with ABNT NBR 14725 Standard

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 2

Acute toxicity (Dermal) : Category 5

Skin sensitization : Category 1

Specific target organ toxicity -

single exposure

Category 2 (Gastrointestinal tract, Stomach, Bladder)

Specific target organ toxicity - :

repeated exposure

Category 2 (Central nervous system)

Aspiration hazard : Category 1

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1

# MARSHAL STAR®



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

10.07.2025 50000000 Date of first issue: 12.12.2017 4.0

#### GHS label elements in accordance with ABNT NBR 14725 Standard

Hazard pictograms









Signal Word **DANGER** 

H226 Flammable liquid and vapor. **Hazard Statements** 

H300 Fatal if swallowed.

H304 May be fatal if swallowed and enters airways.

H313 May be harmful in contact with skin. H317 May cause an allergic skin reaction.

H371 May cause damage to organs (Gastrointestinal tract,

Stomach, Bladder).

H373 May cause damage to organs (Central nervous system)

through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

#### **Precautionary Statements**

#### Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces.

No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/

equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe mist or vapors. P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

# Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a

POISON CENTER/ doctor. Rinse mouth.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

P333 + P313 If skin irritation or rash occurs: Get medical ad-

vice/ attention.

P362 + P364 Take off contaminated clothing and wash it before

P370 + P378 In case of fire: Use dry sand, dry chemical or

alcohol-resistant foam to extinguish.

P391 Collect spillage.

#### Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Other hazards which do not result in classification

None known.

#### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
carbosulfan (ISO)	55285-14-8	Acute Tox. (Oral), 3 Acute Tox. (Inhalation), 2 Acute Tox. (Dermal), 5 STOT SE, (Nervous system, Bladder, Gastro-intestinal system, Blood), 1 STOT RE, (Nervous system, Bladder, Gastro-intestinal system, Blood), 1 Aquatic Acute, 1 Aquatic Chronic, 1	>= 70 -< 90
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	Flam. Liq., 3 Acute Tox. (Oral), 5 Acute Tox. (Inhalation), 4 Acute Tox. (Dermal), 5 Skin corrosion/irritation, 2 Serious eye damage/eye irritation, 2A Carc., 2 STOT SE, (Respiratory system, Central nervous system), 3 Asp. Tox., 1 Aquatic Acute, 2 Aquatic Chronic, 2	>= 10 -< 20
calcium dodecylbenzenesul- phonate (alternate CAS 68584-23-6)	26264-06-2	Acute Tox. (Oral), 4 Skin corro- sion/irritation, 2 Serious eye dam- age/eye irritation, 1 Aquatic Acute, 2	>= 3 -< 5

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

2-methylpropan-1-ol	78-83-1	Flam. Liq., 3 Acute Tox. (Oral), 5 Acute Tox. (Dermal), 5 Skin corrosion/irritation, 2 Serious eye damage/eye irritation, 1 STOT SE, (Respiratory system, Central nervous system), 3	>= 1 -< 3
---------------------	---------	--	-----------

#### **SECTION 4. FIRST AID MEASURES**

General advice : Move out of dangerous area.

Consult a physician.

Show this material safety data sheet to the doctor in attend-

ance.

Symptoms of poisoning may appear several hours later.

Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical

advice.

If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.

If on clothes, remove clothes.

If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

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 : 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

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

lack of energy.

Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing.

Fatal if swallowed.

May be fatal if swallowed and enters airways.

May be harmful in contact with skin. May cause an allergic skin reaction.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

May cause damage to organs.

May cause damage to organs through prolonged or repeated

exposure.

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

Notes to physician : Treat symptomatically.

#### **SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media : Dry chemical, CO2, 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 prod-

ucts

Fire may produce irritating, corrosive and/or toxic gases.

Carbon oxides Sulfur oxides

Nitrogen oxides (NOx) Hydrogen cyanide

Specific extinguishing meth-

ods

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 cir-

cumstances 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.

#### **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emer-

gency procedures

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 further leakage or spillage if safe to do so.

Prevent product from entering drains.

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 absor-

bent material.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal.

#### **SECTION 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 ap-

plication 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.

