ENERGY ULTRA

WM 1115941 **Order number: 0715941**

Version 3.0 Revision Date 15.10.2026 Print Date 15.10.2026

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

1.1 Product identifier

Trade name	:	ENERGY ULTRA
UFI	:	M3Y6-80YP-S00J-1N46

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

Use of the Substance/Mixture	:	Detergents for dishwashers Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Company	:	Tana Chemie GmbH Rheinallee 96 55120 Mainz
Telephone	:	+49613196403
Telefax	:	+4961319642526
E-mail address	:	Produktsicherheit@werner-mertz.com
Responsible/issuing person Contact person	:	Product development / product safety

1.4 Emergency telephone

EU: 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to Metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word	:	Danger	
Hazard Statements	:	H290 H314	May be corrosive to metals. Causes severe skin burns and eye damage.
Precautionary Statements	:	P102 **Prevention:**	Keep out of reach of children.

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:	
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/ doctor.
Disposal:	
P501	Dispose of container into the collection of recyclables only when it is completely empty.

Hazardous ingredients which must be listed on the label:

sodium hydroxide
potassium hydroxide

Safety data sheet available on request.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
sodium hydroxide	1310-73-2 215-185-5 011-002-00-6 01-2119457892-27	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318 --- specific concentration limit Skin Corr. 1A; H314 >= 5 % Skin Corr. 1B; H314 2 - < 5 % Skin Irrit. 2; H315 0,5 - < 2 %	>= 10 - < 15

		Eye Irrit. 2; H319 0,5 - < 2 %	
potassium hydroxide	1310-58-3 215-181-3 019-002-00-8 01-2119487136-33	Acute Tox. 4; H302 Skin Corr. 1A; H314 Met. Corr. 1; H290 Eye Dam. 1; H318 --- specific concentration limit Skin Corr. 1A; H314 >= 5 % Skin Corr. 1B; H314 2 - < 5 % Skin Irrit. 2; H315 0,5 - < 2 % Eye Irrit. 2; H319 0,5 - < 2 % --- Acute toxicity estimate Acute oral toxicity: 500,0 mg/kg	>= 5 - < 10
Alanine, N,N-bis(carboxymethyl)-, trisodium salt	164462-16-2 423-270-5423-270-5 01-0000016977-53	Met. Corr. 1; H290	>= 3 - < 5
nitrilotrimethylenetris(phosphonic acid)	6419-19-8 229-146-5 01-2119487988-08	Eye Irrit. 2; H319 Met. Corr. 1; H290	>= 1 - < 3

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Protect unharmed eye.
Continue rinsing eyes during transport to hospital.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	corrosive effects
Risks	:	No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	For specialist advice physicians should contact the Poisons Information Service.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Neutralize with acid. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8., Treat recovered material as described in the section "Disposal considerations"., Refer to section 15 for specific national regulation.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store at room temperature in the original container.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Detergents for dishwashers

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
sodium hydroxide	Workers	Inhalation	Long-term local effects	1,0 mg/m3
	Workers	Inhalation	Long-term systemic effects, Long-term local effects	1,5 mg/m3
	Workers	Inhalation	Short-term exposure, Local effects, Systemic effects	3 mg/m3
	Consumers	Inhalation	Long-term local effects, Long-term systemic effects	0,6 mg/m3

	Consumers	Inhalation	Short-term exposure, Local effects, Systemic effects	1,2 mg/m3
	Consumers	Ingestion	Long-term local effects, Long-term systemic effects	25 mg/m3
tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate	Workers	Inhalation	Acute systemic effects	55 mg/m3
	Workers	Inhalation	Acute local effects	55 mg/m3
	Workers	Skin contact	Long-term systemic effects	15000 mg/kg
	Workers	Inhalation	Long-term systemic effects	7,3 mg/m3
	Consumers	Skin contact	Long-term systemic effects	7500 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1,8 mg/m3
	Consumers	Ingestion	Long-term systemic effects	1,5 mg/kg
potassium hydroxide	Workers	Inhalation	Long-term local effects	1 mg/m3
	Consumers	Inhalation	Long-term local effects	1 mg/m3
Alanine, N,N-bis(carboxymethyl)-, trisodium salt	Workers	Inhalation	Acute systemic effects	40 mg/m3
	Workers	Inhalation	Acute local effects	40 mg/m3
	Workers	Inhalation	Long-term systemic effects	40 mg/m3
	Workers	Inhalation	Long-term local effects	4 mg/m3
	Consumers	Inhalation	Acute local effects	20 mg/m3
	Consumers	Inhalation	Acute systemic effects	20 mg/m3
	Consumers	Inhalation	Long-term systemic effects	20 mg/m3
	Consumers	Inhalation	Long-term local effects	2 mg/m3
	Consumers	Ingestion	Acute systemic effects	85 mg/kg

