SAFETY DATA SHEET

Command 4 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	30.11.2022	50000507	Date of first issue: 30.11.2022

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

1.1 Product identifier

Product name Command 4 EC

Other means of identification

Product code 50000507

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

Use of the Sub-stance/Mixture : Herbicide

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 Registra
Cnr. West Ave & Hall Street
Centurion
0014
South Africa

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

1.4 Emergency telephone number

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)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.

Serious eye damage, Category 1	H318: Causes serious eye damage.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
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

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H226 Flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Hazardous components which must be listed on the label:
clomazone (ISO)
Solvent naphtha (petroleum), light arom.
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts
POLYOXYETHYLENE (7) TRIDECYL ETHER

Additional Labelling

Restricted to professional users.

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)
clomazone (ISO)	81777-89-1 613-340-00-5	Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 30 - < 50
Solvent naphtha (petroleum), light arom.	64742-95-6 265-199-0 649-356-00-4	Flam. Liq. 3; H226 Carc. 2; H351 STOT SE 3; H336 (Central nervous system) STOT SE 3; H335 (Respiratory system)	>= 30 - < 50

		Asp. Tox. 1; H304 Aquatic Chronic 2; H411	
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts	84989-14-0 284-903-7	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 2; H411	>= 2.5 - < 3
POLYOXYETHYLENE (7) TRIDECYL ETHER	78330-21-9	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 2.5 - < 3
2-methylpropan-1-ol	78-83-1 201-148-0 603-108-00-1	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H336 (Central nervous system) STOT SE 3; H335 (Respiratory system)	>= 1 - < 3

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 : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
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.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed or if inhaled.
May be fatal if swallowed and enters airways.
Causes serious eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Causes severe burns.

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 : Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

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 : Chlorinated compounds
Nitrogen oxides (NOx)
Carbon oxides
Hydrogen chloride
Hydrogen cyanide
Hazardous combustion products
Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

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.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low 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).

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 vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

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 vapours). Keep away from open flames, hot surfaces and sources of ignition.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Avoid contact with skin, eyes and clothing. Provide adequate ventilation. 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	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.

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

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2-methylpropan-1-ol	78-83-1	OEL-RL	100 ppm	ZA OEL
Further information	Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2-methylpropan-1-ol	Consumers	Inhalation	Long-term systemic effects	55 mg/m3
	Workers	Inhalation	Long-term systemic effects	310 mg/m3

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

Substance name	Environmental Compartment	Value
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts	Fresh water	270 µg/l
	Intermittent use/release	2.7 mg/l

	Marine water	270 µg/l
	Intermittent use/release	2.7 mg/l
	Sewage treatment plant	5.5 mg/l
	Fresh water sediment	23.8 mg/kg dry weight (d.w.)
	Marine sediment	23.8 mg/kg dry weight (d.w.)
	Soil	35 mg/kg dry weight (d.w.)
2-methylpropan-1-ol	Fresh water	0.4 mg/l
	Intermittent use/release	11 mg/l
	Marine water	0.04 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	1.56 mg/kg dry weight (d.w.)
	Marine sediment	0.156 mg/kg dry weight (d.w.)
	Soil	0.076 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
Wear face-shield and protective suit for abnormal processing problems.

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 the case of dust or aerosol formation use respirator with an approved filter.

Protective measures : Plan first aid action before beginning work with this product.
Always have on hand a first-aid kit, together with proper instructions.
Wear suitable protective equipment.
Ensure that eye flushing systems and safety showers are located close to the working place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour	:	light yellow
Odour	:	hydrocarbon-like
Odour Threshold	:	No data available
pH	:	5.91 Concentration: 10 g/l
Flash point	:	49 °C Method: closed cup
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapour pressure	:	not determined
Relative density	:	1.087 (20 °C)
Density	:	No data available
Solubility(ies)		
Water solubility	:	emulsifiable
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	5 mm2/s (20 °C)
		3.28 mm2/s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing

9.2 Other information

Flammability (liquids)	:	Sustains combustion
Self-ignition	:	382 °C

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.

Vapours 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

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : LD50 (Rat): 1,406 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): 4.47 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

Components:

clomazone (ISO):

Acute oral toxicity : Acute toxicity estimate: 768 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LD50 (Rat, female): 767.5 mg/kg
Method: US EPA Test Guideline OPP 81-1

Acute inhalation toxicity : Acute toxicity estimate: 4.85 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LC50 (Rat, female): 4.85 mg/l
Exposure time: 4 h

Test atmosphere: dust/mist
Method: US EPA Test Guideline OPP 81-3

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Assessment: The substance or mixture has no acute dermal toxicity

Solvent naphtha (petroleum), light arom.:

Acute oral toxicity : LD50 (Rat, female): 3,492 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat, male): 6,984 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.193 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3,160 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat, male and female): 1,080 - 1,630 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute toxicity estimate: 1,080 mg/kg
Method: Calculation method

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Acute oral toxicity : LD50 (Rat): 500 - 2,000 mg/kg
Remarks: Based on data from similar materials

Acute toxicity estimate: 500 mg/kg
Method: Calculation method

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: vapour
Assessment: The substance or mixture has no acute inhala-

tion toxicity

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

Skin corrosion/irritation

Causes severe burns.

Product:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure

Remarks : Extremely corrosive and destructive to tissue.

Components:

clomazone (ISO):

Species : Rabbit
Method : US EPA Test Guideline OPP 81-5
Result : No skin irritation

Solvent naphtha (petroleum), light arom.:

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

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Species : reconstructed human epidermis (RhE)
Method : OECD Test Guideline 439
Result : Skin irritation

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

2-methylpropan-1-ol:

Species : Rabbit
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Irreversible effects on the eye

Remarks : May cause irreversible eye damage.

Components:

clomazone (ISO):

Species : Rabbit
Method : US EPA Test Guideline OPP 81-4
Result : No eye irritation

Solvent naphtha (petroleum), light arom.:

Species : Rabbit
Result : No eye irritation

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Species : Bovine cornea
Method : OECD Test Guideline 437
Result : Irreversible effects on the eye

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Species : Rabbit
Result : Irreversible effects on the eye

2-methylpropan-1-ol:

Species : Rabbit
Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Result : Does not cause skin sensitisation.

Components:

clomazone (ISO):

Species : Guinea pig
Assessment : Not a skin sensitizer.
Method : US EPA Test Guideline OPP 81-6

Solvent naphtha (petroleum), light arom.:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Not a skin sensitizer.

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406

Result : Does not cause skin sensitisation.
Remarks : Based on data from similar materials

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Exposure routes : Skin contact
Result : Does not cause skin sensitisation.

2-methylpropan-1-ol:

Exposure routes : Skin contact
Result : Not a skin sensitizer.

Germ cell mutagenicity

Not classified based on available information.

Components:

clomazone (ISO):

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative

Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: Cytogenetic assay
Species: Rat
Result: negative

Solvent naphtha (petroleum), light arom.:

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

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration
Species: Mouse

Application Route: Oral
Method: OECD Test Guideline 475
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.

Product:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Components:

clomazone (ISO):

Species : Rat, male and female
Application Route : Oral
Exposure time : 2 Years
Result : negative

Solvent naphtha (petroleum), light arom.:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Not classified based on available information.

Components:

clomazone (ISO):

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Oral
Symptoms: Maternal effects
Result: negative

Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Oral

Symptoms: Maternal effects
Result: negative

Solvent naphtha (petroleum), light arom.:

Effects on fertility : Test Type: Three-generation study
Species: Rat
Application Route: inhalation (vapour)
Fertility: NOAEC Mating/Fertility: 7.5 mg/l
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Species: Mouse
Application Route: inhalation (vapour)
General Toxicity Maternal: LOAEC: 500 part per million
Symptoms: Maternal effects

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Effects on fertility : Test Type: Two-generation study
General Toxicity - Parent: NOAEL: > 350 mg/kg body weight
General Toxicity F1: NOAEL: > 350 mg/kg body weight
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Developmental Toxicity: NOAEL: > 350 mg/kg body weight
Result: negative
Remarks: Based on data from similar materials

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 respiratory irritation.
May cause drowsiness or dizziness.

Product:

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

Components:

clomazone (ISO):

Remarks : No significant adverse effects were reported

Solvent naphtha (petroleum), light arom.:

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

Not classified based on available information.

Components:

Solvent naphtha (petroleum), light arom.:

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

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

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

Repeated dose toxicity

Components:

clomazone (ISO):

Species	:	Rat, male and female
NOEL	:	1000 ppm
Application Route	:	Oral
Exposure time	:	90 days
Symptoms	:	increased liver weight

Solvent naphtha (petroleum), light arom.:

Species	:	Rat, male and female
NOAEC	:	0.8 - 0.9 mg/l
Application Route	:	Inhalation
Test atmosphere	:	vapour
Remarks	:	Based on data from similar materials

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

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Species	:	Rat, male and female
NOAEL	:	85 mg/kg
LOAEL	:	145 mg/kg
Application Route	:	Oral
Exposure time	:	9 mo
Target Organs	:	Kidney, Liver

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:

May be fatal if swallowed and enters airways.

Components:

clomazone (ISO):

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

Solvent naphtha (petroleum), light arom.:

May be fatal if swallowed and enters airways.

Further information

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:

clomazone (ISO):

Toxicity to fish : LC50 (Menidia beryllina (Silverside)): 6.3 mg/l
Exposure time: 96 h

		LC50 (Oncorhynchus mykiss (rainbow trout)): 14.4 mg/l Exposure time: 96 h LC50 (Lepomis macrochirus (Bluegill sunfish)): 34 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia (water flea)): 5.2 mg/l Exposure time: 48 h EC50 (Daphnia magna (Water flea)): 12.7 mg/l Exposure time: 48 h LC50 (Mysidopsis bahia (opossum shrimp)): 0.57 mg/l Exposure time: 96 h LC50 (Crustaceans): 0.53 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	EbC50 (Selenastrum capricornutum (green algae)): 2 mg/l Exposure time: 72 h ErC50 (Selenastrum capricornutum (green algae)): 4.1 mg/l Exposure time: 72 h ErC50 (Navicula pelliculosa (Freshwater diatom)): 0.136 mg/l Exposure time: 120 h NOEC (Navicula pelliculosa (Freshwater diatom)): 0.05 mg/l End point: Growth rate Exposure time: 120 h EC50 (Lemna gibba (duckweed)): 13.9 mg/l Exposure time: 7 d
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 2.3 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 2.2 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to soil dwelling organisms	:	LC50: 156 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LD50: > 2,510 mg/kg Species: Anas platyrhynchos (Mallard duck)

LC50: > 5620 ppm
Species: Anas platyrhynchos (Mallard duck)
Remarks: Dietary

LC50: > 85.29
Species: Apis mellifera (bees)

LC50: > 100
Species: Apis mellifera (bees)
Remarks: Contact

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Solvent naphtha (petroleum), light arom.:

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LL50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4.5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 15.41 mg/l
Exposure time: 40 h
Test Type: Growth inhibition
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Toxicity to fish (Chronic toxicity) : NOELR: 2.6 mg/l
Exposure time: 14 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 204
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chron- : NOELR: 2.6 mg/l
Exposure time: 21 d

ic toxicity) Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Toxicity to fish : LC50 (Fish): 1.7 - 7.7 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 5.7 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: water accommodated fractions (WAF)

Toxicity to algae/aquatic plants : NOELR (Pseudokirchneriella subcapitata (green algae)): 10 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: water accommodated fractions (WAF)

EL50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: water accommodated fractions (WAF)

Toxicity to microorganisms : EC50 (activated sludge): 162 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 10 - 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Leuciscus idus (Golden orfe)): > 1 - 10 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 : > 1 - 10 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): > 1 - 10 mg/l
Exposure time: 72 h

EC10 (algae): > 0.1 - < 1 mg/l

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 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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 20 mg/l
Exposure time: 21 d

12.2 Persistence and degradability

Components:

clomazone (ISO):

Biodegradability : Result: Not readily biodegradable.
Remarks: Substance/product is moderately persistent in the environment.
Primary degradation half-lives vary with circumstances, from a few weeks to a few months in aerobic soil and water.

Solvent naphtha (petroleum), light arom.:

Biodegradability : Concentration: 49.2 mg/l
Result: Inherently biodegradable.
Biodegradation: 77.05 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

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

POLYOXYETHYLENE (7) TRIDECYL ETHER:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301E

2-methylpropan-1-ol:

Biodegradability : Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

clomazone (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 27 - 40
Remarks: Low potential for bioaccumulation

Partition coefficient: n- : log Pow: 2.5

octanol/water

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 4.3 - 5.8 (25 °C)
pH: 7
Method: OECD Test Guideline 117

2-methylpropan-1-ol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : Pow: 10 (25 °C)

12.4 Mobility in soil

Components:

clomazone (ISO):

Distribution among environmental compartments : Koc: 300 ml/g, log Koc: 2.47
Remarks: 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.
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

14.1 UN number

IMDG : UN 1993

IATA : UN 1993

14.2 UN proper shipping name

IMDG : FLAMMABLE LIQUID, N.O.S.
(Aromatic hydrocarbons, C10, Clomazone)

IATA : Flammable liquid, n.o.s.
(Aromatic hydrocarbons, C10, Clomazone)

14.3 Transport hazard class(es)

IMDG : 3

IATA : 3

14.4 Packing group

IMDG

Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E

IATA (Cargo)

Packing instruction (cargo aircraft)	:	366
Packing instruction (LQ)	:	Y344
Packing group	:	III
Labels	:	Flammable Liquids

IATA (Passenger)

Packing instruction (passenger aircraft)	:	355
Packing instruction (LQ)	:	Y344
Packing group	:	III
Labels	:	Flammable Liquids

14.5 Environmental hazards

IMDG

Marine pollutant : 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 components 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. clomazone (ISO) Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., calcium salts
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

SECTION 16: Other information

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.

H318	:	Causes serious eye damage.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H336	:	May cause drowsiness or dizziness.
H351	:	Suspected of causing cancer.
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.
H412	:	Harmful to aquatic life with long lasting effects.

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
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Flam. Liq.	:	Flammable liquids
Skin Irrit.	:	Skin irritation
STOT SE	:	Specific target organ toxicity - single exposure
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)

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:**
Flam. Liq. 3	H226	Based on product data or assessment
Acute Tox. 4	H302	Based on product data or assessment
Acute Tox. 4	H332	Based on product data or assessment
Skin Corr. 1B	H314	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
Carc. 2	H351	Based on product data or assessment
STOT SE 3	H336	Based on product data or assessment
STOT SE 3	H335	Based on product data or assessment
Asp. Tox. 1	H304	Based on product data or assessment
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

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