

SOLBERG® VERSAGARD™ AS-100

SECTION 1: IDENTIFICATION

1.1 Product identifier: SOLBERG® VERSAGARD™ AS-100

Other means of identification:

Non-applicable

1.2 Recommended uses and any restrictions on use or supply:

Relevant uses: Fire-extinguishing. For professional user only.

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Supplier's details:

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1.4 Emergency phone number: + 61294306396

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

HSNO Act:

This product was classified in accordance with HSNO Act

6.3A: Substances that are irritating to the skin, H315

8.3A: Substances that are corrosive to ocular tissue, H318

2.2 Label elements, including precautionary statements:

HSNO Act:

Danger



Hazard statements:

6.3A: H315 - Causes skin irritation.

8.3A: H318 - Causes serious eye damage.

Precautionary statements:

P264: Wash thoroughly after use.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313: If skin irritation occurs: Get medical advice/attention.

Additional labeling:

HSNO ACT (HSR002573)

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SECTION 2: HAZARDS IDENTIFICATION (continued)

2.3 Other hazards which do not result in classification:

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Aqueous solution of tensoactives

Components:

In accordance with Part B: Concentration cut-offs for ingredients in mixtures for purpose of section 3 of Hazardous Substances (Safety Data Sheets) Notice 2017, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 111-76-2	2-butoxyethanol 3.1D: H227; 6.1D: H302+H332; 6.1E: H313; 6.3A: H315; 6.4A: H319 - Warning	 5 - <20 %
CAS: 4292-10-8	(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide 8.3A: H318 - Danger	 2 - <6 %
CAS: 142-31-4	Sodium octyl sulphate 6.3A: H315; 8.3A: H318 - Danger	 0.5 - <3 %
CAS: 112-53-8	Dodecan-1-ol 6.4A: H319; 9.1A: H400 - Warning	  0.1 - <2 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 First aid instructions according to each relevant route of exposure;:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation, however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms and effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of medical attention and its urgency:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Information on the appropriate type of extinguishers or fire-fighting agents:

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SOLBERG® VERSAGARD™ AS-100**SECTION 5: FIRE-FIGHTING MEASURES (continued)****Appropriate type of extinguishers or fire-fighting agents:**

Product is non-flammable under normal conditions of storage, manipulation and use, but the product contains flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Inappropriate type of extinguishers or fire-fighting agents:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2 Advice on specific hazards that may arise from the substance:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures:**

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

6.2 Environmental precautions from accidental spills and release;:

Avoid spillage into the aquatic environment as it contains substances potentially dangerous for this. Contain the product absorbed in hermetically sealed containers. In the case of serious spillage into the aquatic environment notify the relevant authority.

6.3 Advice on how to contain and clean up a spill or release:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling:****A.- Precautions for safe manipulation**

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:**A.- Technical measures for storage**

Minimum Temp.: 0 °C

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SECTION 7: HANDLING AND STORAGE (continued)

Maximum Temp.: 50 °C

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational exposure limits:

Substances whose workplace exposure standards (WES) have to be monitored in the work environment:

The Workplace Exposure Standards (WES), eleventh edition:

Identification	Occupational exposure limits		
	2-butoxyethanol CAS: 111-76-2	TWA	25 ppm
STEL			

8.2 Engineering controls:

A.- Identification of the specific types of personal protective equipment

If product is used at the concentration dosing conditions specified in the relevant instructions for use (section 15), personal protective equipment described in section 8.2 for UNDILUTED products will not be required.

Safe handling recommendations for undiluted product:

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using chemical protection gloves

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Bodily protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 °C:	Liquid
Appearance:	Viscous
Colour:	White
Odour:	Characteristic
Odour threshold:	Non-applicable *

Volatility:

Initial boiling point and boiling range:	Non-applicable *
Vapour pressure at 20 °C:	Non-applicable *
Vapour pressure at 50 °C:	Non-applicable *
Evaporation rate at 20 °C:	Non-applicable *

Product description:

Density at 20 °C:	1000 - 1040 kg/m ³
Relative density at 20 °C:	Non-applicable *
Dynamic viscosity at 20 °C:	105 cP
Kinematic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 40 °C:	>20.5 cSt
Concentration:	Non-applicable *
pH:	7 - 8
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	
Solubility properties:	Highly water-soluble
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *

Flammability:

Flash Point:	Non Flammable (>93 °C)
Heat of combustion:	Non-applicable *
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Upper flammability limit: Non-applicable *

Explosive:

Lower explosive limit: Non-applicable *

Upper explosive limit: Non-applicable *

9.2 Other information:

Surface tension at 20 °C: Non-applicable *

Refraction index: Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY
10.1 Chemical reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 List of conditions to avoid or prevent a hazardous situation:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Precaution	Avoid direct impact	Not applicable

10.5 Information on incompatible substances or materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Information on hazardous decomposition products:

 See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects:

Contains glycols. With possibility of effects that are hazardous to the health, it is recommended not to breathe the vapours for long periods of time.

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.
IARC: 2-butoxyethanol (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:

Non-applicable

Product-specific toxicological information:

Acute toxicity		Genus
LD50 oral	2001 mg/kg	

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
	Route	Dose	
2-butoxyethanol CAS: 111-76-2	LD50 oral	1200 mg/kg	Rat
	LD50 dermal	3000 mg/kg	Rabbit
	LC50 inhalation	11 mg/L (4 h) (ATEi)	
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide CAS: 4292-10-8	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
Dodecan-1-ol CAS: 112-53-8	LD50 oral	26530 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity (aquatic and terrestrial):

Product-specific aquatic toxicity:

Acute toxicity		Species	Genus
LC50	500 mg/L (96 h)	Danio rerio	Fish
EC50	110 mg/L (48 h)	Daphnia magna Straus	Crustacean
EC50	30 mg/L (72 h)	Scenedesmus subspicatus	Algae

Substance-specific aquatic toxicity:

Identification	Acute toxicity		Species	Genus
	Route	Dose		
2-butoxyethanol CAS: 111-76-2	LC50	1490 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	1815 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	911 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Acute toxicity		Species	Genus
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino] propylammonium hydroxide CAS: 4292-10-8	LC50	1.9 mg/L (96 h)	Cyprinus carpio	Fish
	EC50	1.9 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
Dodecan-1-ol CAS: 112-53-8	LC50	1.01 mg/L (96 h)	Pimephales promelas	Fish
	EC50	320 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	0.97 mg/L (96 h)	Scenedesmus subspicatus	Algae

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
2-butoxyethanol CAS: 111-76-2	BOD5	0.71 g O ₂ /g	Concentration	100 mg/L
	COD	2.2 g O ₂ /g	Period	14 days
	BOD5/COD	0.32	% Biodegradable	96 %
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino] propylammonium hydroxide CAS: 4292-10-8	BOD5	Non-applicable	Concentration	100 mg/L
	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	95 %

12.3 Potential to be bioaccumulative:

Identification	Bioaccumulation potential	
2-butoxyethanol CAS: 111-76-2	BCF	3
	Pow Log	0.83
	Potential	Low
Dodecan-1-ol CAS: 112-53-8	BCF	180
	Pow Log	5.13
	Potential	High

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
2-butoxyethanol CAS: 111-76-2	Koc	8	Henry	1.621E-1 Pa·m ³ /mol
	Conclusion	Very High	Dry soil	No
	Surface tension	2.729E-2 N/m (25 °C)	Moist soil	Yes
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino] propylammonium hydroxide CAS: 4292-10-8	Koc	3063	Henry	Non-applicable
	Conclusion	Low	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable
Dodecan-1-ol CAS: 112-53-8	Koc	15000	Henry	2.25 Pa·m ³ /mol
	Conclusion	Immobile	Dry soil	Non-applicable
	Surface tension	2.94E-2 N/m (25 °C)	Moist soil	Yes

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS
13.1 Appropriate and achievable disposal methods:
Special precautions to be taken during disposal:

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommend disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

Imports and Exports (Restrictions) Prohibition Order (No 2) 2004

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SOLBERG® VERSAGARD™ AS-100**SECTION 14: TRANSPORT INFORMATION**

This product is not regulated for transport.

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations specific for the product in question:****Specific provisions in terms of protecting people or the environment:**

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Relevant instructions for use:

This product is intended for the production of foam for fire extinguishing purposes. For this purpose it should be diluted in water and used with appropriate foam-generating equipment. Use at 3% on both hydrocarbon and polar solvent fires.

Relevant regulatory requirements:

Health and Safety at Work (Hazardous Substances) Regulations 2017

Health and Safety at Work Act 2015

Hazardous Substances (Classification) Notice 2017

Hazardous Substances (Labelling) Notice 2017

Other information:

Considering environmental tests, the product is classified in water hazard class 1 - slightly hazardous to water (WGK 1) according to AwSV.

New Zealand

Approval: Fire Fighting Chemicals Group Standard 2021 (HSR002573). NZIoC: All components are listed on the New Zealand Inventory of Chemical Substances.

SECTION 16: OTHER INFORMATION**Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with Schedule 1: Content and format of safety data sheets of Hazardous Substances (Safety Data Sheets) Notice 2017

Texts of the legislative phrases mentioned in section 2:

H318: Causes serious eye damage.

H315: Causes skin irritation.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

HSNO Act:

3.1D: H227 - Combustible liquid.

6.1D: H302+H332 - Harmful if swallowed or if inhaled.

6.1E: H313 - May be harmful in contact with skin.

6.3A: H315 - Causes skin irritation.

6.4A: H319 - Causes serious eye irritation.

8.3A: H318 - Causes serious eye damage.

9.1A: H400 - Very toxic to aquatic life.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

<https://www.epa.govt.nz/>

Abbreviations and acronyms:

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SOLBERG® VERSAGARD™ AS-100**SECTION 16: OTHER INFORMATION (continued)**

HSNO Act: Hazardous substances and new organisms Act
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET