Substance Identity

- Chemical name: Sodium hypochlorite
- Synonyms: Bleach, Hypochlorous acid sodium salt, Sodium salt
- Formula: NaOCl
- CAS numbers:
  - Sodium hypochlorite: 7681-52-9 (12–14%)
  - Sodium hydroxide: 1310-73-2 (1%)
  - Water: 7732-18-5 (85–87%)
- Chemical family: Hypochlorous acid salt
- Molecular weight: 74.4 g/mole

Hazard Warnings

- **Eye contact**: Vapors and moisture cause severe irritation.
- **Skin contact**: Causes severe burns and blisters.
- **Ingestion**: Causes severe gastrointestinal irritation, abdominal pain, mouth and stomach burns, vomiting, shock, unconsciousness.
- **Inhalation**: Causes irritation of nose and throat. When mixed with acids or heated above 40°C, releases chlorine gas, which can cause serious lung damage.
- **Environmental effects**: Chlorine release may damage the ozone layer.

General Information (Hazard Symbols)

- Irritant, corrosive, hazardous to the environment
- Non-flammable, non-explosive

First Aid Measures

- **Eyes**: Rinse immediately with plenty of lukewarm water for at least 15 minutes. Seek medical attention.
- **Skin**: Wash thoroughly with water for at least 15 minutes. Wash contaminated clothing before reuse. Seek medical attention.
- **Ingestion**: Do not give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention immediately.
- **Inhalation**: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, provide oxygen. Seek medical attention.

Fire-Fighting Measures

- Non-flammable.
- Use extinguishing media suitable for surrounding fire.
- Maintain a safe distance and extinguish from a safe area.

Personal Protection

- **Skin protection**: Chemical-resistant gloves
- **Eye protection**: Safety goggles
- **Body protection**: Protective clothing and boots
- **Respiratory protection**: Suitable mask

Environmental Precautions

- Prevent entry into sewage systems and waterways.
- Small spills: Dilute with water or absorb with inert material and dispose of in a suitable container. Neutralize residues with sodium sulfite, sodium thiosulfate, or sodium bisulfite.
- Large spills: Contain and absorb with inert material, store in waste containers. Keep flammable materials away. Prevent entry into drains/waterways.

Handling and Storage

- Keep away from acids, metals, reducing agents, organic materials, heat, light, and air.
- Store in tightly closed, light-resistant containers in cool, ventilated conditions.

Physical and Chemical Properties

- State: Liquid
- Appearance: Clear, yellowish-green
- Odor: Chlorine-like
- pH: ~11
- Solubility: Soluble in water; reacts with many organic solvents
- Density: 1.1 (6% solution) – 1.21 (14% solution)
- Melting point: -6°C
- Boiling point: 40°C
- Vapor pressure: 1.51 mmHg at 40°C

Disposal Considerations

- Dispose of according to local regulations.
- Packaging disposal must follow local regulations.

Stability and Reactivity

- Slowly decomposes in air; decomposition accelerates at high concentrations and temperature.
- Incompatible with: Nitrogen compounds (ammonia, urea, amines), acids (especially HCl), methanol, metals.
- Hazardous decomposition products: Chlorine, sodium chlorate.

Toxicological Information

- Inhalation LC50 (rat, 1 h): 1500 mg/m³
- Oral LD50 (rat): 8910 mg/kg
- Dermal LD50 (rabbit): 10000 mg/kg

Transport Information

- DOT Classification: Corrosive, Class 8
- UN Number: 1791
- Packing Group: II

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