

FREEDOM

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Version: 02.0

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

1.1 Product identifier

Trade name: FREEDOM

1.2 Recommended use and restrictions on use

See product label.

For professional use only.

1.3 Details of the supplier of the safety data sheet

SOLENIS VIETNAM COMPANY LIMITED

Contact details

Level 4&5, M-Building, Lot C7B-02A, Block A, No.9 Street 8, Zone Saigon South New Urban Area, Tan Phu Ward, District 7, Ho Chi Minh City, VIETNAM

Tel. 0314996293

1.4 Emergency telephone number

In case of medical emergency, please seek professional medical advice.

SECTION 2: Composition/information on ingredients

2.1 Substances / Mixtures

Ingredient(s)	CAS number	EC number	Classification	Weight percent
2-butoxyethanol	111-76-2	203-905-0	Flammable liquids, Category 4 (H227) Acute toxicity - Inhalation, Category 3 (H331) Acute toxicity - Oral, Category 4 (H302) Skin irritation, Category 2 (H315) Eye irritation, Category 2A (H319)	10-20
2-aminoethanol	141-43-5	205-483-3	Flammable liquids, Category 4 (H227) Skin corrosion, Category 1B (H314) Acute toxicity - Oral, Category 4 (H302) Acute toxicity - Dermal, Category 4 (H312) Acute toxicity - Inhalation, Category 4 (H332) Specific target organ toxicity - Single exposure, Category 3 (H335) Serious eye damage, Category 1 (H318) Acute aquatic toxicity, Category 3 (H402) Chronic aquatic toxicity, Category 3 (H412)	3-10
sodium xylene sulphonate	1300-72-7	701-037-1	Eye irritation, Category 2A (H319)	3-10
disodium trisilicate	1344-09-8	215-687-4	Specific target organ toxicity - Single exposure, Category 3 (H335) Skin irritation, Category 2 (H315) Eye irritation, Category 2A (H319)	1-3
sodium hydroxide	1310-73-2	215-185-5	Skin corrosion, Category 1A (H314) Corrosive to metals, Category 1 (H290)	1-3

Workplace exposure limit(s), if available, are listed in subsection 8.1.

ATE, if available, are listed in section 11.

SECTION 3: Hazards identification

3.1 Classification of the substance or mixture

Skin corrosion, Category 1B

Serious eye damage, Category 1

Acute toxicity, inhalation, Category 4

Specific target organ toxicity (single exposure), Category 3

Corrosive to metals, Category 1

3.2 Label elements

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Signal word: Danger.

Hazard statements:

H290 - May be corrosive to metals.
 H314 - Causes severe skin burns and eye damage.
 H332 - Harmful if inhaled.
 H335 - May cause respiratory irritation.

Precautionary statements:

P260 - Do not breathe vapours.
 P280 - Wear protective gloves, protective clothing and eye or face protection.
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 - Immediately call a POISON CENTRE, doctor or physician.

3.3 Other hazards

No other hazards known. Exposure and appropriate engineering controls are specified in subsection 8.2 exposure controls.

3.4 Classification diluted product

Recommended maximum concentration (% w/w): 6.66

Skin irritation, Category 3

3.5 Label elements diluted product

Signal word: Warning.

Hazard statements:

H316 - Causes mild skin irritation.

SECTION 4: First aid measures

4.1 Description of first aid measures**General Information:**

Symptoms of intoxication may even occur after several hours. It is recommended to continue medical observation for at least 48 hours after the incident. If unconscious place in recovery position and seek medical advice. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.

Inhalation:

Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE, doctor or physician.

Skin contact:

Wash skin with plenty of lukewarm, gently flowing water for at least 30 minutes. Take off immediately all contaminated clothing and wash it before reuse. Immediately call a POISON CENTRE, doctor or physician.

Eye contact:

Hold eyelids apart and flush eyes with plenty of lukewarm water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE, doctor or physician.

