

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CARBOSULFAN 200 G/L EC

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

Address : FMC Corporation
2929 WALNUT ST
PHILADELPHIA PA 19104
USA

Telephone : (215) 299-6000

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

Emergency telephone : For leak, fire, spill or accident emergencies, call:
0086-0532 8388 9090 (National Registration Center for Chemicals)

Medical emergency:
86 532 8388 9090

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	: liquid
Color	: yellowish-brown
Odor	: Non-irritating

Combustible liquid. Toxic if swallowed. May be fatal if swallowed and enters airways. May be harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. Fatal if inhaled. Suspected of causing cancer. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

GHS Classification

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 2

SAFETY DATA SHEET

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CARBOSULFAN 200 G/L EC

Version
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Acute toxicity (Dermal)	:	Category 5
Skin corrosion/irritation	:	Category 2
Serious eye damage/eye irritation	:	Category 2A
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 1
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	:	H227 Combustible liquid. H301 Toxic if swallowed. H304 May be fatal if swallowed and enters airways. H313 May be harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H330 Fatal if inhaled. 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: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. P260 Do not breathe mist or vapors.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
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Revision Date:
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SDS Number:
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Date of last issue: -
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- 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.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:

- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
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 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
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.

Physical and chemical hazards

Combustible liquid.

Health hazards

Toxic if swallowed. Fatal if inhaled. May be harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways.

Environmental hazards

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Other hazards which do not result in classification

None known.

SAFETY DATA SHEET

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SDS Number:
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
carbosulfan (ISO)	55285-14-8	>= 20 -<= 22.4
Solvent naphtha (petroleum), heavy arom.	64742-94-5	>= 50 -< 70
calcium dodecylbenzenesulphonate	26264-06-2	>= 1 -< 2.5
2-methylpropan-1-ol	78-83-1	>= 1 -< 3

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 : 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.
May be fatal if swallowed and enters airways.
May be harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
Fatal if inhaled.
Suspected of causing cancer.
Causes damage to organs.
Causes damage to organs through prolonged or repeated exposure.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version 1.1	Revision Date: 2022/08/26	SDS Number: 50001574	Date of last issue: - Date of first issue: 2021/06/17
----------------	------------------------------	-------------------------	--

Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO₂)
Dry chemical
Water spray
Foam
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
Sulfur oxides
Nitrogen oxides (NO_x)
- Specific extinguishing methods : 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.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
- Environmental precautions : 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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Advice on protection against : Do not spray on a naked flame or any incandescent material.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

fire and explosion	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. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Avoidance of contact	: Strong oxidizing agents Strong acids and strong bases

Storage

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 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 (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.	64742-94-5	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
2-methylpropan-1-ol	78-83-1	TWA	50 ppm	ACGIH

Personal protective equipment

Respiratory protection	: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Eye/face protection	: Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Impervious clothing

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version 1.1	Revision Date: 2022/08/26	SDS Number: 50001574	Date of last issue: - Date of first issue: 2021/06/17
----------------	------------------------------	-------------------------	--

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

- 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.
- 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 : liquid
- Color : yellowish-brown
- Odor : Non-irritating
- pH : 8
In a 1% aqueous dispersion
- Flash point : 65 °C
Method: closed cup
- Flammability (liquids) : Not highly flammable
- Self-ignition : No data available
- Density : 0.94 g/cm³ (20 °C)
- Solubility(ies)
Water solubility : emulsifiable
- Viscosity
Viscosity, dynamic : 2 mPa.s (20 °C)
4 mPa.s (40 °C)
- Explosive properties : Not explosive
- Oxidizing properties : The product is not oxidizing.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

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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	: No decomposition if stored and applied as directed. Vapors may form explosive mixture with air.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents Strong acids and strong bases
Hazardous decomposition products	: Nitrogen oxides (NOx) Carbon oxides Sulfur oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Toxic if swallowed.
May be harmful in contact with skin.
Fatal if inhaled.

