

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

1.1 Product identifier

Product name : CERAN GEP
Product code : 33318
Product description : Not available.
Product type : Solid.
Other means of identification : Not available.

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

Identified uses

Lubricating grease
Formulation additives, lubricants and greases - Industrial
General use of lubricants and greases in vehicles or machinery - Industrial
General use of lubricants and greases in vehicles or machinery - Professional
Use of lubricants and greases in open systems - Industrial
Use of lubricants and greases in open systems - Professional

Uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

TotalEnergies Lubrifiants
562 Avenue du Parc de L'île
92029 Nanterre Cedex FRANCE
Tél: +33 (0)1 41 35 40 00
Fax: +33 (0)1 41 35 84 71
 m.msds-lubs@totalenergies.com

TotalEnergies Marketing UK Limited
183 Eversholt St, Kings Cross
London, NW1 1BU
UNITED KINGDOM
Tel: +44 (0)20 7339 8000
Fax: +44 (0)20 7339 8033
 m.gb-msds@totalenergies.com

H.S.E

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : National Poisons Information Service (NPIS): 111

Supplier

Telephone number : Emergency telephone: +44 1235 239670

Hours of operation : Edit the content of sentence <GB Telephone Number - Supplier - Hours of operation> to define this output



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

Information limitations : Edit the content of sentence <GB Telephone Number - Supplier - Information limitations> to define this output

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aquatic Chronic 3, H412

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Hazard statements : H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : P273 - Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Contains Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts, Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts, Sulfonic acids, petroleum, calcium salts and Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl. May produce an allergic reaction.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB in a concentration $\geq 0,1$ %.

Other hazards which do not result in classification : None known.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Synthetic graphite	EC: 231-955-3 CAS: 7782-42-5	≤10	Not classified.	[2]
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	REACH #: 01-2119492627-25 EC: 271-529-4 CAS: 68584-23-6	≤5	Skin Sens. 1B, H317	[1]
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	REACH #: 01-2119492616-28 EC: 274-263-7 CAS: 70024-69-0	≤3	Skin Sens. 1B, H317	[1]
Sulfonic acids, petroleum, calcium salts	REACH #: 01-2119488992-18 EC: 263-093-9 CAS: 61789-86-4	≤3	Skin Sens. 1, H317	[1]
molybdenum disulphide	EC: 215-263-9 CAS: 1317-33-5	≤1	Not classified.	[2]
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	REACH #: 01-2119493620-38 EC: 931-384-6	<1	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1B, H317 Aquatic Chronic 2, H411	[1]
(Z)-N-9-octadecenylpropane-1,3-diamine	REACH #: 01-2119487002-46 EC: 230-528-9 CAS: 7173-62-8	<0.1	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT RE 1, H372 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1]
C16-18-(even numbered, saturated and unsaturated)-alkylamines	REACH #: 01-2119473797-19 EC: 627-034-4 CAS: 1213789-63-9	≤0.1	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10) See Section 16 for the full text of the H statements declared above.	[1]

Additional information : Mineral oil of petroleum origin Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

**SECTION 3: Composition/information on ingredients**

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Skin contact** : Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed**Over-exposure signs/symptoms**

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

**SECTION 5: Firefighting measures**

Hazards from the substance or mixture : This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Carbon monoxide
carbon dioxide
Silicon Dioxide
nitrogen oxides
phosphorus oxides
sulfur oxides
Hydrogen sulfide
Mercaptans

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : Specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

**SECTION 7: Handling and storage**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limits**

Product/substance	Exposure limit values
Synthetic graphite	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 4 mg/m ³ 8 hours. Form: respirable dust
molybdenum disulphide	EH40/2005 WELs (United Kingdom (UK), 1/2020). [molybdenum insoluble compounds] STEL: 20 mg/m ³ , (as Mo) 15 minutes. TWA: 10 mg/m ³ , (as Mo) 8 hours.

Reportable hazardous constituent(s) contained in UVCB- and/or multi-constituent substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

No exposure limit value known.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs



SECTION 8: Exposure controls/personal protection

Product/substance	Type	Exposure	Value	Population	Effects
Synthetic graphite	DNEL	Long term Inhalation	0.3 mg/m ³	General population	Local
	DNEL	Long term Oral	813 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	1.2 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1.2 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	0.028 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	0.17 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	1.2 mg/m ³	Workers	Systemic
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	DNEL	Long term Oral	0.8333 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1.667 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3.33 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	11.75 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	2.9 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	1.03 mg/cm ²	Workers	Local
	DNEL	Long term Dermal	0.513 mg/cm ²	General population	Local
	DNEL	Long term Dermal	0.513 mg/cm ²	General population	Local
	DNEL	Long term Dermal	1.03 mg/cm ²	Workers	Local
	DNEL	Long term Inhalation	2.9 mg/m ³	General population	Systemic
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	DNEL	Long term Oral	0.8333 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1.667 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	2.9 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	3.33 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	11.75 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1.03 mg/cm ²	Workers	Local
	DNEL	Long term Dermal	0.513 mg/cm ²	General population	Local
	DNEL	Long term Dermal	0.513 mg/cm ²	General population	Local
	DNEL	Long term Dermal	1.03 mg/cm ²	Workers	Local
	DNEL	Long term Oral	0.8333 mg/kg bw/day	General population	Systemic
Sulfonic acids, petroleum, calcium salts	DNEL	Long term Oral	0.8333 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1.667 mg/	General	Systemic



SECTION 8: Exposure controls/personal protection

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl	DNEL	Long term Inhalation	kg bw/day 2.9 mg/m ³	population General population	Systemic
	DNEL	Long term Dermal	3.33 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	11.75 mg/ m ³	Workers	Systemic
	DNEL	Long term Dermal	1.03 mg/ cm ²	Workers	Local
	DNEL	Long term Dermal	0.513 mg/ cm ²	General population	Local
	DNEL	Long term Dermal	0.513 mg/ cm ²	General population	Local
	DNEL	Long term Dermal	1.03 mg/ cm ²	Workers	Local
	DNEL	Long term Dermal	12.5 mg/kg	Workers	Systemic
	DNEL	Long term Inhalation	4.28 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	6.25 mg/kg	General population	Systemic
	DNEL	Long term Inhalation	1.09 mg/m ³	General population	Systemic
	DNEL	Long term Oral	0.25 mg/ day	General population	Systemic
	DNEL	Long term Dermal	0.16 mg/ cm ²	Workers	Local
	(Z)-N-9-octadecenylpropane-1,3-diamine	DNEL	Long term Inhalation	0.035 mg/ m ³	Workers
DNEL		Long term Oral	2 µg/kg bw/ day	General population	Systemic
DNEL		Long term Dermal	2 µg/kg bw/ day	General population	Systemic
DNEL		Long term Dermal	5.6 µg/kg bw/day	Workers	Systemic
C16-18-(even numbered, saturated and unsaturated)-alkylamines	DNEL	Long term Inhalation	6.96 µg/m ³	General population	Systemic
	DNEL	Long term Oral	40 µg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.38 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	0.035 mg/ m ³	General population	Systemic
	DNEL	Long term Dermal	0.09 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0.06 %	Workers	Local
	DNEL	Long term Inhalation	0.035 mg/ m ³	General population	Systemic
	DNEL	Short term	1 mg/m ³	Workers	Local



SECTION 8: Exposure controls/personal protection

	DNEL	Inhalation Long term Inhalation	1 mg/m ³	Workers	Local
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PNECs

Product/substance	Compartment Detail	Value	Method Detail
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	Fresh water	1 mg/l	-
	Marine water	1 mg/l	-
	Fresh water sediment	226000000 mg/kg dwt	-
	Marine water sediment	226000000 mg/kg dwt	-
	Soil	868700000 mg/kg dwt	-
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	Sewage Treatment Plant	100 mg/l	-
	Secondary Poisoning	16.667 mg/kg dwt	-
	Fresh water	1 mg/l	-
	Marine water	1 mg/l	-
	Fresh water sediment	226000000 mg/kg dwt	-
Sulfonic acids, petroleum, calcium salts	Marine water sediment	226000000 mg/kg dwt	-
	Soil	271000000 mg/kg dwt	-
	Sewage Treatment Plant	100 mg/l	-
	Secondary Poisoning	16.667 mg/kg dwt	-
	Fresh water	1 mg/l	-
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14-tert-alkyl	Marine water	1 mg/l	-
	Fresh water sediment	226000000 mg/kg dwt	-
	Marine water sediment	226000000 mg/kg dwt	-
	Soil	271000000 mg/kg wwt	-
	Sewage Treatment Plant	1000 mg/l	-
(Z)-N-9-octadecenylpropane-1,3-diamine	Fresh water	2.4 µg/l	-
	Marine water	240 ng/l	-
	Fresh water sediment	12.9 µg/kg dwt	-
	Marine water sediment	1.29 µg/kg dwt	-
	Soil	1.17 µg/kg dwt	-
(Z)-N-9-octadecenylpropane-1,3-diamine	Sewage Treatment Plant	24.33 mg/l	-
	Secondary Poisoning	10 mg/kg	-
	Fresh water	0.01 mg/l	-
	Marine water	0.001 mg/l	-
	Fresh water sediment	1.72 mg/kg dwt	-
Marine water sediment	0.172 mg/kg dwt	-	



