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CVR No. DK 12 76 00 43

SAFETY DATA SHEET

PETHOXAMID 300 g/l + TERBUTHYLAZINE 187.5 g/l SE

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** ..... **PETHOXAMID 300 g/l + TERBUTHYLAZINE 187.5 g/l SE**
Contains terbuthylazine and ethylene glycol

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**

CHEMINOVA A/S, a subsidiary of FMC Corporation
Thyborønvej 78
DK-7673 Harboøre
Denmark
SDS.Ronland@fmc.com

1.4. **Emergency telephone number**
Company ..... +45 97 83 53 53 (24 h; for emergencies only)

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: 808 250 143 (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)

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♣ SECTION 2: HAZARDS IDENTIFICATION

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

Flammable liquid: Category 3 (H226)
Acute oral toxicity: Category 4 (H302)
Eye irritation: Category 2 (H319)
Specific target organ toxicity – repeated exposure: Category 2 (H373)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

WHO classification ..... Class II: Moderately hazardous

Physicochemical hazards ..... The product is flammable.

Health hazards ..... The product has irritating properties and is harmful by ingestion.

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

2.2. **Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier ..... Pethoxamid 300 g/l + Terbuthylazine 187.5 g/l SE
Contains terbuthylazine and ethylene glycol

Hazard pictograms (GHS02, GHS07, GHS08, GHS09)

Signal word ..... Warning

Hazard statements
H226 ..... Flammable liquid and vapour.
H302 ..... Harmful if swallowed.
H319 ..... Causes serious eye irritation.
H373 ..... May cause damage to organs through prolonged or repeated exposure.
H410 ..... Very toxic to aquatic life with long lasting effects.

Supplementary hazard statements
EUH208 ..... Contains pethoxamid and 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH401 ..... To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements
P261 ..... Do not breathe vapours.
P264 ..... Wash hands thoroughly after handling.
P280 ..... Wear protective gloves and eye protection.
P301+P312 ..... IF SWALLOWED: Call a POISON CENTER or doctor/physician 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.

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P501 ..... Dispose of contents/container as hazardous waste.

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

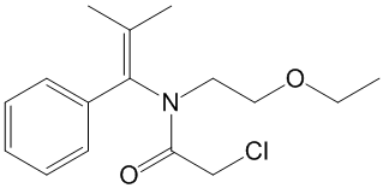
3.1. **Substances** ..... The product is a mixture, not a substance

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

Active ingredients

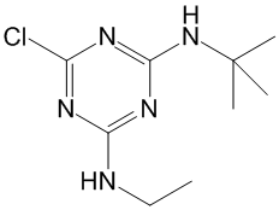
Pethoxamid ..... Content: 30% by weight
CAS name ..... Acetamide, 2-chloro-N-(2-ethoxyethyl)-N-(2-methyl-1-phenyl-1-prop-1-enyl)-
CAS no. 106700-29-2
IUPAC name ..... 2-Chloro-N-(2-ethoxyethyl)-N-(2-methyl-1-phenylprop-1-enyl)-acetamide
ISO name ..... Pethoxamid
EC no. (EINECS no.) ..... None
EU index no. 616-145-00-3
Classification of the ingredient ..... Acute oral toxicity: Category 4 (H302)
Sensitisation – skin: Category 1A (H317)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

Structural formula .....



Terbuthylazine ..... Content: 18% by weight
CAS name ..... 1,3,5-Triazine-2,4-diamine, 6-chloro-N-(1,1-dimethylethyl)-N′-ethyl-
CAS no. 5915-41-3
IUPAC name ..... N^2-tert-Butyl-6-chloro-N^4-ethyl-1,3,5-triazine-2,4-diamine
ISO name ..... Terbuthylazine
EC no. (EINECS no.) 227-637-9
EU index no. ..... None
Classification of the ingredient ..... Acute oral toxicity: Category 4 (H302)
Specific target organ toxicity – repeated exposure: Category 2 (H373)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

Structural formula .....



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Reportable ingredients	Content (% w/w)	CAS no.	EC no.	Classification
Cyclohexanone Reg. no. 01-2119453616-35	19	108-94-1	EINECS no.: 203-631-1	Flam. Liq. 3 (H226) Acute Tox . 4 (H332)
Ethylene glycol Reg. no. 01-2119456816-28	3	107-21-1	EINECS no.: 203-473-3	Acute Tox. 4 (H302)
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt Reg. no. 01-2119560592-37	3		List no.: 932-231-6	Skin Irrit 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411)
1,2-Benzisothiazol-3(2H)-one	max. 0.015	2634-33-5	EINECS no.: 220-120-9	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1A (H317) Aquatic Acute 1 (H400)

♣ SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures**

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. See physician 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. See physician immediately.