Product:

Acute oral toxicity	: LD50 (Rat, male and female): 100 mg/kg
Acute inhalation toxicity	: LC50 (Rat, female): 1.10 mg/l Exposure time: 1 h Test atmosphere: dust/mist
	: LC50 (Rat, male): 2.23 mg/l Exposure time: 1 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rabbit, male and female): > 2,000 mg/kg

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), heavy arom.:

Acute oral toxicity	: LD50 (Rat, male and female): > 5,000 mg/kg
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SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

- Acute inhalation toxicity : LC50 (Rat): > 4.688 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

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 inhalation toxicity
- Acute dermal toxicity : LD50 (Rabbit): 2,460 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

- Species : Rabbit
Result : Skin irritation

Components:

carbosulfan (ISO):

- Species : Rabbit
Result : slight irritation

Solvent naphtha (petroleum), heavy arom.:

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version 1.1	Revision Date: 2022/08/26	SDS Number: 50001574	Date of last issue: - Date of first issue: 2021/06/17
----------------	------------------------------	-------------------------	--

Species	:	Rabbit
Assessment	:	Repeated exposure may cause skin dryness or cracking.
Result	:	No skin irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

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

Causes serious eye irritation.

Product:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days

Components:

carbosulfan (ISO):

Species	:	Rabbit
Result	:	slight irritation

Solvent naphtha (petroleum), heavy arom.:

Species	:	Rabbit
Assessment	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

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

2-methylpropan-1-ol:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

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.
Test Type	:	Patch test
Species	:	Guinea pig
Result	:	May cause sensitization by skin contact.

Solvent naphtha (petroleum), heavy arom.:

Test Type	:	Maximization Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

calcium dodecylbenzenesulphonate:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

2-methylpropan-1-ol:

Routes of exposure	:	Skin contact
Result	:	Not a skin sensitizer.

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
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SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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), heavy arom.:

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: Bone marrow chromosome aberration.
Species: Rat
Application Route: inhalation (vapor)
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.

2-methylpropan-1-ol:

Genotoxicity in vitro

: Result: negative

Genotoxicity in vivo

: Result: negative

Carcinogenicity

Suspected of causing cancer.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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), heavy arom.:

Species	:	Rat, male and female
Application Route	:	inhalation (vapor)
Exposure time	:	12 month(s)
NOAEC	:	1.8 mg/l
Result	:	negative
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

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

Reproductive toxicity

Not classified based on available information.

Components:

carbosulfan (ISO):

Effects on fertility	:	Test Type: Three-generation study
		Species: Rat
		Application Route: Oral

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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

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

2-methylpropan-1-ol:

Effects on fertility : Species: Rat
Application Route: Inhalation
Fertility: NOAEC Mating/Fertility: 7.5 mg/l

STOT-single exposure

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.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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.

2-methylpropan-1-ol:

Assessment : May cause respiratory irritation.
May cause drowsiness or dizziness.

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.

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

Solvent naphtha (petroleum), heavy arom.:

Species : Rat, male and female
NOAEC : 0.9 - 1.8 mg/l
Application Route : inhalation (vapor)
Exposure time : 12 months

calcium dodecylbenzenesulphonate:

Species : Rat, male and female
NOAEL : 85 mg/kg

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version 1.1	Revision Date: 2022/08/26	SDS Number: 50001574	Date of last issue: - Date of first issue: 2021/06/17
----------------	------------------------------	-------------------------	--

LOAEL	:	145 mg/kg
Application Route	:	Oral
Exposure time	:	9 Months
Remarks	:	Based on data from similar materials
Species	:	Rat, male and female
NOAEL	:	100 mg/kg
LOAEL	:	200 mg/kg
Application Route	:	Oral
Exposure time	:	28 Days
Method	:	OECD Test Guideline 422
Remarks	:	Based on data from similar materials
Species	:	Rat, male
LOAEL	:	286 mg/kg
Application Route	:	Skin contact
Exposure time	:	15 Days
Remarks	:	Based on data from similar materials

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.

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), heavy arom.:

May be fatal if swallowed and enters airways.