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

Do not inhale aerosol.

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

Wash hands before breaks and at the end of workday.

Conditions for safe storage : Prevent unauthorized access.

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 stor-

age stability

No decomposition if stored and applied as directed.

#### **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### Ingredients with workplace control parameters

Cor	mponents	CAS-No.	Value type	Control parame-	Basis
			(Form of	ters / Permissible	
			exposure)	concentration	

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

Solvent naphtha (petroleum), light arom.; Low boiling point	64742-95-6	TWA	200 mg/m3 (total hydrocarbon	ACGIH
naphtha -unspecified			vapor)	
2-methylpropan-1-ol	78-83-1	LT	40 ppm	BR OEL
			115 mg/m3	
		Further information: Degree of harmfulness: me-		
		dium		
		TWA	50 ppm	ACGIH

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an

approved filter.

Hand protection

Material : Protective gloves

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.

#### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state : liquid

Form : viscous liquid

Color : dark brown

Odor : solvent, petrol-like

Odor Threshold : No data available

pH : 8,54 (20 °C)

Melting point/ range : No data available

Boiling point/boiling range : No data available

Flash point : 50 °C

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

Evaporation rate : No data available

Flammability (liquids) : Sustains combustion

Self-ignition : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : < 0,000001 mmHg

Relative vapor density : No data available

Relative density : No data available

Density : 1,02 g/cm3

No data available

Solubility(ies)

Water solubility : Miscible

Solubility in other solvents : Solvent: Acetone

Description: completely miscible

Solvent: dichloromethane

Description: completely miscible

Solvent: hexane

Description: completely miscible

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 68,5 mPa.s ( 20 °C)

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

Molecular weight : Not applicable

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

#### **SECTION 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

Vapors may form explosive mixture with air.

No decomposition if stored and applied as directed.

Conditions to avoid : Avoid extreme temperatures.

Avoid formation of aerosol. Heat, flames and sparks.

Incompatible materials : Avoid strong acids, bases, and oxidizers.

#### **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of : Skin contact

exposure

**Acute toxicity** 

Fatal if swallowed.

May be harmful in contact with skin.

**Product:** 

Acute oral toxicity : LD50 Oral (Rat, female): 5 - 50 mg/kg

Method: OECD Test Guideline 423

Assessment: The component/mixture is highly toxic after sin-

gle ingestion.

Acute inhalation toxicity : Remarks: The product has a low vapor pressure, and inhala-

tion is not expected to be a relevant route of exposure.

Acute dermal toxicity : LD50 Dermal (Rabbit, male and female): > 2.000 mg/kg

Method: OECD Test Guideline 402

Assessment: The component/mixture is minimally toxic after

single contact with skin.

**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

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

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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 inhala-

tion toxicity

Remarks: no mortality

Assessment: The component/mixture is moderately toxic after

short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3.160 mg/kg

Assessment: The component/mixture is minimally toxic after

single contact with skin.

calcium dodecylbenzenesulphonate:

Acute oral toxicity : LD50 (Rat, male and female): 1.300 mg/kg

Remarks: Based on data from similar materials

Acute inhalation toxicity : Remarks: Not classified

Acute dermal toxicity : LD50 (Rat, male and female): > 2000 milligram per kilogram

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: Based on data from similar materials

2-methylpropan-1-ol:

Acute oral toxicity : LD50 (Rat): 3.350 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 18,18 mg/l

Exposure time: 6 h Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rabbit): 2.460 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit

Assessment : Not classified as irritant
Method : OECD Test Guideline 404

Result : slight irritation

**Components:** 

carbosulfan (ISO):





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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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

Assessment : Irritating to skin.

calcium dodecylbenzenesulphonate:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

2-methylpropan-1-ol:

Species : Rabbit Result : Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

**Product:** 

Species : Rabbit

Result : slight irritation

Assessment : Not classified as irritant
Method : OECD Test Guideline 405

**Components:** 

carbosulfan (ISO):

Species : Rabbit Result : slight irritation

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

Species : Rabbit

Result : No eye irritation

Assessment : Irritating to eyes.

calcium dodecylbenzenesulphonate:

Species : Rabbit

Result : Irreversible effects on the eye Method : OECD Test Guideline 405

Remarks : Based on data from similar materials

Species : Rabbit

Result : Irreversible effects on the eye Method : OECD Test Guideline 405

# MARSHAL STAR®



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

10.07.2025 50000000 Date of first issue: 12.12.2017 4.0

2-methylpropan-1-ol:

**Species** Rabbit

Result Irreversible effects on the eye

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

**Components:** 

carbosulfan (ISO):

**Buehler Test** Test Type **Species** Guinea pig

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

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

**Maximization Test** Test Type Routes of exposure Skin contact Species Guinea pig

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

calcium dodecylbenzenesulphonate:

Test Type **Maximization Test** 

Species Guinea pig

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

Remarks Based on data from similar materials

2-methylpropan-1-ol:

Routes of exposure Skin contact

Not a skin sensitizer. Result

Germ cell mutagenicity

Not classified based on available information.

**Product:** 

Genotoxicity in vitro Test Type: Ames test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo Test Type: Micronucleus test

Species: mice

Method: OECD Test Guideline 474

Result: negative

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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

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

calcium dodecylbenzenesulphonate:

Genotoxicity in vitro : Test Type: reverse mutation assay

Method: OECD Test Guideline 471

Result: negative

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: chromosome aberration assay

Species: Rat (male and female)

Application Route: Oral Exposure time: 90 d Result: negative

Remarks: Based on data from similar materials

Germ cell mutagenicity -

Assessment

Weight of evidence does not support classification as a germ

cell mutagen.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

2-methylpropan-1-ol:

Genotoxicity in vitro : Result: negative

Genotoxicity in vivo : Result: negative

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-

Weight of evidence does not support classification as a car-

ment cinogen

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

Carcinogenicity - Assess-

ment

: Limited evidence of carcinogenicity in animal studies

calcium dodecylbenzenesulphonate:

Species : Rat, male and female

Application Route : Oral Exposure time : 720 d

NOAEL : 250 mg/kg body weight

Result : negative

Remarks : Based on data from similar materials

Carcinogenicity - Assess-

Weight of evidence does not support classification as a car-

ment cinogen

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

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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

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.

calcium dodecylbenzenesulphonate:

Effects on fertility : Test Type: Fertility/early embryonic development

Species: Rat, male and female Application Route: Ingestion

General Toxicity Parent: NOAEL: 400 mg/kg body weight

Method: OECD Test Guideline 422

Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study

Species: Rat

Application Route: Ingestion

General Toxicity Maternal: NOAEL: 300 mg/kg body weight Developmental Toxicity: NOAEL: 600 mg/kg body weight

Method: OECD Test Guideline 422

Result: negative

Reproductive toxicity - As-

sessment

Weight of evidence does not support classification for repro-

ductive toxicity

2-methylpropan-1-ol:

Effects on fertility : Species: Rat

**Application Route: Inhalation** 

Fertility: NOAEC Mating/Fertility: 7,5 mg/l

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

#### STOT-single exposure

May cause damage to organs (Gastrointestinal tract, Stomach, Bladder).

#### **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.

2-methylpropan-1-ol:

Assessment : May cause respiratory irritation.

May cause drowsiness or dizziness.

#### STOT-repeated exposure

May cause damage to organs (Central nervous system) 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.

#### 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.

# 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

# MARSHAL STAR®



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

10.07.2025 50000000 Date of first issue: 12.12.2017 4.0

Remarks Based on data from similar materials

**Species** Rat, male NOAEL 600 mg/kg

**Application Route** Oral

Based on data from similar materials Remarks

calcium dodecylbenzenesulphonate:

**Species** Rat, male and female

**NOAEL** 85 mg/kg LOAEL 145 mg/kg **Application Route** Oral Exposure time 9 Months

Based on data from similar materials Remarks

**Species** Rat, male LOAEL 286 mg/kg **Application Route** Skin contact 15 Days Exposure time

Remarks Based on data from similar materials

**Species** Rat, male and female **NOAEL** 100 mg/kg bw/day 200 mg/kg bw/day LOAEL Oral - gavage **Application Route** 28 - 54 Days Exposure time

Method **OECD Test Guideline 422** 

Based on data from similar materials Remarks

2-methylpropan-1-ol:

**Species** Rat

1450 mg/kg

Application Route Oral

**Species** Rat

7,5 mg/l

Application Route Inhalation

**Aspiration toxicity** 

May be fatal if swallowed and enters airways.

