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CVR No. DK 12 76 00 43

SAFETY DATA SHEET

Clomazone 480 g/l EC

Revision: Sections containing a revision or new information are marked with a ♣.

♣ SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. **Product identifier** ..... **CLOMAZONE 480 g/l EC**
Contains calcium dodecylbenzenesulphonate, alcohols, C13-15, ethoxylated, and hydrocarbons, C9, aromatics

1.2. **Relevant identified uses of the substance or mixture and uses advised against** ..... Can be used as herbicide only.

1.3. **Details of the supplier of the safety data sheet**

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SDS.Ronland@fmc.com

1.4. **Emergency telephone number**

Medical emergencies:

Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Cyprus: 1401
Czech Republic: +420 224 919 293
+420 224 915 402
Denmark: +45 82 12 12 12
England and Wales: 111
Estonia: +372 7943500
France: +33 (0) 1 45 42 59 59
Finland: +358 9 471 977
Greece: 30 210 77 93 777
Hungary: +36 80 20 11 99
Ireland (Republic): +353 1 837 9964
Italy: +39 02 6610 1029
Latvia: +371 670 42 473
112
Lithuania: +370 523 62052
+370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54
+48 22 619 08 97
Portugal: 800 250 250 (in Portugal only)
+351 21 330 3284
Romania: +40 21318 3606
Scotland: +8454 24 24 24
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.)
Spain: +34 91 562 04 20
Sweden: +46 08-331231
112
Switzerland: 145
Turkey: 114
U.S.A. & Canada: +1 800 / 331 3148
All other countries: +1 651 / 632 6793 (Collect)

For fire, leak, spill or other accident emergencies:

U.S.A.: +1 800 / 424 9300 (CHEMTREC)
All other countries: +1 703 / 527 3887 (CHEMTREC - Collect)

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SECTION 2: HAZARDS IDENTIFICATION

2.1. **Classification of the substance or mixture**

Eye damage: Category 1 (H318)
Specific target organ toxicity, single exposure: Category 3 (H335 and H336)
Aspiration toxicity: Category 1 (H304)
Hazards to the aquatic environment, chronic: Category 1 (H410)

WHO classification ..... Class III: Slightly hazardous

Health hazards ..... The product is severely irritating to eyes and moderately irritating by other routes of exposure. It may be slightly harmful by ingestion and by inhalation.

Environmental hazards ..... The product is toxic to aquatic organisms.

2.2. **Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier ..... Clomazone 480 g/l EC
Contains calcium dodecylbenzene sulphonate, alcohols, C13-15, ethoxylated, and hydrocarbons, C9, aromatics

Hazard pictograms (GHS05, GHS07, GHS08, GHS09)

Signal word ..... Danger

Hazard statements
H304 ..... May be fatal if swallowed and enters airways.
H318 ..... Causes serious eye damage.
H335 ..... May cause respiratory irritation.
H336 ..... May cause drowsiness or dizziness.
H410 ..... Very toxic to aquatic life with long lasting effects.

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

Precautionary statements
P261 ..... Avoid breathing vapours.
P273 ..... Avoid release to the environment.
P280 ..... Wear eye or face protection.
P305+P351+P338 ..... IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 ..... Immediately call a POISON CENTER or physician.
P501 ..... Dispose of contents and container as hazardous waste.

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2.3. **Other hazards** ..... None of the ingredients in the product meets the criteria for being PBT or vPvB.

♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** ..... The product is a mixture, not a substance

3.2. **Mixtures** ..... See section 16 for full text of hazard statements.

Active ingredient

Clomazone ..... Content: 47% w/w
CAS name ..... 3-Isoxazolidinone, 2-[(2-chlorophenyl)methyl]-4,4-dimethyl-
CAS no. 81777-89-1
IUPAC name(s) ..... 2-(2-Chlorobenzyl)-4,4-dimethyl-1,2-oxazolidin-3-one
2-(2-Chlorobenzyl)-4,4-dimethylisoxazolidin-3-one
ISO-name ..... Clomazone
EC no. (EINECS no.) ..... None
EU index no. ..... None
Molecular weight 239.7
Classification of the ingredient ..... Acute oral toxicity: Category 4 (H302)
Acute inhalation toxicity: Category 4 (H332)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

