

MATERIAL SAFETY DATA SHEET

Section 1 - Product Identification & Use

Product Name: **Advance-12 Chlorine Bleach**
SYNONYMS: Liquid Swimming Pool, 12% Chlorine Bleach, Sodium Hypochlorite Solutions, Javel Water.
CHEMICAL FAMILY: Hypochlorite solutions
CHEMICAL FORMULA OF ACTIVE: NaOCl
PRODUCT USE: Disinfectant, sanitizer, odour control, water purification, textile bleaching, commercial laundry applications.
WHMIS Classification: Class C, Oxidizing Material
Class D, Div. 2, Toxic Liquid, Skin Sensitizer
Class E, Corrosive Liquid
TDG Classification: Hypochlorite Solutions
UN 1791, Class 8 (9.2), packing group III
Manufacturer: Advance Chemicals Ltd.
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Langley, B.C. V3A 3X7
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Emergency phone: CANUTEC 24 hrs (613) 996-6666

Section 2 - Hazardous Ingredients

| Hazardous Components | % (w/w) | C.A.S. No. | LD ₅₀ & LC ₅₀ |
|----------------------|---------|------------------------|---|
| Sodium Hypochlorite | 10-12 | 7681-52-9(oral, mouse) | 5800 mg/kg ACGIH TLV 2 mg/m ³ |

Section 3 - Physical Data

Physical state: liquid Boiling point: decomposes at 40°C
Density: 1.160-1.170 g/mL Freezing point: -6°C (5% aq. sol'n.)
pH: 12.5-13.5 @ 20°C Vapour pressure: 17.5 mmHg @ 20°C
Solubility in water: 100% Evaporation rate: no data
Odour & Appearance: The product is a clear, light green to golden yellow liquid. There is a chlorine like odour above the open liquid. The odour is due to the normal, slow but gradual decomposition process. See storage and handling conditions.

Section 4 - Fire or Explosion Hazard

Flammability: The product is not considered to be flammable.
Extinguishing media: Use an extinguishing media for surrounding the fire, or all purpose foam by manufacturer's recommended techniques for large fires. Use water to cool fire exposed containers to prevent vapour build-up and rupture. Water may also be used to flush spills away from dangerous exposures.
Hazardous Combustion Products: This product decomposes thermally above 40°C. Hazardous and toxic decomposition products may include chlorine gas, oxygen and sodium chlorate. Unvented containers will build-up internal pressure and may rupture causing a product leak. When Advance-12 is heated or comes into contact with acids, chlorine gas may be released. Vigorous reaction with oxidizable and organic materials may result in fire.

Section 5 - Reactivity Data

Stability: Under normal conditions of storage and use, this product will slowly decompose over time. The long term decomposition products are not dangerous if the product is stored in a cool, dry, well ventilated area away from direct exposure to sunlight. See also section 7, Preventative Measures.
Thermal Stability: This product will begin to decompose above 40°C. Container may rupture from excessive pressure build-up. Open cap slowly to release any pressure. Hazardous and toxic decomposition products may include chlorine gas, oxygen and sodium chlorate.
Incompatible substances: All acids, ammonium salts and aqueous ammonium hydroxide solutions, metals, oxidizers, nitrogen compounds, and methanol.
Polymerization: Will not occur.

Conditions to Avoid: High temperatures, open flame, direct sunlight (UV radiation initiates decomposition). When Advance-12 is heated, contacted with acids, contacted with oxidizers, or contacted with organic materials, a vigorous reaction may release chlorine gas and heat, resulting in a fire hazard. Allow any paper towels or rags used to wipe up spills to dry or rinse with water before discarding in an approved manner.

Section 6 - Toxicological Properties

Acute Toxicity: No data found.
Carcinogenicity: The ingredients in this product are; not classified as carcinogenic by the American Conference of Governmental Industrial Hygienists (ACGIH), or the International Agency for Research on Cancer (IARC); not regulated as carcinogens by the Occupational Health and Safety Administration (OSHA); and not listed as carcinogens by the National Toxicology Program (NTP).
Respiratory & Skin Sensitization: May cause skin sensitization and other allergenic responses. Sensitization is the process whereby a biological change occurs in the individual because of previous exposure to a substance, and as a result, the individual reacts more strongly when subsequently exposed to the product. Once sensitized, an individual can react to extremely low airborne levels, even below the TLV, or to skin contact.

Effects of Exposure:

Skin contact: Prolonged and repeated exposure often causes irritation, redness, pain, drying and cracking of the skin. Concentrated solutions may cause severe burns to the skin.
Eye contact: This product will cause irritation, redness and pain. May cause corneal damage and conjunctivitis (inflammation of the mucous membrane between the eyeball and inner eyelid).
Inhalation: This product is irritating to the nose, throat and respiratory tract.
Ingestion: This product causes severe burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus and stomach lining may occur.

