Sodium Hypochlorite

Product Safety Summary

Summary:

Carus provides sodium hypochlorite on a regional basis to municipalities for use in drinking water and wastewater applications. The 12.5% sodium hypochlorite is a registered pesticide under the EPA Federal Insecticide, Fungicide and Rodenticide Act. This product may be applied only by the methods specified on the Master Label. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Chemical Identity, Chemical Formula and CAS #:

Sodium hypochlorite NaOCl 7881-52-9

What is sodium hypochlorite and What is it Used for?

Sodium Hypochlorite

Sodium hypochlorite is used primarily as a disinfectant in processes used by municipal drinking water authorities to purify and improve the quality of drinking water as it is distributed to the public. It is also used as a disinfectant in municipal wastewater.

The main benefits from the use of sodium hypochlorite products are the following:

1. Provides disinfection for drinking water and wastewater applications.
2. Oxidizes inorganic compounds

Physical-Chemical Properties:

Liquid sodium hypochlorite is a clear yellowish liquid with a chlorine bleach smell, with a specific gravity of about 1.09-1.21 g/ml. The pH is typically 11.5. Concentrations typically range from 10-15%. Sodium hypochlorite solutions can liberate dangerous amounts of chlorine or chloramine if mixed with acids or ammonia.

This product is incompatible with many other chemicals found in drinking water and wastewater plants. Incompatible chemicals include the following: Aluminum Sulfate (Alum), Ferrous or Ferric Chloride, Ferrous or Ferric Sulfate, Acids, Hydrofluosilicic Acid (HFS), Ammonium Hydroxide, sodium sulfite, and sodium bisulfite to name a few.

Health and Environmental Effects:

Sodium hypochlorite is corrosive and may cause burns to skin and eyes.

None of the components have been classified as a carcinogen by ACGIH, OSHA, NTP, IARC, or California Proposition 65.

Exposure Potential:

Sodium hypochlorite is corrosive and causes serious eye damage, severe skin burns, and damage to the respiratory system if inhaled. The likely routes of exposure are:

1. Worker Exposure- Exposure could occur in the manufacturing facility, transportation personnel, or users in municipal drinking water or waste water treatment facilities and or industrial facilities that use sodium hypochlorite chemicals. When exposures occur, they are typically skin, eye, or inhalation exposures. Ingestion exposure is not very likely to occur. To

minimize the risk of exposure, good industrial hygiene practice, engineering controls and the use of personal protective equipment, such as chemical goggles, chemical resistant gloves, and work clothing that covers arms and legs as needed, have been established. Emergency responders such as firefighters could also be exposed to sodium hypochlorite if they are present during an incident. Normal turnout protective gear for first responders such as positive pressure breathing units, chemical resistant suits, boots and gloves will minimize their risk.

2. Consumer Exposure – Carus Corporation does not sell sodium hypochlorite in retail stores, although the components present in our products may also be an ingredient in some consumer products from other manufacturers. Public exposure to sodium hypochlorite is possible through accidents, spills, and inadvertent misuse of the products or overdosing from the municipality.
3. Releases: Non-routine releases to the environment can occur from accidents, spills and inadvertent misuse of the products. If a spill occurs, emergency personnel should wear protective equipment suitable for the task to minimize exposures.

Risk Management Measures:

The primary mechanism for providing advice on the handling of sodium hypochlorite is through the Safety Data Sheet (SDS). Carus provides a SDS to all customers and others directly involved in handling the products, and to other stakeholders upon request through the company website.

Carus also provides customers advice and assistance in the design and construction of equipment used to safely handle sodium hypochlorite. For example, Carus can assist with compatible materials recommendations and technical assistance on dosing and sizing equipment.

In addition, Carus provides PowerPoint safety presentations given by the Technical Services Department or trained personnel. In many municipal bids this is written in as a requirement of the vendor.

The Chlorine institute offers Pamphlet 96 on Sodium Hypochlorite. www.chlorineinstitute.org

Regulatory compliance information:

TSCA:
All components in this product are listed on the TSCA inventory.
CERCLA Hazardous Substances and Corresponding RQs:
Sodium hydroxide, CAS# 1310-73-2 has an RQ of 1000 lbs.
Sodium hypochlorite, CAS# 7681-52-9 has an RQ of 100 lbs.
SARA Section 302 Extremely Hazardous Substances:
None of the chemicals in this product have a TPQ.
SARA Codes:
Section 311/312 Hazardous chemical-Yes
Section 313: None of chemicals in this product are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants and do not contain any Class 1 or Class 2 ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

State:
CAS# 1310-73-2 is present on state lists from RI, PA, MA, and NJ.
CAS# 7681-52-9 is present on state lists from RI, PA,NJ, and MA.
California Prop 65:
California No Significant Risk Level: None of the chemicals in this product are listed.
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RCRA:
This product is a hazardous waste, see Safety Data Sheet for details. Many of the containers are refillable. Please see the label for specific package disposal instructions.
Transport Information:
Sodium hypochlorite is regulated by DOT, TDG, IMDG and IATA.
This product is a listed with the EPA as a pesticide. Please reference the product label for specific uses and instructions. The label also specifies the necessary package disposal information.