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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier: UF224 - Ultra Presoak 224

Other means of identification:

Non-applicable

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Chemical cleaning products

Liquid Detergent Mixture for commercial car washes.

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

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

National Carwash Solutions
1997 American Blvd
54115 De Pere - United States
Phone: 9203372175 - Fax: 9203379410
http://cleaningsystemsinc.com

1.4 Emergency phone number: 1-800-424-9300 or 1-703-527-3887

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

NFPA:

Health Hazards: 3
Flammability Hazards: 2
Instability Hazards: 0
Special Hazards: Non-applicable

29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Eye Dam. 1: Serious eye damage, Category 1, H318
Flam. Liq. 4: Flammable liquids, Category 4, H227
Skin Corr. 1A: Skin corrosion, Category 1A, H314

2.2 Label elements:

NFPA:

29 CFR 1910.1200:

Danger

Hazard statements:

Flam. Liq. 4: H227 - Combustible liquid.
Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.

Precautionary statements:

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SECTION 2: HAZARD(S) IDENTIFICATION (continued)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280: Wear protective gloves/protective clothing/eye protection/protective footwear.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370+P378: In case of fire: Use ABC powder extinguisher to put it out.
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Substances that contribute to the classification

Surfactant Mixture ; sodium hydroxide; tetrasodium ethylene diamine tetraacetate; 2-aminoethanol

Acute Toxicity Estimate (ATE mix):

43.25 % (oral), 50.31 % (dermal), 50.31 % (inhalation) of the mixture consists of ingredient(s) of unknown toxicity

Additional labeling:

Keep out of the reach of children

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Aqueous mixture composed of chemical products for cleaning products

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: Proprietary	**Surfactant Mixture** Acute Tox. 4: H302+H332; Eye Dam. 1: H318; Skin Corr. 1A: H314 - Danger	**35 - <65 %**
CAS: 1310-73-2	**sodium hydroxide** Skin Corr. 1A: H314 - Danger	**5 - <10 %**
CAS: 64-02-8	**tetrasodium ethylene diamine tetraacetate** Acute Tox. 4: H302; Eye Dam. 1: H318 - Danger	**5 - <10 %**
CAS: 141-43-5	**2-aminoethanol** Acute Tox. 4: H302+H312+H332; Flam. Liq. 4: H227; Skin Corr. 1B: H314 - Danger	**<5 %**
CAS: 111-76-2	**2-butoxyethanol** Acute Tox. 4: H302+H332; Eye Irrit. 2A: H319; Flam. Liq. 4: H227; Skin Irrit. 2: H315 - Warning	**<5 %**
CAS: 1310-58-3	**potassium hydroxide** Acute Tox. 4: H302; Skin Corr. 1A: H314 - Danger	**<5 %**
CAS: 5989-27-5	**d-limonene** Asp. Tox. 1: H304; Flam. Liq. 3: H226; Skin Irrit. 2: H315; Skin Sens. 1B: H317 - Danger	**<5 %**

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

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

Request medical assistance immediately, showing the SDS of this product.

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SECTION 4: FIRST-AID MEASURES (continued)

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:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and its inhalation, to the respiratory system. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

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

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

Combustible liquid. If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO_2).

Unsuitable extinguishing media:

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

5.2 Specific hazards arising from the chemical:

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:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. 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:

For non-emergency personnel:

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SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

Isolate leaks provided that there is no additional risk for the people performing this task. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inert medium. Remove any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

For emergency responders:

See section 8.

6.2 Environmental precautions:

The characteristic of corrosivity per RCRA could apply to the unused product if it becomes a waste material. The EPA hazardous waste number D002 could apply. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing.

6.3 Methods and materials for containment and cleaning up:

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.- General precautions for safe use

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Maintain order, cleanliness and destroy using safe methods (section 6).