Ingestion ..... Let the exposed person rinse mouth with water and let him/her drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Get medical attention immediately.

4.2. **Most important symptoms and effects, both acute and delayed** — Primarily irritation. After ingestion, only non-specific symptoms were seen in animal tests on similar products.

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.

Note to physician ..... A specific antidote against this substance is not known. Gastric lavage

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and/or administration of activated charcoal can be considered. After decontamination, treatment of exposure should be directed at the control of symptoms and the clinical condition.

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, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen chloride, 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 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. Avoid and reduce mist formation as much as possible. Remove sources of ignition.

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).

Use non-sparking tools and equipment. Surface water drains should be

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covered if appropriate. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with much water and industrial detergent. Absorb wash liquid onto 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.

6.4. **Reference to other sections** .....

See subsection 7.1. for fire prevention.
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 flammable. Formation of explosive vapour-air mixtures is possible. Fire prevention measures should be taken. Keep away from sources of ignition and protect from exposure to fire and heat. Take precautions against static discharge.

If the temperature of the liquid is below 34°C, which is 10°C below its flash point of approx. 44°C, the fire and explosion hazard is considered minor. At higher temperatures the hazard gradually becomes more serious.

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.

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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. Protect from frost.

Keep 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.

♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters**

Personal exposure limits .....

To our knowledge, personal exposure limits have not been established for the active ingredients in this product.

		Year	
Cyclo-hexanone	ACGIH (USA) TLV	2015	TWA 20 ppm STEL 50 ppm Skin notation; BEI
	OSHA (USA) PEL	2015	TWA 50 ppm (200 mg/m^3)
	EU, 2000/39/EC as amended	2017	8-hr TWA 10 ppm (40.8 mg/m^3) Peak level 20 ppm (81.6 mg/m^3); max. duration 15 min. Skin notation
	Germany, MAK	2014	Skin notation; EKA
	HSE (UK) WEL	2011	8-hr TWA 10 ppm (41 mg/m^3) STEL 20 ppm (82 mg/m^3); 15-minute reference period Skin notation; BMGV

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

Pethoxamid

DNEL, systemic ..... Not established
EFSA has established an AOEL of 0.02 mg/kg bw/day

PNEC, aquatic environment ..... 0.29 µg/l

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Terbuthylazine

DNEL, systemic ..... Not established
EFSA has established an AOEL of 0.0032 mg/kg bw/day

PNEC, aquatic environment ..... 1.9 µg/l

Cyclohexanone

DNEL, dermal ..... 10 mg/kg bw/day
DNEL, inhalation ..... 100 mg/m^3
PNEC, aquatic ..... 0.0329 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 equipment may be necessary, such as respirator, face mask, chemical resistant coveralls.

Respiratory protection

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 time of these materials for this product are unknown. Generally, however, the use of protective gloves will give only partial protection against dermal exposure. Small tears in the gloves and cross-contamination can easily occur. It is recommended to limit the work to be done manually and to change the gloves regularly.

Eye protection .....

Wear goggles, safety glasses or face shield. 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.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

Appearance	White to light brown liquid (opaque)
Odour	Acetonic
Odour threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not determined **Cyclohexanone** : 156°C
Flash point	Not determined, but expected to be approx. 44°C
Evaporation rate	(Butyl acetate = 1) **Cyclohexanone** : 0.3
Flammability (solid/gas)	Not applicable (liquid)
Upper/lower flammability or explosive limits	**Cyclohexanone** : 1 - 9.4 vol% (≈ 1 - 9.4 kPa)
Vapour pressure	**Pethoxamid** : 3.5×10^{-4} Pa at 25°C **Terbuthylazine** : 9.0×10^{-5} Pa at 25°C **Cyclohexanone** : 0.47 kPa at 20°C
Vapour density	(Air = 1) **Cyclohexanone** : 3.4
Relative density	Not determined Density: 1.058 g/ml at 20°C
Solubility(ies)	Solubility of **pethoxamid** at 20°C in: n-heptane 117 g/kg ethyl acetate > 250 g/kg water 400 mg/l Solubility of **terbuthylazine** at 25°C in: hexane 0.41 g/l ethyl acetate 35 g/l water 9.0 mg/l
Partition coefficient n-octanol/water	**Pethoxamid** : log K_{ow} = 2.96 (at pH 5 and 20°C) **Terbuthylazine** : log K_{ow} = 3.4 at 25°C **Cyclohexanone** : log K_{ow} = 0.86 at 25°C
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	Not explosive
Oxidising properties	Not oxidising

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.

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

10.4. **Conditions to avoid** ..... Heating of the product will evolve harmful and irritant vapours. The product is flammable and can be ignited by e.g. flame, spark or hot surface.

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 harmful by ingestion. The acute toxicity, as measured on a similar product, is:

Route(s) of entry - ingestion LD_{50}, oral, rat: 300 - 2000 mg/kg (method OECD 420)

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

- inhalation LC_{50}, inhalation, rat: > 4.95 mg/l/4 h (method OECD 403) *

Skin corrosion/irritation ..... May be moderately irritating to skin (measured on a similar product; method OECD 404). *

Serious eye damage/irritation ..... Irritating to eyes (measured on a similar product, method OECD 405).

Respiratory or skin sensitisation ... Not a skin sensitizer (measured on a similar product). *

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 ..... To our knowledge, no specific effects after single exposure have been observed. *

STOT – repeated exposure ..... The following is found for the active ingredient **pethoxamid**:
Target organ: liver
LOAEL: 500 ppm (36.2 mg/kg bw/day) in a 90-day rat study (method OECD 408). At this dose level, decreased body weight and phenobarbitone-type enzyme induction were seen. *

For **terbuthylazine** the following was found:
Target organ: no specific target organ

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LOAEL: 100 ppm (10 mg/kg bw/day) in a 90-day rat study. At this dose level, decreased body weight gain was observed (method OECD 408).

Aspiration hazard ..... The product does not present an aspiration hazard. *

Symptoms and effects, acute and delayed: Primarily irritation. After ingestion, only non-specific symptoms were seen in animal tests, such as decreased activity.

Pethoxamid

Toxicokinetics, metabolism and distribution: Pethoxamid is rapidly absorbed and with distribution mainky to intestinal tract, liver and kidneys. It is extensively metabolised and excreted within 96 hours mainly by urine. There is no evidence for accumulation.

Acute toxicity ..... Pethoxamid is harmful by ingestion. The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD_{50}, oral, rat: 983 mg/kg (method OECD 401)
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat: > 4.16 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 ... Sensitising (method OECD 406).

Terbuthylazine

Toxicokinetics, metabolism and distribution: Terbuthylazine is rapidly absorbed after oral administration. It is widely distributed in the body, but binds significantly and persistently to red blood cells. It is extensively metabolised and rapidly excreted, within 96 hours. There is no evidence for bioaccumulation.

Acute toxicity ..... Terbuthylazine is harmful by ingestion. The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD_{50}, oral, rat: 1000 - 1590 mg/kg
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg *
	- inhalation	LC_{50}, inhalation, rat: > 5.3 mg/l/4 h *

Skin corrosion/irritation ..... Minimally irritating to skin. *

Serious eye damage/irritation ..... Slightly irritating to eyes. *

Respiratory or skin sensitisation ... Weakly sensitising. *

Cyclohexanone

Toxicokinetics, metabolism and distribution: After oral intake, cyclohexanone is readily absorbed and widely distributed in the body. It is extensively metabolised to natural body

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constituents and partially taken up in the organism.

Acute toxicity ..... Cyclohexanone is harmful by inhalation. It may have harmful effects by ingestion and skin contact as well. Study results for inhalation toxicity are divergent. The acute toxicity is measured as:

Route(s) of entry
- ingestion: LD_{50}, oral, rat: 1820 mg/kg (average of 6 study results)
- skin: LD_{50}, dermal, rabbit: 950 mg/kg (average of 5 study results)
- inhalation: LC_{50}, inhalation, rat: 3 - 30 mg/l/4 h

Skin corrosion/irritation ..... Cyclohexanone has irritating properties to skin as has been found in several studies. It is not clear if the classification criteria are met.

Serious eye damage/irritation ..... Cyclohexanone has irritating properties to eyes as has been found in several studies. It is not clear if the classification criteria are met.

Respiratory or skin sensitisation ... To our knowledge, no indications of allergenic effects have been reported. Negative results were found in a number of tests. *

Ethylene glycol

Toxicokinetics, metabolism and distribution: After oral intake, ethylene glycol is rapidly absorbed and widely distributed in the body. It is extensively metabolised and ethylene glycol and its metabolites are rapidly excreted with plasma half-lives of 4 hours in rats and dogs. Its harmful effects appear to be caused by the metabolites glycolic acid and oxalic acid.

Acute toxicity ..... The substance is harmful by ingestion. The acute toxicity is measured as:

Route(s) of entry
- ingestion: LD_{50}, oral, rat: > 4000 mg/kg
- skin: LD_{50}, dermal, rat: > 2800 mg/kg *
- inhalation: LC_{50}, inhalation, rat: > 5 mg/l (measured on a similar substance) *

The substance appears to be more toxic to humans. The minimum lethal dose for humans by oral intake has been estimated to about 1300 mg/kg.