Experience with human exposure

Components:

Solvent naphtha (petroleum), heavy arom.:

Skin contact : Symptoms: Repeated exposure may cause skin dryness or cracking.

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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.
- Remarks : Solvents may degrease the skin.

Components:

Solvent naphtha (petroleum), heavy arom.:

- Remarks : Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life.
- 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 toxicity) : 100
- Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.00828

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version 1.1	Revision Date: 2022/08/26	SDS Number: 50001574	Date of last issue: - Date of first issue: 2021/06/17
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icity)	mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.0032 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	: 10
Toxicity to terrestrial organisms	: (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), heavy arom.:

Toxicity to fish	: LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EL50 (Daphnia magna (Water flea)): 1.4 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l Exposure time: 24 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: EL50 (Daphnia magna (Water flea)): 0.89 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
Toxicity to microorganisms	: LL50 (Tetrahymena pyriformis): 677.9 mg/l Exposure time: 72 h Test Type: Growth inhibition

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

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

**CARBOSULFAN 200 G/L EC**Version
1.1Revision Date:
2022/08/26SDS Number:
50001574Date of last issue: -
Date of first issue: 2021/06/17

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 (Chronic 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 organisms : LC50 (Eisenia fetida (earthworms)): 1,000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207
- Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 1,356 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 223

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
- Toxicity to microorganisms : EC50 (Anabaena flos-aquae (cyanobacterium)): 593 - 1,799 mg/l
Exposure time: 72 h
- IC50 (Natural microorganism): 1,000 mg/l
Exposure time: 16 h

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

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), heavy arom.:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 58.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

calcium dodecylbenzenesulphonate:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301E

2-methylpropan-1-ol:

Biodegradability : Result: Readily biodegradable.

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

Solvent naphtha (petroleum), heavy arom.:

Bioaccumulation : Remarks: The product/substance has a potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.72
Method: QSAR

calcium dodecylbenzenesulphonate:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 70.79
Method: QSAR

Partition coefficient: n-

: log Pow: 4.77 (25 °C)

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

octanol/water

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

Components:

carbosulfan (ISO):

Distribution among environmental compartments : Remarks: immobile

Solvent naphtha (petroleum), heavy arom.:

Distribution among environmental compartments : Remarks: Expected to partition to sediment and wastewater solids. Moderately volatile.

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.

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 : 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.

14. TRANSPORT INFORMATION

International Regulations

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

UNRTDG

UN number	:	UN 2992
Proper shipping name	:	CARBAMATE PESTICIDE, LIQUID, TOXIC (Carbosulfan)
Class	:	6.1
Packing group	:	II
Labels	:	6.1

IATA-DGR

UN/ID No.	:	UN 2992
Proper shipping name	:	Carbamate pesticide, liquid, toxic (Carbosulfan)
Class	:	6.1
Packing group	:	II
Labels	:	Toxic
Packing instruction (cargo aircraft)	:	662
Packing instruction (passenger aircraft)	:	654

IMDG-Code

UN number	:	UN 2992
Proper shipping name	:	CARBAMATE PESTICIDE, LIQUID, 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.

Domestic regulation

GB 6944/12268

UN number	:	UN 2992
Proper shipping name	:	CARBAMATE PESTICIDE, LIQUID, TOXIC CARBAMATE PESTICIDE, LIQUID, TOXIC (Carbosulfan)
Class	:	6.1
Packing group	:	II
Labels	:	6.1

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

National regulatory information

Law on the Prevention and Control of Occupational Diseases

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

Regulations on Safety Management of Hazardous Chemicals

Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)

No. / Code	Chemical name / Category	Threshold quantity
J5	Acute toxic	500 t

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

Revision Date : 2022/08/26

Date format : yyyy/mm/dd

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 Sys-

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519



CARBOSULFAN 200 G/L EC

Version
1.1

Revision Date:
2022/08/26

SDS Number:
50001574

Date of last issue: -
Date of first issue: 2021/06/17

tem; 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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