**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.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

#### **SECTION 12. ECOLOGICAL INFORMATION**

#### **Ecotoxicity**

**Product:** 

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 12,49 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia similis (Water flea)): < 0,01 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Selenastrum capricornutum (green algae)): 1.505 mg/l

Exposure time: 96 h

Toxicity to soil dwelling or-

ganisms

LC50 (Eisenia fetida (earthworms)): 134 mg/kg

Exposure time: 14 d

Remarks: No significant adverse effect on Nitrogen minerali-

zation.

No significant adverse effect on Carbon mineralization.

Toxicity to terrestrial organ-

isms

LD50 (Coturnix japonica (Japanese quail)): 24,82 mg/kg

Exposure time: 14 d

Method: OECD Test Guideline 223

LD50 (Apis mellifera (bees)): 0,11 µg/bee

Exposure time: 48 h

End point: Acute contact toxicity

**Ecotoxicology Assessment** 

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**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

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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

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 fish (Chronic tox-

icity)

NOELR (Pimephales promelas (fathead minnow)): 2,6 mg/l

Exposure time: 14 d

Method: OECD Test Guideline 204

Remarks: Based on data from similar materials

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOELR (Daphnia magna (Water flea)): 2,6 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

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

(CAESAR models), etc.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

**Ecotoxicology Assessment** 

Acute aquatic toxicity : Toxic to aquatic life.

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

calcium dodecylbenzenesulphonate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 10 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

LC50 (Pimephales promelas (fathead minnow)): 4,6 mg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3,5 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

NOEC (Pseudokirchneriella subcapitata (green algae)): 7,9

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

EC50 (Pseudokirchneriella subcapitata (green algae)): 65,4

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 1,65 mg/l

Exposure time: 21 d

Remarks: Based on data from similar materials

NOEC (Daphnia magna (Water flea)): 1,18 mg/l

Exposure time: 21 d

Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 500 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Toxicity to soil dwelling or-

ganisms

LC50 (Eisenia fetida (earthworms)): 1.000 mg/kg

Exposure time: 14 d

Method: OECD Test Guideline 207

Toxicity to terrestrial organ-

isms

LD50 (Colinus virginianus (Bobwhite quail)): 1.356 mg/kg

Exposure time: 14 d

Method: OECD Test Guideline 223

# **MARSHAL STAR®**



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

10.07.2025 50000000 Date of first issue: 12.12.2017 4.0

2-methylpropan-1-ol:

Toxicity to fish LC50: 1.430 mg/l

Exposure time: 4 d

Toxicity to daphnia and other :

aquatic invertebrates

EC50: 1.100 mg/l Exposure time: 48 h

Toxicity to daphnia and other :

aquatic invertebrates (Chronic toxicity)

NOEC: 20 mg/l Exposure time: 21 d

EC50 (Anabaena flos-aquae (cyanobacterium)): 593 - 1.799 Toxicity to microorganisms

ma/l

Exposure time: 72 h

IC50 (Natural microorganism): 1.000 mg/l

Exposure time: 16 h

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

calcium dodecylbenzenesulphonate:

Result: Readily biodegradable. Biodegradability

Method: OECD Test Guideline 301E

2-methylpropan-1-ol:

Biodegradability Result: Readily biodegradable.

Bioaccumulative potential

**Product:** 

: Remarks: No data available Bioaccumulation

**Components:** 

carbosulfan (ISO):

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 990

Remarks: Can accumulate in aquatic organisms.

Partition coefficient: n-

octanol/water

: log Pow: 5,37 pH: 8

Method: OECD Test Guideline 107

calcium dodecylbenzenesulphonate:

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 70,79

Method: QSAR

Partition coefficient: n-

octanol/water

log Pow: 4,77 (25 °C)

2-methylpropan-1-ol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <=

4).