Section 7 - Preventative Measures

Recommendations listed in this section indicate the type of equipment which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.
Skin protection: Gloves and protective clothing made from natural rubber, neoprene or nitrile rubber should be impervious under normal conditions of use. Prior to use, user should confirm impermeability.
Eye protection: Safety glasses with side shields are recommended. Use chemical safety goggles if there is a potential for eye contact.
Other Personal Protective Equipment: Avoid contact with product by wearing chemical protective clothing and rubber boots if necessary. Eye wash fountains and safety shower facilities should be provided nearby for emergency use.
Respiratory protection: No specific guidelines available. Use an NIOSH or MSHA approved air purifying respirator equipped with chlorine cartridges for concentrations up to about 8-10ppm. An air supplied or self contained breathing apparatus should be used if concentrations are exceptionally high or unknown.
Ventilation Requirements: This product should be used in a well ventilated area at all times. Local exhaust ventilation may be required and must be corrosion proof. Do not use this product in a poorly ventilated or confined area without approved respiratory protection.
Storage Requirements: Store Advance Bleach in a cool, well ventilated area. Keep away from heat, sparks and open flames.

Store away from exposure to direct sunlight. Do not expose sealed containers to temperatures above 40°Celsius.

Action to take for spills & leaks: Wear chemical protective clothing, rubber gloves and suitable respiratory protection. **SMALL SPILLS** should be wiped up with absorbant material and disposed of in government approved waste containers. Paper towels may become extremely hot when saturated with this product and cause a secondary fire hazard. Rinse out absorbant materials used in small spill recovery with plenty of water, (see section 5, reactivity data).

LARGER SPILLS should be contained by diking with sand, soil or other absorbant, non-combustible material, then transferred into approved waste containers for proper disposal. Keep product out of sewers,
(continued on next page)

Section 7 - Preventative Measures - Continued

storm drains, surface run-off water and soil. Harmful to aquatic life at low concentrations. Can be dangerous if allowed to enter potable water intakes. Wear appropriate respiratory protection and restrict access to non-protected personnel. Comply with all government regulations on spill reporting, and handling and disposal of waste.

The contained bleach spill can be effectively neutralized as follows;

1. Wear respiratory protection and protective clothing, gloves, glasses, etc.
2. Very slowly and cautiously, apply a dilute aqueous solution of Sodium Sulphite, or Sodium meta-Bisulphite to the spill. Mix well. This neutralizes the available chlorine content while reducing the pH to about pH 4. Check with a pH meter or test strip paper. Chlorine gas is a dangerous by-product of this reaction procedure.
3. Increase the pH of the contained spill to about pH 7 by slowly adding a dilute aqueous solution of Soda Ash or Sodium Bicarbonate. Check pH frequently.
4. The bleach spill should be neutral, with a pH of 7. Check with the appropriate local, provincial or federal agencies for proper and correct disposal methods for this product. If available, use a field test kit to check for levels of residual chlorine in the treated waste water.

Disposal methods: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, provincial and local regulatory agencies to ascertain proper disposal procedures.

Note: Empty containers can have residues, gasses and mists, and are subject to proper waste disposal as mentioned above.

Repair and Maintenance Precautions: Do not cut, grind, weld or drill in, on or near this container. Do not re-use the original container for any other product, substance, food or drink.

Section 8 - First Aid Measures

If inhaled: Remove victim to fresh air. Give artificial respiration if not breathing. Get immediate emergency medical attention.

In case of eye contact: Immediately flush eyes with clean water for at least fifteen (15) minutes, lifting the upper and lower eye lids occasionally. If irritation persists, repeat flushing and GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.

In case of skin contact: Immediately flush skin with plenty of clean running water for at least fifteen (15) minutes. Remove contaminated clothing and shoes. If irritation persists, flush skin again and seek medical attention. Wash and launder clothes before re-use. If irritation persists after washing, get immediate medical attention.

In case of ingestion or swallowing: If victim is conscious and not convulsing, rinse mouth out with water, and give a glass of water to dilute stomach contents. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS VICTIM. Immediately contact local poison control centre. Vomiting should only be induced under the direction of a physician or poison control official. If spontaneous vomiting occurs, have patient lean forward with head down to avoid breathing in the vomitus. Rinse mouth out and administer more water. GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.

Emergency Medical Care: Treat symptomatically

Section 9 - Preparation Information

Advance Chemicals Limited expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided. The information contained herein is offered only as a guide to the handling of this specific product, and has been prepared in good faith by

technically knowledgeable personnel. This M.S.D.S. is not intended to be all inclusive, and the manner and conditions of use may involve other and additional considerations.

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