	Consumers	Ingestion	Long-term systemic effects	17 mg/kg
nitrilotrimethylenetris(phosphonic acid)	Workers	Skin contact	Acute systemic effects	2,75 mg/kg bw/day
	Workers	Inhalation	Acute systemic effects	9,7 mg/m3
	Workers	Skin contact	Long-term systemic effects	2,75 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	9,7 mg/m3
	Consumers	Skin contact	Acute systemic effects	1,38 mg/kg bw/day
	Consumers	Inhalation	Acute systemic effects	2,39 mg/m3
	Consumers	Ingestion	Acute systemic effects	1,38 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	1,38 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	2,39 mg/m3
	Consumers	Ingestion	Long-term systemic effects	1,38 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate	Fresh water	> 2 mg/l
	Sea water	> 0,2 mg/l
	intermittent release	> 1 mg/l
	STP	> 41,2 mg/l
	Oral	67 mg/kg
Alanine, N,N-bis(carboxymethyl)-, trisodium salt	Fresh water	2 mg/l
	Sea water	0,2 mg/l
	Fresh water sediment	24 mg/kg
	Soil	2,5 mg/kg

	STP	100 mg/l
	intermittent release	1 mg/l
nitrilotrimethylenetris(phosphonic acid)	Fresh water	0,46 mg/l
	Sea water	0,046 mg/l
	Fresh water sediment	150 mg/kg
	Sea sediment	15 mg/kg
	Soil	244 mg/kg
	STP	20 mg/l
	Oral	170 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection

Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.

Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Remove and wash contaminated clothing before re-use.

Respiratory protection : Not required; except in case of aerosol formation.

Recommended Filter type:

ABEK-P3-filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Color	:	colorless
Odor	:	characteristic
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flammability (solid, gas)	:	No data available
Flammability (liquids)	:	No data available
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Flash point	:	does not flash
Ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	ca. 14, 100 % at 20 °C
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapor pressure	:	No data available
Density	:	ca. 1,334 g/cm3 at 20 °C
Relative density	:	No data available
Relative vapor density	:	No data available
Particle characteristics	:	No data available

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions. No decomposition if used as directed.

10.4 Conditions to avoid

Conditions to avoid	:	No data available

10.5 Incompatible materials

Materials to avoid	:	No data available

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Our company is strongly against animal testing.
Our company does not place any orders for animal testing for the finished product or the ingredients.
However, as a result of EU legislation (REACH Regulation), the manufacturers of ingredients or EU importers are obliged to test ingredients with regard to their effects on human health and the environment before they are brought onto the market. Some of the tests made necessary by this took place decades ago.

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2.000 mg/kg Method: Calculation method

Components:

sodium hydroxide

1310-73-2:

Acute oral toxicity	:	LD50 Oral (Rat): 2.000 mg/kg

potassium hydroxide

1310-58-3:

Acute oral toxicity	:	LD50 (Rat): 273 mg/kg Acute toxicity estimate: 500,0 mg/kg Method: Converted acute toxicity point estimate LD50 Oral (Rat, male): 333 mg/kg Method: OECD Test Guideline 425

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Acute oral toxicity	:	LD50 Oral (Rat): > 2.000 mg/kg Method: Tested according to Directive 92/69/EEC.

Acute inhalation toxicity	:	LC50 (Rat): > 5 mg/l Exposure time: 4 h
Acute dermal toxicity	:	LD50 (Rat): > 2.000 mg/kg Method: OECD Test Guideline 402

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg Method: OECD Test Guideline 401 LD50 Oral (Rat): 2.100 mg/kg LD50 (Rat, male and female): 2.910 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rabbit): > 6.310 mg/kg Method: OECD Test Guideline 402

Skin corrosion/irritation

Product:

Remarks : Extremely corrosive and destructive to tissue.

Components:

sodium hydroxide

1310-73-2:

Result : Corrosive

potassium hydroxide

1310-58-3:

Result : Corrosive

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Product:

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide

1310-73-2:

Result	:	Corrosive

potassium hydroxide

1310-58-3:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Corrosive

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Species	:	Rabbit
Assessment	:	Irritating to eyes.
Method	:	OECD Test Guideline 405

Respiratory or skin sensitization

Product:

Remarks	:	No data available

Components:

potassium hydroxide

1310-58-3:

Species	:	Guinea pig
Result	:	Did not cause sensitization on laboratory animals.

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitization on laboratory animals.

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Germ cell mutagenicity : Not Rated

Components:

potassium hydroxide

1310-58-3:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Result: negative

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Genotoxicity in vitro	:	Test Type: Ames test Method: OECD Test Guideline 471 Result: negative Test Type: Micronucleus test Method: Mutagenicity (micronucleus test) Result: negative Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Method: OECD Test Guideline 474

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Germ cell mutagenicity-Assessment	:	In vivo tests did not show mutagenic effects

Carcinogenicity

Carcinogenicity : Not Rated

Components:

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Carcinogenicity - Assessment	:	Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.

Reproductive toxicity : Not Rated

STOT-single exposure : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Species	:	Rat
NOAEL	:	262 mg/kg
Application Route	:	Oral
Symptoms	:	Kidney disorders

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Species	:	Rat
NOAEL	:	> 500 mg/kg
Exposure time	:	24 Months

Species	:	Rat
NOAEL	:	> 1.000 mg/kg
Exposure time	:	34 Days

Species	:	Rat
NOAEL	:	> 6.000 mg/kg
Exposure time	:	90 Days

Species	:	Rat, male and female
NOAEL	:	> 500 mg/kg
Method	:	OECD Test Guideline 453

Aspiration toxicity : Not Rated

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

sodium hydroxide

1310-73-2:

Toxicity to fish	:	LC50 (Fish): 33 - 189 mg/l Exposure time: 96 h

		LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l Exposure time: 96 h LC50 (Poecilia reticulata (guppy)): 76 mg/l Exposure time: 24 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): 40,4 mg/l EC50 (Daphnia magna (Water flea)): 76 mg/l Exposure time: 24 h EC50 (Ceriodaphnia (water flea)): 40,4 mg/l Exposure time: 48 h Test Type: Immobilization
Toxicity to microorganisms	:	EC50 (Photobacterium phosphoreum): 22 mg/l Exposure time: 15 min

potassium hydroxide

1310-58-3:

Toxicity to fish	:	(Pimephales promelas (fathead minnow)): 880 mg/l Exposure time: 96 h Test Type: static test LC50 (Gambusia affinis (Mosquito fish)): 80 mg/l Exposure time: 96 h LC50 (Poecilia reticulata (guppy)): 165 mg/l Exposure time: 24 h LC50 (Oncorhynchus mykiss (rainbow trout)): 45,4 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 660 mg/l Exposure time: 48 h Test Type: static test EC50 (Ceriodaphnia dubia (water flea)): 40,4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 : 1.337 mg/l Exposure time: 120 h
Toxicity to microorganisms	:	EC50 (Photobacterium phosphoreum): 22 mg/l Exposure time: 15 min
Toxicity to soil dwelling organisms	:	LC50: 850 mg/kg Exposure time: 90 d

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Toxicity to fish	:	LC50 (Brachydanio rerio): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h

		Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (microalgae)): > 100 mg/l Exposure time: 72 h Test Type: static test
Toxicity to microorganisms	:	EC20 (activated sludge): > 1.000 mg/l Exposure time: 0,5 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	:	NOEC: > 100 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout) Method: OECD Test Guideline 204
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 100 mg/l Species: Daphnia magna (Water flea) Method: OECD Test Guideline 202
Toxicity to soil dwelling organisms	:	LC50: 142 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Plant toxicity	:	EC50: 794 mg/kg Test period: 19 d Species: Avena sativa (oats) Method: OECD 208

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Toxicity to fish	:	LC50 (Salmo trutta (brown trout)): 160 mg/l Exposure time: 14 d LC50 (Oncorhynchus mykiss (rainbow trout)): 160 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 297 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 EC50 (Daphnia): 94 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): > 100 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC: 23 mg/l Exposure time: 60 d Species: Oncorhynchus mykiss (rainbow trout) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 25 mg/l Exposure time: 28 d Species: Daphnia magna (Water flea)

12.2 Persistence and degradability

Components:

sodium hydroxide

1310-73-2:

Biodegradability	:	Result: Biodegradable Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

potassium hydroxide

1310-58-3:

Biodegradability	:	Result: Biodegradable Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: > 80 % Related to: see user defined free text Exposure time: 28 d Method: OECD 301 F Remarks: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Biodegradability	:	Inoculum: Sea water Concentration: 4,08 mg/l Biodegradation: 23 % Exposure time: 28 d Method: OECD 301 D Inoculum: Sea water Concentration: 11,97 mg/l Biodegradation: 22 % Exposure time: 28 d Method: OECD 301 D Inoculum: Sea water Biodegradation: 2 % Exposure time: 28 d Method: OECD Test Guideline 306 Inoculum: Sea water Concentration: 8 mg/l Biodegradation: 21,7 % Exposure time: 28 d Method: OECD Test Guideline 306 Inoculum: Sea water Concentration: 10 mg/l Biodegradation: 2,6 % Exposure time: 28 d Method: OECD Test Guideline 306 Inoculum: Sea water Concentration: 1 mg/l

Biodegradation: 41 %
Exposure time: 28 d
Method: OECD Test Guideline 306

Inoculum: Sea water
Concentration: 2,5 mg/l
Biodegradation: 22 %
Exposure time: 28 d
Method: OECD Test Guideline 306

Biodegradation: 13,5 %
Exposure time: 30 d
Method: OECD 301 D

Biodegradation: 23 %
Exposure time: 28 d
Method: OECD 302 B

Biodegradation: 90 %
Method: OECD Test Guideline 302A

Biodegradation: 20 %
Method: OECD 301 E

Concentration: 1 mg/l
Result: Not rapidly biodegradable
Biodegradation: 22 %
Related to: Chemical oxygen demand
Exposure time: 28 d

12.3 Bioaccumulative potential

Components:

sodium hydroxide

1310-73-2:

Bioaccumulation	:	Species: Fish Remarks: No bioaccumulation is to be expected (log Pow <= 4).

potassium hydroxide

1310-58-3:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Partition coefficient: n-octanol/water	:	log Pow: < -4 (25 °C) pH: 11,4 Method: Tested according to Directive 92/69/EEC.

nitrilotrimethylenetris(phosphonic acid)

6419-19-8:

Partition coefficient: n-octanol/water	:	log Pow: -3,53

12.4 Mobility in soil

Components:

Alanine, N,N-bis(carboxymethyl)-, trisodium salt

164462-16-2:

Stability in soil : Remarks: Will not adsorb on soil.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

potassium hydroxide

1310-58-3:

Assessment : Not very persistent and very bioaccumulative (vPvB).. Not persistent, bioaccumulative, and toxic (PBT).

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local and national regulations.

Contaminated packaging : Empty remaining contents.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste Code : European Waste Catalog
20 01 29*
According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : 1719
IMDG : 1719

IATA : 1719

14.2 UN proper shipping name

ADR : CAUSTIC ALKALI LIQUID, N.O.S. (sodium hydroxide)

IMDG : CAUSTIC ALKALI LIQUID, N.O.S. (sodium hydroxide)

IATA : Caustic alkali liquid, n.o.s.

14.3 Transport hazard class(es)

ADR : 8
IMDG : 8
IATA : 8

14.4 Packing group

ADR

Classification Code	:	C5
Packaging group	:	II
Hazard Identification Number	:	80
Labels	:	8
Tunnel restriction code	:	(E)

IMDG

Packaging group	:	II
Labels	:	8
EmS Number	:	F-A, S-B

IATA

(Cargo)	:	Caustic alkali liquid, n.o.s.
Packaging group	:	II
Labels	:	8

14.5 Environmental hazards

ADR
Environmentally hazardous : no

IMDG
Marine pollutant : no

IATA
Environmentally hazardous : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

For personal protection see section 8.

14.7 Maritime transport in bulk according to IMO instruments
Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	:	Not applicable
TA Luft List (Germany)	:	Total dust: Not applicable
	:	Inorganic substances in powdered form: Not applicable
	:	Inorganic substances in vapor or gaseous form: Not applicable
	:	Organic Substances: Not applicable
	:	Carcinogenic substances: Not applicable
	:	mutagenic: Not applicable
	:	Toxic to reproduction: Not applicable
Volatile organic compounds (VOC) content	:	Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control) Update: Not applicable
according to Detergents Regulation EC 648/2004	:	<5% phosphonates, polycarboxylates

15.2 Chemical Safety Assessment

There is no data available for this product.

SECTION 16: Other information

Full text of H-Statements

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Met. Corr.	:	Corrosive to Metals
Skin Corr.	:	Skin corrosion

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory

Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Met. Corr. 1	H290	Calculation method
Skin Corr. 1	H314	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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