Skin corrosion/irritation ..... Can cause mild skin irritation. *

Serious eye damage/irritation ..... May cause mild, short-lasting discomfort to eyes. *

Respiratory or skin sensitisation ... To our knowledge, no indications of respiratory or skin sensitisation have been reported. *

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts

Toxicokinetics, metabolism and distribution: The substance is readily absorbed by the gastrointestinal tract and rapidly excreted with its metabolites, primarily in the urine.

Acute toxicity ..... The substance is not considered as harmful by single exposure. * The

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following has been measured on the substance:

Route(s) of entry	- ingestion	LD_{50}, oral, rat: 4445 mg/kg
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (measured on a similar substance, method similar to OECD 402)
	- inhalation	LC_{50}, inhalation, rat: not available

Skin corrosion/irritation ..... Irritating to skin (method similar to OECD 404)

Serious eye damage/irritation ..... Irritating to eyes with the potential to cause permanent eye damage (method similar to OECD 405).

Respiratory or skin sensitisation ... Not sensitising to skin (measured on a similar substance, method similar to OECD 406). *

1,2-Benzisothiazol-3(2H)-one

Acute toxicity ..... The substance is harmful by ingestion.

Route(s) of entry	- ingestion	LD_{50}, oral, rat (male): 670 mg/kg LD_{50}, oral, rat (female): 784 mg/kg (method OPPTS 870.1100; measured on 73% solution)
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg * (method OPPTS 870.1200 measured on 73% solution)
	- inhalation	LC_{50}, inhalation, rat: not available

Skin corrosion/irritation ..... Slightly irritating to skin (method OPPTS 870.2500).

Serious eye damage/irritation ..... Severely irritating to eyes (method OPPTS 870.2400).

Respiratory or skin sensitisation ... Moderate dermal sensitizer to guinea pigs (method OPPTS 870.2600). The substance appears to be significantly more sensitising to humans.

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** ..... The product is very toxic to algae and aquatic plants. The product is toxic to fish and harmful to daphnids. It is considered as non-toxic to soil micro-and macroorganisms and birds.

The following has been measured on a similar product:

- Fish	Common carp (*Cyprinus carpio*)	96-h LC_{50}: 6.4 mg/l
- Invertebrates	Daphnids (*Daphnia magna*)	48-h EC_{50}: 40.2 mg/l
- Algae	Green algae (*Desmodesmus subspicatus*)	72-h EC_{50}: 0.168 mg/l
- Plants	Duckweed (*Lemna gibba*)	7-day EC_{50}: 0.147 mg/l 7-day NOEC: 0.004 mg/l

12.2. **Persistence and degradability** .... **Pethoxamid** is rapidly degraded in the environment. Primary

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degradation half-lives are within a few weeks. Degradation products are not readily biodegradable.

Terbuthylazine is not readily biodegradable, but is degraded in the environment. Primary half-lives in soil are 2 to 6 months, depending on circumstances. Degradation products are not readily biodegradable.

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

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

Neither **pethoxamid** nor **terbuthylazine** is expected to bioaccumulate.

12.4. **Mobility in soil** ..... **Pethoxamid** is moderately mobile in soil.

Terbuthylazine and its metabolites are not mobile in soil.

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 feasible, 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.

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3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
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. (pethoxamid and terbuthylazine)

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 73/78 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 ..... Classification has been adapted to EU reg. 2017/776.

List of abbreviations .....

ACGIH	American Conference of Governmental Industrial Hygienists
AOEL	Acceptable Operator Exposure Level
BEI	Biological Exposure Index
BMGV	Biological Monitoring Guidance Value
CAS	Chemical Abstracts Service
Dir.	Directive

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DNEL	Derived No Effect Level
EC	European Community
EC_{50}	50% Effect Concentration
EFSA	European Food Safety Authority
EINECS	European INventory of Existing Commercial Chemical Substances
EKA	Expositionsäquivalent für Krebserzeugende Arbeitsstoffe
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
HSE	Health & Safety Executive, UK
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
MAK	Maximale Arbeitspaltz-Konzentration
MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
NOEC	No Observed Effect Concentration
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulative, Toxic
PEL	Personal Exposure Limit
PNEC	Predicted No Effect Concentration
Reg.	Registration, or Regulation
SE	Suspo-emulsion
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TWA	Time Weighted Average
vPvB	very Persistent, very Bioaccumulative
WEL	Workplace Exposure Limit
WHO	World Health Organisation

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

Method for classification ..... Flammable liquid: test data
Acute oral toxicity: read-across
Eye irritation: read-across
Specific target organ toxicity – repeated exposure: calculation rules
Hazards to the aquatic environment: read-across

Used hazard statements .....

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.

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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH208	Contains pethoxamid and 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
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 Corporation / Cheminova A/S / GHB