Safety Data Sheet

LAVO 12 Sodium Hypochlorite

1. Identification

Product identifier:	LAVO 12 Sodium Hypochlorite
Other means of identification:	PCP12419, DIN02246212, ACIA/CFIA, NSF Std. 60
Recommended use:	Oxidizing and bleaching agent. For use in food processing plants, industrial cooling water recirculation systems, municipal wastewater and industrial effluent treatment, for sanitation/disinfection and brewery pasteurization.
Restriction on use:	For industrial, institutional and swimming pool uses only.
Supplier Name:	Lavo 11900 Boulevard Saint-Jean-Baptiste Montréal, Québec Canada, H1C 2J3 www.lavo.ca
Telephone:	514 526-7783
Emergency tel. number:	514 526-7783
Available hours:	8h - 17h Monday to Friday

2. Hazard identification

Signal word: DANGER

Product classification:

Serious eye damage - Category 1. Corrosive to metals - Category 1.

Skin irritation - Category 2. Specific target organ toxicity – single exposure - Category 3 Respiratory tract irritation.

Hazard statement(s):

H318 - Causes serious eye damage.
H290 - May be corrosive to metals.
H315 - Causes skin irritation.
H335 - May cause respiratory irritation.

Precautionary statement(s)

Prevention: Keep only in original packaging. Avoid breathing mist, vapours, and spray. Wash hands thoroughly after handling and any other part of the body that may have been exposed to the product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye and face protection.

Response: IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. Absorb spillage to prevent material-damage.

Storage: Keep container tightly closed. Store in a well ventilated place. Store locked up. Store in a corrosive resistant container with a resistant inner liner.

Disposal: Dispose of contents/container in accordance with local, regional, national and/or international regulations in force.

Other hazards: No other effects shown.

See toxicological information, section 11

3. Composition/ Information on ingredients

No	CAS No :	Common name and synonyms	Concentration % (w/w)
1	7681-52-9	Sodium hypochlorite	7.00 - 13.00 *
2	1310-73-2	Sodium hydroxide. Caustic soda	1.20

* The actual concentration range is withheld as a trade secret.

4. First-aid measures

If swallowed, irritation, any type of overexposure or symptoms of overexposure occur during use of the product or persists after use, immediately contact a POISON CENTER, an EMERGENCY ROOM or a PHYSICIAN; ensure that the product safety data sheet is available.

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention as soon as possible.

Skin contact: Remove contaminated clothing immediately. Wash the skin with soap and water. Thoroughly wet contaminated clothing. If irritation persists, consult a doctor.

Inhalation: Move exposed person to fresh air. Keep this person warm and lying down. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

Ingestion: If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do not induce vomiting unless instructed by medical personnel.

Symptoms: Burning eyes sensation manifested by tearing and/or conjunctivitis. Possible erythema of the skin. Coughing, breathing pain.

Effects (acute or delayed): Possibility of permanent damage to the cornea. May cause skin irritation. May cause coughing and dry throat.

Immediate medical attention and special treatment: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Suitable extinguishing media: Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media: Jets of water can facilitate the spread of fire.

Specific hazards arising from the hazardous product: May release dangerous fumes.

Hazardous combustion products: Hydrochloric acid. Sodium oxides.

Special protective equipment and precautions for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions: No action shall be taken involving any personal risk or if you do not have suitable training or protection. Evacuate surrounding areas. Do not touch or walk through spilled material. Shut off all heating and ignition sources. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Protective equipment and emergency procedures: Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution. Use inert absorbent or retention tubes in the event of a large spill.

Methods and materials for containment and cleaning up: Stop leak if without risk. Move containers from spill area. Contain leaks and pick up with non-combustible absorbent materials such as sand, earth or vermiculite. Then, place in an appropriate waste disposal container according to local regulations. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Precautions for safe handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

The handling of this product must comply with local regulations. Store in an airtight container located in a dry, well ventilated and soil corrosion resistant cemented. Refer to the storage of the ROHS standards and NFC. Keep away from combustible materials and acids. If the product is stored with other dangerous substances, refer to the NFC segregation table. Containers for corrosive substances shall be kept closed, carry clear identification of their contents and be handled with care. Note: this product attacks certain types of plastic, rubber or coating.

