

SAFETY DATA SHEET

COMMAND® 4 EC



Version 1.0	Revision Date: 2025/07/02	SDS Number: 50000360	Date of last issue: - Date of first issue: 2025/07/02
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COMMAND® 4 EC

Other means of identification : Clomazone 480 g/L EC

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC Taiwan Co. Ltd.

Address : 3F, No. 179, Fuhuiyuan Blvd.,
Xitun Dist., Taichung City, 40758
Taiwan

Telephone : +886 4 2254 2785

Telefax : +886 4 2254 2831

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

Emergency telephone : For leak, fire, spill or accident emergencies, call:
00801-14-8954 (CHEMTREC)

Medical emergency:
00886 2 28757525 (in case of chemical spill, fire or poisoning
accident)

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 5

Serious eye damage/eye irritation : Category 2B

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Carcinogenicity : Category 2

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

Aspiration hazard : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :

Signal Word : DANGER

Hazard Statements : H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H313 May be harmful in contact with skin.
H320 Causes eye irritation.
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:

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.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing mist or vapors.

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.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

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CENTER/ doctor.

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

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/ doctor if you feel unwell.

P331 Do NOT induce vomiting.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391 Collect spillage.

Storage:

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

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

P405 Store locked up.

Disposal:

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

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Hazardous ingredients	CAS-No.	Concentration (% w/w)
clomazone (ISO)	81777-89-1	>= 30 -< 50
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	>= 30 -< 50
naphthalene	91-20-3	>= 0.1 -< 0.25

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

First aid measures for different exposure routes

If inhaled : Consult a physician after significant exposure.

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- If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Wash off with soap and water.
If symptoms persist, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : 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 : Swallowing or inhaling may result in sudden shortness of breath, coughing, nausea and or abdominal pain.
Harmful if swallowed or if inhaled.
May be fatal if swallowed and enters airways.
May be harmful in contact with skin.
Causes eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO₂, water spray or regular foam.
- Unsuitable extinguishing media : High volume water jet
Do not spread spilled material with high-pressure water streams.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.
Carbon oxides
Nitrogen oxides (NO_x)
Chlorine compounds
- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Use a water spray to cool fully closed containers.

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Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use a water spray to cool fully closed containers.

Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

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

7. HANDLING AND STORAGE

Handling

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

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

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Storage

Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
naphthalene	91-20-3	STEL	15 ppm 78 mg/m ³	TW OEL
		TWA	10 ppm 52 mg/m ³	TW OEL
		TWA	10 ppm	ACGIH

Biological occupational exposure limits

Contains no substances with biological exposure indices.

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection

Material : Protective gloves

Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection

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

Protective measures

: Plan first aid action before beginning work with this product.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Provide adequate ventilation.
Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

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Do not inhale aerosol.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Form	: liquid
Color	: light yellow
Odor	: hydrocarbon-like
Odor Threshold	: No data available
pH	: 6.77 Method: CIPAC MT 75.3 (1% solution in water)
Melting point/ range	: No data available
Boiling point/boiling range	: No data available
Flash point	: 52 °C Method: Regulation (EC) No. 440/2008, Annex, A.9
Evaporation rate	: No data available
Flammability (liquids)	: Sustains combustion
Self-ignition	: 371 °C Method: EEC A.15
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1.0194 Method: OECD Test Guideline 109
Solubility(ies)	

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Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	5.44 mm ² /s (20 °C) Method: OECD Test Guideline 114
	:	3.25 mm ² /s (40 °C) Method: OECD Test Guideline 114
Explosive properties	:	Not explosive Method: Regulation (EC) No. 440/2008, Annex, A.14
Oxidizing properties	:	Non-oxidizing Method: Regulation (EC) No. 440/2008, Annex, A.21
Surface tension	:	31.91 mN/m, OECD Test Guideline 115
Molecular weight	:	Not applicable

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Symptoms of Overexposure	:	Swallowing or inhaling may result in sudden shortness of breath, coughing, nausea and or abdominal pain.
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Acute toxicity

Harmful if swallowed or if inhaled.
May be harmful in contact with skin.

