Safety Data Sheet

According To Regulation (EC) No 1907/2006 (REACH)

SODIUM HYPOCHLORIDE

Version:	*1.0*	*Preparation Date :*	*11/11/2013*
Form No:	*193232*	*Revision Date:*	*11/11/2013*

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	**SODIUM HYPOCHLORIDE**
SDS[1] No	193235
CAS[2] No	7681-52-9
EINECS[3] No	231-668-3
Chemical Name	Sodium hypochlorite
Chemical Formula	ClHO.Na
Structural Formula	

1.2 Relevant Identified Uses Of The Product And Uses Advised Against

Relevant Identified Uses	It is one of the basic raw materials of the Chemical Industry with a wide range of applications. · Liquid bleach production · Textile Industry (bleaching process) · Disinfection and cleaning processes · Potable and waste water refining · Chlorination of water · Paper Industry
Uses Advised Against	See chapter 16 for a general overview

1.3 Details Of The Supplier Of The Safety Data Sheet

Supplier (Manufacturer)	**AK-KİM KİMYA SAN. VE TİC. A.Ş.** www.akkim.com.tr
Address – Factory	Denizçalı Köyü, Taşköprü Mevkii, P.K. 39 77600 Yalova / TÜRKİYE
Telephone	0 226 815 33 00
Fax	0 226 353 25 39

1.4 Information Providing Authority About Safety Data Sheet

	Ali Haydar KETİR – Environmental Engineer
Telephone	+90 (226) 815 33 00 / 33304
Fax	ali.ketir@akkim.com.tr

1.5 Emergency Telephone Number

Company Emergency	0 226 815 33 00

2. HAZARDS IDENTIFICATION

2.1 Classification Of The Product

2.1.1 Classification According to Regulation (EC) No 1272/2008

· Skin corrosion, Category 1B; H314

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- Hazardous to the aquatic environment, Acute Category 1; H400

2.2 Label elements

2.2.1. Labeling According to Regulation (EC) No 1272/2008 [CLP[4]/GHS[5]]

Product Identifier

Hazard Component for Labeling

- Sodium hypochlorite

Hazard Pictograms

Signal Word

- Danger

Hazard Statements

H314	Causes severe skin burns and eye damage
H400	Very toxic to aquatic life

Precautionary Statements

General

- None

Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment
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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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 CENTER or doctor/ physician.

Storage

P405	Store locked up

Disposal

P501	Dispose of contens / container in accordance with local / regional / national / international regulations.

Supplemental Hazard Information (EU) Statements

EUH031	Contact with acids liberates toxic gas.
EUH206	'Warning! Do not use together with other products. May release dangerous gases (chlorine).'

2.2.2. Special Rules For Supplemental Label Elements For Certain Mixtures

None.

2.2.3. Additional Labeling

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· Not Applicable

2.3 Hazard Identification

2.3.1. Skin Contact

May be harmful if absorbed through skin. Causes skin burns.

2.3.2. Eye Contact

Causes eye burns.

2.3.3. Ingestion

May be harmful if swallowed. Causes burns.

2.3.4. Inhalation

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

2.3.5. Long term effects

Repeated oral uptake of the substance did not cause substance-related effects. Repeated inhalative uptake of the substance did not cause substance-related effects. The product has not been tested. The statement has been derived from products of a similar structure or composition.

2.3.6. Adverse Environmental Effects

Very toxic to aquatic life

2.4. Additional Information

· None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Description Of The Substance: SODIUM HYPOCHLORIDE

NAME	EINECS NO	CAS NO.	CONTENT (%)	CLASSIFICATION CLP
Sodium hypochlorite	231-668-3	7681-52-9	30-50 %	 DANGER Skin corrosion, Category 1B; H314 Hazardous to the aquatic environment, Acute Category 1; H400

3.2 Additional information

· None

4. FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General information

· Remove contaminated clothing.
· In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.1.2 Following inhalation

· Following inhalation of aerosols from solutions or chlorine gas released:
· Whilst protecting yourself remove the casualty from the hazardous area and take him to the fresh air.
· Lay the casualty down in a quiet place and protect him against hypothermia.