SECTION 8: Exposure controls/personal protection

C16-18-(even numbered, saturated and unsaturated)-alkylamines	Soil	10 mg/kg dwt	-
	Sewage Treatment Plant	0.251 mg/l	-
	Marine water	0.000026 mg/l	-
	Fresh water sediment	3.76 mg/kg dwt	-
	Marine water sediment	0.376 mg/kg dwt	-
	Soil	10 mg/kg	-
	Sewage Treatment Plant	0.55 mg/l	-

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. EN 166

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Hydrocarbon-proof gloves

nitrile rubber

Fluorinated rubber

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

In case of prolonged contact with the product, it is recommended to wear gloves complying with ISO 21420 and EN 374 standards, protecting at least for 480 minutes and having a thickness of 0,38 mm at least. These values are indicative only. The level of protection is provided by the material of the glove, its technical characteristics, its resistance to the chemicals to be handled, the appropriateness of its use and its replacement frequency

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**SECTION 8: Exposure controls/personal protection**

- Respiratory protection** : Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. In case of inadequate ventilation wear respiratory protection: Type A/P1. Warning! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated

9.1 Information on basic physical and chemical propertiesAppearance

- Physical state** : Solid.
- Colour** : Dark grey.
- Odour** : Characteristic.
- Odour threshold** : Not available.
- Melting point/freezing point** : 300°C
- Initial boiling point and boiling range** : Not applicable.
- Flammability (solid, gas)** : Yes.
- Upper/lower flammability or explosive limits** : Not applicable.
- Flash point** : Open cup: Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : 300°C
- pH** : Not applicable. Product is non-soluble (in water).
- Viscosity** : Kinematic (40°C): Not applicable.
- Solubility(ies)** :

Media	Result
Water	Not soluble

- Solubility in water** : Insoluble
- Miscible with water** : No.
- Partition coefficient: n-octanol/ water** : 3.5
- Vapour pressure** : Not applicable.
- Relative density** : 0.9
- Density** : 0.9 g/cm³ [20°C (68°F)]
- Vapour density** : Not applicable.
- Particle characteristics**
- Median particle size** : Not available.

9.2 Other information

**SECTION 9: Physical and chemical properties**

No other relevant physical and chemical parameters for the safe use of the product

SECTION 10: Stability and reactivity**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.**10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.**10.4 Conditions to avoid** : No specific data.**10.5 Incompatible materials** : Strong oxidising agents**10.6 Hazardous decomposition products** : carbon monoxide
carbon dioxide
Silicon Dioxide
nitrogen oxides
phosphorus oxides
sulfur oxides
Hydrogen sulfide
Mercaptans**SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Product/substance	Result	Species	Dose	Exposure	Test
<input checked="" type="checkbox"/> Synthetic graphite	LC50 Inhalation Dusts and mists	Rat - Male, Female	>2000 mg/m ³	4 hours	OECD 403
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	LD50 Oral	Rat - Female	>2000 mg/kg	-	OECD 401
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>1.9 mg/l	4 hours	EPA OPP 81-3 Acute Inhalation Toxicity OECD
	LD50 Dermal	Rabbit - Male, Female	>4000 mg/kg	-	OECD 401
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-	OECD 401
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>1.9 mg/l	4 hours	Read across EPA OPP 81-3 Acute Inhalation Toxicity
	LD50 Dermal	Rabbit - Male, Female	>5000 mg/kg	-	Read across OECD 402
Sulfonic acids, petroleum, calcium salts	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-	OECD 401
	LC50 Inhalation Dusts and mists	Rat - Male	>1.9 mg/l	4 hours	EPA OPP 81-3 Acute Inhalation



SECTION 11: Toxicological information

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl (Z)-N-9-octadecenylpropane-1,3-diamine C16-18-(even numbered, saturated and unsaturated)-alkylamines	LD50 Dermal	Rabbit - Male, Female	>4000 mg/kg	-	Toxicity -
	LD50 Oral	Rat - Male	>16000 mg/kg	-	Section 772 . 112-21 CFR 40
	LC50 Inhalation Dusts and mists	Rat	5.1 mg/l	4 hours	-
	LC50 Inhalation Vapour	Rat	80.4 mg/l	1 hours	-
	LC50 Inhalation Vapour	Rat	20.1 mg/l	4 hours	-
	LD50 Dermal	Rabbit	2201 mg/kg	-	-
	LD50 Oral	Rat	2000 mg/kg	-	OECD 401
	LD50 Oral	Rat - Female	>300 mg/kg	-	OECD 423
					Acute Oral toxicity - Acute Toxic Class Method OECD
		LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	1689 mg/kg	-	OECD 401

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Product/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	2000	2201	N/A	20.1	5.1
(Z)-N-9-octadecenylpropane-1,3-diamine	500	N/A	N/A	N/A	N/A
C16-18-(even numbered, saturated and unsaturated)-alkylamines	1689	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/substance	Result	Species	Score	Exposure	Test
Synthetic graphite	Eyes - Iris lesion	Rabbit	0	-	OECD 405
	Skin - Oedema	Rabbit	0	-	404
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	Eyes - Cornea opacity	Rabbit	0	-	EPA
	Skin - Oedema	Rabbit	0.3	4 hours	EPA OPPTS 870.2500 Acute Dermal Irritation

**SECTION 11: Toxicological information**

(Z)-N-9-octadecenylpropane-1,3-diamine	Skin - Primary dermal irritation index (PDII)	Rabbit	0.5	4 hours	OECD
	Skin - Severe irritant	Rabbit	-	4 hours	OECD 404 Acute Dermal Irritation/ Corrosion
	Eyes - Severe irritant	Rabbit	-	-	OECD 405
	Skin - Visible necrosis	Rabbit	-	-	OECD 404
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Eyes - Severe irritant	Rabbit	-	-	OECD 405
	Skin - Visible necrosis	Rabbit	-	-	OECD 404

Conclusion/Summary

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

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

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

Sensitisation

Product/substance	Route of exposure	Species	Result
Synthetic graphite Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts Sulfonic acids, petroleum, calcium salts C16-18-(even numbered, saturated and unsaturated)-alkylamines	skin	Mouse	Not sensitizing Sensitising
	skin	Human	
	skin	Mouse	Sensitising
	skin	Guinea pig	Sensitising
skin	Guinea pig	Not sensitizing	

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met. The supplier of one or more of the components contained within this formulation has indicated that he has data on the components and/or similar mixtures, which confirms that at the concentration used, classification is not required Contains sensitiser May produce an allergic reaction.

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

Mutagenicity

Product/substance	Test	Experiment	Result
Synthetic graphite Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	OECD 473	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 471	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474	Experiment: In vivo	Negative

**SECTION 11: Toxicological information**

(Z)-N-9-octadecenylpropane-1,3-diamine	-	Subject: Mammalian-Animal Cell: Somatic Experiment: In vivo	Negative
	OECD 471 Bacterial Reverse Mutation Test	Subject: Mammalian-Animal Experiment: In vitro	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Subject: Bacteria Experiment: In vitro	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Subject: Mammalian-Animal Experiment: In vitro	Negative
C16-18-(even numbered, saturated and unsaturated)-alkylamines	OECD 471	Subject: Mammalian-Animal Experiment: In vitro Subject: Bacteria	Negative

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Product/substance	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Synthetic graphite	Negative	Negative	Negative	Rat - Male, Female	Oral	-
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	Negative	Negative	Negative	Rat - Male, Female	Oral	-
(Z)-N-9-octadecenylpropane-1,3-diamine	-	Negative	Negative	Rat	Oral	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Negative	Negative	Negative	Rat - Male, Female	Oral	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Product/substance	Result	Species	Dose	Exposure
(Z)-N-9-octadecenylpropane-1,3-diamine	Negative - Oral	Rabbit	9 mg/kg NOAEL	-
	Negative - Oral	Rat	1.25 mg/kg NOAEL	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Negative - Oral	Rabbit - Male, Female	>30 mg/kg NOAEL	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/substance	Category	Route of exposure	Target organs
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Category 3	-	Respiratory tract irritation

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

**SECTION 11: Toxicological information**

Product/substance	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> N-9-octadecenylpropane-1,3-diamine C16-18-(even numbered, saturated and unsaturated)-alkylamines	Category 1 Category 2	- -	- -

Conclusion/Summary : Based on available data, the classification criteria are not met.

Aspiration hazard

Product/substance	Result
<input checked="" type="checkbox"/> 16-18-(even numbered, saturated and unsaturated)-alkylamines	ASPIRATION HAZARD - Category 1

Conclusion/Summary : Based on available data, the classification criteria are not met.

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- Ingestion** : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Short term exposure**

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

**SECTION 11: Toxicological information**

Product/substance	Result	Species	Dose	Exposure
Synthetic graphite Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts (Z)-N-9-octadecenylpropane- 1,3-diamine C16-18-(even numbered, saturated and unsaturated)- alkylamines	Sub-acute NOAEL Oral	Rat - Male, Female	813 mg/kg	-
	Sub-acute NOAEL Inhalation Dusts and mists	Rat - Male, Female	12 mg/m ³	4 weeks
	Sub-acute NOAEL Dermal	Rat - Male, Female	>1000 mg/kg	-
	Sub-acute NOAEL Oral	Rat - Male, Female	500 mg/kg	-
	Sub-acute NOAEL Inhalation Vapour	Rat - Male, Female	50 mg/m ³	28 days
	Sub-chronic NOAEL Oral	Rat	0.4 mg/kg	-
	Sub-acute LOAEL Dermal	Rat - Male, Female	12.5 mg/kg	-
	Sub-acute NOAEL Oral	Rat - Male, Female	3.25 mg/kg	-

Conclusion/Summary	: Not available.
General	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Carcinogenicity	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Mutagenicity	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Reproductive toxicity	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.

11.2 Information on other hazards**11.2.1 Endocrine disrupting properties**

This product does not contain any substance present at a concentration equal to or greater than 0.1% by mass, included in the list drawn up in accordance with article 59, paragraph 1 of the REACH Regulation, due to its endocrine disrupting properties, or a substance known to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation 2018/605.

11.2.2 Other information**SECTION 12: Ecological information**

Harmful to aquatic life with long lasting effects.

12.1 Toxicity

Product/substance	Result	Species	Exposure	Test
Synthetic graphite Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	Acute EC50 101 mg/l	Algae - Desmodesmus subspicatus	72 hours	OECD 201
	Acute EC50 101 mg/l	Daphnia - Daphnia magna	48 hours	OECD 202
	Acute LC50 101 mg/l	Fish	96 hours	-
	Acute NOEC 101 mg/l	Algae - Desmodesmus subspicatus	72 hours	OECD 201
	Acute NOEC 101 mg/l	Daphnia - Daphnia magna	48 hours	OECD 202
	Acute NOEC >100 mg/l	Fish - Danio rerio	96 hours	OECD 203
	Acute EC50 >1000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 >1000 mg/l	Crustaceans - Daphnia magna	48 hours	OECD 202
Acute LC50 >1000 mg/l	Fish - Cyprinodon	96 hours	OECD 203	



SECTION 12: Ecological information

Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	Chronic EC10 >1000 mg/l	variegatus Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 >1000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 >1000 mg/l	Crustaceans - Daphnia magna	48 hours	OECD 202
	Acute LC50 >1000 mg/l	Fish - Cyprinodon variegatus	96 hours	OECD 203
Sulfonic acids, petroleum, calcium salts	Chronic EC10 >1000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 >1000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 >1000 mg/l	Crustaceans - Daphnia magna	48 hours	OECD 202
	Acute LC50 >1000 mg/l	Fish - Cyprinodon variegatus	96 hours	OECD 203
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl	Chronic EC10 >1000 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	OECD 201
	Acute EC50 6.4 mg/l	Algae - Pseudokirchneriella subcapitata	96 hours	OECD 201
	Acute EL50 91.4 mg/l	Crustaceans - Daphina Magna	48 hours	OECD 202
	Acute LL50 24 mg/l	Fish - Oncorhynchus mykiss	96 hours	OECD 203
(Z)-N-9-octadecenylpropane-1,3-diamine	Chronic NOEC 1.7 mg/l	Algae - Pseudokirchneriella subcapitata	96 hours	OECD 201
	Chronic NOEL 0.12 mg/l	Crustaceans - Daphina Magna	21 days	OECD 211
	Acute EC50 0.01 to 0.1 mg/l	Algae - Desmodesmus subspicatus	72 hours	OECD 201
	Acute EC50 0.01 to 0.1 mg/l	Daphnia - Daphina Magna	48 hours	OECD 202
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Chronic NOEC 0.0011 mg/l	Daphnia - Daphina Magna	48 hours	OECD 211
	Acute EL50 0.04 mg/l	Algae - Selenastrum capricornutum	72 hours	-
	Acute EL50 0.011 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 222.5 mg/l	Micro-organism	3 hours	-
	Acute LL50 0.06 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic NOEL 0.013 mg/l	Daphnia - Daphnia magna	21 days	-

Conclusion/Summary : Not available.

12.2 Persistence and degradability



SECTION 12: Ecological information

Product/substance	Test	Result	Dose	Inoculum
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	OECD 301D	0 % - Not readily - 28 days	-	Activated sludge
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	OECD 301D	0 % - Not readily - 28 days	-	Activated sludge
Sulfonic acids, petroleum, calcium salts	OECD 301D	0 % - Not readily - 28 days	-	Activated sludge
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	STDMETH, ASTM and USEPA	3 % - Not readily - 28 days	-	Activated sludge
C16-18-(even numbered, saturated and unsaturated)-alkylamines	OECD 301B Ready Biodegradability - CO2 Evolution Test	66 % - Readily - 20 days	-	-

Conclusion/Summary : Not available.

Product/substance	Aquatic half-life	Photolysis	Biodegradability
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	-	-	Not readily
Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	-	-	Not readily
Sulfonic acids, petroleum, calcium salts	-	-	Not readily
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	-	-	Not readily
(Z)-N-9-octadecenylpropane-1,3-diamine	-	-	Readily
C16-18-(even numbered, saturated and unsaturated)-alkylamines	-	-	Readily

12.3 Bioaccumulative potential

**SECTION 12: Ecological information**

Product/substance	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> CERAN GEP	>3.5	-	low
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	22	-	high
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	0.3 to 7.1	-	low
(Z)-N-9-octadecenylpropane-1,3-diamine	0.03	0.5	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

Mobility in soil : Given its physical and chemical characteristics, the product has no soil mobility. The product is insoluble and floats on water. Loss by evaporation is limited

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

This product does not contain any substance present at a concentration equal to or greater than 0.1% by mass, included in the list drawn up in accordance with article 59, paragraph 1 of the REACh Regulation, due to its endocrine disrupting properties, or a substance known to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation 2018/605.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

**SECTION 13: Disposal considerations**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: 12 01 12*

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	ICAO/IATA
14.1 UN number or ID number	Not regulated.	9005	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., MOLTEN (C16-18-(even numbered, saturated and unsaturated)-alkylamines)	-	-
14.3 Transport hazard class(es)	-	9	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

Additional information

ADN : The product is only regulated as a dangerous good when transported in tank vessels.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.



SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB) /REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

**SECTION 15: Regulatory information**

Australia inventory (AIC)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Canada inventory	: <input checked="" type="checkbox"/> All components are listed or exempted.
China inventory (IECSC)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Europe inventory	: <input checked="" type="checkbox"/> All components are listed or exempted.
Japan inventory	: <input checked="" type="checkbox"/> Japan inventory (CSCL): All components are listed or exempted. Japan inventory (ISHL): Not determined.
New Zealand Inventory of Chemicals (NZIoC)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Philippines inventory (PICCS)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Korea inventory (KECI)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Thailand inventory	: Not determined.
Turkey inventory	: Not determined.
United States inventory (TSCA 8b)	: <input checked="" type="checkbox"/> All components are listed or exempted.
Vietnam inventory	: Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms	: ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DNEL = Derived No Effect Level DMEL = Derived Minimal Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic vPvB = Very Persistent and Very Bioaccumulative PNEC = Predicted No Effect Concentration LC50 = Median lethal concentration LD50 = Median lethal dose OEL = Occupational Exposure Limit VOC = Volatile Organic Compound UVCB Substance of unknown or Variable composition, Complex reaction products or Biological material NOEC No Observed Effect Concentration QSAR = Quantitative Structure–Activity Relationship
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Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> Aquatic Chronic 3, H412	Calculation method



SECTION 16: Other information

Full text of abbreviated H statements

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
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.

Full text of classifications

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.