SAFETY DATA SHEET

Marshal® 2.5 ULV

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.10.2022	50000367	Date of first issue: 28.10.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Marshal® 2.5 ULV

Other means of identification

Product code 50000367

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Insecticide

Recommended restrictions on use : Use as recommended by the label.

1.3 Details of the supplier of the safety data sheet

Supplier Address

FMC CHEMICALS (PTY) LTD
COMPANY REGISTRATION NUMBER: 1988/001451/07
WEST END OFFICE PARK, BUILDING C
CNR. WEST AVE & HALL STREET
CENTURION, 0014
SOUTH AFRICA

E-mail address: SDS-Info@fmc.com (E-Mail General Information)

1.4 Emergency telephone

For leak, fire, spill or accident emergencies, call:
South Africa: 0-800-983-611 (CHEMTREC)

Medical emergency:
For any emergency or poisoning contact: Griffon Poison Information Centre (24 hrs) - +27-(0)-82-446-8946

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 3	H331: Toxic if inhaled.

Skin sensitization, Sub-category 1B	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 1	H370: Causes damage to organs.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H331 Toxic 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:

P260 Do not breathe mist or vapors.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
P391 Collect spillage.

Storage:

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

tightly closed.

Disposal:

P501 Dispose of contents/container in accordance with local regulation.

Hazardous ingredients which must be listed on the label:

Solvent naphtha (petroleum), heavy arom.
carbosulfan (ISO)

Additional Labeling

EUH066 Repeated exposure may cause skin dryness or cracking.
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), heavy arom.	64742-94-5 265-198-5 649-424-00-3	Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 70 - < 90
carbosulfan (ISO)	55285-14-8 259-565-9 006-084-00-5	Acute Tox. 3; H301 Acute Tox. 2; H330 Skin Sens. 1; H317 STOT SE 1; H370 (Nervous system, Bladder, Gastrointestinal system, Blood) STOT RE 1; H372 (Nervous system, Bladder, Gastrointestinal system, Blood) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity):	>= 25 - < 30

		100 M-Factor (Chronic aquatic toxicity): 10	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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 on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention if irritation develops and persists.

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.

4.2 Most important symptoms and effects, both acute and delayed

Risks : This substance is a reversible cholinesterase-inhibiting pesticide, which elicits symptoms in humans typical of cholinesterase inhibition including headache, light-headedness, weakness, abdominal cramps, nausea, excessive salivation, perspiration and blurred vision. More severe signs of cholinesterase inhibition include tearing, pin-point pupils, excessive respiratory secretions, cyanosis, convulsions, generalized tremor and coma. Excessive cholinesterase inhibition may result.

Harmful if swallowed.
May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Toxic if inhaled.
Suspected of causing cancer.
Causes damage to organs.

Causes damage to organs through prolonged or repeated exposure.
Repeated exposure may cause skin dryness or cracking.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

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 (NOx)
Hydrogen cyanide
Thermal decomposition can lead to release of toxic and irritating vapors.

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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. 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.
Advice on protection against fire and explosion	:	Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	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.
Advice on common storage	:	Do not store near acids.
Further information on storage stability	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
Soybean oil, epoxidized	Workers	Inhalation	Long-term systemic effects	11.9 mg/m3
	Workers	Inhalation	Acute systemic effects	70 mg/m3
	Workers	Dermal	Long-term systemic effects	1.7 mg/kg bw/day
	Workers	Dermal	Acute systemic effects	10 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	2.8 mg/m3
	Consumers	Inhalation	Acute systemic effects	17.5 mg/m3
	Consumers	Dermal	Long-term systemic effects	0.800 mg/kg bw/day
	Consumers	Dermal	Acute systemic effects	5 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0.800 mg/kg bw/day
	Consumers	Oral	Acute systemic effects	5 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Soybean oil, epoxidized	Soil	6.25 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

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.

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

Respiratory protection	:	In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Protective measures	:	Plan first aid action before beginning work with this product. In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Color	:	amber
Odor	:	hydrocarbon-like
pH	:	4.3
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	> 79 °C Method: closed cup
Evaporation rate	:	not determined
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	not determined
Relative vapor density	:	not determined
Density	:	8.32 lb/gal
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Decomposition temperature	:	not determined
Viscosity		
Viscosity, kinematic	:	not determined

9.2 Other information

Flammability (liquids)	:	Sustains combustion
Particle size	:	Not applicable
Particle Size Distribution	:	Not applicable
Self-ignition	:	not determined

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

Vapors may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers.

10.6 Hazardous decomposition products

Stable under recommended storage conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed.
Toxic if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat): 740 mg/kg Remarks: The value is calculated
Acute inhalation toxicity	:	Acute toxicity estimate: 0.6 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Components:

Solvent naphtha (petroleum), heavy arom.:

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

carbosulfan (ISO):

Acute oral toxicity	:	Acute toxicity estimate: 100.0 mg/kg Method: Converted acute toxicity point estimate LD50 (Rat, female): 185 mg/kg Acute toxicity estimate: 185 mg/kg Method: Calculation method
Acute inhalation toxicity	:	LC50 (Rat, female): 0.15 mg/l Exposure time: 4 h Test atmosphere: dust/mist Acute toxicity estimate: 0.15 mg/l Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg

Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

Product:

Result	:	slight irritation
Remarks	:	May cause skin irritation and/or dermatitis.

