

SAFETY DATA SHEET

1. Identification

Product identifier: Sodium Hypochlorite 5% Solution

Other means of identification

Product No.: 9416, P005

Recommended use and restriction on use

Recommended use: For Laboratory, Research or Manufacturing Use.

Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

	Avantor Performance Materials, LLC
	100 Matsonford Rd, Suite 200
	Radnor, PA 19087
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Product Information Compliance
E-mail:	info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard identification

Hazard Classification

Physical Hazards

Corrosive to metal	Category 1
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Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	0 %
Acute toxicity, inhalation, vapor	4 %
Acute toxicity, inhalation, dust or mist	4 %

Environmental Hazards

Acute hazards to the aquatic environment	Category 1
Chronic hazards to the aquatic environment	Category 2

Unknown toxicity - Environment

Acute hazards to the aquatic environment 0 %
Chronic hazards to the aquatic environment 4 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: May be corrosive to metals.
Causes skin irritation.
Causes serious eye damage.
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Sodium hypochlorite		7681-52-9	4,0 - 6,0%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information:	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion:	Do NOT induce vomiting. Drink plenty of water. Never give liquid to an unconscious person. Call a physician or poison control center immediately.
Inhalation:	Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms:	Irritating to eyes, respiratory system and skin.
Hazards:	None known.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.
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5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	None known.

Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.
Methods and material for containment and cleaning up:	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal. Clean surface thoroughly to remove residual contamination.
Notification Procedures:	Prevent entry into waterways, sewer, basements or confined areas. Stop leak if you can do so without risk. Inform authorities if large amounts are involved.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:	Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment.
Conditions for safe storage, including any incompatibilities:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in a cool and well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Appropriate Engineering Controls

No data available.

Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
Eye/face protection:	Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.
Skin Protection	
Hand Protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing and gloves.
Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene measures: Provide eyewash station and safety shower. Keep away from food, drink and animal feeding stuffs. Observe good industrial hygiene practices. Avoid contact with eyes, skin, and clothing. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Colorless to slightly yellow
Odor:	Chlorine-like odor
Odor threshold:	No data available.
pH:	11 - 13
Melting point/freezing point:	-6 °C
Initial boiling point and boiling range:	40 °C
Flash Point:	Not applicable
Evaporation rate:	< 1
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	2,33 kPa (20 °C)
Vapor density:	No data available.
Density:	1,10 g/ml (20 °C)
Relative density:	1,10 (20 °C)
Solubility(ies)	
Solubility in water:	Completely soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Slowly decomposes on contact with air.
Possibility of hazardous reactions:	Hazardous polymerization does not occur. Slowly decomposes on contact with air. Rate increases with the concentration and temperature. Exposure to sunlight accelerates decomposition. Sodium hypochlorite becomes less toxic with age.
Conditions to avoid:	Heat. Sunlight. Contact with incompatible materials.
Incompatible Materials:	Ammonia. Amines. Ammonium salts. Aziridine. Methanol. Phenyl acetonitrile. Ethyleneimine. Oxidizable metals. Acids. Soaps. Bisulfates. Cellulose

Hazardous Decomposition Products: Chlorine. Sodium oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation: May cause irritation to the respiratory system.

Skin Contact: Causes skin irritation.

Eye contact: Causes serious eye damage.

Ingestion: May cause irritation of the gastrointestinal tract.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: No data available.

Specified substance(s):

Sodium hypochlorite LD 50 (Rat): 8.910 mg/kg

Dermal

Product: No data available.

Specified substance(s):

Sodium hypochlorite LD 50 (Rabbit): > 10.000 mg/kg
LOAEL (Rabbit): 20.000 mg/kg

Inhalation

Product: No data available.

Specified substance(s):

Sodium hypochlorite LC 50 (Rat): > 10,5 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye damage.

Respiratory or Skin Sensitization

Product: Not a skin nor a respiratory sensitizer.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

ACGIH Carcinogen List:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure

Product: None known.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.

Aspiration Hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 (Bluegill (*Lepomis macrochirus*), 96 h): 38,6 - 46,8 mg/l

Aquatic Invertebrates

Product: EC 50 (Water flea (*Ceriodaphnia dubia*), 24 h): 2,2 - 2,6 mg/l
LC 50 (Opossum shrimp (*Americamysis bahia*), 96 h): 4,58 - 6,42 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Sodium hypochlorite
NOAEL (Various, 15 d): 0,014 - 0,062 mg/l
LOAEL (Various, 15 d): 0,014 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Sodium hypochlorite
NOAEL (*V. iris* (*Ambloplites rupestris*) and *Cottus caroliniae* (*E. capsaeformis*), 21 d): 10 - 30 µg/l

LOAEL (V. iris (Ambloplites rupestris) and Cottus carolinae (E. capsaeformis), 21 d): 20 - 60 µg/l

Toxicity to Aquatic Plants

Product: LC 50 (Green algae (Dunaliella primolecta)): 8,0 mg/l

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Other adverse effects: Toxic to aquatic life.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN Number: UN 1791
 UN Proper Shipping Name: HYPOCHLORITE SOLUTION
 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 Packing Group: III
 Marine Pollutant: No
 Special precautions for user: Not determined.

IMDG

UN Number: UN 1791
 UN Proper Shipping Name: HYPOCHLORITE SOLUTION
 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 EmS No.: F-A, S-B
 Packing Group: III
 Marine Pollutant: Yes

Special precautions for user: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids are not subject to any other provisions of the IMDG Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In case of marine pollutants also meeting criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

IATA

UN Number:	UN 1791
UN Proper Shipping Name:	Hypochlorite solution
Transport Hazard Class(es):	
Class:	8
Label(s):	8
Packing Group:	III
Marine Pollutant:	Yes
Special precautions for user:	Marine pollutants when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids are not subject to any other provisions of the IATA regulations relevant to marine pollutants provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Cargo aircraft only:	Allowed.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

15. Regulatory information

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Not Regulated

Export Control List (CEPA 1999, Schedule 3)

Not Regulated

National Pollutant Release Inventory (NPRI)

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5 Not Regulated

Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)

NPRI Not Regulated

Greenhouse Gases

Not Regulated

Controlled Drugs and Substances Act

CA CDSI Not Regulated

CA CDSII Not Regulated

CA CDSIII Not Regulated

CA CDSIV Not Regulated

CA CDSV Not Regulated

CA CDSVII Not Regulated

CA CDSVIII Not Regulated

Precursor Control Regulations

Not Regulated

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory

16. Other information

Revision Date: 03.12.2020

Version #: 2.0

Source of information: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

Further Information: No data available.

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