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- As soon as possible repeatedly have the casualty deeply breath a glucocorticoid inhalation spray in.
- In the case of breathing difficulties have the casualty inhale oxygen.
- Absolutely avoid any bodily exertion.
- Immediately call a physician to the accident site.

4.1.3 Following skin contact

- Rinse the affected skin areas for 10 minutes under running water.
- Remove contaminated clothing while protecting yourself.
- If any irritation is felt and always following contact with solutions > 10%:
- Arrange medical treatment.

4.1.4 Following eye contact

- Following contact with solutions, aerosols from solutions or chlorine gas released
- as quickly as possible:
- Rinse the affected eye with widely spread lids for 10 minutes under running water whilst protecting the unimpaired eye.
- Immediate rinsing can significantly reduce the severity of the damage!
- Transport the casualty to an eye doctor/hospital. During transport continue rinsing with physiological salt solution.

4.1.5 Following ingestion

- Rinse the mouth and spit the fluids out.
- If the casualty is conscious have him drink copious amounts of liquids (water).
- Lay the casualty down in a quiet place and protect him against hypothermia.
- Do not make the casualty vomit.
- During spontaneous vomiting hold the head of the casualty low with the body in a prone position in order to avoid aspiration.
- In the meantime, call a physician to the site of the accident.

4.1.6 Self-protection of the first aider

- Pay attention to self-protection

4.1.7 Notes for the doctor

<u>Symptoms of acute poisoning:</u>

- Eyes: burning, pain; dependent on the concentration superficial damage to the corneal epithelium through to serious chemical burns. The degree of damage and the extent to which they are reversible are strongly dependent on the time of contact before rinsing is carried out!
- Skin: superficial irritation through to corrosion
- Inhalation: aerosols cause mainly irritation/damage in the nose and throat area; following massive inhalation and always when chlorine gas is released: danger of laryngospasm, glottic edema, bronchospasm, tracheobronchitis, pulmonary edema, pneumonia (after a latency period), possibly also reflex respiratory/cardiac arrest
- Ingestion: burning sensation, pain in the mouth, throat, esophagus, stomach; nausea, vomiting (danger of aspiration); danger of corrosion of the contacted mucous membranes (ulceration, perforation, strictures in the esophagus/ stomach); following aspiration, danger of most serious lung damage; following massive corrosion even acute cardiovascular responses (collapse, shock); following very high doses there could be systemic effects

- *Absorption: hypernatremia and hyperchloremic acidosis possible; more likely as a result of massive damage to tissue than from absorption: CNS disturbances (lethargy, loss of consciousness through to coma), heart-circulatory reactions, possibly disturbance of the kidney function..*

Medical advice:

- *Following contact with the eye, carry out first aid (thorough rinsing, if possible with physiological saline solution, pain relief as necessary), then immediate further treatment by an ophthalmologist.*
- *Wash contaminated skin thoroughly with water. Treat irritated areas with a dermatic agent containing corticoids. If there was skin damage over a large area, transport the casualty to hospital for further observation and treatment.*
- *Following inhalation of fine aerosols from solutions or if chlorine gas is released, administration of glucocorticoids (inhalatively and/or i.v.) and oxygen are indicated. Carry out all further prophylactic measures for pulmonary edema.*
- *For bronchospasm, apply bronchodilators. In severe cases, intubation and artificial respiration can be required. Support cardiovascular functions.*
- *Always transport the casualty to hospital as soon as possible for further diagnosis/treatment.*
- *Following oral intake, the measures necessary depend on the circumstances and the clinical picture. Provided there are definitely no signs of perforation, an immediate, very careful gastrolavage (in intubation) is worthy of consideration. A gastrolavage probably only makes sense if a large volume of solution has been swallowed. As for inhalation, the application of glucocorticoids could be necessary to prevent the formation of glottic edema and/or pulmonary damage (see measures for inhalation). Further treatment symptomatically.*
- *Whenever poisoning is suspected, always carry out diagnosis in hospital. There the main issues are the functions of the cardiovascular system, CNS and respiratory systems, the diagnosis (endoscopy) and treatment of damage caused by corrosion and the checking of the acid-base balance, the hemogram (especially the leukocytes) and the kidney function.*