Partition coefficient: n-

octanol/water

Pow: 10 (25 °C)

Mobility in soil

**Product:** 

Distribution among environ-

mental compartments

Remarks: Highly mobile in soils

**Components:** 

carbosulfan (ISO):

Distribution among environ-

mental compartments

: Remarks: Slightly mobile in soils

Stability in soil :

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.

**SECTION 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 chemi-

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

cal or used container.

Send to a licensed waste management company.

Contaminated packaging: It is prohibited to reuse, bury, burn or sell packaging.

Washable packaging: Triple wash packs of less than 20 liters and pressure wash packs of 20 liters or more. Triple Wash (Manual Wash): Completely empty the contents of the package into the sprayer tank, keeping it in an upright position for 30 seconds; Add clean water to the package up to ¼ of its volume; Cover the package well and shake it for 30 seconds; Pour the wash water into the spray tank; Do this operation three times; Make the plastic or metal packaging unusable by perforating the bottom.

Pressure wash: Fit the empty package in the appropriate place of the funnel installed on the sprayer; Activate the mechanism to release the water jet; Direct the water jet to all the inside walls of the package, for 30 seconds; Wash water must be transferred to the sprayer tank; Make the plastic or metal packaging unusable by perforating the bottom. In both procedures, puncture the container at its base without damaging the label. Within a period of up to one year from the date of purchase, the user must return the empty packaging, with lid, to the establishment where the product was purchased or to the place indicated on the invoice, issued at the time of purchase. Activate the mechanism to release the water jet. Direct the water jet to all the inside walls of the package, for 30 seconds. Wash water must be transferred to the sprayer tank. Make the plastic or metal packaging unusable by perforating the bottom.

Empty remaining contents.

Dispose of as unused product.

Do not re-use empty containers.

Do not burn, or use a cutting torch on, the empty drum.

#### **SECTION 14. TRANSPORT INFORMATION**

#### International Regulations

**UNRTDG** 

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 : II
Labels : 6.1 (3)
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 2991

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

Proper shipping name : Carbamate pesticide, liquid, toxic, flammable

(Carbosulfan, Solvent naphtha (petroleum), light

aromatic)

662

Class : 6.1
Subsidiary risk : 3
Packing group : II

Labels : Toxic, Flammable Liquids

Packing instruction (cargo

aircraft)

Packing instruction (passen- : 654

ger aircraft)

**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 : II
Labels : 6.1 (3)
EmS Code : F-E, S-D
Marine pollutant : yes

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

Not applicable for product as supplied.

#### **Domestic regulation**

**ANTT** 

UN number : UN 2991

Proper shipping name : CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE,

N.O.S, WITH PFG = OR > THAN 23° C

(Carbosulfan, Solvent naphtha (petroleum), light aromatic)

Class : 6.1
Subsidiary risk : 3
Packing group : II
Labels : 6.1 (3)
Hazard Identification Number : 63

#### 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.

#### **SECTION 15. REGULATORY INFORMATION**

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

Law No. 14,785 of December 27, 2023. Decree 4,074 of January 4, 2002 and its regulatory standards. ANTT Resolution No. 5,998/22 of November 3, 2022. This MSDS was prepared in accordance with the criteria of ABNT NBR 14725. The user is recommended to pay attention to local regulations.

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

National List of Carcinogenic Agents for Humans - (LINACH)

Brazil. List of chemicals controlled by the Federal Po-

lice

Solvent naphtha (petroleum), light

arom.; Low boiling point naphtha -

unspecified

2-methylpropan-1-ol

#### 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

#### **SECTION 16. OTHER INFORMATION**

Revision Date : 10.07.2025

Date format : dd.mm.yyyy

#### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
BR OEL : Brazil. NR 15 - Unhealthy activities and operations

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

BR OEL / LT : Up to 48 hours /week

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

# **MARSHAL STAR®**



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

4.0 10.07.2025 50000000 Date of first issue: 12.12.2017

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 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

#### **Disclaimer**

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. You can contact FMC Corporation to insure that this document is the most current available from FMC Corporation. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

BR / EN