SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

MULTIS COMPLEX SHD 100

SDS # : 38364

previous revision date : 2023/01/27

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

1.1 Product identifier

Product name : MULTIS COMPLEX SHD 100

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

Identified uses
Lubricating grease

1.3 Details of the supplier of the safety data sheet

TotalEnergies Lubrifiants
562 Avenue du Parc de L'ile
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 Deutschland GmbH
Jean-Monnet-Straße 2
10557 BERLIN
DEUTSCHLAND
Tel: +49 (0)30 2027 60

msds@totalenergies.com

Contact

HSE : + 49 (0) 30/ 2027-9429

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : Giftnotruf Berlin, Tel.+49 (0)30 19240 (24 h erreichbar, Beratung in Deutsch und Englisch

Supplier

Telephone number : TOTAL Emergency number: +49 89 220 61012

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]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

For more details about adverse physical, human health and environmental effects, see sections 9 to 12.

2.2 Label elements

Signal word	:	No signal word.
Hazard statements	:	No hazard statement.
Precautionary statements		
Prevention	:	Not applicable.
Response	:	Not applicable.
Storage	:	Not applicable.
Disposal	:	Not applicable.
Supplemental label elements	:	Safety data sheet available on request.
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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/substance	Identifiers	% (w/w)	Classification	Specific Conc. Limits, M-factors and ATEs	Type
dilithium azelate	REACH #: 01-2120119814-57 EC: 254-184-4 CAS: 38900-29-7	≤3	Acute Tox. 4, H302	ATE [Oral] = 500 mg/kg	[1]
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	<2.5	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	Skin Irrit. 2, H315: C ≥ 15% Eye Dam. 1, H318: C ≥ 3%	[1] [2]
Molybdenum, bis (dibutylcarbamodithioato)di-µ-oxodioxodi-, sulfurized	REACH #: 01-2120764792-44 EC: 270-180-5 CAS: 68412-26-0	≤3	Aquatic Chronic 4, H413	-	[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 **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 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

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. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

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

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact :
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, CO_2, 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 : No specific fire or explosion hazard.

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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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 spilled material. Put on appropriate personal protective equipment.
For emergency responders	:	If specialized 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 spilled 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).

6.3 Methods and materials for containment and cleaning up

Small spill	:	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

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

7.1 Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). See Section 10 for incompatible materials before handling or use.

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. Shelf life: 36 months. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

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
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	**DFG MAK-values list (Germany, 7/2023) [Zinc and its inorganic compounds]** Develop C. PEAK 15 minutes: 0.4 mg/m³ 4 times per shift [Interval: 1 hour]. Form: respirable fraction. TWA 8 hours: 2 mg/m³. Form: inhalable fraction. TWA 8 hours: 0.1 mg/m³. Form: respirable fraction. PEAK 15 minutes: 4 mg/m³ 4 times per shift [Interval: 1 hour]. Form: inhalable fraction.

Biological Limit Values (BLV)

Product/substance	Exposure indices
Molybdenum, bis(dibutylcarbamodithioato)di-μ-oxodioxodi-, sulfurized	**DFG BEI-values list (Germany, 7/2023) [Molybdenum and its compounds]** BEI: See Section XII.2: Substances for which no BAT values are currently be derived, but documentaries in the "work Medico-toxicological justifications for BAT values, EKA and BLW", molybdenum [in urine, in plasma]. BEI: 150 µg/l, molybdenum [in urine].

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Advisory OEL : Mineral oil mist: USA: OSHA (PEL) TWA 5 mg/m3, NIOSH (REL) TWA 5 mg/m3, STEL 10 mg/m3, ACGIH (TLV) TWA 5 mg/m3 (highly refined)

DNELs/DMELs

Product/substance	Type	Exposure	Value	Population	Effects
dilithium azelate	DNEL	Long term Dermal	1.25 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	8.82 mg/m³	Workers	Systemic
	DNEL	Long term Inhalation	2.17 mg/m³	General population	Systemic
	DNEL	Long term Oral	0.625 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.023 mg/cm²	General population	Local
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/m³	General population	Systemic
	DNEL	Long term Dermal	5.93 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	8.13 mg/m³	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	0.05 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.08 mg/m³	General population	Systemic
	DNEL	Long term Dermal	0.22 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.31 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	0.44 mg/kg bw/day	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Name	Method Detail
dilithium azelate	Fresh water	0.023 mg/l	Assessment Factors
	Marine water	0.0023 mg/l	Assessment Factors
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	-
Molybdenum, bis(dibutylcarbamodithioato)di-μ-oxodioxodi-, sulfurized	Fresh water	0.1 mg/l	-
	Marine water	0.01 mg/l	-
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	-

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 : In case of contact through splashing: 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.
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.

Respiratory protection : None under normal use conditions. If these are not sufficient to maintain exposure below the OEL, suitable respiratory protection must be worn (Type A/P1).

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]	
Color	: Yellow.	
Odor	: Characteristic.	
pH	: Not applicable.	Product is non-soluble (in water).
Melting point/freezing point	: >250°C [EN ISO 3016]	
Initial boiling point and boiling range	: Not applicable.	
Flash point	: Not applicable.	
Flammability	: Yes.	
Lower and upper explosion limit	: Not applicable.	
Vapor pressure	: Not applicable.	
Vapor density	: Not applicable.	
Relative density	: 0.9 [ASTM D 4052]	

Density : 0.9 g/cm³ [20°C] [ASTM D 4052]

Solubility(ies) :

Media	Result
water	Not soluble

Miscible with water : No.

Partition coefficient: n-octanol/ water : >3.5

Auto-ignition temperature : Not applicable.

Decomposition temperature : >250°C

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not applicable.
Kinematic (40°C): 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.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : Strong oxidizing agents

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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
dilithium azelate	LD50 Dermal	Rat - Female	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat - Female	>300 mg/kg	-	OECD 420
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	LD50 Dermal	Rabbit	>20 g/kg	-	OECD 402 Acute Dermal Toxicity
	LD50 Oral	Rat	3.6 g/kg	-	-
Molybdenum, bis (dibutylcarbamodithioato)di-µ-oxodioxodi-, sulfurized	LC50 Inhalation Dusts and mists	Rat	34.5 mg/l	4 hours	-

	LD50 Dermal	Rabbit	10001 mg/kg	-	-
	LD50 Oral	Rat	>2000 mg/kg	-	OECD 420
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-	OECD 401

Acute toxicity estimates

Product/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
MULTIS COMPLEX SHD 100	20000	N/A	N/A	N/A	N/A
dilithium azelate	500	N/A	N/A	N/A	N/A
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	3600	N/A	N/A	N/A	N/A
Molybdenum, bis(dibutylcarbamodithioato)di-μ-oxodioxodi-, sulfurized	N/A	10001	N/A	N/A	34.5

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

Irritation/Corrosion

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.

Sensitization

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

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

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

Teratogenicity

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

Specific target organ toxicity (single exposure)

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

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

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

Information on the 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	:	irritation dryness cracking
Ingestion	:	No specific data.

Delayed and immediate effects and also 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

Not available.

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.

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

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/substance	Result	Species	Exposure	Test
dilithium azelate	Acute LC50 3.2 mg/l Fresh water	Algae	72 hours	OECD 201
	Acute LC50 >100 mg/l	Daphnia	48 hours	Read across
	Acute LC50 >100 mg/l	Fish	96 hours	Read across
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	Acute EL50 23 mg/l Fresh water	Daphnia - *Daphnia magna*	48 hours	OECD 202
	Acute LC50 21 mg/l Fresh water	Algae - *Scenedesmus subspicatus*	72 hours	OECD 201
	Acute LC50 46 mg/l Marine water	Fish - *Cyprinodon variegatus*	96 hours	OECD 203
	Acute LL50 4.5 mg/l Fresh water	Fish - *Oncorhynchus mykiss*	96 hours	OECD 203
	Acute NOEC 0.8 mg/l Fresh water	Daphnia - *Daphnia magna*	21 days	OECD 211
Molybdenum, bis (dibutylcarbamodithioato)di-µ-oxodioxodi-, sulfurized	Acute EC50 >100 mg/l	Algae - *Pseudokirchneriella subcapitata*	72 hours	OECD 201
	Acute EC50 >100 mg/l	Daphnia - *Daphnia magna*	48 hours	OECD 202
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Acute EC50 >100 mg/l Fresh water	Algae - *Desmodesmus subspicatus*	72 hours	OECD 201
	Acute LC50 >100 mg/l Fresh water	Fish - *Danio rerio*	96 hours	OECD 203

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/substance	Test	Result	Dose	Inoculum
dilithium azelate	-	94 % - 28 days	-	-
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	OECD 301B	1 % - 28 days	-	-

Conclusion/Summary : Not available.

Product/substance	Aquatic half-life	Photolysis	Biodegradability
dilithium azelate	-	-	Readily
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	-	-	Not readily
Molybdenum, bis (dibutylcarbamodithioato)di-µ-oxodioxodi-, sulfurized	-	-	Readily
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	-	-	Not readily

12.3 Bioaccumulative potential

Product/substance	$LogK_{ow}$	BCF	Potential
MULTIS COMPLEX SHD 100	>3.5	-	Low
dilithium azelate	-3.4	-	Low
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	0.69	-	Low
Molybdenum, bis (dibutylcarbamodithioato)di-µ-oxodioxodi-, sulfurized	6.24 to 7.28	-	High
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	5.1	1730	High

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 in a concentration >= 0,1 %.

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

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized 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. Should not be released into the environment.

Hazardous waste : Yes.

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 minimized 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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled 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.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Labeling : Not applicable.

Other EU regulations

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

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

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

Explosive precursors : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Storage class (TRGS 510) : 13

Take into account special provisions for the storage of flammable liquids in portable tanks according to TRGS 510

Hazardous incident ordinance

This product is not controlled under the Germany Hazardous Incident Ordinance.

Hazard class for water : 1

Technical instruction on air quality control : Number 5.2.1: 14.9897%
Number 5.2.5: 85.0103%
Number 5.2.5 - Class I: 0.6000%

Employment law : Law on the protection of young workers
Regulation on the complementary implementation of the EC Directive on Maternity Protection (MuSchRiV - Maternity Protection Directive Regulation)

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

Australia inventory (AIIC) : All components are listed or exempted.

Canada inventory (DSL/NDSL) : At least one component is not listed in DSL but all such components are listed in NDSL.

China inventory (IECSC) : All components are listed, exempted, or notified.

Europe inventory (EC) : All components are listed or exempted.

Japan inventory : **Japan inventory (CSCL)**: At least one component is not listed.
Japan inventory (ISHL): Not determined.

New Zealand Inventory of Chemicals (NZIoC)	: All components are listed or exempted.
Philippines inventory (PICCS)	: All components are listed or exempted.
Korea inventory (KECI)	: All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	: All components are listed, exempted, or notified.
Thailand inventory	: Not determined.
Turkey inventory	: Not determined.
United States inventory (TSCA 8b)	: 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 : Risk management measures and safety conditions of use are included in the relevant sections of the SDS

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ACGIH = American Conference of Governmental Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
DMSO = Dimethyl Sulfoxide
EC50 = Half maximal effective concentration
EL50 = median Effective Loading
EUH statement = CLP-specific Hazard statement
HSE = Health, Safety and Environment
IC50 = Half maximal inhibitory concentration
IDHL = Immediately dangerous to life or health
LC50 = Median lethal concentration
LD50 = Median lethal dose
LL50 = median Lethal Loading
LogKow = logarithm of the octanol/water partition coefficient
N/A = Not available
NIOSH = National Institute of Occupational Safety and Health
NOAEL = No Observed Adverse Effect Level
NOEC No Observed Effect Concentration
NOEL = No Observed Effect Level
NOELR = No observed Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
OEL = Occupational Exposure Limit
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
QSAR = Quantitative Structure–Activity Relationship
REL = Recommanded Exposure Limit
STEL = Short Term Exposure Limit
TLV = Threshold Limit Value
TWA = Time Weight Average
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative
UFI = Unique Formula Identifier
UVCB Substance of unknown or Variable composition, Complex reaction products or Biological material

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H361f	Suspected of damaging fertility.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 2	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 4	AQUATIC HAZARD (LONG-TERM) - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Repr. 2	TOXIC TO REPRODUCTION - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2

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Notice to reader

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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.