Product:

Acute oral toxicity	:	LD50 (Rat, female): 1,406 mg/kg Method: US EPA Test Guideline OPP 81-1 LD50 (Rat, male): 2,343 mg/kg Method: US EPA Test Guideline OPP 81-1
Acute inhalation toxicity	:	LC50 (Rat, male and female): 4.59 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 2,000 mg/kg Method: EPA OPP 81-2

Components:

clomazone (ISO):

Acute oral toxicity	:	LD50 (Rat, female): 768 mg/kg Method: OECD Test Guideline 425 LD50 (Rat, female): 300 - 2,000 mg/kg Method: OECD Test Guideline 423 Target Organs: Liver Assessment: The component/mixture is moderately toxic after single ingestion. LD50 (Rat, female): 1,564 mg/kg Symptoms: ataxia
Acute inhalation toxicity	:	LC50 (Rat): > 5.02 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 LC50 (Rat, female): 4.23 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: EPA OPP 81 - 3 Symptoms: Breathing difficulties
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 2,000 mg/kg Method: US EPA Test Guideline OPP 81-2 Assessment: The component/mixture is minimally toxic after single contact with skin. Remarks: no mortality

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

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

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

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

naphthalene:

Acute oral toxicity : LD50 (Mouse, female): 710 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat, male and female): > 0.4 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 16,000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

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

Product:

Species : Rabbit
Method : EPA OPP 81-5
Result : No skin irritation
Remarks : Minimal effects that do not meet the threshold for classification.

Remarks : May cause skin irritation in susceptible persons.

Components:

clomazone (ISO):

Species : Rabbit
Assessment : Not classified as irritant
Method : OECD Test Guideline 404
Result : slight or no skin irritation.

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

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

naphthalene:

Species	:	Rabbit
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes eye irritation.

Product:

Species	:	Rabbit
Result	:	Mild eye irritation
Method	:	EPA OPP 81-4

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

clomazone (ISO):

Species	:	Rabbit
Result	:	Slight or no eye irritation
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 405
GLP	:	yes

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

Species	:	Rabbit
Result	:	No eye irritation

naphthalene:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Product:

Test Type	:	Skin sensitization
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	EPA OPP 81-6
Result	:	Not a skin sensitizer.

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Components:

clomazone (ISO):

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

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

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

naphthalene:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

Chronic toxicity

Germ cell mutagenicity

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

Components:

clomazone (ISO):

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Cytogenetic assay Species: Rat Method: OECD Test Guideline 473 Result: negative

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

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

naphthalene:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
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

Species : Mouse
Method : OECD Test Guideline 453
Result : negative

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

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

naphthalene:

Species : Rat
Application Route : Inhalation
Exposure time : 2 Years
Result : positive

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

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Reproductive toxicity

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

Components:

clomazone (ISO):

- Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Result: negative
- Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
Symptoms: Maternal effects.
Result: negative
- Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
Symptoms: Maternal effects.
Result: negative

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

- Effects on fertility : Test Type: Three-generation study
Species: Rat
Application Route: inhalation (vapor)
Fertility: NOAEC Mating/Fertility: 7.5 mg/l
Result: negative
Remarks: Based on data from similar materials
- Effects on fetal development : Species: Mouse
Application Route: inhalation (vapor)
General Toxicity Maternal: LOAEC: 500 part per million
Symptoms: Maternal effects.

naphthalene:

- Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Inhalation
Result: negative
- Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 414
Result: Embryotoxic effects and adverse effects on the off-spring were detected only at high maternally toxic doses

STOT-single exposure

May cause respiratory irritation.
May cause drowsiness or dizziness.

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Components:

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

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

STOT-repeated exposure

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

Components:

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

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

Repeated dose toxicity

Components:

clomazone (ISO):

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

Species : Rat
LOAEL : 400 mg/kg
Exposure time : 90 d
Method : OECD Test Guideline 408
Symptoms : Liver effects

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

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

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

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

clomazone (ISO):

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

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

May be fatal if swallowed and enters airways.

Further information

Product:

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

Components:

clomazone (ISO):

Remarks : When fed to animals, clomazone caused decreased activity, tearing eyes, bleeding from the nose and incoordination.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

clomazone (ISO):

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

LC50 (Oncorhynchus mykiss (rainbow trout)): > 45 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 magna (Water flea)): 40.8 mg/l
Exposure time: 48 h

EC50 (Daphnia): 5.2 mg/l
Exposure time: 48 h

EC50 (Daphnia magna (Water flea)): 12.7 mg/l
Exposure time: 48 h
Test Type: static test

EC50 (Mysidopsis bahia (opossum shrimp)): 9.8 mg/l
Exposure time: 48 h

LC50 (Americamysis bahia (mysid shrimp)): 0.57 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to algae/aquatic : EbC50 (Selenastrum capricornutum (green algae)): 2 mg/l