Recommendations:

- *Provide the physician information about the substance/product and treatment already administered.*

5. FIRE-FIGHTING MEASURES

5.1 General Information and Flammable Properties

- *Substance is incombustible. Select firefighting measures according to the surrounding conditions.*
- *In case of ambient fire: Cool surrounding containers with water spray.*
- *If possible, take container out of dangerous zone.*
- *Rise in pressure and risk of bursting when heating.*

5.2 Extinguishing media:

- *Dry powder*

5.3 Unsuitable extinguishing media

- *None known.*

5.4 Special hazards arising from the product

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Ambient fire may liberate hazardous vapours or decomposition products.

- Hydrogen chloride
- Chlorine
- Chlorine dioxide.

5.5 Advice for fire-fighters

- Wear NIOSH [6] approved breathing apparatus, eye and face protector and chemical resistant clothes.

5.6 Additional information

- Contaminated extinguishing water must be disposed of in accordance with official regulations
- Do not allow the quenching water into sewage systems

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Avoid inhalation of vapours.
- Avoid vapour formation. Ensure adequate ventilation
- Refer to protective measures listed in section 7 and 8.
- Put on protective equipment before entering danger area.

6.2 Environmental precautions

- Cover drains.
- Do not allow to enter into soil/subsoil.
- Do not empty into drains or the aquatic environment..

6.3 Methods and material for containment and cleaning up

6.3.1 For containment

- Control personal contact by using protective equipment as required
- Take up contaminated material and pass on for further processing.
- Contain for disposal according to local / national regulations.

6.3.2 For cleaning up

- Soak up with inert absorbent material and dispose of as hazardous waste.
- Keep in suitable, closed containers for disposal.
- Only conduct maintenance and other work on or in the vessel or closed spaces after obtaining written permission.
- Only work with vessels and lines after they have been thoroughly rinsed.

6.3.3 Other information

- Dispose of waste material according to local, state and federal regulations.

6.4 Reference to other sections

- Dispose of contaminated material as waste in accordance with section 13.
- See Section 13.

7. HANDLING AND STORAGE

7.1.1 Precautions for safe handling

7.1.2 Protective measures

Personal preventions

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- Avoid vapour formation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Fire preventions

- The substance/product is non-combustible
- See section 5.

Environmental precautions:

- Dispose of waste material according to local, state and federal regulations.

7.1.3 Advice on general occupational hygiene

- Take care to maintain clean working place.
- The substance must not be present at workplaces in quantities above that required for work to be progressed.
- Do not leave container open.
- Use leak-proof equipment with exhaust for refilling or transfer.
- Avoid splashing.
- Fill only into labelled container.
- Use alkaline resistant utensils.
- Avoid any contact when handling the substance.
- Prevent seepage into flooring (use of a steel tub).
- Do not transport together with incompatible substances.
- Use an appropriate exterior vessel when transporting in fragile containers.

7.2 Conditions for safe storage, including any incompatibilities

- Store in cool place. 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.
- Never allow product to get in contact with water during storage.
- Do not store near acids.
- Recommended storage temperature: 2 - 8 °C

7.1 Advice on common storage

- Do not use any food containers - risk of mistake.
- Containers have to be labelled clearly and permanently.

- Store in the original container as much as possible.
- Preferably use unbreakable containers rather than glass containers.
- Place fragile vessels in break-proof outer vessels.
- Keep container tightly closed.
- Recommended storage temperature: 2 to 8 degree C.
- Store in a dry place.
- Store smaller vessels in cabinets with collecting tubs.
- Protect from exposure to light.
- Protect from exposure to sunlight.
- Protect from overheating/heating up.

7.2 Specific precautions on storage

- Storage class 8 B (Non-combustible corrosive substances)
- Only substances of the same storage class should be stored together.
- Collocated storage with the following substances is prohibited:
- - Pharmaceuticals, foods, and animal feeds including additives.
- - Infectious, radioactive und explosive substances.
- - Strongly oxidizing substances of storage class 5.1A.
- - Organic peroxides and self reactive substances.
- Under certain conditions the collocated storage with the following sub-stances is permitted:
- - Other explosive substances of storage class 4.1A.
- - Spontaneously flammable substances.
- - Substances liberating flammable gases in contact with water.
- - Ammonium nitrate and preparations containing ammonium nitrate.
- The substance should not be stored with substances with which hazardous chemical reactions are possible.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Preventive industrial and medical examinations must be carried out according to the application area.
Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

8.1.1 Occupational exposure limits

Components with workplace control parameters

- AIHA (WEEL) – STEL : 2 mg/m3
- OSHA (PEL) : 0.5 ppm (TWA), 1 ppm (STEL) as Chlorine
- ACGIH (TLV) : 1 ppm (TWA), 3 ppm (STEL) as Chlorine

8.2 Exposure controls

- Adequate ventilation should be used during processing

8.2.1 Appropriate engineering controls:

- Provide local exhaust ventilation to control vapour.
- In the immediate working surroundings there must be: Emergency shower installed.

- Make available sufficient washing facilities.
- Provide eye shower and label its location conspicuously.
- See Section 7

8.2.2 Personal protection equipment

8.2.2.1 Eye / Face protection:

- Safety glasses with side shields.
- Wear chemical safety goggles.
- If the face is at risk a protective shield must also be worn.
- If vapours or aerosols that may injure the eyes arise, then safety of the eyes can best be guaranteed by wearing a full mask.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.

8.2.2.2 Skin protection

Hand protection

- The use of resistant protective gloves is recommended.
- Skin protection cremes do not protect as effectively against the substance as protective gloves. Therefore suitable protective gloves should be preferred as far as possible.
- The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well ventilated location. Pay attention to skin care.
- Skin protection cremes do not protect sufficiently against the substance.
- Textile or leather gloves are completely unsuitable.
- The following information refers to sodium hypochlorite solution (13% active chlorine):
- The following materials are suitable for protective gloves (Permeation time >= 8 hours):
- Natural rubber/Natural latex - NR (0,5 mm) (use non-powdered and allergen free products)
- Polychloroprene - CR (0,5 mm)
- Nitrile rubber/Nitrile latex - NBR (0,35 mm)
- Butyl rubber - Butyl (0,5 mm)
- Fluoro carbon rubber - FKM (0,4 mm)
- Polyvinyl chloride - PVC (0,5 mm)
- The times listed are suggested by measurements taken at 22 °C and constant contact. Temperatures raised by warmed substances, body heat, etc. and a weakening of the effective layer thickness caused by expansion can lead to a significantly shorter breakthrough time. In case of doubt contact the gloves' manufacturer. A 1.5-times increase / decrease in the layer thickness doubles / halves the breakthrough time. This

data only applies to the pure substance. Transferred to mixtures of substances, these figures should only be taken as an aid to orientation.

Body protection

- Depending on the risk, wear a tight, long apron and boots or suitable chemical protection clothing
- Eye wash unit.

Other protection

- Handle in accordance with good industrial hygiene and safety practice.

8.2.2.3 Respiratory protection

- In an emergency (e.g.: unintentional release of the substance) respiratory protection must be worn. Consider the maximum period for wear.
- Respiratory protection: Particle filter P2 or P3, colour code white.
- Perhaps also necessary for improved protection:
- Combination filter B - P2 or B - P3, colour code grey-white.
- Use insulating device for concentrations above the usage limits for filter devices, for oxygen concentrations below 17% volume, or in circumstances which are unclear.

8.2.3 Environmental exposure controls

- Legislation for the protection of the environment must be met in full.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance

Form/Physical state	Liquid
Color	Yellowish,
Odor	Like chlorine

	Value
pH @ (20(°C)	>12
Freezing point/range (°C)	Not available
Boiling point/range (°C)101,3 kPa	111 °C
Melting point (°C)	-30-20 °C
Flash Point (°C)closed cup	Not available
Viscosity (20°C)	No data available
Relative density	1,206 g/mL at 25 °C
Vapour pressure	23,3 hPa at 20 °C
Relative vapour density	No data available
Solubility in water g/l @ 20°C	Completely miscible, soluble
Partition coefficient n-Octanol/Water (log Po/w)	No data available
Explosive Property	None
Oxidation Property	None

Note: The above features were determined according to prescribed methods at the Classification, Packaging and Labeling of Hazardous. Substances Regulation Section A-3 or a method comparable to the other.

10. STABILITY AND REACTIVITY

10.1 Reactivity

- No data available

10.2 Chemical stability

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- Stable under recommended storage and handling conditions. (See section 7.)

10.3 Possibility of hazardous reactions

Risk of explosion in contact with:

- amines
- ammonia
- organic substances
- oxidizing agents
- reducing agents
- formic acid/ heat (rare); aziridine;
- ammonium acetate; ammonium salts/ acid (rare); urea;
- acetic anhydride; methanol; oxalic acid/solid; phenylacetonitrile; friction/heat

The substance can react dangerously with:

- Ethanediol/solution; arsenic; cyanides -> chlorine cyanide; acids -> chlorine;
- storage -> oxygen; light -> decomposition ->oxygen;
- Nitric acid -> chlorine, oxidizing agents/solution; nitrous gases;
- Heavy metals and their salts catalyse the decomposition.

10.4 Conditions to avoid:

- Light, heat, incompatibles.

10.5 Incompatible materials:

- Strong acids, Organic materials, Powdered metals, Forms shock-sensitive mixtures with certain other materials., Amines, Reacts violently with ammonium salts, aziridine, methanol, and phenylacetonitrile, sometimes resulting in explosions. Reacts with primary aliphatic or aromatic amines to form explosively unstable n-chloroamines. Reaction with formic acid becomes explosive at 55°C.

10.6 Hazardous decomposition products:

- chlorine; chlorine dioxide; hydrogen chloride; oxygen

10.7 Hazardous polymerization:

- None.

11. TOXICOLOGICAL INFORMATION

11.1 General Information

- Routes of exposure:
- - During occupational handling of Sodium hypochlorite exposure is to be expected via the inhalative and dermal intake pathways.

11.2 Acute toxicity

- No data available

11.3 Skin corrosion/irritation and Eye damage/irritation:

Skin: no data available

Eye: no data available

Respiratory or skin sensitization: no data available

11.4 CMR effects (Carcinogenity) :

- NaOCl solution did not induce any skin tumors in dermal carcinogenicity studies on mice. A potential to promote the formation of tumors on the skin cannot be excluded on

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the basis of the results of two studies (1 test positive).

- With regard to the drinking water chlorination, no causal relationship could be proved for humans between the intake of hypochlorite and increased incidence of tumors.
- The results of carcinogenicity studies carried with oral adminstration of NaOCl to rats and mice were negative, except some equivocal results were reported for the female rats.
- The classification as IARC ("Group 3") is considered valid in the context of recent data.

11.5 CMR effects (Mutagenicity and Toxicity for reproduction) :

- Reproductive toxicity:
- Epidemiological studies carried out in conjunction with the chlorination of drinking water did not reveal any indication of effects to the reproduction attributable to hypochlorite but the studies were of limited validity.
- Animals which received NaOCl in drinking water did not show any influence on fertility or developmental toxic effects.
- Mutagenicity:
- Mutagenic effects were found in some of the in-vitro studies carried out with NaOCl solutions but mutagenic effects could not be found in vivo.

11.6 Other Toxicological Effects:

Allergic Effects	No data available
Effects on Repeated Doses Chronic Exposures	Repeated inhalative uptake of the substance did not cause substance-related effects. The product has not been tested. The statement has been derived from products of a similar structure or composition
Sensitization	No data available
Developmental Toxicity (Teratogenicity)	No data available concerning teratogenic effects. The chemical structure does not suggest such an effect.
Fertility	The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from products of a similar structure or composition. The chemical structure does not suggest such an effect.

11.7 STOT-single/repeated exposures:

STOT-single exposure	No data available
STOT-repeated exposure	No data available

11.8 Symptoms related to the physical, chemical and toxicological characteristics:

In case of inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
In case of skin contact	May be harmful if absorbed through skin. Causes severe skin burns.
In case of eye contact	Causes severe eye burns
In case of ingestion	May be harmful if swallowed. Causes severe burns.

11.9 Additional Toxicological Information:

- Signs and Symptoms of Exposure
- burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

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- Toxicological classifications are based on available knowledge and information
- EEC classification: Corrosive.
- The special effects to health are considered by taking into account the information in section 3.
- RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

- Acute Fish Toxicity (LC50 96 hour): 0,18 mg/l
- Acute Crustaceans Toxicity (LC50 48 hour): 0,055 mg/l
- Acute Crustaceans Toxicity (EC50 48 hour): 1,57 mg/l
- Acute Algae Toxicity (EC50 72 or 96 hour): 46 mg/l
- Acute Microorganisms Toxicity (EC50 72hour): No data available
- Acute Microorganisms Toxicity (EC10 17hour): No data available

12.2 Photo degradation

No data available.

12.3 Effects on Waste Water Treatment Plants

Not determined.

12.4 Mobility

Liquid
Solubility in water: Completely
Refer to ecotoxicity.

Water threat class	WGK 2 - hazard to waters
Clean Water Impact	No data available
Known or predicted environmental distribution	No data available

12.5 Results of PBT and vPvB assessment

Biotic	
Ready biodegradability:	No data available
Abiotic:	
Hydrolysis as a function of pH:	No data available
Photolysis:	No data available
Atmospheric oxidation:	No data available

- **Persistence and degradability:**

Decomposition Potential of the products	No data available
The half-life of degradation	No data available
Potential degradation of product content in the evaluation of wastewater treatment plants	No data available

- **Bioaccumulation Potential :**

Biological environment (biota) accumulation potential	No data available
Potential - nutrients pass through	No data available
Reference Values - Log Kow , Sw and BCF	No data available

12.6 Additional information

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- *Very toxic to aquatic life*
- *See the sections 6, 7, 13, 14 and 15.*

13. DISPOSAL CONSIDERATIONS

13.1 Product / Packaging disposal

- *This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.*
- *If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means.*
- *Shelf life considerations should also be applied in making decisions of this type.*
- *Note that properties of a material may change in use, and recycling or reuse may not always be appropriate*
- *When recycling of the product is not possible, disposal to landfill or incineration in accordance with all applicable government laws and regulations is recommended.*
- *Disposal according to local authority regulations.*
- *Contact waste disposal services*

13.2 Contaminated packaging

- *If there is product residue in the emptied container, follow directions for handling on the container's label.*
- *Contaminated packaging must be emptied of all residues and can be recycled following appropriate cleaning.*

13.3 Disposal Methods

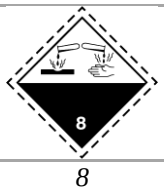
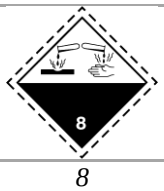
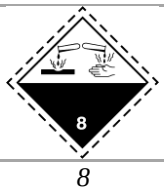
- *Dispose of chemicals waste or in accordance with local regulations.*
- *Follow all applicable local laws, rules and regulations regarding the proper disposal of this material.*
- *If this product has been altered or contaminated with other hazardous materials, appropriate waste analysis may be necessary to determine proper method for disposal*

13.4 European Waste Catalogue

- *The final classification has to be done together with the local waste disposal company / authority.*

14. TRANSPORT INFORMATION

UN 1791 HYPOCHLORITE SOLUTION

	ADR[7]/RID[8]	ADNR	IMDG[9]	ICAO[10]/IATA[11]
TRANSPORTATION	Road	River	Marine	Airways
PROPER SHIPPING NAME	HYPOCHLORITE SOLUTION			
UN/ID No.	1791	1791	1791	1791
SYMBOL				
CLASS	8	8	8	8
PACKAGING GROUP	III	III	III	III

Safety Data Sheet

According To Regulation (EC) No 1907/2006 (REACH)

SODIUM HYPOCHLORIDE

Version:	1.0	Preparation Date :	11/11/2013
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LABELLING NO	8	8	8	8
CLASSIFICATION CODE	C9			
HAZARD NO (HIN NO)	80			
EmS			F-A;S-B	
MARINE Pollutant			NO	
Tunnel restrictions: Passage forbidden through tunnels of category E.				
Road Transport Notes: This product is regulated as a hazardous material.				

15. REGULATORY INFORMATION

15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance

Substance is found on the following regulatory lists;;

- "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)"

15.2 Chemical Safety Assessment

No data available

15.2.1 HAZARD

CLP classification according to Annex VI of CLP (Regulation (EC) No 1272/2008)

- Causes severe skin burns and eye damage
- Very toxic to aquatic life

15.2.2 RISK

- Contact with acids liberates toxic gas
- Causes burns
- Very toxic to aquatic organisms

15.3 RESTRICTIONS OF USE

REACH Regulation (EC) No 1907/2006 Annex XVII; status - September 2012

Annex XVII, Point 3

1. The putting into circulation and the utilization of the substance is not allowed in decorative objects, games and joke articles.

2. Substances labelled with R 65 which can be utilized as fuels in decorative lamps and are put in circulation in amounts of 15 l or less must not contain a dye and/or a perfume.

Further information on prohibitions can be taken from the regulation.

Prohibitions of Chemicals Ordinance; status - November 2010

Annex to §1, Section 5

See entry to Annex XVII, Point 3 of REACH Regulation (EC) No 552/2009.

15.4 INTERNATIONAL REGULATIONS

- This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006 and ISO 11014:2009. This product is classified according to EU Directive 67/548/EC and GHS/CLP.

16. OTHER INFORMATION

16.1 Other information

- For additional information regarding **AK-KIM KIMYA SAN. VE TIC. ŞTİ.**products please contact the **AK-KIM KIMYA SAN. VE TIC. A.S** Vedat Ateşoğlu - vatesoglu@akkim.com.tr

Safety Data Sheet

According To Regulation (EC) No 1907/2006 (REACH)

SODIUM HYPOCHLORIDE

Version:	*1.0*	*Preparation Date :*	*11/11/2013*
Form No:	*193232*	*Revision Date:*	*11/11/2013*

- *The above information complies with the 199/45/EC and 1907/2006 Directives and their amendments.*
- *In all cases of potential poisoning supportive therapy is of the utmost importance.*

16.2 Related Person

- *Vedat Ateşoğlu - vatesoglu@akkim.com.tr Ak-Kim Kimya San. Ve Tic. A.Ş*
- *Prepared by : Ali Haydar KETİR - Ak-Kim Kimya San. Ve Tic. A.Ş ali.ketir@akkim.com.tr*
- ***Competent Person Accreditation no : TSE GBF-0855 28.07.2011***

16.3 Revision Date, Version and SDS no

- *Date : November 11, 2013*
- *Version : 1.0*
- *MSDS No : 193235*

16.4 Reason of re-issue

- *Compiling according to Regulation (EC) No 1272/2008*

16.5 Relevant R-, H- and EUH-phrases (number and full text):

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

16.6 Legal disclaimer

- *The purpose of the above information is to describe the products only in terms of health and safety requirements.*
- *The information given should not, therefore, be construed as guaranteeing specific properties or as specification.*
- *Customers should satisfy themselves as to the suitability and completeness of such information for their own particular use.*
- *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 above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.*
- *The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Due to the many factors outside our control when using this product, we cannot accept liability for any injury, accident, loss or damage caused through its use.*

[1] SDS: Safety Data Sheet
[2] CAS: Chemical Abstract Service
[3] EINECS: European INventory of Existing Commercial
[4] CLP:Classification Laballing and Packaging
[5] GHS:Global Harmonised System
[6] NIOSH-National Institute of Occupational Safety and Health(Ulusal İş Sağlığı ve Güvenliği Enstitüsü)
[7] ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
[8] RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
[9] IMDG: International Maritime Code for Dangerous Goods
[10] ICAO: International Civil Aviation Organization
[11] IATA: International Air Transport Association