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

Avoid the evaporation of the product as it contains flammable substances, which could form flammable vapour/air mixtures in the presence of sources of ignition. Control sources of ignition (mobile phones, sparks,...) and transfer at slow speeds to avoid the creation of electrostatic charges. Consult section 10 for conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

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.: 24.8 ºF

Maximum Temp.: 120 ºF

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 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000):

Identification	Occupational exposure limits		
2-aminoethanol	8-hour TWA PEL	3 ppm	6 mg/m³
CAS: 141-43-5	Ceiling Values - TWA PEL		
2-butoxyethanol	8-hour TWA PEL	50 ppm	240 mg/m³
CAS: 111-76-2	Ceiling Values - TWA PEL		
sodium hydroxide	8-hour TWA PEL		2 mg/m³
CAS: 1310-73-2	Ceiling Values - TWA PEL		

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits		
Disodium tetraborate decahydrate	TLV-TWA		2 mg/m³
CAS: 1303-96-4	TLV-STEL		6 mg/m³
2-aminoethanol	TLV-TWA	3 ppm	
CAS: 141-43-5	TLV-STEL	6 ppm	
2,2´-iminodiethanol	TLV-TWA		2 mg/m³
CAS: 111-42-2	TLV-STEL		
2-butoxyethanol	TLV-TWA	20 ppm	
CAS: 111-76-2	TLV-STEL		

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:

Identification	Occupational exposure limits		
Disodium tetraborate decahydrate	PEL		5 mg/m³
CAS: 1303-96-4	STEL		
2-aminoethanol	PEL	3 ppm	8 mg/m³
CAS: 141-43-5	STEL	6 ppm	15 mg/m³
2,2´-iminodiethanol	PEL	0.46 ppm	2 mg/m³
CAS: 111-42-2	STEL		
2-butoxyethanol	PEL	20 ppm	97 mg/m³
CAS: 111-76-2	STEL		
potassium hydroxide	PEL		2 mg/m³
CAS: 1310-58-3	STEL		2 mg/m³
sodium hydroxide	PEL		2 mg/m³
CAS: 1310-73-2	STEL		2 mg/m³

Biological limit values:

Biological Exposure Indices (BEIs®) - ACGIH

Identification	BEIs®	Determinant	Sampling Time
2-butoxyethanol CAS: 111-76-2	200 mg/g (NULL)	Butoxyacetic acid (BAA) in urine	End of shift

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

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, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

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

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Linear low -density polyethylene (LLDPE), Breakthrough time: > 480 min, Thickness: 0.062 mm)	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

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.- Eye and face 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. Use this PPE in accordance with manufacturer´s use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

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

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

40 CFR Part 59 (VOC):

V.O.C.(weight-percent): 8.05 % weight

V.O.C. at 68 ºF: 152.28 kg/m³ (152.28 g/L)

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 68 ºF:	Liquid
Appearance:	Translucent
Color:	Green
Odor:	Citric
Odour threshold:	Non-applicable *

Volatility:

*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)

Boiling point at atmospheric pressure:	225 ºF
Vapour pressure at 68 ºF:	2247 Pa
Vapour pressure at 122 ºF:	11844.78 Pa (11.84 kPa)
Evaporation rate at 68 ºF:	Non-applicable *
Product description:	
Density at 68 ºF:	1088.6 kg/m³
Relative density at 68 ºF:	1.089
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	Non-applicable *
Concentration:	Non-applicable *
pH:	>13 (at 100 %)
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	178 ºF
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	458 ºF
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *
Other safety characteristics:	
Surface tension at 68 ºF:	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 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 indicated conditions of storage, handling and use.

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SECTION 10: STABILITY AND REACTIVITY (continued)

10.3 Possibility of hazardous reactions:

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

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

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

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Precaution	Not applicable	Not applicable

10.6 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 (CO_2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

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: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract

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

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.

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

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
  IARC: 2,2´-iminodiethanol (2B); 2-butoxyethanol (3); d-limonene (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous 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 hazardous 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 hazardous with sensitising effects. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous with sensitising effects. For more information see section 3.

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

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 hazardous 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 hazardous 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 hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

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

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
2-aminoethanol CAS: 141-43-5	LD50 oral	>5000 mg/kg	Rat
	LD50 dermal	1025 mg/kg	Rabbit
	LC50 inhalation	11 mg/L (4 h)	Rat
2-butoxyethanol CAS: 111-76-2	LD50 oral	1200 mg/kg	Rat
	LD50 dermal	3000 mg/kg	Rabbit
	LC50 inhalation	11 mg/L (ATEi)	
potassium hydroxide CAS: 1310-58-3	LD50 oral	388 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
tetrasodium ethylene diamine tetraacetate CAS: 64-02-8	LD50 oral	1700 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
d-limonene CAS: 5989-27-5	LD50 oral	4400 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	Rabbit
	LC50 inhalation	Non-applicable	

Acute Toxicity Estimate (ATE mix):

ATE mix		Ingredient(s) of unknown toxicity
Oral	5900.22 mg/kg (Calculation method)	43.25 %
Dermal	10717.74 mg/kg (Calculation method)	50.31 %
Inhalation	72.37 mg/L (4 h) (Calculation method)	50.31 %

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SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
sodium hydroxide	LC50	189 mg/L (48 h)	Leuciscus idus	Fish
CAS: 1310-73-2	EC50	33 mg/L	Crangon crangon	Crustacean
	EC50	Non-applicable		
tetrasodium ethylene diamine tetraacetate	LC50	121 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 64-02-8	EC50	140 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
2-aminoethanol	LC50	349 mg/L (96 h)	Cyprinus carpio	Fish
CAS: 141-43-5	EC50	65 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	22 mg/L (72 h)	Scenedesmus subspicatus	Algae
2-butoxyethanol	LC50	1490 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 111-76-2	EC50	1815 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	911 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae
potassium hydroxide	LC50	80 mg/L (48 h)	Gambussia afinis	Fish
CAS: 1310-58-3	EC50	Non-applicable		
	EC50	Non-applicable		
d-limonene	LC50	0.702 mg/L (96 h)	Pimephales promelas	Fish
CAS: 5989-27-5	EC50	0.577 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		

Chronic toxicity:

Identification	Concentration		Species	Genus
tetrasodium ethylene diamine tetraacetate	NOEC	25.7 mg/L	Danio rerio	Fish
CAS: 64-02-8	NOEC	25 mg/L	Daphnia magna	Crustacean
2-aminoethanol	NOEC	1.24 mg/L	Oryzias latipes	Fish
CAS: 141-43-5	NOEC	0.85 mg/L	Daphnia magna	Crustacean
2-butoxyethanol	NOEC	100 mg/L	Danio rerio	Fish
CAS: 111-76-2	NOEC	100 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
2-aminoethanol	BOD5	Non-applicable	Concentration	20 mg/L
CAS: 141-43-5	COD	Non-applicable	Period	21 days
	BOD5/COD	Non-applicable	% Biodegradable	90 %

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Degradability		Biodegradability	
2-butoxyethanol	BOD5	0.71 g O2/g	Concentration	100 mg/L
CAS: 111-76-2	COD	2.2 g O2/g	Period	14 days
	BOD5/COD	0.32	% Biodegradable	96 %
d-limonene	BOD5	Non-applicable	Concentration	10 mg/L
CAS: 5989-27-5	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	71.4 %

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
tetrasodium ethylene diamine tetraacetate	BCF	2
CAS: 64-02-8	Pow Log	-13
	Potential	Low
2-aminoethanol	BCF	3
CAS: 141-43-5	Pow Log	-1.31
	Potential	Low
2-butoxyethanol	BCF	3
CAS: 111-76-2	Pow Log	0.83
	Potential	Low
d-limonene	BCF	
CAS: 5989-27-5	Pow Log	4.83
	Potential	

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
tetrasodium ethylene diamine tetraacetate	Koc	1046	Henry	0E+0 Pa·m³/mol
CAS: 64-02-8	Conclusion	Low	Dry soil	No
	Surface tension	Non-applicable	Moist soil	No
2-aminoethanol	Koc	0.27	Henry	3.7E-5 Pa·m³/mol
CAS: 141-43-5	Conclusion	Very High	Dry soil	No
	Surface tension	5.025E-2 N/m (77 ºF)	Moist soil	No
2-butoxyethanol	Koc	8	Henry	1.621E-1 Pa·m³/mol
CAS: 111-76-2	Conclusion	Very High	Dry soil	No
	Surface tension	2.729E-2 N/m (77 ºF)	Moist soil	Yes
d-limonene	Koc	6324	Henry	2533.13 Pa·m³/mol
CAS: 5989-27-5	Conclusion	Immobile	Dry soil	Yes
	Surface tension	2.675E-2 N/m (77 ºF)	Moist soil	Yes

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SECTION 12: ECOLOGICAL INFORMATION (continued)

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

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. Waste should not be disposed of to drains. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:

14.1	**UN number:**	UN1824
14.2	**UN proper shipping name:**	SODIUM HYDROXIDE SOLUTION
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group, if applicable:**	II
14.5	**Marine pollutant:**	No
14.6	**Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**	
	Physico-Chemical properties:	see section 9
	Limited quantities:	1 L
14.7	**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):**	Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 40-20:

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SECTION 14: TRANSPORT INFORMATION (continued)

14.1 UN number: UN1824

14.2 UN proper shipping name: SODIUM HYDROXIDE SOLUTION

14.3 Transport hazard class(es): 8

Labels: 8

14.4 Packing group, if applicable: II

14.5 Marine pollutant: No

14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Special regulations: Non-applicable

EmS Codes: F-A, S-B

Physico-Chemical properties: see section 9

Limited quantities: 1 L

Segregation group: SGG18

14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2022:

14.1 UN number: UN1824

14.2 UN proper shipping name: SODIUM HYDROXIDE SOLUTION

14.3 Transport hazard class(es): 8

Labels: 8

14.4 Packing group, if applicable: II

14.5 Marine pollutant: No

14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Physico-Chemical properties: see section 9

14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

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SECTION 15: REGULATORY INFORMATION (continued)

Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): 2-butoxyethanol
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Non-applicable
The Toxic Substances Control Act (TSCA) : sodium hydroxide ; tetrasodium ethylene diamine tetraacetate ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide ; d-limonene
Massachusetts RTK - Substance List: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
New Jersey Worker and Community Right-to-Know Act: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
New York RTK - Substance list: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
Pennsylvania Worker and Community Right-to-Know Law: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
CANADA-Domestic Substances List (DSL): sodium hydroxide ; tetrasodium ethylene diamine tetraacetate ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide ; d-limonene
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
Rhode Island - Hazardous substances RTK: sodium hydroxide ; 2-butoxyethanol ; potassium hydroxide
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous Air Pollutants (Clean Air Act): 2-butoxyethanol
CALIFORNIA LABOR CODE - The Hazardous Substances List: sodium hydroxide ; 2-aminoethanol ; 2-butoxyethanol ; potassium hydroxide
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: Non-applicable
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: sodium hydroxide (1000 pounds) ; 2-butoxyethanol (1 pounds) ; potassium hydroxide (1000 pounds)

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.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H227: Combustible liquid.

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

29 CFR 1910.1200:

Acute Tox. 4: H302 - Harmful if swallowed.
Acute Tox. 4: H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled.
Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled.
Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways.
Eye Dam. 1: H318 - Causes serious eye damage.
Eye Irrit. 2A: H319 - Causes serious eye irritation.
Flam. Liq. 3: H226 - Flammable liquid and vapour.
Flam. Liq. 4: H227 - Combustible liquid.
Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.
Skin Sens. 1B: H317 - May cause an allergic skin reaction.

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SECTION 16: OTHER INFORMATION (continued)

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:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

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
IARC: International Agency for Research on Cancer

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END OF SAFETY DATA SHEET