

Material group	2730	Page 1 of 18
Product name	PETHOXAMID 300 g/l + TERBUTHYLAZINE 250 g/l SE	September 2018
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes August 2017

SAFETY DATA SHEET

PETHOXAMID 300 g/l + TERBUTHYLAZINE 250 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 250 g/l SE**
Contains terbuthylazine and alcohols, C9-11-iso-, C10-rich, ethoxylated
- 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 Harbøre
 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 | Norway: +47 22 591300 |
| Belgium: +32 70 245 245 | Poland: +48 22 619 66 54 |
| Bulgaria: +359 2 9154 409 | +48 22 619 08 97 |
| Cyprus: 1401 | Portugal: 808 250 143 (in Portugal only) |
| Czech Republic: +420 224 919 293 | +351 21 330 3284 |
| +420 224 915 402 | Romania: +40 21318 3606 |
| Denmark: +45 82 12 12 12 | Scotland: +8454 24 24 24 |
| England and Wales: 111 | Slovakia: +421 2 54 77 4 166 |
| France: +33 (0) 1 45 42 59 59 | Slovenia: +386 41 650 500 |
| Finland: +358 9 471 977 | South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.) |
| Greece: 30 210 77 93 777 | Spain: +34 91 562 04 20 |
| Hungary: +36 80 20 11 99 | Sweden: +46 08-331231 |
| Ireland (Republic): +353 1 837 9964 | 112 |
| Italy: +39 02 6610 1029 | Switzerland: 145 |
| Lithuania: +370 523 62052 | Turkey: 114 |
| +370 687 53378 | U.S.A. & Canada: +1 800 / 331 3148 (ProPharma) |
| Luxembourg: +352 8002 5500 | All other countries: +1 651 / 632 6793 (ProPharma - Collect) |
| Netherlands: +31 30 274 88 88 | |

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♣ SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Acute oral toxicity: Category 3 (H301)
 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

Health hazards The product has irritating properties and is toxic by ingestion.
 The ingredient terbutylazine caused decreased body weight in laboratory animals at repeated exposure.

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 + Terbutylazine 250 g/l SE
 Contains terbutylazine and alcohols, C9-11-iso-, C10-rich, ethoxylated

Hazard pictograms (GHS06, GHS08, GHS09)



Signal word Danger

Hazard statements

H301 Toxic 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

EUH066 Repeated exposure may cause skin dryness and cracking.
 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 eye 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.

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P310 Immediately call a POISON CENTER or doctor/physician.
 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

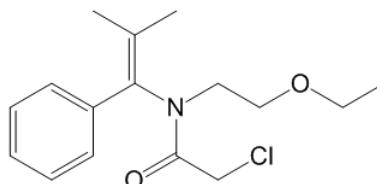
3.1. **Substances** The product is a mixture, not a substance

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

Active ingredients

Pethoxamid Content: 29% 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)

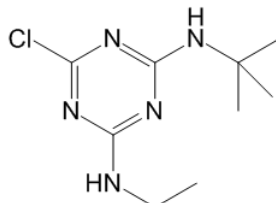
Structural formula



Terbuthylazine Content: 24% 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 N²-tert-Butyl-6-chloro-N⁴-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)

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Structural formula



<u>Reportable ingredients</u>	Content (% w/w)	CAS no.	EC no.	Classification
Hydrocarbons, C10-C13, aromatics, < 1% naphthalene Reg. no. 01-2119451097-39	15		922-153-0	Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411)
Ethylene glycol Reg. no. 01-2119456816-28	3	107-21-1	EINECS no.: 203-473-3	Acute Tox. 4 (H302)
Poly(oxy-1,2-ethanediyl), α-[2,4,6- tris(1-phenylethyl)phenyl]-ω-hydroxy-	2	99734-09-5	None	Aquatic Chronic 3 (H412)
Alcohols, C9-11-iso-, C10-rich, ethoxylated	2	78330-20-8	None	Acute Tox. 4 (H302) Eye Dam. 1 (H318)
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts Reg. no. 01-2119560592-37	1		932-231-6	Skin Irrit 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411)
1,2-Benzisothiazol-3(2H)-one	max. 0.02	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.

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Ingestion	<p>Call a doctor or get medical attention immediately. Make the exposed person rinse mouth and then drink 1 or 2 glasses of water or milk. Induce vomiting only if:</p> <ol style="list-style-type: none"> 1. A significant amount (more than a mouthful) has been ingested 2. Patient is fully conscious 3. Medical aid is not readily available 4. Time since ingestion is less than one hour. <p>Let the patient induce vomiting by touching the back of the throat with a finger. If vomiting does occur, take care that vomit does not enter airways. Let the person rinse mouth and drink fluids again.</p>
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	<p>Immediate medical attention is required in case of ingestion or eye contact.</p> <p>It may be helpful to show this safety data sheet to physician.</p>
Note to physician	A specific antidote against this substance is not known. Gastric lavage and/or administration of activated charcoal can be considered.

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	<p>It is recommended to have a predetermined plan for the handling of spills. Empty, sealable vessels for the collection of spills should be available.</p> <p>In case of large spill (involving 10 tonnes of the product or more):</p> <ol style="list-style-type: none"> 1. use personal protection equipment; see section 8 2. call emergency telephone no.; see section 1 3. alert authorities.
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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).

Surface water drains should be 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 8.2. for personal protection.
 See section 13 for disposal.

♣ SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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.

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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. 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.

Aromatic hydrocarbons

100 ppm total hydrocarbon is recommended.

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

Pethoxamid

DNEL, systemic

Not established

PNEC, aquatic environment

EFSA has established an AOEL of 0.02 mg/kg bw/day

0.29 µg/l

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Terbuthylazine

DNEL	Not established EFSA has established an AOEL of 0.0032 mg/kg bw/day
PNEC, aquatic environment	1.9 µg/l

Aromatic hydrocarbons

DNEL, dermal	12.5 mg/kg bw/day
DNEL, inhalation	151 mg/m ³
PNEC, aquatic environment	Not applicable

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	Light brown liquid (opaque)
Odour	Of aromatic hydrocarbons
Odour threshold	Not determined
pH	Undiluted: 3.67 at room temperature 1% dilution in water: 4.09 at room temperature
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not determined Aromatic hydrocarbons : 200 - 310°C
Flash point	> 105°C
Evaporation rate	(Butyl acetate = 1) Aromatic hydrocarbons : < 0.01
Flammability (solid/gas)	Not applicable (liquid)
Upper/lower flammability or explosive limits	Aromatic hydrocarbons : 0.6 - 7.0 vol% (≈ 0.6 - 7.0 kPa)
Vapour pressure	Pethoxamid : 3.5×10^{-4} Pa at 25°C Terbuthylazine : 9.0×10^{-5} Pa at 25°C Aromatic hydrocarbons : < 0.1 kPa at 25°C
Vapour density	(Air = 1) Aromatic hydrocarbons : > 1
Relative density	1.0822
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 Aromatic hydrocarbons : some of the main components have $\log K_{ow} = 4.0 - 4.4$ at 25°C by model calculation
Autoignition temperature	390°C
Decomposition temperature	Not determined
Viscosity	381 mPa.s at 20°C
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2. Other information

Miscibility	The product is dispersible in water.
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SECTION 10: STABILITY AND REACTIVITY

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

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

Acute toxicity The product is harmful to toxic by ingestion. The acute toxicity of the product is measured as:

Route(s) of entry - ingestion LD₅₀, oral, rat (male): 230 mg/kg (method OECD 423)

LD₅₀, oral, rat (female): 202 mg/kg

- skin LD₅₀, dermal, rat: > 2000 mg/kg * (method OECD 402)

- inhalation LC₅₀, 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). * Can cause skin dryness.

Serious eye damage/irritation Mildly to moderately irritating to eyes (method OECD 405).

Respiratory or skin sensitisation ...	Not a skin sensitizer (method OECD 406).*
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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 known to have adverse effects on reproduction. *
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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.
<u>Pethoxamid</u>	
Toxicokinetics, metabolism and distribution	Pethoxamid is rapidly absorbed and with distribution mainly 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).
<u>Terbutylazine</u>	
Toxicokinetics, metabolism and distribution	Terbutylazine 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	Terbutylazine 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. *
<u>Hydrocarbons, C10-C13, aromatics, < 1% naphthalene</u>	
Acute toxicity	The substance is not considered as harmful. * The acute toxicity as measured on a similar product is:

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Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 5000 mg/kg (method OECD 401)
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (method OECD 402)
	- inhalation	LC ₅₀ , inhalation, rat: > 4.7 mg/l (method OECD 403)
Skin corrosion/irritation		Can cause skin dryness (measured on similar products; method OECD 404).
Serious eye damage/irritation		May cause mild, short-lasting discomfort to eyes (measured on similar products; method OECD 405). *
Respiratory or skin sensitisation ...		Not expected to cause respiratory or skin sensitisation (measured on similar products; method OECD 406). *
Aspiration hazard		Aromatic hydrocarbons present an aspiration hazard.