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plants	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
	EC50 (Lemna gibba (duckweed)): 13.9 mg/l Exposure time: 7 d
	NOEC (Navicula pelliculosa (Freshwater diatom)): 0.05 mg/l End point: Growth rate Exposure time: 120 h
	NOEC (algae): 0.05 mg/l Exposure time: 96 h
	EC50 (Lemna gibba (duckweed)): 13.9 mg/l Exposure time: 7 d
	EC50 (algae): 0.136 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l Exposure time: 21 d Test Type: flow-through test
	NOEC (Oncorhynchus mykiss (rainbow trout)): 2.29 mg/l Exposure time: 57 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 2.2 mg/l Exposure time: 21 d
	NOEC (Americamysis bahia (mysid shrimp)): 0.032 mg/l Exposure time: 28 d Test Type: flow-through test
	NOEC (Daphnia magna (Water flea)): 1.25 mg/l Exposure time: 21 d Test Type: static test
M-Factor (Chronic aquatic toxicity)	: 1
Toxicity to soil dwelling organisms	: LC50 (Eisenia fetida (earthworms)): 156 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	: LD50 (Anas platyrhynchos (Mallard duck)): > 2,510 mg/kg

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

LD50 (Coturnix japonica (Japanese quail)): > 2000

NOEC (Colinus virginianus): 94 mg/kg
End point: Reproduction Test

LC50 (Apis mellifera (bees)): > 85.29

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

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

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

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

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

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

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)): 2.6 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

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

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Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

naphthalene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.16 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Skeletonema costatum (marine diatom)): 0.4 - 0.5 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus kisutch (coho salmon)): 0.37 mg/l
Exposure time: 40 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia pulex (Water flea)): 0.59 mg/l
Exposure time: 125 d

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : IC50 (Bacteria): 29 mg/l
Exposure time: 24 h

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.; Low boiling point naphtha -unspecified:

Biodegradability : Concentration: 49.2 mg/l
Result: Inherently biodegradable.
Biodegradation: 77.05 %
Exposure time: 28 d

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Method: OECD Test Guideline 301F

naphthalene:

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 67 %
Exposure time: 12 d

Bioaccumulative potential

Components:

clomazone (ISO):

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

Partition coefficient: n-octanol/water : log Pow: 2.61 - 2.69 (20 - 21 °C)
pH: 4 - 10
Method: Regulation (EC) No. 440/2008, Annex, A.8

naphthalene:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 168

Partition coefficient: n-octanol/water : log Pow: 3.7

Mobility in soil

Components:

clomazone (ISO):

Distribution among environmental compartments : Koc: 300 ml/g, log Koc: 2.47
Remarks: Moderately mobile in soils

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

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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

UNRTDG

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Clomazone, Solvent naphtha (petroleum), light aromatic)
Class : 3
Packing group : III
Labels : 3
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.
(Clomazone, Solvent naphtha (petroleum), light aromatic)
Class : 3
Packing group : III
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355
Environmentally hazardous : yes

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Clomazone, Solvent naphtha (petroleum), light aromatic)
Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : yes

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

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

National regulatory information

Regulations on Occupational Safety and Health Facilities : applicable

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Standards for the Storage, Cleanup, Handling and Disposal of Industrial Waste	: applicable
Regulations on Labelling and Hazard Communication of Hazardous Chemicals	: applicable
Rules on Road Traffic Safety	: applicable
Standards of Permissible Exposure Limits in Workplace	: applicable
Rules on the Prevention of Poisoning from Organic Solvents.	: applicable
Standard for the Control of Designated Hazardous and Dangerous Chemicals	: Not applicable
Establishment Standards and Safety Control Regulations for Manufacturing, Storing, Processing Public Hazardous Substances and Flammable Pressurized Gases Places	: Quantity subject to control
Toxic and Concerned Chemical Substances Control Act	
Toxic chemical substances	: Not applicable
Concerned chemical substances	: Not applicable
Regulations for Governing Designating and Handling of Priority Management Chemicals	: Not applicable
Rules on Labour Health Protection	: Not applicable

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. clomazone (ISO)
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

16. OTHER INFORMATION

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Responsible Department : FMC Corporation

Contact person : Bee Huang

Revision Date : 2025/07/02

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
TW OEL : Standards of Permissible Exposure Limits in Workplace

ACGIH / TWA : 8-hour, time-weighted average
TW OEL / TWA : 8-hour time weighted average
TW OEL / STEL : time weighted average for short term exposure

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic 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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lates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

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