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

1.1. Product identifier

Natrii hypochlorosi 14% solut

Item No. 21370000

Registration no.

EC No.:	231-668-3
Registration no.	01-2119488154-34-XXXX
CAS No.	7681-52-9

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

Hänseler AG
Industriestrasse 35
9100 Herisau

Telephone no.	0041 (0)71 353 58 58
E-mail address of person responsible for this SDS	sdb@haenseler.ch

1.4. Emergency telephone number

Switzerland :145 / Abroad +41 (0)44 251 51 51

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Met. Corr. 1	H290
Skin Corr. 1B	H314
Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 2	H411

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Danger

Hazard statements ***

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

EUH031	Contact with acids liberates toxic gas.

Precautionary statements ***

P234	Keep only in original packaging.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P310	Immediately call a POISON CENTER or doctor.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains *** sodium hypochlorite, solution… % Cl active; sodium hydroxide

SECTION 3: Composition/information on ingredients ***

Hazardous ingredients *

sodium hypochlorite, solution… % Cl active

CAS No.	7681-52-9				
EINECS no.	231-668-3				
Registration no.	01-2119488154-34-XXXX				
Concentration	>=	10	<	25	%

Classification (Regulation (EC) No. 1272/2008)

Skin Corr. 1B	H314
Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Concentration limits (Regulation (EC) No. 1272/2008)

	EUH031	>= 5
Aquatic Acute 1		M = 10
Aquatic Chronic 1		M = 1

CLP Regulation (EC) No 1272/2008, Annex VI, Note B

sodium hydroxide

CAS No.	1310-73-2				
EINECS no.	215-185-5				
Registration no.	01-2119457892-27-XXXX				
Concentration	>=	1	<	2	%

Classification (Regulation (EC) No. 1272/2008)

Met. Corr. 1	H290
Skin Corr. 1A	H314

Concentration limits (Regulation (EC) No. 1272/2008)

Eye Irrit. 2	H319	>= 0.5 < 2 %
Skin Corr. 1A	H314	>= 5
Skin Corr. 1B	H314	>= 2 < 5
Skin Irrit. 2	H315	>= 0.5 < 2 %

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove affected person from danger area, lay him down. Adhere to personal protective measures when giving first aid. Keep under medical supervision for at least 48 hours. Remove contaminated, soaked clothing immediately and dispose of safely.

After inhalation

If the patient is likely to become unconscious, place and transport in stable sideways position.

After skin contact

Summon a doctor immediately. Wash off immediately with soap and water and rinse well. Wash skin thoroughly with water (15 min.).

After eye contact

Shield unaffected eye. Separate eyelids, wash the eyes thoroughly with water (15 min.). Summon a doctor immediately.

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If individual is drowsy or unconscious place in recovery position (on left side, with head down). Summon a doctor immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritating to respiratory system. Irritation of mucosa, Gastrointestinal complaints, Chemical burn

4.3. Indication of any immediate medical attention and special treatment needed

Hints for the physician / hazards

Frequent and persistent contact with the skin can cause dermatitis. Risk of pulmonary oedema

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Hydrogen chloride (HCl); Chlorine (Cl2)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Wear full protective suit. Use self-contained breathing apparatus.

Other information

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Respiratory protection. Wear protective equipment. Keep away unprotected persons.

6.2. Environmental precautions

Suppress gases/vapours/mists with water spray jet. Dilute with lot of water. Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

Neutralize. When picked up, treat material as prescribed under Section 13 "Disposal". Ensure adequate ventilation.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Handle and open container with care. Avoid formation of aerosols.

Advice on protection against fire and explosion

The product is not combustible. Oxidizing

7.2. Conditions for safe storage, including any incompatibilities

Recommended storage temperature

Value	15	25	°C

Requirements for storage rooms and vessels

Only use containers that are approved specifically for the substance/product. Do not use metal containers and metal pinings.

Hints on storage assembly

Do not store with combustible materials. Do not store with acids.

Storage classes

Storage class according to TRGS 510	8B	Non-combustible corrosive hazardous substances
Storage category (Switzerland)	8	Caustic and corrosive substances

Further information on storage conditions

Protect from frost. Protect from light. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection ***

8.1. Control parameters

Exposure limit values ***

sodium hydroxide

List	SUVA	
Type	MAK	
Value	2	mg/m³
Short term exposure limit	2	mg/m³

Pregnancy group: S; Remarks: SSc; Haut, OAWKT & AugeKT; NIOSH, OSHA

Derived No/Minimal Effect Levels (DNEL/DMEL)

sodium hypochlorite, solution… % Cl active

Type of value	Derived No Effect Level (DNEL)		
Reference group	Worker		
Duration of exposure	Short term		
Route of exposure	inhalative		
Mode of action	Systemic effects		
Concentration	3.1		mg/m³
Type of value	Derived No Effect Level (DNEL)		
Reference group	Worker		
Duration of exposure	Long term		
Route of exposure	inhalative		
Mode of action	Systemic effects		
Concentration	1.55		mg/m³
Type of value	Derived No Effect Level (DNEL)		
Reference group	Worker		
Duration of exposure	Long term		

Route of exposure	dermal	
Mode of action	Local effects	
Concentration	0.5	%
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1.55	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Short term	
Route of exposure	inhalative	
Concentration	3.1	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	0.26	mg/kg/d

Predicted No Effect Concentration (PNEC)

sodium hypochlorite, solution… % Cl active

Type of value	PNEC	
Type	Freshwater	
Concentration	0.21	µg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0.042	µg/l
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	0.03	mg/l
Type of value	PNEC	
Conditions	Intermittend	
Concentration	0.26	µg/l

8.2. Exposure controls

Exposure controls

See Section 7. No measures exeeding the ones mentioned necessary.

General protective and hygiene measures

Hold eye wash fountain available. Keep away from food-stuffs, beverages and feed-stocks. Remove contaminated, soaked clothing immediately and dispose of safely. Wash hands before breaks and after work. Avoid contact with skin and eyes.

Respiratory protection

Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter B-P2; At intensive and longer exposition use self-contained breathing apparatus. EN 141

Hand protection

Gloves (alkali-resistant)

Appropriate Material	Polychloroprene		
Material thickness		0.5	mm
Breakthrough time	>=	8	h

Hand protection must comply with EN 374.

Gloves (alkali-resistant)

Appropriate Material	Fluoro carbon rubber - FKM		
Material thickness		0.4	mm
Breakthrough time	>=	8	h

Gloves (alkali-resistant)

Appropriate Material	PVC		
Material thickness		0.5	mm
Breakthrough time	>=	8	h

Protective gloves

Not suitable: gloves made of thick material

Not suitable: leather gloves

Eye protection

Tightly fitting safety glasses

Body protection

Alkali-resistant protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form liquid

Colour yellow-green

Odour Chlorine.

pH value

Value	12	to	13	

Melting point

Value	-30	to	-20	°C

Flash point

Value	°C
Remarks	Not applicable

Vapour pressure

Value	appr.	20	hPa

Density

Value	1.22	g/cm³
Method	DIN 51757	

Solubility in water

Remarks	Completely miscible

Partition coefficient: n-octanol/water

log Pow	-3.42	
Temperature	20	°C

Viscosity

dynamic

Value	3	to	4	mPa.s

9.2. Other information

Other information

The product is not dangerous for explosions. The product is not combustible.

SECTION 10: Stability and reactivity

10.1. Reactivity

Contact with acids liberates toxic gases.

10.2. Chemical stability

Protect from light. Heat

10.3. Possibility of hazardous reactions

Protect from light and atmospheric moisture. Keep away from sources of heat and ignition.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Reactions with strong acids. Do not store with combustible materials. Evolution of chlorine under influence of acids. Reactions with reducing agents. Corrosive to metals. Violent reaction with organic compounds like wood, paper, grease. hydrogen peroxide (H2O2). Salts of metals (iron), copper (Cu)

10.6. Hazardous decomposition products

Chlorine, Hydrogen chloride (HCl), Chlorine compounds

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

ATE	41.6168	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute oral toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	mouse	
LD50	5800	mg/kg

sodium hypochlorite, solution… % Cl active

Species	rat	
LD50	> 1100	mg/kg
Method	OECD 401	
Source	Test substance: Cl	

sodium hypochlorite, solution… % Cl active

Species	rat	
NOAEL	5	mg/kg

sodium hydroxide

Species	rat	
LD50	2000	mg/kg
Source	NLM HSDB	

sodium hydroxide

Species	rat	
LD50	325	mg/kg
Source	OECD SIDS	

Acute dermal toxicity

ATE	> 10’000	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute dermal toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	rabbit		
LD50	>	20000	mg/kg
Method	OECD 402		
Source	Test substance: Cl		

sodium hydroxide

Remarks	Strong corrosive action on the skin and mucous membrane.

sodium hydroxide

Species	rabbit		
LD50		1350	mg/kg
Source	NLM HSDB		

Acute inhalative toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	rat			
LC50	>	10.5		mg/l
Duration of exposure		1	h	
Method	OECD 403			
Source	Chlor			

sodium hydroxide

Remarks	Strong corrosive action on the skin and mucous membrane.

Skin corrosion/irritation

Remarks	Corrosive action on the skin and mucous membrane.

Skin corrosion/irritation (Components)

sodium hypochlorite, solution… % Cl active

Species	Human
evaluation	corrosive

sodium hypochlorite, solution… % Cl active

Species	rabbit
evaluation	strongly irritant
Method	OECD 404

sodium hydroxide

Species	rabbit		
Duration of exposure		24	h
Remarks	Corrosive		

Serious eye damage/irritation

evaluation	strongly corrosive

Serious eye damage/irritation (Components)

sodium hypochlorite, solution… % Cl active

Species	rabbit
evaluation	irritant - risk of serious damage to eyes
Method	OECD 405

sodium hydroxide

Species	rabbit		
Duration of exposure		24	h
evaluation	strongly corrosive		
Method	Draize method		
Remarks	Influence of the product with the eyes can lead to blindness.		

Sensitization

Remarks	No sensitation effect known.

Sensitization (Components)

sodium hypochlorite, solution… % Cl active

Species	guinea pig
evaluation	non-sensitizing
Method	OECD 406

sodium hydroxide

Remarks	No sensitation effect known.

Subacute, subchronic, chronic toxicity (Components)

sodium hydroxide

Remarks	No data available

Mutagenicity (Components)

sodium hypochlorite, solution… % Cl active

evaluation	No experimental information on genotoxicity in vitro available.

sodium hypochlorite, solution… % Cl active

evaluation	No experimental indications on genotoxicity in vivo found.

sodium hypochlorite, solution… % Cl active

Species	Salmonella typhimurium
evaluation	No mutagenicity in the Ames-test.
Method	OECD 471

sodium hypochlorite, solution… % Cl active

Species	hamster
evaluation	Information on genotoxicity in vitro available.
Method	OECD 473

sodium hypochlorite, solution… % Cl active

Species	mouse
evaluation	No experimental indications on genotoxicity in vivo found.
Method	OECD 474

sodium hypochlorite, solution… % Cl active

Species	mouse
evaluation	Information on genotoxicity in vivo available.

sodium hydroxide

Species	Escherichia coli
evaluation	No mutagenicity in the Ames-test.

Reproduction toxicity (Components)

sodium hypochlorite, solution… % Cl active

evaluation	No negative effects

sodium hydroxide

Remarks	No data available

Carcinogenicity (Components)

sodium hypochlorite, solution… % Cl active

evaluation	No negative effects

sodium hydroxide

evaluation	No negative effects

Specific Target Organ Toxicity (STOT) (Components)

sodium hypochlorite, solution… % Cl active

Single exposure

evaluation	May cause respiratory irritation. Route of exposure inhalative Organs: Respiratory tract
Species	Human

sodium hydroxide

Remarks	No data available

Experience in practice

After Swallowing: burns in mouth, throat, oesophagus and gastrointetinal tract. Risk of perforation in the oesophagus and stomach.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity

Species	Fathead minnow (Pimephales promelas)		
LC50	5.9		mg/l
Duration of exposure	96	h	

Fish toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	Salmo gairdneri		
LC50	0.06		mg/l
Duration of exposure	96	h	

sodium hypochlorite, solution… % Cl active

Species	Menidia peninsulae		
NOEC	0.04		mg/l
Duration of exposure	96	h	

sodium hypochlorite, solution… % Cl active

Species	Menidia peninsulae		
NOEC	0.04		mg/l
Duration of exposure	28	d	

sodium hydroxide

Species	Gambusia affinis		
LC50	125		mg/l
Duration of exposure	96	h	

sodium hydroxide

Species	rainbow trout (Oncorhynchus mykiss)		
LC50	45.4		mg/l
Duration of exposure	96	h	

Daphnia toxicity

Species	Daphnia magna		
LC50	< 10		mg/l
Duration of exposure	24	h	

Daphnia toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	Daphnia magna		
EC50	0.141		mg/l
Duration of exposure	48	h	

sodium hydroxide

Species	Daphnia		
EC50	40.38		mg/l
Duration of exposure	48	h	
Remarks	Immobilization		

sodium hydroxide

Species	Daphnia magna		
EC50	76		mg/l
Duration of exposure	24	h	

Algae toxicity (Components)

sodium hypochlorite, solution… % Cl active

NOEC	0.0021	
Duration of exposure	7	d

sodium hydroxide

Remarks	No data available.

Bacteria toxicity (Components)

sodium hypochlorite, solution… % Cl active

Species	activated sludge		
EC50	>	3	mg/l
Duration of exposure		3	h

sodium hydroxide

Species	Photobacterium phosphoreum	
EC50	22	mg/l
Duration of exposure	15	min

12.2. Persistence and degradability

Physico-chemical eliminability (Components)

sodium hydroxide

Remarks	No data available.

Biodegradability

evaluation	not degradable

Biodegradability (Components)

sodium hypochlorite, solution… % Cl active

Remarks	Inorganic product, cannot be eliminated from the water by biological purification processes.

sodium hydroxide

evaluation	not degradable

Ready degradability (Components)

sodium hydroxide

Remarks	Inorganic product, cannot be eliminated from the water by biological purification processes.

12.3. Bioaccumulative potential

General information

Not applicable

Partition coefficient: n-octanol/water

log Pow	-3.42	
Temperature	20	°C

Octanol/water partition coefficient (log Pow) (Components)

sodium hypochlorite, solution… % Cl active

log Pow	-3.42	
Temperature	20	°C

12.4. Mobility in soil

Mobility in soil

Highly mobile in soils

Mobility in soil (Components)

sodium hypochlorite, solution… % Cl active

Highly mobile in soils

sodium hydroxide

Slightly mobile in soils

12.5. Results of PBT and vPvB assessment

General information

No data available

Evaluation of persistance and bioaccumulation potential (Components)

sodium hypochlorite, solution… % Cl active

The Substance doesn't meets PBT/vPvB-criterions

12.6. Other adverse effects

General information / ecology

Toxic for aquatic organismes. Do not allow it to reach ground water, water bodies or sewage system. Hazard for drinking water supplies.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Disposal in compliance with local and national regulations.

Disposal recommendations for packaging

Dispose of as unused product.

SECTION 14: Transport information

	Land transport ADR/RID	Marine transport IMDG/GGVSee	Air transport ICAO/IATA
Tunnel restriction code	E		
14.1. UN number	1791	1791	1791
14.2. UN proper shipping name	HYPOCHLORITE SOLUTION (sodium hypochlorite, solution… % Cl active)	HYPOCHLORITE SOLUTION (sodium hypochlorite, solution… % Cl active)	HYPOCHLORITE SOLUTION (sodium hypochlorite, solution… % Cl active)
14.3. Transport hazard class(es)	8	8	8
Label			
14.4. Packing group	II	II	II
Limited Quantity	1 l		
Transport category	2		

SECTION 15: Regulatory information

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

Water Hazard Class (Germany)

Water Hazard Class (Germany)	WGK 2
Remarks	Derivation of WGK according to Annex 1 No. 5.2 AwSV

SECTION 16: Other information

Hazard statements listed in Chapter 3

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

CLP categories listed in Chapter 3

Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic, Category 1
Eye Dam. 1	Serious eye damage, Category 1
Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion, Category 1A
Skin Corr. 1B	Skin corrosion, Category 1B

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.