

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

### 1.1 Product identifier

**Product name** : MULTIS COMPLEX SHD 00  
**Product code** : 38229  
**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

Not applicable.

#### Uses advised against

Not applicable.

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  
rm.msds-lubs@totalenergies.com

TotalEnergies Marketing UK Limited  
10 Upper Bank Street (19th floor)  
Canary Wharf,  
London E14 5BF  
UNITED KINGDOM  
Tel: +44 (0)20 7339 8000  
Fax: +44 (0)20 7339 8033  
rm.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

**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.

**Ingredients of unknown toxicity** : 1.9 percent of the mixture consists of component(s) of unknown acute oral toxicity

**Ingredients of unknown ecotoxicity** : Contains 63.5% of components with unknown hazards to the aquatic environment

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** : Not applicable.

**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  $\geq 0,1$  %.  
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.

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



# MULTIS COMPLEX SHD 00

**SDS no.**  
:

38229

### SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

- Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Phosphorodithioic acid, mixed O, O-bis(iso-Bu and pentyl) esters, zinc salts	REACH #: 01-2119493628-22 EC: 270-608-0 CAS: 68457-79-4	≤3	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1]
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	REACH #: 01-2119491299-23 EC: 270-128-1 CAS: 68411-46-1	≤1	Repr. 2, H361f	[1]
Reaction products of 4-methyl- 2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl (Z)-N-9-octadecenylpropane- 1,3-diamine	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]
C16-18-(even numbered, saturated and unsaturated)- alkylamines	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]
diphenylamine	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)	[1]
	EC: 204-539-4 CAS: 122-39-4 Index: 612-026-00-5	<0.1	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT RE 2, H373 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [2]

### Additional information

: The product is made from synthetic base oils

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** : Flush contaminated skin with plenty of water. 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** : No specific data.
- 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, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- 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.

## SECTION 5: Firefighting measures

**Hazardous combustion products** :

- carbon monoxide
- carbon dioxide
- nitrogen oxides
- phosphorus oxides
- sulfur oxides
- Hydrogen sulfide
- Mercaptans
- Zinc oxides

### 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
diphenylamine	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 20 mg/m <sup>3</sup> 15 minutes. TWA: 10 mg/m <sup>3</sup> 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.

- Advisory OEL DNELs/DMELs** : No known significant effects or critical hazards.

## SECTION 8: Exposure controls/personal protection

Product/substance	Type	Exposure	Value	Population	Effects
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	DNEL	Long term Oral	0.24 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	2.06 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Dermal	5.93 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	8.13 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	11.87 mg/kg bw/day	Workers	Systemic
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	DNEL	Long term Oral	0.04 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.04 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.08 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.14 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Inhalation	0.6 mg/m <sup>3</sup>	Workers	Systemic
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 Dermal	12.5 mg/kg	Workers	Systemic
	DNEL	Long term Inhalation	4.28 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	6.25 mg/kg	General population	Systemic
	DNEL	Long term Inhalation	1.09 mg/m <sup>3</sup>	General population	Systemic
	DNEL	Long term Oral	0.25 mg/day	General population	Systemic
(Z)-N-9-octadecenylpropane-1,3-diamine	DNEL	Long term Dermal	0.16 mg/cm <sup>2</sup>	Workers	Local
	DNEL	Long term Inhalation	0.035 mg/m <sup>3</sup>	Workers	Systemic
	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 <sup>3</sup>	General population	Systemic
	DNEL	Long term Oral	40 µg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.38 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Inhalation	1 mg/m <sup>3</sup>	Workers	Local



## SECTION 8: Exposure controls/personal protection

	DNEL	Long term Inhalation	0.035 mg/m <sup>3</sup>	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 <sup>3</sup>	General population	Systemic
	DNEL	Short term Inhalation	1 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Local

### PNECs

Product/substance	Compartment Detail	Value	Method Detail
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	Fresh water	1.9 mg/l	-
	Marine water	1.9 mg/l	-
	Sewage Treatment Plant	39 mg/l	-
	Fresh water sediment	33 mg/kg	-
	Marine water sediment	33 mg/kg	-
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Fresh water	33.8 µg/l	-
	Marine water	3.38 µg/l	-
	Fresh water sediment	446 µg/kg dwt	-
	Marine water sediment	44.6 µg/kg dwt	-
	Soil	1.76 mg/kg dwt	-
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14-tert-alkyl	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	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Marine water sediment	0.172 mg/kg dwt	-
	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