Conditions for safe storage: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatibility: Acids as well as strong oxidizing agent.

8. Exposure Controls/ Personal protection

Control parameters:

Occupational exposure limit values:

Alberta

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	Not listed	Not listed	Not listed	2

British-Columbia

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	Not listed	Not listed	Not listed	2

Ontario

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Quebec

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	Not listed	Not listed	Not listed	2

Saskatchewan

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	Not listed	Not listed	Not listed	2

United States

No	CAS No :	Common name and synonyms	IDLH NIOSH	Regulatory Limits			Recommended Limits	
				OSHA PEL		California / OSHA PEL	NIOSH REL	ACGIH ® 2019 TLV ®
				ppm	mg/m^3	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
1	7681-52-9	Sodium hypochlorite	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
2	1310-73-2	Sodium hydroxide. Caustic soda	10	Not listed	2	(C) 2 mg/m3	(C) 2 mg/m3	(C) 2 mg/m3

IDLH: Immediately Dangerous to Life or Health Concentrations

NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limits
California / OSHA: California Division of Occupational Safety and Health
REL: Recommended Exposure Limits
ACGIH ®: American Conference of Governmental Industrial Hygienists
TLV ®: Threshold Limit Values

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eyes: DO NOT WEAR CONTACT LENSES. Wear anti-splash safety goggles.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.

Respiratory: If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Others: Wear protective clothing with long sleeves and appropriate safety shoes at all times.

9. Physical and chemical properties

Physical state: Liquid
Colour: Colorless to yellowish
Odour: Chlorine
Melting/Freezing point: -19 °C (-2.2 °F)
Initial boiling point/boiling range: Not applicable
Flammability: Not applicable
Lower flammable/explosive limit: Not applicable at 25 °C
Upper flammable/explosive limit: Not applicable at 25 °C
Flash point: Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: 35 °C (95 °F)
pH: 12,0 - 13,3
Kinematic viscosity: < 20,5 mm^2/s (at 40 °C)
Solubility (in water): Miscible
Partition coefficient – n-octanol/water (Log Kow): < 1
Vapour pressure: 17,535 mm Hg at 20 °C
Density and relative density: 1.031 kg/L at 20 °C (water = 1)
Relative vapour density: > 1 (air = 1)
Particle characteristics: Not applicable

10. Stability and reactivity

Reactivity: Stable under recommended conditions of storage and handling.

Chemical stability: This product is unstable under the following conditions: The product decomposes when exposed to light or heat.

Possibility of hazardous reactions: No dangerous or polymerization reactions will not occur under normal conditions of use. Emits toxic fumes when heated.

Conditions to avoid: Keep away from incompatible products (see section 7).

Incompatible materials: This product attacks metals.

Hazardous decomposition products: Sodium oxides. Chlorine.

11. Toxicological information

	Oral	Dermal	Inhalation gases	Inhalation vapours	Inhalation dusts/mists
$ATE_{product}$	> 5 000 mg/kg	> 5 000 mg/kg	N/A	> 20 mg/l	> 5 mg/l

No	CAS No :	Common name and synonyms	LD_{50} oral mg/kg	LD_{50} skin mg/kg	LC_{50} inhalation ppmV 4h - gases	LC_{50} inhalation mg/l 4h - vapours	LC_{50} inhalation mg/l 4h - dusts-mist
1	7681-52-9	Sodium hypochlorite	> 5000	20000	N/A	> 20.00	> 5.00
2	1310-73-2	Sodium hydroxide. Caustic soda	> 5000	> 5000	N/A	N/A	> 5.00

Routes of exposure: This product is absorbed through the respiratory tract and by the digestive tract.

Symptoms: Burning eyes sensation manifested by tearing and/or conjunctivitis. Possible erythema of the skin. Coughing, breathing pain.

Delayed and immediate effects: Possibility of permanent damage to the cornea. May cause skin irritation. May cause coughing and dry throat.

Aspiration hazard	N/A
Skin corrosion - Skin irritation	Yes
Serious eye damage - Serious eye irritation - Eye irritation	Yes
Skin sensitization	N/A
Respiratory sensitization	N/A
Specific target organ toxicity – single exposure	N/A
Specific target organ toxicity – single exposure Category 3 Narcotic effects	N/A
Specific target organ toxicity – single exposure Category 3 Respiratory tract irritation	Yes
Specific target organ toxicity – repeated exposure	N/A

No	CAS No :	Common name and synonyms	IARC	ACGIH	Mutagenicity	Effect on reproduction
1	7681-52-9	Sodium hypochlorite	3	A4	The data do not allow for an adequate assessment of mutagenic effects.	No effects shown.
2	1310-73-2	Sodium hydroxide. Caustic soda	Not listed	Not listed	No effects shown.	No effects shown.

Cancer classification under IARC (International Agency for Research on Cancer)

Group 1: carcinogenic to humans.
Group 2A: probably carcinogenic to humans.
Group 2B: possibly carcinogenic to humans.
Group 3: not classifiable as to its carcinogenicity to humans.
Group 4: probably not carcinogenic to humans.

Cancer classification under ACGIH (American Conference of Governmental Industrial Hygienists)

Group A1: confirmed human carcinogen.
Group A2: suspected human carcinogen.
Group A3: confirmed animal carcinogen with unknown relevance to humans.
Group A4: not classifiable as a human carcinogen.
Group A5: not suspected as a human carcinogen.

12. Ecological information

Ecotoxicity

No	CAS No :	Common name and synonyms	%	Aquatic Ecotoxicity short term	Aquatic Ecotoxicity long term	Terrestrial Ecotoxicity
1	7681-52-9	Sodium hypochlorite	7.00 - 13.00	Very toxic to aquatic life.	Very toxic to aquatic life with long lasting effects.	Harmful to the environment.
2	1310-73-2	Sodium hydroxide. Caustic soda	1.20	No known adverse effect to aquatic life.	No known adverse effect to aquatic life.	No known adverse effect to the environment.

Persistence and degradability. Bioaccumulative potential. Other adverse effects

No	CAS No :	Common name and synonyms	%	Persistent	Bio-accumulation	Aquatic ecotoxicity
1	7681-52-9	Sodium hypochlorite	7.00 - 13.00	No	No	Yes
2	1310-73-2	Sodium hydroxide. Caustic soda	1.20	Yes	No	No

Degradability: N/A

Mobility in soil: N/A

13. Disposal considerations

Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14. Transport information

	TDG	DOT	IMDG	IATA
UN Number	1791	1791	1791	1791
Proper shipping name	HYPOCHLORITE SOLUTION	HYPOCHLORITE SOLUTION	HYPOCHLORITE SOLUTION	HYPOCHLORITE SOLUTION
Transport hazard class(es)	8	8	8	8
Packing group	III	III	III	III

Canada - ERAP

Not applicable

United States - Reportable Quantities (RQ)

No	CAS No :	Common name and synonyms	RQ lbs (kg)
1	7681-52-9	Sodium hypochlorite	100 (45.4)
2	1310-73-2	Sodium hydroxide. Caustic soda	1000 (454)

Transport in bulk (according to Annex II of the International Convention for the Prevention of Pollution From Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), and the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code)): N/A

Marine pollutant: No

Exemption for limited quantity: 5 L

In accordance with the Canadian Transport of Dangerous Goods regulations by Road, we use the 1.17 exemption when applicable. In accordance with49 CFR article 172.315 for transportation by a mode other than air, we use the Limited quantities exemption when applicable.

Other exemptions: Not applicable

Special precautions: Not applicable

15. Regulatory information

Canada

No	CAS No :	Common name and synonyms	%	DSL	NDSL	NPRI
1	7681-52-9	Sodium hypochlorite	7.00 - 13.00	X		
2	1310-73-2	Sodium hydroxide. Caustic soda	1.20	X		

United States

No	CAS No :	Common name and synonyms	%	TSCA	PROP-65	RTK
1	7681-52-9	Sodium hypochlorite	7.00 - 13.00	X		X
2	1310-73-2	Sodium hydroxide. Caustic soda	1.20	X		X

The classification of the product and the SDS were developped in accordance with HPR and HazCom 2012.

16. Other information

Date: 2024-03-07

Version: 1

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