Components:

Solvent naphtha (petroleum), heavy arom.:

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 classifica-

tion.
Based on data from similar materials

carbosulfan (ISO):

Species	:	Rabbit
Result	:	slight irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result	:	slight irritation
Remarks	:	Vapors may cause irritation to the eyes, respiratory system and the skin.

Components:

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

carbosulfan (ISO):

Species	:	Rabbit
Result	:	slight irritation

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Product:

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

Components:

Solvent naphtha (petroleum), heavy arom.:

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

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.

Germ cell mutagenicity

Not classified based on available information.

Components:

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

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

Carcinogenicity

Suspected of causing cancer.

Product:

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

Components:

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.

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

Reproductive toxicity

Not classified based on available information.

Components:

carbosulfan (ISO):

Effects on fertility	:	Test Type: Three-generation study Species: Rat Application Route: Oral General Toxicity Parent: NOAEL: 1.2 mg/kg bw/day Fertility: NOAEL: 1.2 mg/kg bw/day Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 2 mg/kg bw/day Developmental Toxicity: NOAEL: 2 Result: negative Test Type: Embryo-fetal development Species: Rabbit Application Route: Oral General Toxicity Maternal: NOAEL: 5 mg/kg bw/day Developmental Toxicity: NOAEL: 10

Result: negative

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

STOT-single exposure

Causes damage to organs.

Product:

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

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:

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

carbosulfan (ISO):

Species : Rat
NOAEL : 2 mg/kg bw/day
Application Route : Oral
Exposure time : 90 days

Species : Dog
NOAEL : 1.6 mg/kg bw/day
Application Route : Oral

Exposure time : 6 months

Aspiration toxicity

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:

Solvent naphtha (petroleum), heavy arom.:

May be fatal if swallowed and enters airways.

carbosulfan (ISO):

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

Experience with human exposure

Components:

Solvent naphtha (petroleum), heavy arom.:

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

Neurological effects

Components:

carbosulfan (ISO):

Remarks : Neurotoxity observed in animals studies

Further information

Product:

Remarks : This substance is a reversible cholinesterase-inhibiting pesticide, which elicits symptoms in humans typical of cholinesterase inhibition including headache, light-headedness, weakness, abdominal cramps, nausea, excessive salivation, perspiration and blurred vision. More severe signs of cholinesterase inhibition include tearing, pin-point pupils, excessive respiratory secretions, cyanosis, convulsions, generalized tremor and coma. Excessive cholinesterase inhibition may result.

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.

SECTION 12: Ecological information

12.1 Toxicity

Components:

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 microorganisms	:	LL50 (Tetrahymena pyriformis): 677.9 mg/l Exposure time: 72 h Test Type: Growth inhibition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EL50: 0.89 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

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: 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)

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: No data is available on the product itself.

Components:

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

carbosulfan (ISO):

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 28 % Exposure time: 28 d
Stability in water	:	Remarks: Hydrolyzes readily.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data is available on the product itself.

Components:

Solvent naphtha (petroleum), heavy arom.:

Bioaccumulation	:	Remarks: The product/substance has a potential to bioaccumulate.
Partition coefficient: n-	:	log Pow: 3.72

octanol/water | Method: QSAR

carbosulfan (ISO):

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

Partition coefficient: n-octanol/water : log Pow: 7.42

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: No data is available on the product itself.

Components:

Solvent naphtha (petroleum), heavy arom.:

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

carbosulfan (ISO):

Distribution among environmental compartments : Remarks: Slightly mobile in soils

Stability in soil :

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	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. Do not re-use empty containers. Packaging that is not properly emptied must be disposed of as the unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

IMDG	:	UN 2810
IATA	:	UN 2810

14.2 UN proper shipping name

IMDG	:	TOXIC LIQUID, ORGANIC, N.O.S. (Carbosulfan)
IATA	:	Toxic liquid, organic, n.o.s. (Carbosulfan)

14.3 Transport hazard class(es)

IMDG	:	6.1
IATA	:	6.1

14.4 Packing group

IMDG

Packing group	:	III
Labels	:	6.1
EmS Code	:	F-A, S-A

IATA (Cargo)

Packing instruction (cargo aircraft)	:	663
Packing instruction (LQ)	:	Y642
Packing group	:	III
Labels	:	Toxic

IATA (Passenger)

Packing instruction (passenger aircraft)	:	655
Packing instruction (LQ)	:	Y642
Packing group	:	III

Labels : Toxic

14.5 Environmental hazards

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 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
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

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture.

SECTION 16: Other information

Full text of H-Statements

H301	:	Toxic if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H317	:	May cause an allergic skin reaction.
H330	:	Fatal if inhaled.
H370	:	Causes damage to organs.
H372	:	Causes damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
EUH066	:	Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Skin Sens.	:	Skin sensitization
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet;

SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; 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

Other information :

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H302	Based on product data or assessment
Acute Tox. 3	H331	Calculation method
Skin Sens. 1B	H317	Based on product data or assessment
Carc. 2	H351	Based on product data or assessment
STOT SE 1	H370	Based on product data or assessment
STOT RE 1	H372	Based on product data or assessment
Asp. Tox. 1	H304	Based on product data or assessment
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

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