



Chemifloc Ltd.

SAFETY DATA SHEET **Sodium Hypochlorite 5%**

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II

Section 1: Identification of the substance and of the company/undertaking

Identification of the substance or mixture

Product Name:	Sodium Hypochlorite
Chemical Name:	Sodium Hypochlorite
Registration Number:	01-2119488154-34
Synonyms:	Hypochlorous acid, sodium salt, Javel extract
Date of first issue:	24th March 2016
Version number	02
Revision date:	20th May 2019
Supersedes date:	24th March 2016

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

Identified uses Bleaching agent, Oxidizing agents, Reagent, Disinfectant, Cleaning agent
Use in the treatment of raw water in the supply of either potable water or industrial process water

Uses advised against None

Details of the supplier of the safety data sheet

Manufacturer: Chemifloc Ltd
Smithstown, Shannon,
Co. Clare,
Rep. of Ireland.
Tel: 00353 61 708699
Fax: 00353 61 708698
e-mail: info@chemifloc.ie

**Emergency Telephone Number: National Poison Information Centre,
00353 1 8379964**

Section 2: Hazards Identification

Classification of the substance

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classificatory applies.

Classification according to Regulation (EC) no 1272/2008 as amended

Health hazards

Serious eye damage	Category 1	H318 ó Causes serious eye damage.
Skin corrosion/irritation	Category 1A	H314 ó Causes severe skin burns and eye damage.
Corrosion to metals	Category 1	H290 ó May be corrosive to metals.
Target Organ Systemic	Category 3	H335 - May cause respiratory irritation.
Acute aquatic toxicity	Category 1	H400 - Very toxic to aquatic life.

Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains: Sodium Hypochlorite



Signal word	Danger
Hazard statements	H314 - Causes severe skin burns and eye damage. H290 ó May be corrosive to metals. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. H400 - Very toxic to aquatic life. EUH031 - Contact with acids liberates toxic gas
Precautionary statements	
Prevention	P260 - Do not breathe mist or vapour. P280 ó Wear eye/face protection P273 - Avoid release to the environment
Response	P390 - Absorb spillage to prevent material damage P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+351+338 ó 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	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 - Dispose of contents/container in accordance with local regulation.
Supplemental label information.	Not applicable
Other hazards	Not assigned.

Section 3: Composition/Information on Ingredients**Substance****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Sodium Hypochlorite	4 - 6	7681-52-9 231-668-3	01-2119488154-34	-	#
Water	94 - 96	7732-18-5 231-791-2			

Classification: CLP: Skin Corr. 1A;H314, Mett. Corr. 1:H290, STOT SE 3:H335, Aquatic Acute 1:H400

#: This substance has workplace exposure limit(s).

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

Composition comments The full text for all H-phrases is displayed in section 16.**Section 4: First Aid Measures****General information**

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Description of first aid measures**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately.

Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water. Keep warm and in a quiet place. Get medical attention immediately. Wash clothing separately before reuse.
Eye contact	SPEED IS ESSENTIAL: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine). Consult a physician. Continue rinsing eyes during transport to hospital.
Ingestion	If material is ingested, immediately contact a physician or poison control centre. Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms and effects, both acute and delayed	
Inhalation	Severe respiratory irritant Irritating to mucous membranes Symptoms: Breathing difficulties, cough, chemical pneumonitis, pulmonary oedema Repeated or prolonged exposure: Nose bleeds, chronic bronchitis
Skin contact	Severe skin irritation. Symptoms: Redness, Swelling of tissue, Burn Repeated exposure: Ulceration
Eye contact	Severe eye irritation May cause irreversible eye damage. May cause blindness. Symptoms: Redness, Lachrymation, Swelling of tissue, Burn
Ingestion	If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Risk of chemical pneumonitis from product inhalation. Risk of shock. Symptoms: Nausea, Abdominal pain, Bloody vomiting, Diarrhoea, Suffocation, Cough, Severe shortness of breath. Risk of: Respiratory disorder.
Indication of any immediate medical attention and special treatment needed	The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

Section 5: Firefighting measures

General fire hazards	Non-combustible, substance itself does not burn. Do not inhale combustion gases.
Extinguishing media	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing Media	None known.
Special hazards arising from the substance or mixture	Not combustible Hazardous decomposition products formed under fire conditions. Promotes combustion of combustible products or materials.
Advice for firefighters	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear chemical resistant oversuit. Cool containers / tanks with water spray. Suppress (knock down) gasses/vapours/mists with a water spray jet.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind.
For emergency	Not available.

responders	
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods and material for containment and cleaning up	Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Large Spills: Dike the spilled material, where this is possible. Soak up with inert absorbent material. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Sweep up or gather material and place in appropriate container for disposal. Following product recovery, flush area with water. After removal flush contaminated area thoroughly with water. Clean up in accordance with all applicable regulations. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste. For waste disposal, see Section 13.
Reference to other sections	Not available.

Section 7: Handling and storage

Precautions for safe handling	Provide appropriate exhaust ventilation. Use only in well-ventilated areas. Keep away from incompatible products. To avoid thermal decomposition, do not overheat. Use only equipment and materials which are compatible with the product. Do not confine the product in a circuit, between closed valves, or in a container without a vent. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
Conditions for safe storage, including incompatibilities.	Store in original container. Keep in a well-ventilated place. Keep cool. Keep in properly labelled containers. Keep container closed (vented cap). Keep in a banded area. Protect from direct sunlight. Store in a cool and dark place to preserve the quality of the product. Keep away from incompatible products.
Materials for packaging:	Suitable material: Reinforced polyester, Lined PVC, Glass
Materials to avoid:	Metals
Other data:	Stable under recommended storage conditions.
Specific end use(s)	The specified uses for this material are shown in section 1 of this document.

Section 8: Exposure controls / personal protection

Control parameters

Exposure Limit Values

Sodium hypochlorite	US. ACGIH Threshold Limit Values	Remarks: none established
Sodium chlorate	US. ACGIH Threshold Limit Values	Remarks: none established
Sodium hydroxide	UK. EH40 Workplace Exposure Limits (WELs) 2007	
	Short term exposure limit = 2 mg/m ³	
Sodium carbonate	SAEL (Solvay Acceptable Exposure Limit) 2007	
	TWA = 10 mg/m ³	
	US. ACGIH Threshold Limit Values	Remarks: none established

Other information on limit values

Predicted No Effect Concentration

Fresh water, 0.21 µg/l

Marine water, 0.042 µg/l
Sewage treatment plants, 0.03 mg/l

Derived No Effect Level / Derived minimal effect level

Workers, Inhalation, Acute effects, 3.1 mg/m³, Systemic toxicity
Workers, Inhalation, Acute effects, 3.1 mg/m³, Local effects
Workers, Inhalation, Chronic effects, 1.55 mg/m³, Systemic toxicity
Workers, Dermal, Chronic effects, 0.5%, Local effects
Workers, Inhalation, 1.55 mg/m³, Local effects

Exposure control

Appropriate engineering controls

Provide local ventilation appropriate to the product decomposition risk (see section 10)
Provide appropriate exhaust ventilation at machinery.
Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Self-contained breathing apparatus (EN 133)
Respirator with a vapour filter (EN 141)
In case of decomposition (see section 10), face mask with combined type B-P2 cartridge.

Hand protection

Impervious gloves
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).

Eye protection

Suitable material: PVC, Neoprene, Natural Rubber. (EN374)
Chemical resistant goggles or full-face shield must be worn. (EN166)
If splashes are likely to occur, wear: Tightly fitted safety goggles and full face shield.

Skin and body protection

Wear suitable protective clothing. (EN13034)
Chemical resistant apron.

Hygiene measures

If splashes are likely to occur, wear: Rubber or plastic boots.
Ensure that eyewash stations and safety showers are close to the workstation location.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before re-use.
When using, do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure controls

Dispose of rinse water in accordance with local and national regulations.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

General information (Appearance, odour)

Physical State	Liquid
Colour	Yellow, Green
Odour	pungent-Chlorine
Molecular Weight	74.5 g/mol

Important health safety and environmental information

pH	>11 (15% solution)
Melting/freezing point	-17°C (15% solution); crystals of Sodium Chloride may form at low temperature (<5°C)
Boiling point	110°C

Flash point	not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted., inorganic compound
Flammability (solid, gas)	does not sustain combustion.
Explosive properties	
- Lower explosive limit	not applicable
- Upper explosive limit	
Vapour Pressure	2.5 kPa, at 20°C
Density	1.065-1.115 at 20°C
Viscosity	6.4 mPa.s
Solubility(ies)	
- Water solubility	miscible
Partition coefficient (n-octanol/water)	not applicable, inorganic compound.
Thermal Decomposition	40°C, Slow decomposition
Other information	

Section 10: Stability and reactivity

Chemical stability	Stable under recommended storage conditions. Corrosive in contact with metals.
Conditions to avoid	Keep away from direct sunlight. To avoid thermal decomposition, do not overheat. Keep away from contact with metals (Nickel, Copper, Cobalt, Aluminium, Manganese, etc.) Freezing.
Incompatible materials	Metals, Salts of metals, Acids, Organic materials.
Hazardous decomposition products	Risk of decomposition, Chlorine, Sodium chlorate Hypochlorous acid, predominant at acid pH, is 4 to 5 fold more toxic than hypochlorite ion. The release of other hazardous decomposition products is possible.

Section 11: Toxicological information

Chlorine gas produced under fire or acidic conditions is toxic by inhalation.

Acute toxicity

Acute oral toxicity LD50, rat, > 1,100 mg/kg (Chlorine)

Acute inhalation toxicity LC50, 1 h, rat, > 10.5 mg/l (Chlorine)

Acute dermal toxicity LD50, rabbit, > 20,000 mg/kg (Chlorine)

Skin corrosion/irritation

Causes severe skin burns rabbit, corrosive effects

Serious eye damage/eye irritation

Causes serious eye damage rabbit, Severe eye irritation

Respiratory or skin sensitization

Irritating to respiratory tract.

- guinea pig, Did not cause sensitization on laboratory animals.

Mutagenicity

in vitro, Ambiguous mutagenic effect

in vivo tests did not show mutagenic effects

Carcinogenicity

Oral, rat, 50 mg/kg, NOAEL

Toxicity for reproduction

Oral, rat, 5 mg/kg, Effects on fertility, NOAEL, (Chlorine)

Oral, rat, 5.7 mg/kg, Developmental Toxicity, NOAEL, (Chlorine)

Specific target organ toxicity – single exposure

Human experience, Remarks: May cause respiratory irritation.

Repeated dose toxicity

Oral, 90-day, rat, 50 mg/kg, NOAEL

Other information

Toxic effect linked with corrosive properties

Section 12: Ecological information

Toxicity

Fishes, various species, LC50, 96 h, 0.06mg/l, fresh water (active chlorine)

Fishes, Menidia pelinsulae, NOEC, 96 h, 0.04 mg/l, salt water (Chlorine)

	Fishes, various species, 96 h, 0.032 mg/l, Marine water (active chlorine) Crustaceans, various species, EC50, 48 h, 0.026 mg/l (Chlorine) Crustaceans, Daphnia magna, EC50, 48 h, 0.141 mg/l, fresh water (active chlorine)
Persistence and degradability	
Abiotic degradation	Water, photolysis, t ½ = 12 min: Result: photolysis: Conditions: pH 8 Water, photolysis, t ½ = 60 min: Result: photolysis: Conditions: pH 5 Air, indirect photo-oxidation, t ½ 115 d: Degradation products: Chlorine Water, Hydrolysis: Result: Chemical degradation: Degradation products: chlorides
Biodegradation	The methods for determining biodegradability are not applicable to inorganic substances.
Bioaccumulative potential	Does not bioaccumulate.
Mobility	
Water, Soil/sediments:	Considerable solubility and mobility
Soil/sediments:	log KOC: 1.12: Highly mobile in soils
Air:	Henry's law constant (H), 0.076 Pa.m ³ /mol, 20°C: Non-significant volatility
Other adverse effects	No data available.

Section 13: Disposal considerations

Waste disposal methods	In accordance with local and national regulations. Reduce the product with sulphite or hydrogen peroxide.
Contaminated packaging	Empty containers. Clean container with water. The empty and clean containers are to be reused in conformity with regulations.

Section 14: Transport information

ADR/RID:

UN Number:	1791
Proper Shipping Name:	HYPOCHLORITE SOLUTION
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	8
Special precautions for user	Not available.

IATA

UN Number:	1791
UN Proper Shipping Name:	HYPOCHLORITE SOLUTION
Transport hazard class(es)	8
Packing group	III
Environmental hazards	Yes
Special precautions for user	Not available.

IMDG

UN number	1791
UN proper shipping name	HYPOCHLORITE SOLUTION
Transport hazard class(es)	8
Packing group	III
Marine pollutant	No
EmS No.	F-A, S-B
Special precautions for user	Not available.



ADR



IATA



IMDG

Section 15: Regulatory information

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

EU Regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations, as amended.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended.

COUNCIL DIRECTIVE 96/82/EC on the control of major-accident hazards involving dangerous substances as amended.
Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.

REGULATION (EC) No 166/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste.

EH40/2005. Workplace Exposure Limits, as amended through 1,10,2007 (WELs). Published by the Health and Safety Executive (HSE). Issued under the Control of Substances Hazardous to Health Regulations 6 as amended.

Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for the components of this substance.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances(PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

Section 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

H290	May be corrosive to metals.
H318	Causes serious eye damage.
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Training advice Not available

Further information

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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