Ingestion:

Rinse mouth. Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Keep at rest. Immediately call a POISON CENTRE, doctor or physician.

Self-protection of first aider:

Consider personal protective equipment as indicated in subsection 8.2.

4.2 Most important symptoms and effects, both acute and delayed**Inhalation:**

Corrosive to the respiratory tract. May cause respiratory irritation.

Skin contact:

Causes severe burns.

Eye contact:

Causes severe or permanent damage.

Ingestion:

Ingestion will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

SECTION 5: Firefighting measures

FREEDOM

5.1 Extinguishing media

Carbon dioxide. Dry powder. Water spray jet. Fight larger fires with water spray jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture

No special hazards known.

5.3 Advice for firefighters

As in any fire, wear self contained breathing apparatus and suitable protective clothing including gloves and eye/face protection.

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

Ensure adequate ventilation. Do not breathe dust or vapour. Wear suitable protective clothing. Wear eye/face protection. Wear suitable gloves.

6.2 Environmental precautions

Dilute with plenty of water. Do not allow to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up

Ensure adequate ventilation. Dyke to collect large liquid spills. Use neutralising agent. Absorb with liquid-binding material (sand, diatomite, universal binders). Do not place spilled materials back into the original container. Collect in closed and suitable containers for disposal.

6.4 Reference to other sections

For personal protective equipment see subsection 8.2. For disposal considerations see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Measures to prevent fire and explosions:**

No special precautions required.

Measures required to protect the environment:

For environmental exposure controls see subsection 8.2.

Advice on general occupational hygiene:

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not mix with other products unless advised by Diversey. Wash face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Avoid contact with skin and eyes. Do not breathe vapours. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. See chapter 8.2, Exposure controls / Personal protection.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local and national regulations. Store in a closed container. Keep only in original packaging. For conditions to avoid see subsection 10.4. For incompatible materials see subsection 10.5.

7.3 Specific end use(s)

No specific advice for end use available.

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

Air limit values, if available:

Ingredient(s)	Long term value(s)	Short term value(s)
2-aminoethanol	8 mg/m ³	15 mg/m ³
sodium hydroxide	0.5 mg/m ³	1 mg/m ³

Biological limit values, if available:

8.2 Exposure controls

The following information applies for the uses indicated in subsection 1.2 of the Safety Data Sheet. If available, please refer to the product information sheet for application and handling instructions. Normal use conditions are assumed for this section.

Recommended safety measures for handling the undiluted product:

Covering activities such as filling and transfer of product to application equipment, flasks or buckets

Appropriate engineering controls: If the product is diluted by using specific dosing systems with no risk of splashes or direct skin contact, the personal protection equipment as described in this section is not required.

Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel. Users are advised to

FREEDOM

consider national Occupational Exposure Limits or other equivalent values, if available.

Personal protective equipment**Eye / face protection:**

Safety glasses or goggles (EN 16321). The use of a full-face shield or other full-face protection is strongly recommended when handling open containers or if splashes may occur.

Hand protection:

Chemical-resistant protective gloves (EN 374). Verify instructions regarding permeability and breakthrough time, as provided by the gloves supplier. Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.

Suggested gloves for prolonged contact: Material: butyl rubber Penetration time: ≥ 480 min Material thickness: ≥ 0.7 mm

Suggested gloves for protection against splashes: Material: nitrile rubber Penetration time: ≥ 30 min Material thickness: ≥ 0.4 mm

In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.

Body protection:

Wear chemical-resistant clothing and boots in case direct dermal exposure and/or splashes may occur (EN 14605).

Respiratory protection:

If exposure to liquid particles or splashes cannot be avoided use: half mask (EN 140) or full-face mask (EN 136) with particle filter P2 (EN 143) Consider specific local use conditions. In consultation with the supplier of respiratory protection equipment a different type providing similar protection may be chosen. Specific applications tools may be available to limit exposure. Please refer to the product information sheet for the possibilities. Apply technical measures to comply with the occupational exposure limits, if available.

Environmental exposure controls:

Should not reach sewage water or drainage ditch undiluted or unneutralised.

Recommended safety measures for handling the diluted product:

Recommended maximum concentration (% w/w): 6.66

Appropriate engineering controls:

No special requirements under normal use conditions.

Appropriate organisational controls:

Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment**Eye / face protection:**

No special requirements under normal use conditions.

Hand protection:

No special requirements under normal use conditions.

Body protection:

No special requirements under normal use conditions.

Respiratory protection:

No special requirements under normal use conditions.

Environmental exposure controls:

No special requirements under normal use conditions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

	Method / remark
Physical state: Liquid	
Colour: Clear , Pale , Colourless	
Odour: Product specific	
Odour threshold: Not applicable	
pH: ≥ 11.5 (neat)	ISO 4316
Dilution pH: > 11 (6.7 %)	ISO 4316
Melting point/freezing point (°C): Not determined	Not relevant to classification of this product
Initial boiling point and boiling range (°C): Not determined	
Flammability (liquid): Not flammable.	
Flash point (°C): > 93 °C	closed cup
Sustained combustion: Not applicable. (UN Manual of Tests and Criteria, section 32, L.2)	
Evaporation rate: Not determined	Not relevant to classification of this product
Flammability (solid, gas): Not applicable to liquids	
Lower and upper explosion limit/flammability limit (%): Not determined	
Vapour pressure: Not determined	
Relative density: ≈ 1.05 (20 °C)	OECD 109 (EU A.3)
Relative vapour density: No data available.	Not relevant to classification of this product
Particle characteristics: No data available.	Not applicable to liquids.
Solubility in / Miscibility with water: Fully miscible	
Partition coefficient: n-octanol/water No information available.	

Substance data, partition coefficient n-octanol/water (log Kow): see subsection 12.3

Autoignition temperature: Not determined
Decomposition temperature: Not applicable.
Kinematic viscosity: Not determined
Explosive properties: Not explosive. Vapours may form explosive mixtures with air.
Oxidising properties: Not oxidising.

9.2 Other information

Surface tension (N/m): Not determined
Corrosion to metals: Corrosive

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under normal storage and use conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known under normal storage and use conditions.

10.4 Conditions to avoid

None known under normal storage and use conditions.

10.5 Incompatible materials

May be corrosive to metals. Reacts with acids.

10.6 Hazardous decomposition products

None known under normal storage and use conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture data: .

Relevant calculated ATE(s):

ATE - Oral (mg/kg): >5000
 ATE - Dermal (mg/kg): >5000
 ATE - Inhalatory, vapours (mg/l): 20

Substance data, where relevant and available, are listed below:.

Acute toxicity

Acute oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
2-butoxyethanol	LD ₅₀	1746	Rat	ATE - Acute Toxicity Estimate	
2-aminoethanol	LD ₅₀	1089	Rat	OECD 401 (EU B.1)	
sodium xylene sulphonate	LD ₅₀	> 7200	Rat	OECD 401 (EU B.1)	
disodium trisilicate	LD ₅₀	3400	Rat	Method not given	
sodium hydroxide		No data available			

Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
2-butoxyethanol	LD ₅₀	6411		Method not given	
2-aminoethanol	LD ₅₀	2504	Rabbit	OECD 402 (EU B.3)	
sodium xylene sulphonate	LD ₅₀	> 2000	Rabbit	OECD 402 (EU B.3)	
disodium trisilicate	LD ₅₀	> 5000	Rat	Method not given	
sodium hydroxide	LD ₅₀	1350	Rabbit	Method not given	

Acute inhalative toxicity

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
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2-butoxyethanol	LC ₅₀	> 2 (mist) No mortality observed	Rat	Method not given	4
2-aminoethanol	LC ₅₀	> 1.4 No mortality observed	Rat	Method not given	4
sodium xylene sulphonate	LC ₀	> 6.41 (mist) No mortality observed	Rat	OECD 403 (EU B.2)	4
disodium trisilicate		No mortality observed	Rat	Method not given Non guideline test	4
sodium hydroxide		No data available			

Irritation and corrosivity

Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
2-butoxyethanol	Irritant	Rabbit	OECD 404 (EU B.4)	24; 48; 72 hour(s)
2-aminoethanol	Corrosive	Rabbit	OECD 404 (EU B.4)	
sodium xylene sulphonate	Mild irritant	Rabbit	OECD 404 (EU B.4)	
disodium trisilicate	Irritant		Method not given	
sodium hydroxide	Corrosive	Rabbit	Method not given	

Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
2-butoxyethanol	Irritant	Rabbit	OECD 405 (EU B.5)	24; 48; 72 hour(s)
2-aminoethanol	Severe damage	Rabbit	OECD 405 (EU B.5)	
sodium xylene sulphonate	Irritant	Rabbit	OECD 405 (EU B.5)	
disodium trisilicate	Severe damage Irritant		Method not given	
sodium hydroxide	Corrosive	Rabbit	Method not given	

Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
2-butoxyethanol	No data available			
2-aminoethanol	Irritating to respiratory tract		Method not given	
sodium xylene sulphonate	No data available			
disodium trisilicate	Irritating to respiratory tract		Method not given	
sodium hydroxide	No data available			

Sensitisation

Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)
2-butoxyethanol	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT	
2-aminoethanol	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT	
sodium xylene sulphonate	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT	
disodium trisilicate	Not sensitising		Method not given	
sodium hydroxide	Not sensitising		Human repeated patch test	

Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
2-butoxyethanol	No data available			
2-aminoethanol	No data available			
sodium xylene sulphonate	No data available			
disodium trisilicate	No data available			
sodium hydroxide	No data available			

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Mutagenicity

Ingredient(s)	Result (in-vitro)	Method (in-vitro)	Result (in-vivo)	Method (in-vivo)
2-butoxyethanol	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 476 (Chinese	No evidence for mutagenicity, negative test results	OECD 474 (EU B.12)

		Hamster Ovary)		
2-aminoethanol	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 473 OECD 476 (Mouse lymphoma)	No evidence for mutagenicity, negative test results	OECD 474 (EU B.12)
sodium xylene sulphonate	No evidence for mutagenicity, negative test results	OECD 473	No evidence for mutagenicity, negative test results	OECD 474 (EU B.12)
disodium trisilicate	No evidence for mutagenicity, negative test results		No data available	
sodium hydroxide	No evidence for mutagenicity, negative test results	DNA repair test on rat hepatocytes OECD 473	No evidence for mutagenicity, negative test results	OECD 474 (EU B.12) OECD 475 (EU B.11)

Carcinogenicity

Ingredient(s)	Effect
2-butoxyethanol	No evidence for carcinogenicity, negative test results
2-aminoethanol	No evidence for carcinogenicity, weight-of-evidence
sodium xylene sulphonate	No evidence for carcinogenicity, negative test results
disodium trisilicate	No evidence for carcinogenicity, negative test results
sodium hydroxide	No evidence for carcinogenicity, weight-of-evidence

Toxicity for reproduction

Ingredient(s)	Endpoint	Specific effect	Value (mg/kg bw/d)	Species	Method	Exposure time	Remarks and other effects reported
2-butoxyethanol			No data available				
2-aminoethanol	NOAEL	Developmental toxicity	> 75	Rabbit	OECD 414 (EU B.31), oral	6 - 15 day(s)	No evidence for developmental toxicity No evidence for reproductive toxicity
sodium xylene sulphonate	NOAEL	Teratogenic effects	> 936	Rat	Non guideline test		
disodium trisilicate			No data available				No evidence for reproductive toxicity
sodium hydroxide			No data available				No evidence for developmental toxicity No evidence for reproductive toxicity

Repeated dose toxicity

Sub-acute or sub-chronic oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
2-butoxyethanol		No data available				
2-aminoethanol	NOAEL	300	Rat		75	
sodium xylene sulphonate	NOAEL	763 - 3534	Rat	OECD 408 (EU B.26)	90	
disodium trisilicate	NOAEL	> 159	Rat	Method not given	180	No effects observed
sodium hydroxide		No data available				

Sub-chronic dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
2-butoxyethanol		No data available				
2-aminoethanol		No data available				
sodium xylene sulphonate	NOAEL	> 440		OECD 411 (EU B.28)	90	
disodium trisilicate		No data available				
sodium hydroxide		No data available				

Sub-chronic inhalation toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
2-butoxyethanol		No data available				
2-aminoethanol		No data available				
sodium xylene sulphonate		No data available				

FREEDOM

disodium trisilicate		No data available				
sodium hydroxide		No data available				

Chronic toxicity

Ingredient(s)	Exposure route	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time	Specific effects and organs affected	Remark
2-butoxyethanol			No data available					
2-aminoethanol			No data available					
sodium xylene sulphonate	Oral		No data available	Rat	OECD 453 (EU B.33)	24 month(s)	No adverse effects observed	
disodium trisilicate			No data available					
sodium hydroxide			No data available					

STOT-single exposure

Ingredient(s)	Affected organ(s)
2-butoxyethanol	No data available
2-aminoethanol	Respiratory tract
sodium xylene sulphonate	No data available
disodium trisilicate	No data available
sodium hydroxide	No data available

STOT-repeated exposure

Ingredient(s)	Affected organ(s)
2-butoxyethanol	No data available
2-aminoethanol	No data available
sodium xylene sulphonate	No data available
disodium trisilicate	Not applicable
sodium hydroxide	No data available

Aspiration hazard

Substances with an aspiration hazard (H304), if any, are listed in section 3.

Potential adverse health effects and symptoms

Effects and symptoms related to the product, if any, are listed in subsection 4.2.

SECTION 12: Ecological information

12.1 Toxicity

No data is available on the mixture.

Substance data, where relevant and available, are listed below:

Aquatic short-term toxicity

Aquatic short-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
2-butoxyethanol	LC ₅₀	> 100	<i>Oncorhynchus mykiss</i>	OECD 203, static	96
2-aminoethanol	LC ₅₀	349	<i>Cyprinus carpio</i>	OECD 203, semi-static	96
sodium xylene sulphonate	LC ₅₀	> 1000	<i>Oncorhynchus mykiss</i>	Method not given	96
disodium trisilicate	LC ₅₀	260 - 310	<i>Brachydanio rerio</i> <i>Oncorhynchus mykiss</i>	Method not given	96
sodium hydroxide	LC ₅₀	35	Various species	Method not given	96

Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
2-butoxyethanol	EC ₅₀	> 100	<i>Daphnia magna</i> Straus	OECD 202, static	48
2-aminoethanol	EC ₅₀	27.04	<i>Daphnia magna</i> Straus	OECD 202, static	48
sodium xylene sulphonate	EC ₅₀	> 1000	<i>Daphnia</i>	Method not given	48

disodium trisilicate	EC ₅₀	1700	<i>Daphnia magna</i> Straus	Method not given OECD 202, static	48
sodium hydroxide	EC ₅₀	40.4	<i>Ceriodaphnia</i> <i>sp.</i>	Method not given	48

Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
2-butoxyethanol	EC ₅₀	> 100	<i>Pseudokirchneriella subcapitata</i>	OECD 201, static	72
2-aminoethanol	EC ₅₀	2.8	<i>Selenastrum capricornutum</i>	OECD 201 (EU C.3)	72
sodium xylene sulphonate	EC ₅₀	> 230	Not specified	EPA OPPTS 850.5400	96
disodium trisilicate	EC ₅₀	207	<i>Desmodesmus subspicatus</i>	DIN 38412, Part 9	72
sodium hydroxide	EC ₅₀	22	<i>Photobacterium phosphoreum</i>	Method not given	0.25

Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
2-butoxyethanol		No data available			
2-aminoethanol		No data available			
sodium xylene sulphonate		No data available			
disodium trisilicate		No data available			
sodium hydroxide		No data available			

Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
2-butoxyethanol	EC ₀	700	<i>Pseudomonas putida</i>	Method not given	16 hour(s)
2-aminoethanol	EC ₅₀	> 1000	Activated sludge	DIN EN ISO 8192-OECD 209-88/302/EEC	3 hour(s)
sodium xylene sulphonate	E _r C ₅₀	> 1000	Activated sludge	OECD 209	3 hour(s)
disodium trisilicate		No data available			
sodium hydroxide		No data available			

Aquatic long-term toxicity

Aquatic long-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
2-butoxyethanol	NOEC	> 100	<i>Danio rerio</i>	OECD 204	21 day(s)	
2-aminoethanol	NOEC	1.2	<i>Oryzias latipes</i>	OECD 210	30 day(s)	
sodium xylene sulphonate		No data available				
disodium trisilicate	NOEC	348	<i>Brachydanio rerio</i>	Method not given	96 hour(s)	
sodium hydroxide		No data available				

Aquatic long-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
2-butoxyethanol	NOEC	100	<i>Daphnia magna</i>	OECD 211	21 day(s)	
2-aminoethanol	NOEC	0.85	<i>Daphnia magna</i>	OECD 202	21 day(s)	
sodium xylene sulphonate		No data available				
disodium trisilicate		No data available				
sodium hydroxide		No data available				

Aquatic toxicity to other aquatic benthic organisms, including sediment-dwelling organisms, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw sediment)	Species	Method	Exposure time (days)	Effects observed
2-aminoethanol		No data available				
sodium hydroxide		No data available				

Terrestrial toxicity

Terrestrial toxicity - soil invertebrates, including earthworms, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
2-aminoethanol		No data available				
sodium hydroxide		No data available				

Terrestrial toxicity - plants, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
sodium hydroxide		No data available				

Terrestrial toxicity - birds, if available:

Ingredient(s)	Endpoint	Value	Species	Method	Exposure time (days)	Effects observed
2-aminoethanol		No data available				
sodium hydroxide		No data available				

Terrestrial toxicity - beneficial insects, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
2-aminoethanol		No data available				
sodium hydroxide		No data available				

Terrestrial toxicity - soil bacteria, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
2-aminoethanol		No data available				
sodium hydroxide		No data available				

12.2 Persistence and degradability

Abiotic degradation

Abiotic degradation - photodegradation in air, if available:

Ingredient(s)	Half-life time	Method	Evaluation	Remark
sodium hydroxide	13 second(s)	Method not given	Rapidly photodegradable	

Abiotic degradation - hydrolysis, if available:

Ingredient(s)	Half-life time in fresh water	Method	Evaluation	Remark
sodium hydroxide	No data available			

Abiotic degradation - other processes, if available:

Ingredient(s)	Type	Half-life time	Method	Evaluation	Remark
sodium hydroxide		No data available			

Biodegradation

Ready biodegradability - aerobic conditions

Ingredient(s)	Inoculum	Analytical method	DT ₅₀	Method	Evaluation
2-butoxyethanol		CO ₂ production	90.4 % in 28 day(s)	OECD 301B	Readily biodegradable
2-aminoethanol		DOC reduction	> 90 % in 21	OECD 301A	Readily biodegradable

			day(s)		
sodium xylene sulphonate	Activated sludge, aerobic	CO ₂ production	99.8 % in 28 day(s)	OECD 301B	Readily biodegradable
disodium trisilicate					Not applicable (inorganic substance)
sodium hydroxide					Not applicable (inorganic substance)

Ready biodegradability - anaerobic and marine conditions, if available:

Ingredient(s)	Medium & Type	Analytical method	DT ₅₀	Method	Evaluation
sodium hydroxide					No data available

Degradation in relevant environmental compartments, if available:

Ingredient(s)	Medium & Type	Analytical method	DT ₅₀	Method	Evaluation
sodium hydroxide					No data available

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Ingredient(s)	Value	Method	Evaluation	Remark
2-butoxyethanol	0.81	OECD 107	Low potential for bioaccumulation	
2-aminoethanol	- 1.91	OECD 107	No bioaccumulation expected	
sodium xylene sulphonate	-3.12	Method not given	No bioaccumulation expected	
disodium trisilicate	No data available		Low potential for bioaccumulation Not relevant, does not bioaccumulate	
sodium hydroxide	No data available		Not relevant, does not bioaccumulate	

Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
2-butoxyethanol	No data available				
2-aminoethanol	No data available				
sodium xylene sulphonate	No data available				
disodium trisilicate	No data available				
sodium hydroxide	No data available				

12.4 Mobility in soil

Adsorption/Desorption to soil or sediment

Ingredient(s)	Adsorption coefficient Log K _{oc}	Desorption coefficient Log K _{oc} (des)	Method	Soil/sediment type	Evaluation
2-butoxyethanol	No data available				Potential for mobility in soil, soluble in water
2-aminoethanol	0.067		Model calculation		Potential for mobility in soil, soluble in water Adsorption to solid soil phase is not expected
sodium xylene sulphonate	No data available				
disodium trisilicate	No data available				
sodium hydroxide	No data available				Mobile in soil

12.5 Other adverse effects

No other adverse effects known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products:

The concentrated contents or contaminated packaging should be disposed of by a certified handler or according to the site permit. Release of waste to sewers is discouraged. The cleaned packaging material is suitable for energy recovery or recycling in line with local legislation.

Empty packaging

Recommendation:

Dispose of observing national or local regulations.

Suitable cleaning agents:

Water, if necessary with cleaning agent.

SECTION 14: Transport information



Land transport, Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)

14.1 UN number: 1760

14.2 UN proper shipping name:

Corrosive liquid, n.o.s. (sodium hydroxide , ethanolamine)

14.3 Transport hazard class(es):

Transport hazard class (and subsidiary risks): 8

14.4 Packing group: III

14.5 Environmental hazards:

Environmentally hazardous: No

Marine pollutant: No

14.6 Special precautions for user: None known.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code: The product is not transported in bulk tankers.

Other relevant information:

IMO/IMDG

EmS: F-A, S-B

Transport regulations include special provisions for certain classes of dangerous goods packed in limited quantities.

SECTION 15: Regulatory information

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

National regulations

- Decree 108/2008/NP-CP Circular No.: 04/2012/TT-BCT Regulations on the Classification and Labeling of Chemicals

SECTION 16: Other information

The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract

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Abbreviations and acronyms:

- ATE - Acute Toxicity Estimate
- DNEL - Derived No Effect Limit
- EC50 - effective concentration, 50%
- LC50 - Lethal Concentration, 50% / Median Lethal Concentration
- LD50 - Lethal Dose, 50% / Median Lethal dose
- NOAEL - No observed adverse effect level
- NOEL - No observed effect level
- OECD - Organisation for Economic Cooperation and Development
- PNEC - Predicted No Effect Concentration
- STOT-RE - Specific target organ toxicity (repeated exposure)
- STOT-SE - Specific target organ toxicity (single exposure)
- H227 - Combustible liquid.
- H290 - May be corrosive to metals.
- H302 - Harmful if swallowed.
- H312 - Harmful in contact with skin.
- H314 - Causes severe skin burns and eye damage.
- H315 - Causes skin irritation.
- H318 - Causes serious eye damage.
- H319 - Causes serious eye irritation.
- H331 - Toxic if inhaled.
- H332 - Harmful if inhaled.
- H335 - May cause respiratory irritation.
- H402 - Harmful to aquatic life.
- H412 - Harmful to aquatic life with long lasting effects.

End of Safety Data Sheet