SAFETY DATA SHEET
Aval Chlor

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name Aval Chlor

Synonyms, Trade Names Sodium hypochlorite 10/11%.

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

1.3. Details of the supplier of the safety data sheet

Supplier:
THE CARBON GROUP
RINGASKIDDY
CORK
IRELAND
Tel: +353 21 4378988
Fax: +353 21 4378950
E-mail: info@carbon.ie

Contact Person SDS Contact: DCM Compliance, info@dcmcompliance.com

1.4. Emergency telephone number

+353 21 4378988

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	EUH031;Skin Corr. 1B - H314
Environment	Not classified.

Classification (1999/45/EEC) C;R34. R31.

2.2. Label elements

Contains: SODIUM HYDROXIDE
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE

Label In Accordance With (Ec) No. 1272/2008

Signal Word Danger

Hazard Statements

H314	Causes severe skin burns and eye damage.

Precautionary Statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+351+338	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.

Supplementary Precautionary Statements

P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
	P501 a Dispose of container to inceneration.

Supplemental Label Information (EU)

EUH031	Contact with acids liberates toxic gas.

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

SODIUM HYDROXIDE **< 1%**

CAS-No.: 1310-73-2 **EC No.: 215-185-5**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Skin Corr. 1A - H314	C;R35.

SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE **10-20%**

CAS-No.: 7681-52-9 **EC No.: 231-668-3**

Classification (EC 1272/2008)	Classification (67/548/EEC)
EUH031	C;R34
Skin Corr. 1B - H314	R31
Aquatic Acute 1 - H400	N;R50

The Full Text for all R-Phrases is Hazard Statements are Displayed in Section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation.

When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.

Ingestion

Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Skin Contact

Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if any discomfort continues.

Eye Contact

Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital. Bring these instructions.

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

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

Consider oral administration of Sodium thiosulphate solutions if Sodium Hypochlorite is ingested. Do not administer neutralising substances since the resultant exothermic reaction could further damage tissue. Endotracheal intubation could be needed if glottic oedema compromises the airway. For individuals with significant inhalation exposure, monitor arterial blood gases and chest x-ray.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing Media
Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards
OXIDISING!
Specific Hazards
The material is non-combustible and non-explosive. Containers should be kept cool with water spray. Decomposition is accelerated by heat and is accompanied by evolution of oxygen, which may enhance the combustion of other flammable materials. The material is a powerful oxidising agent. When involved in fires toxic fumes can be evolved, thus self contained breathing apparatus should be worn.

5.3. Advice for firefighters

Special Fire Fighting Procedures
Beware, risk of formation of toxic and corrosive gases. Breathing apparatus must be worn.
Protective Measures In Fire
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area.

6.2. Environmental precautions

Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Keep unauthorised personnel away from the immediate area. If appropriate inform the police, fire brigade, local authority and EPA. Prevent from spreading by using sand or earth to soak up.
Keep away from drains and prevent from entering water courses. Sodium Sulphite or Sodium Thiosulphate may be used for dechlorination

6.4. Reference to other sections

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Emergency shower and eyewashing facilities should be readily available.

7.2. Conditions for safe storage, including any incompatibilities

Sodium Hypochlorite decomposes slowly on standing with the evolution of some oxygen. The rate of decomposition can be minimised by storing the material in as cool a location as possible and out of direct sunlight. Certain metal impurities may catalyse the decomposition and contact with these should be avoided. The metals include nickel, cobalt, copper and iron. The material should be stored away from reactive chemicals. For containers the closure should have a vent to allow for the release of any oxygen evolved during storage. Bulk tanks should also be vented and suitable tank materials include certain types of rubber lined mild steel, PVC or PVC lined GRP, polyethylene and PTFE. Apart from vent and overflow connections storage tanks should be enclosed and provision made for washing out the tank with water to remove any sludge which may accumulate over a period of time.
Storage Class
Oxidiser storage.

7.3. Specific end use(s)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
SODIUM HYDROXIDE	WEL				2 mg/m3	

WEL = Workplace Exposure Limit.

8.2. Exposure controls

Protective Equipment

Process Conditions
Provide eyewash station.
Engineering Measures
Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of spray.
Respiratory Equipment
In case of inadequate ventilation use suitable respirator.
Hand Protection
For prolonged or repeated skin contact use suitable protective gloves. PVC gloves are recommended.
Eye Protection
If risk of splashing, wear safety goggles or face shield. Use eye protection.
Other Protection
Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.
Hygiene Measures
Wash contaminated clothing before reuse.
Skin Protection
Direct contact with skin must be prevented. Gloves and acid resistant footwear are essential. A PVC suit may be advisable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Green yellow
Odour	Characterisitic Bleach Odour.
Solubility	Completely soluble in water
Initial Boiling Point and Boiling Range:	107 Deg C for 15% Solution
Melting Point (°C)	Solution solidifies at -25ºC. Crystals of NaCl may form at low temperatures
Relative Density	1.230 – 1.250 @ 20ºC for 14/15% solution
pH-Value, Conc. Solution	10.5-12.5
Comments	Non flammable. Decomposition can evolve oxygen with a resultant enhancement of combustion

9.2. Other information

Mol. Weight	74.44

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

The solution decomposes slowly over time with the evolution of oxygen. Factors affecting stability are as follows:

(a) initial concentration (decomposition rate reduces as strength decreases).
(b) storage temperature (lower the temperature, the lower the rate of decomposition).
(c) presence of metallic impurities (Ni, Co, Cu, Fe all act as catalysts to increase the rate of decomposition).
(d) pH (the pH must be kept above 10.5 and this is done by maintaining an excess of sodium hydroxide in the solution during manufacture).
(e) exposure to light (the solution should be stored in opaque containers out of direct sunlight).

10.2. Chemical stability

On mixing with acids the material decomposes violently with the rapid evolution of chlorine gas. Explosive reactions can occur with ammonia and ammonium compounds. No reactions occur with other alkalis. The material reacts with the generation of heat and liberation of oxygen when in contact with sodium or Hydrogen peroxides. With other oxidising agents a reaction occurs with the possible evolution of oxygen chlorine. The material is highly corrosive to most metals and to painted or varnished surfaces. Organic matter is readily oxidised and dangerous reactions are possible with alcohols, aldehydes, ketones, unsaturated hydro and halocarbons. Hazardous polymerisation will not occur.

10.3. Possibility of hazardous reactions

Hazardous Polymerisation

Will not polymerise.

10.4. Conditions to avoid

Avoid contact with strong reducing agents. Avoid contact with acids.

10.5. Incompatible materials

Materials To Avoid

Strong acids. Strong reducing agents. The material reacts with the generation of heat and liberation of oxygen when in contact with sodium or hydrogen peroxides. With other oxidising agents a reaction occurs with the possible evolution of oxygen of chlorine. The material is highly corrosive to most metals and to painted or varnished surfaces. Organic matter is readily oxidised and dangerous reactions are possible with alcohols, aldehydes, ketones, unsaturated hydro and halo-carbons.

10.6. Hazardous decomposition products

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxic Dose 1 - LD 50 5000 mg/kg (oral rat)

General Information

Vapours containing chlorine or hypochlorous acid fumes (derived from hypochlorite under fire or acidic conditions) irritate the nose, throat and lungs causing coughing and other effects. Exposure to the mist or spray causes irritation of the nose, throat and respiratory tract. There is little hazard from properly stored solution

Inhalation

Upper respiratory irritation.

Ingestion.

May cause internal injury. Causes irritation and corrosion of the mucous membranes of the mouth and throat. May cause oedema of the pharynx, glottis and larynx and perforation or ulceration of the oesophagus or stomach.

Skin Contact

Irritating to skin.

Eye Contact

Liquid splashes in the eye may cause serious damage to the eyes.

Health Warnings

Irritating to all body tissues.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

At concentrations of 0.05 mg/l, there is evidence of inhibition to the aerobic treatment process.

12.1. Toxicity

LC 50, 96 Hrs, Fish mg/l Toxic to all aquatic organisms;1 ppm $AvCl^2$ is Toxic to all fish and 0.4ppm is toxic to game fish

12.2. Persistence and degradability

Degradability:

The product is easily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative Potential:

Does not bio-accumulate and is soluble in water.Decomposes to salt and water with oxygen released.

12.4. Mobility in soil

Mobility:

The product is soluble in water.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Effects on effluent treatment: at >0.05 mg/l there is evidence of inhibition to the aerobic treatment process.

SECTION 13: DISPOSAL CONSIDERATIONS

General Information

Small quantities of material can be disposed of by treating with Sodium Sulphite or Sodium thiosulphate and flushing to drain having first ensured total dechlorination of the resulting solution. For large quantities a specialist waste disposal firm should be employed.

13.1. Waste treatment methods

Small quantities of material can be disposed of by treating with sodium sulphite or sodium thiosulphate and flushing to drain having first ensured total dechlorination of the resulting solution. For large quantities a specialist waste disposal firm should be employed

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN)	1791
UN No. (IMDG)	1791
UN No. (ICAO)	1791

14.2 UN Proper shipping name

Proper Shipping Name	HYPOCHLORITE SOLUTION

14.3 Transport hazard class(es)

ADR/RID/ADN Class	8
ADR/RID/ADN Class	Class 8: Corrosive substances.
ADR Label No.	8
IMDG Class	8
ICAO Class/Division	8

Transport Labels

14.4. Packing group

ADR/RID/ADN Packing group	II
IMDG Packing group	II
ICAO Packing group	II

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6. Special precautions for user

EMS	F-A, S-B
Emergency Action Code	2X
Hazard No. (ADR)	80
Tunnel Restriction Code	(E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

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

EU Legislation

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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. REACH Reg 1907/2006, CLP Reg 1272/2008, ANNEX II revision to REACH as per REGULATION (EU) No 453/2010 of 20 May 2010.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

General Information

This Safety Data Sheet is compliant with REACH, CLP and ANNEX II requirements.

Revision Date	05/04/2011
Revision	3
Supersedes Date	05/04/2011

Risk Phrases In Full

R34	Causes burns.
R35	Causes severe burns.
R31	Contact with acids liberates toxic gas.
R50	Very toxic to aquatic organisms.

Hazard Statements In Full

H314	Causes severe skin burns and eye damage.
EUH031	Contact with acids liberates toxic gas.
H400	Very toxic to aquatic life.