Reportable ingredients	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Hydrocarbons, C9, aromatics Reg. no. 01-2119455851-35	28		918-668-5	Flam. Liq. 3 (H226) STOT SE 3 (H335) STOT SE 3 (H336) Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411)
γ-Butyrolactone Reg. no. 01-2119471839-21	15	96-48-0	EINECS no.: 202-509-5	Acute Tox. 4 (H302) Eye Irrit. 2 (H319)
Alcohols, C13-15, ethoxylated	6	64425-86-1		Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400)
Calcium dodecylbenzenesulphonate	2	26264-06-2	EINECS no.: 247-557-8	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411)
2-Ethylhexan-1-ol	1	104-76-7	EINECS no.: 203-234-3	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)

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SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

If exposure has occurred, do not wait for symptoms to develop, but immediately start the procedures described below.

Inhalation .....

If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

Skin contact .....

Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. Get medical attention if any symptom develops.

Eye contact .....

Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. Get medical attention if immediately.

Ingestion .....

Let the exposed person rinse mouth and drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

When fed to animals, the active ingredient in this product caused decreased activity, tearing eyes, bleeding from the nose and incoordination

4.3. Indication of any immediate medical attention and special treatment needed

Immediate medical attention is required in case of ingestion or eye contact.

It may be helpful to show this safety data sheet to physician.

Notes to physician .....

A specific antidote for exposure to this material is not known. Gastric lavage and/or administration of activated charcoal can be considered. Possible mucosal damage may contraindicate gastric lavage.

The product contains petroleum distillates which may pose an aspiration pneumonia hazard.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media .....

Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

5.2. Special hazards arising from the substance or mixture

The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen chloride, nitrogen oxides, carbon monoxide, carbon dioxide, sulphur dioxide and various chlorinated organic compounds.

5.3. Advice for firefighters .....

Use water spray to keep fire-exposed containers cool. Approach fire

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from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. **Personal precautions, protective equipment and emergency procedures**

It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):
1. use personal protection equipment; see section 8
2. call emergency telephone no.; see section 1
3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Remove sources of ignition. Avoid and reduce formation of vapour or mist as much as possible.

6.2. **Environmental precautions** .....

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

6.3. **Methods and materials for containment and cleaning up**

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with detergent and much water. Absorb wash liquid with absorbent and transfer to suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

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6.4. **Reference to other sections** ..... See subsection 8.2. for personal protection.
See section 13 for disposal.

SECTION 7: HANDLING AND STORAGE

7.1. **Precautions for safe handling** .... The product is not classified as flammable, but it has a low flash point (61°C). Fire prevention measures should be taken. Keep away from sources of ignition and protect from exposure to fire and heat.

In an industrial environment, it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Inhalation of vapours of the product can cause lowered consciousness, which increases the risks of operating machinery and driving.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

7.2. **Conditions for safe storage, including any incompatibilities** The product is stable under normal conditions of warehouse storage.

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. **Specific end use(s)** ..... The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

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♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters**

Personal exposure limits ..... To our knowledge, not established for clomazone.

Aromatic hydrocarbons ..... 100 ppm total hydrocarbon is recommended. The mixture contains trimethyl benzene. The ACGIH recommends a TLV-TWA of 25 ppm (123 g/m3) for trimethyl benzene.

However, other personal exposure limits defined by local regulations may exist and must be observed.

Clomazone

DNEL ..... Not established
EFSA has established an AOEL of 0.133 mg/kg bw/day

PNEC, aquatic environment ..... 0.22 mg/l

Aromatic hydrocarbons

DNEL, dermal ..... 25 mg/kg bw/day
DNEL, inhalation ..... 150 mg/m^3
PNEC, aquatic environment ..... Not applicable

γ-Butyrolactone

DNEL, dermal ..... 19 mg/kg bw/day
DNEL, inhalation ..... 130 mg/m^3
PNEC, aquatic environment ..... 0.056 mg/l

8.2. **Exposure controls** ..... When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

In cases of incidental high exposure, maximal personal protection may be necessary, such as respirator, face mask, chemical resistant coveralls.

Respiratory protection — The product does not automatically present an airborne exposure concern when handled carefully, but in the event of an accidental discharge of the material which produces a heavy vapour or mist, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Protective gloves ..... Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.

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Eye protection ..... Wear face shield or safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.

Other skin protection — Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

♣ SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. **Information on physical and chemical properties**

Appearance	Light yellow to yellow liquid
Odour	Aromatic
Odour threshold	Not determined
pH	1% emulsion in water: 6.5 - 7.5
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not determined
	Aromatic hydrocarbons : 155 - 181°C
Flash point	61°C
Evaporation rate	(Butyl acetate = 1)
	Aromatic hydrocarbons : 0.15
Flammability (solid/gas)	Not applicable (liquid)
Upper/lower flammability or explosive limits	**Aromatic hydrocarbons** : 0.8 - 7.0 vol% (≈ 0.8 - 7.0 kPa)
Vapour pressure	**Clomazone** : 1.92×10^{-2} Pa at 25°C
	Aromatic hydrocarbons : 0.20 kPa at 20°C
Vapour density	(Air = 1)
	Aromatic hydrocarbons : > 1
Relative density	Not determined
	Density: 1.058 g/ml at 20°C
Solubility(ies)	**Clomazone** is soluble in acetone, acetonitrile, chloroform, cyclohexanone, dichloromethane, methanol, toluene, heptane, dimethylformamide.
	Solubility of clomazone in water: 1100 mg/l
Partition coefficient n-octanol/water	**Clomazone** : log K_{ow} = 2.5
	Aromatic hydrocarbons : some of the main components have log K_{ow} = 3.4 - 4.1
Autoignition temperature	338°C
Decomposition temperature	Not determined
Viscosity	5.47 mm^2/s at 20°C
	3.25 mm^2/s at 40°C
Explosive properties	Not explosive
Oxidising properties	Not oxidising

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9.2. **Other information**
Miscibility ..... The product is dispersible in water.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity** ..... To our knowledge, the product has no special reactivities.

10.2. **Chemical stability** ..... The product is stable during normal handling and storage at ambient temperatures.

10.3. **Possibility of hazardous reactions** None known.

10.4. **Conditions to avoid** ..... Heating of the product will evolve harmful and irritant vapours.

10.5. **Incompatible materials** ..... None known.

10.6. **Hazardous decomposition products** See subsection 5.2.

♣ SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity ..... The product is not considered as harmful by single exposures. * The acute toxicity, as measured on a similar product, is:

Route(s) of entry - ingestion LD_{50}, oral, rat: > 2000 mg/kg (method OECD 425)

- skin LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402)

- inhalation LC_{50}, inhalation, rat: > 5.31 mg/l/4 h (method OECD 403)

Skin corrosion/irritation ..... Moderately irritating to skin (measured on a similar product; method OECD 404). * Can cause skin dryness and cracked skin.

Serious eye damage/irritation ..... Severely irritating to eyes (measured on a similar product; method OECD 405).

Respiratory or skin sensitisation ... Not sensitising (measured on a similar product; method OECD 429). *

Germ cell mutagenicity ..... The product contains no ingredients known to be mutagenic. *

Carcinogenicity ..... The product contains no ingredients known to be carcinogenic. *

Reproductive toxicity ..... The product contains no ingredients found to have adverse effects on reproduction. *

STOT – single exposure ..... The product may cause irritation of airways and depression of nervous system.

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STOT – repeated exposure		The following has been measured on the active ingredient clomazone: Target organ: liver LOAEL: 4000 ppm (400 mg/kg bw/day) in a 90-day rat study (method OECD 408). At this dose level, increased liver weight and increased cholesterol were seen. *
Aspiration hazard		The product presents an aspiration hazard.
Symptoms and effects, acute and delayed		When fed to animals, the active ingredient in this product caused decreased activity, tearing eyes, bleeding from the nose and incoordination.
Clomazone		
Toxicokinetics, metabolism and distribution		Clomazone is rapidly absorbed and excreted. It is widely distributed in the body and almost completely metabolised. There is no evidence of accumulation.
Acute toxicity		Clomazone is harmful by ingestion. The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat (female): 768 mg/kg (method OECD 425)
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat: > 5.02 mg/l/4 h (method OECD 403) *
Skin corrosion/irritation		Slightly irritating to skin (method OECD 404). *
Serious eye damage/irritation		Slightly irritating to eyes (method OECD 405). *
Respiratory or skin sensitisation ...		Not a skin sensitizer (method OECD 429). *
Hydrocarbons, C9, aromatics		
Acute toxicity		The substance is not considered as harmful. * The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 3592 mg/kg (method similar to OECD 401)
	- skin	LD_{50}, dermal, rabbit: > 3160 mg/kg (method similar to OECD 402)
	- inhalation	LC_{50}, inhalation, rat: > 6.2 mg/l/4 h (method similar to OECD 403)
Skin corrosion/irritation		Mildly irritating to skin at prolonged exposure. Can cause skin dryness (method similar to OECD 404).
Serious eye damage/irritation		May cause mild, short-lasting discomfort to eyes (method similar to OECD 405). *
Respiratory or skin sensitisation ...		Not expected to cause allergic reactions (method similar to OECD 406). *
Aspiration hazard		Aromatic hydrocarbons present an aspiration hazard.

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γ-Butyrolactone

Toxicokinetics, metabolism and distribution		γ-Butyrolactone is rapidly and completely absorbed and distributed primarily to plasma and liver. It is rapidly metabolised and eliminated primarily as respiratory carbon dioxide and urinary metabolites.
Acute toxicity		The substance is harmful by ingestion. It is not considered as harmful by inhalation or skin contact. The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 1582 mg/kg
	- skin	LD_{50}, dermal, guinea pig: > 5000 mg/kg *
	- inhalation	LC_{50}, inhalation, rat: > 5.1 mg/l/4 h *
Skin corrosion/irritation		Not irritating to skin. *
Serious eye damage/irritation		Seriously irritating to eyes (method OECD 405).
Respiratory or skin sensitisation ...		Not sensitising to skin in animal tests. To our knowledge, allergenic effects have not been reported. *
STOT – single exposure		May have narcotic effects by inhalation.

Alcohols C13-15, ethoxylated

Acute toxicity		The substance is not considered as harmful by ingestion, inhalation or by skin contact. * The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: > 2000 mg/kg
	- skin	LD_{50}, dermal, rat: not available
	- inhalation	LC_{50}, inhalation, rat: no mortalities within 8 hours
Skin corrosion/irritation		Irritating to skin.
Serious eye damage/irritation		Irreversible damage to eyes.

Calcium dodecylbenzenesulphonate

Acute toxicity		The substance is not considered as harmful by skin contact, ingestion and inhalation. * The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 4000 mg/kg
	- skin	LD_{50}, dermal, rat: not available
	- inhalation	LC_{50}, inhalation, rat: not available
Skin corrosion/irritation		Irritating to skin.
Serious eye damage/irritation		Irritating to eyes with the potential to cause permanent eye damage.

2-Ethylhexan-1-ol

Toxicokinetics, metabolism and distribution		After oral administration, the substance is rapidly absorbed. It was rapidly excreted within the first 24 hr predominantly in the urine.

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Glucuronides of oxidized metabolites prevailed with almost no parent compound left. There is no indication of bioaccumulation.

Acute toxicity ..... The substance is not considered as harmful. *
The acute toxicity is measured as:

Route(s) of entry - ingestion: LD_{50}, oral, rat: 3290 mg/kg (method OECD 401)

- skin: LD_{50}, dermal, rat: > 3000 mg/kg (method OECD 402)

- inhalation: LC_{50}, inhalation, rat: 0.89 - 5.3 mg/l/4 h (method OECD 403)

Not harmful at saturated vapour pressure (approx. 0.89 mg/l). Harmful at 5.3 mg/l, a mixture of vapour and droplets.

Skin corrosion/irritation ..... Mildly irritating to skin.

Serious eye damage/irritation ..... Moderately to severely irritating to eyes.

Respiratory or skin sensitisation ... Not a skin sensitizer. *

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** ..... The product is a herbicide and must therefore be expected to be harmful to all plants. The product is toxic to green algae and daphnids and harmful to fish. It is considered as non-toxic to soil micro- and macroorganisms and birds.

The ecotoxicity, as measured on a similar product is:

- Fish	Rainbow trout (*Oncorhynchus mykiss*)	96-h LC_{50}: 18.5 mg/l
- Invertebrates	Daphnids (*Daphnia magna*)	48-h EC_{50}: 7.4 mg/l
- Algae	Green algae (*Pseudokirneriella subcapitata*)	72-h EC_{50}: 9.1 mg/l
- Earthworms	*Eisenia fetida*	14-day LC_{50}: 337 mg/kg dry soil
- Bees	Honey bees (*Apis mellifera* L.)	48-h LD_{50}, oral: > 106.3 µg/bee 48-h LD_{50}, contact: > 100 µg/bee

12.2. **Persistence and degradability** .... **Clomazone** 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. Degradation occurs microbiologically.

Aromatic hydrocarbons are not readily biodegradable. However, they are expected to be degraded in the environment at a moderate rate. A BOD_5/COD ratio of 0.43 was measured. When evaporated, the mixture is expected to degrade rapidly in the air.

The product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

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12.3. **Bioaccumulative potential** ..... See section 9 for octanol-water partition coefficient.

Clomazone has a low potential to bioaccumulate. The measured bioaccumulation factor of clomazone is 27 - 40. It is rapidly excreted.

Aromatic hydrocarbons have a moderate potential to bioaccumulate if continuous exposure is maintained. Most components can be metabolised by many organisms, bacteria, fungi, etc. Bioaccumulation factors (BCFs) of some of the main components are 300 - 400 (by model calculation).

12.4. **Mobility in soil** ..... Under normal conditions **clomazone** is of moderate mobility in soil.

Aromatic hydrocarbons are not mobile in the environment, but they are highly volatile and will rapidly evaporate to the air if released onto water or on the surface of soil. They float and can migrate to sediment.

12.5. **Results of PBT and vPvB assessment** ..... None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Other adverse effects** ..... Other relevant hazardous effects in the environment are not known.

♣ SECTION 13: DISPOSAL CONSIDERATIONS

13.1. **Waste treatment methods** ..... Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packagings must always be in accordance with all applicable local regulations.

Disposal of product ..... According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not possible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging ..... It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.

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4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

♣ SECTION 14: TRANSPORT INFORMATION

ADR/RID/IMDG/IATA/ICAO classification

14.1.	**UN number**	3082
14.2.	**UN proper shipping name**	Environmentally hazardous substance, liquid, n.o.s. (clomazone and alkyl(C3)benzenes)
14.3.	**Transport hazard class(es)**	9
14.4.	**Packing group**	III
14.5.	**Environmental hazards**	Marine pollutant
14.6.	**Special precautions for user**	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.
14.7.	**Transport in bulk according to Annex II of MARPOL and the IBC code**	The product is not transported in bulk by ship.

SECTION 15: REGULATORY INFORMATION

15.1.	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	Seveso category (Dir. 2012/18/EU): dangerous for the environment. All ingredients are covered by EU chemical legislation.
15.2.	**Chemical safety assessment**	A chemical safety assessment is not required to be included for this product.

♣ SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet ..... Minor corrections only.

List of abbreviations .....

ACGIH	American Conference of Governmental Industrial Hygienist
AOEL	Acceptable Operator Exposure Level
BOD5	Biological Oxygen Demand within 5 days
CAS	Chemical Abstracts Service
COD	Chemical Oxygen Demand
Dir.	Directive
DNEL	Derived No Effect Level
EC	Emulsifiable Concentrate European Community

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EC_{50}	50% Effect Concentration
EFSA	European Food Safety Authority
EINECS	European INventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
IBC	International Bulk Chemical code
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC_{50}	50% Lethal Concentration
LD_{50}	50% Lethal Dose
LOAEL	Lowest Observed Adverse Effect Level
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Registration, or Regulation
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TWA	Time Weighted Average
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

References ..... Data measured on a similar product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Method for classification ..... Eye damage: read-across
Specific target organ toxicity, single exposure: calculation method
Aspiration toxicity: test data
Hazards to the aquatic environment, chronic: calculation method

Used hazard 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.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
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 and cracking.

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EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Advice on training ..... This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB