

OPTIMUM 282

Revision: 2024-10-22

Version: 01.0

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

1.1 Product identifier

Trade name: OPTIMUM 282

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
sodium hydroxide	1310-73-2	215-185-5	Skin corrosion, Category 1A (H314) Corrosive to metals, Category 1 (H290) Serious eye damage, Category 1 (H318)	3-10
2-(2-ethoxyethoxy)ethanol	111-90-0	203-919-7	Acute toxicity - Oral, Category 5 (H303)	3-10
2-butoxyethanol	111-76-2	203-905-0	Flammable liquids, Category 4 (H227) Acute toxicity - Oral, Category 4 (H302) Acute toxicity - Dermal, Category 4 (H312) Acute toxicity - Inhalation, Category 4 (H332) Skin irritation, Category 2 (H315) Eye irritation, Category 2A (H319)	3-10
alcohols, C12-14, ethoxylated, sulphates, sodium salts	68891-38-3	500-234-8	Skin irritation, Category 2 (H315) Serious eye damage, Category 1 (H318) Chronic aquatic toxicity, Category 3 (H412)	1-3
sodium gluconate	527-07-1	208-407-7	Acute toxicity - Oral, Category 5 (H303)	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 1A
Corrosive to metals, Category 1
Serious eye damage, Category 1

3.2 Label elements



Signal word: Danger.

Hazard statements:

H314 - Causes severe skin burns and eye damage.
H290 - May be corrosive to metals.

Precautionary statements:

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P260 - Do not breathe spray.

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.

SECTION 4: First aid measures

4.1 Description of first aid measures

General Information:

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:

Get medical attention or advice if you feel unwell.

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:

No known effects or symptoms in normal use.

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

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

Wear suitable protective clothing, gloves and eye/face protection.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Use neutralising agent. Absorb onto dry sand or similar inert material.

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:

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No special precautions required.

Measures to prevent aerosol and dust generation:

Avoid formation of aerosol.

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 hands before breaks and at the end of workday. Wash face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Use personal protective equipment as required. Avoid contact with skin and eyes. Do not breathe spray. Use only with adequate ventilation. 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)
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:

Appropriate engineering controls: Use only in well ventilated areas. Where possible: use in automated/closed system and cover open containers. Transport over pipes. Filling with automatic systems. Use tools for manual handling of product.

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

Personal protective equipment

Eye / face protection: Safety glasses or goggles (EN 16321 / EN 166). 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) with particle filter P2 (EN 143) or full-face mask (EN 136) with particle filter P1 (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.

Environmental exposure controls: Should not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

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Physical state: Liquid
Colour: Clear , Amber
Odour: Product specific
Odour threshold: Not applicable
pH: > 13 (neat)
Melting point/freezing point (°C): Not determined
Initial boiling point and boiling range (°C): Not determined

Method / remark

ISO 4316
 Not relevant to classification of this product

Flammability (liquid): Not flammable.
Flash point (°C): Not applicable.
Sustained combustion: Not applicable.
 (UN Manual of Tests and Criteria, section 32, L.2)

Evaporation rate: Not determined
Flammability (solid, gas): Not applicable to liquids
Lower and upper explosion limit/flammability limit (%): Not determined
Vapour pressure: Not determined
Relative density: ≈ 1.12 (20 °C)
Relative vapour density: Not determined.
Particle characteristics: No data available.
Solubility in / Miscibility with water: Fully miscible
Partition coefficient: n-octanol/water No information available.

Not relevant to classification of this product

OECD 109 (EU A.3)
 Not relevant to classification of this product
 Not applicable to liquids.

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.
Oxidising properties: Not oxidising.

9.2 Other information

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

Weight of evidence

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

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): 280

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)
sodium hydroxide		No data available			
2-(2-ethoxyethoxy)ethanol	LD ₅₀	5540	Rat	Method not given	
2-butoxyethanol	LD ₅₀	1746	Rat	ATE - Acute Toxicity Estimate	
alcohols, C12-14, ethoxylated, sulphates, sodium salts	LD ₅₀	> 2000	Rat	OECD 401 (EU B.1)	
sodium gluconate	LD ₅₀	6060	Rat	OECD 401 (EU B.1) Read across	

Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
sodium hydroxide	LD ₅₀	1350	Rabbit	Method not given	
2-(2-ethoxyethoxy)ethanol	LD ₅₀	5940	Rat	Method not given	
2-butoxyethanol	LD ₅₀	6411		Method not given	
alcohols, C12-14, ethoxylated, sulphates, sodium salts	LD ₅₀	> 2000	Rat	OECD 402 (EU B.3)	
sodium gluconate	LD ₅₀	> 2000	Rat	OECD 402 (EU B.3) Read across	

Acute inhalative toxicity

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium hydroxide		No data available			
2-(2-ethoxyethoxy)ethanol	LC ₀	> 5.24 (mist)	Rat	OECD 403 (EU B.2)	8
2-butoxyethanol	LC ₅₀	> 2 (mist) No mortality observed	Rat	Method not given	4
alcohols, C12-14, ethoxylated, sulphates, sodium salts		5.71			
sodium gluconate		No data available			

Irritation and corrosivity

Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium hydroxide	Corrosive	Rabbit	Method not given	
2-(2-ethoxyethoxy)ethanol	No data available			
2-butoxyethanol	Irritant	Rabbit	OECD 404 (EU B.4)	24; 48; 72 hour(s)
alcohols, C12-14, ethoxylated, sulphates, sodium salts	Irritant	Rabbit	OECD 404 (EU B.4)	
sodium gluconate	Not irritant	Rabbit	OECD 404 (EU B.4) Read across	

Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium hydroxide	Corrosive	Rabbit	Method not given	
2-(2-ethoxyethoxy)ethanol	No data available			
2-butoxyethanol	Irritant	Rabbit	OECD 405 (EU B.5)	24; 48; 72 hour(s)
alcohols, C12-14, ethoxylated, sulphates, sodium salts	Severe damage	Rabbit	OECD 405 (EU B.5)	
sodium gluconate	Not corrosive or irritant	Rabbit	OECD 405 (EU B.5) Read across	

Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium hydroxide	No data available			
2-(2-ethoxyethoxy)ethanol	No data available			
2-butoxyethanol	No data available			
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No data available			
sodium gluconate	No data available			

Sensitisation

Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)

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sodium hydroxide	Not sensitising		Human repeated patch test
2-(2-ethoxyethoxy)ethanol	Not sensitising		Method not given
2-butoxyethanol	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT
alcohols, C12-14, ethoxylated, sulphates, sodium salts	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT
sodium gluconate	Not sensitising	Mouse	OECD 429 (EU B.42) Read across

Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
sodium hydroxide	No data available			
2-(2-ethoxyethoxy)ethanol	No data available			
2-butoxyethanol	No data available			
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No data available			
sodium gluconate	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)
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)
2-(2-ethoxyethoxy)ethanol	No data available		No data available	
2-butoxyethanol	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 476 (Chinese Hamster Ovary)	No evidence for mutagenicity, negative test results	OECD 474 (EU B.12)
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 476	No evidence for mutagenicity, negative test results	OECD 475 (EU B.11)
sodium gluconate	No evidence for mutagenicity, negative test results	Method not given	No data available	

Carcinogenicity

Ingredient(s)	Effect
sodium hydroxide	No evidence for carcinogenicity, weight-of-evidence
2-(2-ethoxyethoxy)ethanol	No data available
2-butoxyethanol	No evidence for carcinogenicity, negative test results
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No evidence for carcinogenicity, weight-of-evidence
sodium gluconate	No evidence for carcinogenicity, negative test results

Toxicity for reproduction

Ingredient(s)	Endpoint	Specific effect	Value (mg/kg bw/d)	Species	Method	Exposure time	Remarks and other effects reported
sodium hydroxide			No data available				No evidence for developmental toxicity No evidence for reproductive toxicity
2-(2-ethoxyethoxy)ethanol			No data available				
2-butoxyethanol			No data available				
alcohols, C12-14, ethoxylated, sulphates, sodium salts	NOAEL	Developmental toxicity	> 1000	Rat	OECD 414 (EU B.31), oral		No evidence for reproductive toxicity
sodium gluconate			No data available				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
sodium hydroxide		No data available				
2-(2-ethoxyethoxy)ethanol		No data available				
2-butoxyethanol		No data available				
alcohols, C12-14, ethoxylated, sulphates, sodium salts	NOAEL	> 225		OECD 408 (EU B.26)	90	
sodium gluconate		[-]	Rat	OECD 408 (EU	90	No effects observed

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					B.26) Read across		
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Sub-chronic dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
sodium hydroxide		No data available				
2-(2-ethoxyethoxy)ethanol		No data available				
2-butoxyethanol		No data available				
alcohols, C12-14, ethoxylated, sulphates, sodium salts		No data available				
sodium gluconate		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
sodium hydroxide		No data available				
2-(2-ethoxyethoxy)ethanol		No data available				
2-butoxyethanol		No data available				
alcohols, C12-14, ethoxylated, sulphates, sodium salts		No data available				
sodium gluconate		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
sodium hydroxide			No data available					
2-(2-ethoxyethoxy)ethanol			No data available					
2-butoxyethanol			No data available					
alcohols, C12-14, ethoxylated, sulphates, sodium salts			No data available					
sodium gluconate	Oral	LOEL	250	Rat	OECD 408	Read across		

STOT-single exposure

Ingredient(s)	Affected organ(s)
sodium hydroxide	No data available
2-(2-ethoxyethoxy)ethanol	No data available
2-butoxyethanol	No data available
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No data available
sodium gluconate	No data available

STOT-repeated exposure

Ingredient(s)	Affected organ(s)
sodium hydroxide	No data available
2-(2-ethoxyethoxy)ethanol	No data available
2-butoxyethanol	No data available
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No data available
sodium gluconate	No data available

Aspiration hazard

Substances with an aspiration hazard (H304), if any, are listed in section 3. If relevant, see section 9 for dynamic viscosity and relative density of the product.

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)
sodium hydroxide	LC ₅₀	35	Various species	Method not given	96
2-(2-ethoxyethoxy)ethanol	LC ₅₀	> 100	<i>Pimephales promelas</i>	Method not given	96
2-butoxyethanol	LC ₅₀	> 100	<i>Oncorhynchus mykiss</i>	OECD 203, static	96
alcohols, C12-14, ethoxylated, sulphates, sodium salts	LC ₅₀	7.1	Fish	OECD 203 (EU C.1)	96
sodium gluconate	LC ₅₀	> 100	<i>Oryzias latipes</i>	OECD 203, semi-static	96

Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium hydroxide	EC ₅₀	40.4	<i>Ceriodaphnia</i> sp.	Method not given	48
2-(2-ethoxyethoxy)ethanol	EC ₅₀	1982	<i>Daphnia magna</i> Straus	Method not given	48
2-butoxyethanol	EC ₅₀	> 100	<i>Daphnia magna</i> Straus	OECD 202, static	48
alcohols, C12-14, ethoxylated, sulphates, sodium salts	EC ₅₀	7.4	<i>Daphnia magna</i> Straus	OECD 202 (EU C.2)	48
sodium gluconate	EC ₅₀	> 1000	<i>Daphnia magna</i> Straus	OECD 202, static	48

Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium hydroxide	EC ₅₀	22	<i>Photobacterium phosphoreum</i>	Method not given	0.25
2-(2-ethoxyethoxy)ethanol	EC ₅₀	14861	<i>Pseudokirchneriella subcapitata</i>	Method not given	72
2-butoxyethanol	EC ₅₀	> 100	<i>Pseudokirchneriella subcapitata</i>	OECD 201, static	72
alcohols, C12-14, ethoxylated, sulphates, sodium salts	EC ₅₀	10 - 100	<i>Pseudokirchneriella subcapitata</i>	OECD 201 (EU C.3)	72
sodium gluconate	EC ₀	≤ 100	<i>Desmodesmus subspicatus</i>	OECD 201, static	72

Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
sodium hydroxide		No data available			
2-(2-ethoxyethoxy)ethanol		No data available			
2-butoxyethanol		No data available			
alcohols, C12-14, ethoxylated, sulphates, sodium salts		No data available			
sodium gluconate		No data available			

Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
sodium hydroxide		No data available			
2-(2-ethoxyethoxy)ethanol	EC ₅₀	> 5000		Method not given	16 hour(s)
2-butoxyethanol	EC ₀	700	<i>Pseudomonas putida</i>	Method not given	16 hour(s)
alcohols, C12-14, ethoxylated, sulphates, sodium salts	EC ₀	> 100		DIN 38412, Part 27	
sodium gluconate	EC ₅₀	649.8	Activated sludge	OECD 209 Read across	3 hour(s)

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Aquatic long-term toxicity

Aquatic long-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
sodium hydroxide		No data available				
2-(2-ethoxyethoxy)ethanol		No data available				
2-butoxyethanol	NOEC	> 100	<i>Danio rerio</i>	OECD 204	21 day(s)	
alcohols, C12-14, ethoxylated, sulphates, sodium salts	NOEC	1 - 10	<i>Not specified</i>	OECD 203	45 day(s)	
sodium gluconate	NOEC	100	<i>Oryzias latipes</i>	OECD 203	96 hour(s)	

Aquatic long-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
sodium hydroxide		No data available				
2-(2-ethoxyethoxy)ethanol		No data available				
2-butoxyethanol	NOEC	100	<i>Daphnia magna</i>	OECD 211	21 day(s)	
alcohols, C12-14, ethoxylated, sulphates, sodium salts	NOEC	0.27	<i>Daphnia sp.</i>	OECD 211	21 day(s)	
sodium gluconate		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
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
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
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
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
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:

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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
sodium hydroxide					Not applicable (inorganic substance)
2-(2-ethoxyethoxy)ethanol			90 % in 28 day(s)	OECD 301E	Readily biodegradable
2-butoxyethanol		CO ₂ production	90.4 % in 28 day(s)	OECD 301B	Readily biodegradable
alcohols, C12-14, ethoxylated, sulphates, sodium salts		CO ₂ production	77-79 % in 28 day(s)	OECD 301D	Readily biodegradable
sodium gluconate		Oxygen depletion	> 89% in 28 day(s)	OECD 301D	Readily biodegradable

Ready biodegradability - anaerobic and marine conditions, if available:

Ingredient(s)	Medium & Type	Analytical method	DT ₅₀	Method	Evaluation
sodium hydroxide					No data available
sodium gluconate			100 % in 35 day(s)		Readily biodegradable

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
sodium hydroxide	No data available		Not relevant, does not bioaccumulate	
2-(2-ethoxyethoxy)ethanol	-0.8	Method not given	No bioaccumulation expected	
2-butoxyethanol	0.81	OECD 107	Low potential for bioaccumulation	
alcohols, C12-14, ethoxylated, sulphates, sodium salts	0.3	Method not given	No bioaccumulation expected	
sodium gluconate	-5.99	Method not given	No bioaccumulation expected	

Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
sodium hydroxide	No data available				
2-(2-ethoxyethoxy)ethanol	No data available				
2-butoxyethanol	No data available				
alcohols, C12-14, ethoxylated, sulphates, sodium salts	< 3		Method not given	No bioaccumulation expected	
sodium gluconate	2.15			Low potential for bioaccumulation	

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
sodium hydroxide	No data available				Mobile in soil
2-(2-ethoxyethoxy)ethanol	No data available				High potential for mobility in soil
2-butoxyethanol	No data available				Potential for mobility in soil, soluble in water
alcohols, C12-14, ethoxylated, sulphates, sodium salts	No data available				
sodium gluconate	No data available				

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: 1824

14.2 UN proper shipping name:

Sodium hydroxide solution

14.3 Transport hazard class(es):

Transport hazard class (and subsidiary risks): 8

14.4 Packing group: II

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:

- DNEL - Derived No Effect Limit
- PNEC - Predicted No Effect Concentration
- ATE - Acute Toxicity Estimate
- LD50 - Lethal Dose, 50% / Median Lethal dose
- LC50 - Lethal Concentration, 50% / Median Lethal Concentration
- EC50 - effective concentration, 50%
- NOEL - No observed effect level
- NOAEL - No observed adverse effect level
- STOT-RE - Specific target organ toxicity (repeated exposure)
- STOT-SE - Specific target organ toxicity (single exposure)

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- OECD - Organisation for Economic Cooperation and Development
- H227 - Combustible liquid.
- H290 - May be corrosive to metals.
- H302 - Harmful if swallowed.
- H303 - May be 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.
- H332 - Harmful if inhaled.
- H402 - Harmful to aquatic life.
- H412 - Harmful to aquatic life with long lasting effects.

End of Safety Data Sheet