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: 4700 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 be 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. *

Poly(oxy-1,2-ethanediyl), α-[2,4,6-tris(1-phenylethyl)phenyl]-ω-hydroxy-

Acute toxicity

The product is not considered as harmful by inhalation, ingestion or skin contact. * The acute toxicity is:

Route(s) of entry	- ingestion	LD ₅₀ , oral, rat: > 2000 mg/kg
	- skin	LD ₅₀ , dermal, rat: > 2000 mg/kg (measured on a similar substance)
	- inhalation	LC ₅₀ , inhalation, rat: not available

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Skin corrosion/irritation Measured on a similar substance: not irritating to skin. *

Serious eye damage/irritation Measured on a similar substance: not irritating to eyes. *

Alcohols, C9-11-iso-, C10-rich, ethoxylated

Acute toxicity The substance is expected to be harmful by ingestion based on comparison to similar substances. The acute toxicity is:

Route(s) of entry - ingestion LD₅₀, oral, rat: 300 - 2000 mg/kg
 - skin LD₅₀, dermal, rat: not available
 - inhalation LC₅₀, inhalation, rat: not available

Skin corrosion/irritation Expected to be mildly irritating to skin based on comparison to similar substances. *

Serious eye damage/irritation Expected to be seriously irritating to eyes with the potential to cause permanent eye damage based on comparison to similar substances.

Respiratory or skin sensitisation ... Not expected to be allergenic based on comparison to similar substances. *

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 following has been measured on the substance:

Route(s) of entry - ingestion LD₅₀, oral, rat: 4445 mg/kg
 - skin LD₅₀, dermal, rat: > 2000 mg/kg
 (measured on a similar substance, method similar to OECD 402)
 - inhalation LC₅₀, 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 LD₅₀, oral, rat (male): 670 mg/kg
 LD₅₀, oral, rat (female): 784 mg/kg
 (method OPPTS 870.1100; measured on 73% solution)

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- 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 green algae and other aquatic plants. The product is toxic to fish and harmful to daphnids. It is considered as non-toxic to soil micro-and macroorganisms, birds and insects.

The following has been measured on the product:

- Fish	Common carp (<i>Cyprinus carpio</i>)	96-h LC ₅₀ : 6.4 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>)	48-h EC ₅₀ : 40.2 mg/l
- Algae	Green algae (<i>Desmodesmus subspicatus</i>)	72-h EC ₅₀ : 0.168 mg/l
- Plants	Duckweed (<i>Lemna gibba</i>)	7-day EC ₅₀ : 0.147 mg/l
- Earthworms	<i>Eisenia fetida</i>	14-day LC ₅₀ : 320 mg kg dry soil
- Bees	Honeybees (<i>Apis mellifera</i> L.)	48-h LD ₅₀ , oral: > 200 µg/bee 48-h LD ₅₀ , contact: > 200 µg/bee

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

Aromatic hydrocarbons are readily biodegradable as measured according to OECD guidelines. However, they are not always rapidly degraded in the environment, but are expected to be degraded at a moderate rate, depending on circumstances.

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.

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

Aromatic hydrocarbons have a potential to bioaccumulate if continuous exposure is maintained. Most components can be metabolised by many organisms. Bioaccumulation factors (BCFs) of some of the main components are 1200 - 3200 by model calculation.

12.4. **Mobility in soil**

Pethoxamid is moderately mobile in soil.

Terbuthylazine and its metabolites are not mobile in soil.

Aromatic hydrocarbons are not mobile in the environment, but are volatile and will 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 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.
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

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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** 2902
- 14.2. **UN proper shipping name** Pesticide, liquid, toxic, n.o.s. (pethoxamid, terbuthylazine and alkyl(C3-C6)benzenes)
- 14.3. **Transport hazard class(es)** 6.1
- 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
 AOEL Acceptable Operator Exposure Level
 CAS Chemical Abstracts Service
 Dir. Directive
 DNEL Derived No Effect Level
 EC European Community
 EC₅₀ 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

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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
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Registration, or Regulation
SE	Suspo-emulsion
STOT	Specific Target Organ Toxicity
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

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

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

Used hazard statements H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 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.
 H412 Harmful to aquatic life with long lasting effects.
 EUH066 Repeated exposure may cause skin dryness and cracking.
 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



Cheminova A/S
Thyborønvej 78
DK-7673 Harbøre
Denmark
+45 9690 9690
www.fmc.com
CVR No. DK 12 76 00 43

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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