## SECTION 8: Exposure controls/personal protection

- 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.
- nitrile 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.
- 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 properties

#### Appearance

Physical state	: Solid. [grease]
Colour	: Yellow.
Odour	: Characteristic.
Odour threshold	: Not available.
Melting point/freezing point	: 250°C [ISO 3016]
Initial boiling point and boiling range	: Not applicable.
Flammability (solid, gas)	: Not applicable.
Upper/lower flammability or explosive limits	: Not applicable.
Flash point	: Open cup: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: 250°C
pH	: Not applicable. Product is non-soluble (in water).
Viscosity	: Not applicable.
Solubility(ies)	:

Media	Result
water	Not soluble

Miscible with water	: No.
Partition coefficient: n-octanol/ water	: Not applicable.
Vapour pressure	: Not applicable.
Relative density	: 0.9 [ISO 12185]
Density	: 0.9 g/cm <sup>3</sup> [20°C (68°F)] [ISO 12185]
Vapour density	: Not applicable.
Particle characteristics	
Median particle size	: Not available.

### 9.2 Other information

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.

## SECTION 10: Stability and reactivity

**10.4 Conditions to avoid** : No specific data.

**10.5 Incompatible materials** : Strong oxidising agents

**10.6 Hazardous decomposition products** :  
carbon monoxide  
carbon dioxide  
nitrogen oxides  
phosphorus oxides  
sulfur oxides  
Hydrogen sulfide  
Mercaptans  
Zinc oxides

## 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
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	LD50 Dermal	Rabbit	>20 g/kg	-	OECD 402 Acute Dermal Toxicity
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	LD50 Oral	Rat	3.6 g/kg	-	-
	LD50 Oral	Rat	2500 mg/kg	-	OECD 401
	LD50 Oral	Rat	>5000 mg/kg	-	-
	LC50 Inhalation Dusts and mists	Rat	5.1 mg/l	4 hours	-
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl	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
(Z)-N-9-octadecenylpropane-1,3-diamine	LD50 Oral	Rat - Female	>300 mg/kg	-	OECD 423 Acute Oral toxicity - Acute Toxic Class Method OECD
C16-18-(even numbered, saturated and unsaturated)-alkylamines	LC50 Inhalation Dusts and mists	Rat - Male	>0.099 mg/l	1 hours	-
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat - Male, Female	1689 mg/kg	-	OECD 401
diphenylamine	LC50 Inhalation Dusts and mists	Rat	0.501 mg/l	4 hours	-
	LC50 Inhalation Vapour	Rat	3 mg/l	4 hours	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-	-
	LD50 Dermal	Rat	300 mg/kg	-	-

## SECTION 11: Toxicological information

	LD50 Oral	Rat	100 mg/kg	-	-
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**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)
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	3600	N/A	N/A	N/A	N/A
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, 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
diphenylamine	100	300	N/A	3	0.501

### Irritation/Corrosion

Product/substance	Result	Species	Score	Exposure	Test
(Z)-N-9-octadecenylpropane-1,3-diamine	Skin - Severe irritant	Rabbit	-	4 hours	OECD 404 Acute Dermal Irritation/Corrosion
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. 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

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

### Sensitisation

Product/substance	Route of exposure	Species	Result
C16-18-(even numbered, saturated and unsaturated)-alkylamines	skin	Guinea pig	Not sensitizing


### Conclusion/Summary

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

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

### Mutagenicity

## SECTION 11: Toxicological information


Product/substance	Test	Experiment	Result
 -N-9-octadecenylpropane-1,3-diamine  C16-18-(even numbered, saturated and unsaturated)-alkylamines	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 471	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
 -N-9-octadecenylpropane-1,3-diamine C16-18-(even numbered, saturated and unsaturated)-alkylamines	-	Negative	Negative	Rat	Oral	-
	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
 -N-9-octadecenylpropane-1,3-diamine  C16-18-(even numbered, saturated and unsaturated)-alkylamines	Negative - Oral	Rabbit	9 mg/kg NOAEL	-
	Negative - Oral	Rat	1.25 mg/kg NOAEL	-
	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)

Product/substance	Category	Route of exposure	Target organs
 -N-9-octadecenylpropane-1,3-diamine C16-18-(even numbered, saturated and unsaturated)-alkylamines diphenylamine	Category 1	-	-
	Category 2	-	-
	Category 2	-	-

## SECTION 11: Toxicological information

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

### Aspiration hazard

Product/substance	Result
C16-18-(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** : No known significant effects or critical hazards.  
**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** : No specific data.  
**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

Product/substance	Result	Species	Dose	Exposure
C16-18-(even numbered, saturated and unsaturated)-alkylamines	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** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Reproductive toxicity** : No known significant effects or critical hazards.

## SECTION 11: Toxicological information

### 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
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	Acute EC50 10 mg/l	Daphnia - Daphnia magna	48 hours	OECD 202
	Acute LC50 32 mg/l	Algae - Scenedesmus subspicatus	72 hours	OECD 201
	Acute LC50 5.3 mg/l	Fish - Oncorhynchus mykiss	96 hours	OECD 203
	Acute NOEC 0.8 mg/l	Daphnia - Daphnia magna	21 days	-
	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
	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
(Z)-N-9-octadecenylpropane-1,3-diamine	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	-
diphenylamine	Acute LL50 0.06 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic NOEL 0.013 mg/l	Daphnia - Daphnia magna	21 days	-
	Acute EC50 0.31 mg/l	Daphnia - Daphnia magna	48 hours	-
	Fresh water			
	Acute LC50 2.2 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours	US EPA



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**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

Product/substance	Test	Result	Dose	Inoculum
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, 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
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	-	-	Not readily
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	-	-	Not readily
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, 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

Product/substance	LogP <sub>ow</sub>	BCF	Potential
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	0.69	-	low
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	5.1	1730	high
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl	0.3 to 7.1	-	low

## SECTION 12: Ecological information

(Z)-N-9-octadecenylpropane-1,3-diamine	0.03	0.5	low
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### 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. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	ICAO/IATA
<b>14.1 UN number or ID number</b>	Not regulated.	9005	Not regulated.	Not regulated.
<b>14.2 UN proper shipping name</b>	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., MOLTEN (C16-18-(even numbered, saturated and unsaturated)-alkylamines, Phosphorodithioic acid, mixed O,O-bis (iso-Bu and pentyl) esters, zinc salts)	-	-
<b>14.3 Transport hazard class(es)</b>	-	9	-	-
<b>14.4 Packing group</b>	-	-	-	-
<b>14.5 Environmental hazards</b>	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.

## SECTION 15: Regulatory information

### Prior Informed Consent (PIC)

Not listed.

### Persistent Organic Pollutants

Not listed.

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

### Seveso Directive

☒ This product is not controlled under the Seveso Directive.

### EU regulations

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

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

### 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

<b>Australia inventory (AIIC)</b>	: At least one component is not listed.
<b>Canada inventory</b>	: At least one component is not listed.
<b>China inventory (IECSC)</b>	: All components are listed, exempted, or notified.
<b>Europe inventory</b>	: <input checked="" type="checkbox"/> All components are listed or exempted.
<b>Japan inventory</b>	: <input checked="" type="checkbox"/> <b>Japan inventory (CSCL)</b> : At least one component is not listed. <b>Japan inventory (ISHL)</b> : Not determined.
<b>New Zealand Inventory of Chemicals (NZIoC)</b>	: <input checked="" type="checkbox"/> All components are listed or exempted.
<b>Philippines inventory (PICCS)</b>	: At least one component is not listed.
<b>Korea inventory (KECI)</b>	: At least one component is not listed.

## SECTION 15: Regulatory information

<b>Taiwan Chemical Substances Inventory (TCSI)</b>	: <input checked="" type="checkbox"/> All components are listed, exempted, or notified.
<b>Thailand inventory</b>	: Not determined.
<b>Turkey inventory</b>	: Not determined.
<b>United States inventory (TSCA 8b)</b>	: All components are listed or exempted.
<b>Vietnam inventory</b>	: 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.

<b>15.2 Chemical safety assessment</b>	: <input checked="" type="checkbox"/> This product contains substances for which Chemical Safety Assessments are still required.
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## SECTION 16: Other information

☒ Indicates information that has changed from previously issued version.

<b>Abbreviations and acronyms</b>	: 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

### Full text of abbreviated H statements

<input checked="" type="checkbox"/> H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.

**SECTION 16: Other information**

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. 3	ACUTE TOXICITY - Category 3
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
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
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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