MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: Lancer Group International
311 Saulteaux Crescent
Winnipeg, Manitoba,
Canada R3J 3C7

Emergency Telephone Number: (204) 889-7422

Trade Name: Phantom 1000

Code: PH 1000

Chemical Family: Aqueous mixture of Sodium hydroxide and Sodium hypochlorite

Product Use: Ghost and haze remover

WHMIS Classification: D-2B: Toxic (Skin Sensitizer), E: Corrosive

24 Hour Emergency Number: (613) 996-6666 CANUTEC
(Use in case of a dangerous goods emergency.)

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients	Percentage (w/w)	ACGIH TLV (ppm)	CAS#
Sodium hydroxide	10 - 15	Not listed	001370-73-2
Sodium hypochlorite	1 - 5	Not listed	007681-52-9

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview: Harmful if inhaled or swallowed. Causes delayed lung injury. Toxic effects are principally related to its corrosive properties. Prolonged or repeated exposure may cause discoloration and erosion of teeth. Causes severe skin and eye burns. Vapours are extremely irritating to eyes and respiratory tract. May cause chemical pneumonitis, pulmonary oedema, skin sensitization or other allergenic responses. Severe exposure may cause lung damage. Can decompose at high temperatures forming toxic gases. Contents may develop pressure on prolonged exposure to heat.

Respiration/Skin Sensitization Data: Sodium hypochlorite may cause skin sensitization or 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 substance. Once sensitized, an individual can react to extremely low airborne levels, even below the TLV or to skin contact.

Synergistic Materials: None known.

SECTION 4. FIRST AID MEASURES

General Guidelines: Prompt removal of the material and obtaining medical attention are essential for all contact. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of water. Continue flushing during transportation to the emergency department. Corrosive effects may be delayed (up to 72 hours) and damage may occur without the sensation or onset of pain. Contact local poison control center for further guidance.

Eye Contact: Immediately flush eyes with water for at least 30 preferably up to 60 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Do not transport victim until recommended flushing period is completed unless flushing can be continued during transport.

Skin Contact: Prompt removal of the material for the skin is essential for all concentrations, whether as a solid or a concentrated or dilute solution. Remove all contaminated clothing and immediately wash the exposed areas with copious amount of water for a minimum of 30 minutes up to 60 minutes for critical body areas. Obtain medical attention.

IMMEDIATELY: While the patient is being transported to a medical facility, apply compresses of water. If medical treatment must be delayed, immersed the affected areas in iced water. Avoid prolonged immersion because of risk of frostbite. Remove briefly from iced solution every 10-15 minutes. If immersion is not practical, compresses of iced water can be applied. Avoid freezing tissues. See “Note to Physician” below.

Inhalation: Move victim to fresh air. Give artificial respiration only if breathing has stopped. Give CPR if there is no breathing or pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention immediately.

Ingestion: Do not attempt to give anything by mouth to an unconscious person. Do not give acidic agents (e.g. citrus juices or vinegar) to neutralize the alkali. This action may cause an exothermic reaction and burn the esophagus. IMMEDIATELY contact local poison control center. IF victim is alert and not convulsing, rinse mouth and give 1-2 glasses of milk. Water may be used if milk is not available but is not as effective. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more milk or water.

Note to Physicians: Immediate consultation with the local poison control center should be initiated. Severe and sometimes delayed (up to 72 hours) local and systematic reactions can occur.

SECTION 5. FIRE FIGHTING MEASURES

Flammability Properties

Flammability Class (WHMIS): Not regulated
Flash Point (closed cup, ºC): Not applicable

Explosion Limit: Not applicable

Hazardous Combustion Products: Thermal decomposition products are toxic and may include oxides of chlorine, sodium and irritating gases. Decomposition causes evolution of oxygen.

Sodium hypochlorite solution decomposes slowly. Decomposition is accelerated by heat (temperature above 40ºC) and sunlight. Some metals accelerate the decomposition of Sodium hyppochlorite.

Extinguishing Media: DO NOT USE WATER. Use media for surrounding fire and/or materials. Use carbon dioxide or dry chemical media for small fires. If only water is available, use it in the form of fog

Special Firefighting Procedures: Avoid direct contact of this product with water as this can cause a violent exothermic reaction. Remove containers from fire zone wherever possible. Use media appropriate for surrounding fire and/or materials.

Fire fighting Protective Equipment: Use self-contained breathing apparatus and protective clothing. Protective clothing for skin and eye protection should be worn to protect against highly alkaline materials.

Unusual Fire Explosion Hazards: Not normally a fire hazard. Water content of product prevents ignition. Sodium hypochlorite is a strong oxidant, but solutions do not support combustion. If mixed with acids or warmed to temperatures greater than 40ºC.Hypochlorite solutions release chlorine gas. Avoid direct contact of this product with water as this can cause a violent exothermic reaction. Closed containers

exposed to heat may explode. Spilled material can cause floors and contact surfaces to become slippery. Reacts with most metals to produce hydrogen gas, which could make an explosive mixture with air.

Sodium hypochlorite may react with primary amines to form nitrogen trichloride, which explodes spontaneously in air.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedure if Material is Spilled or Released: For release to land or storm water run off, contain discharge by constructing a dyke or applying inert absorbent to release to water. Utilize damning and/or water diversion to minimize the spread of contamination. Ventilate closed spaces. Notify applicable government authority if release is reportable or could become slippery. Wear respirator, protective clothing and gloves. Replace damaged containers immediately to avoid loss of material and contamination of surrounding area.

SECTION 7. HANDLING AND STORAGE

Handling: Use normal good industrial hygiene and house keeping practices. Containers, which have been exposed to heat, may be under internal pressure. These should be cooled and carefully vented before opening. A face shield and apron should be worn. When diluting, add this material to water in small amounts to avoid spattering. Never add water to this material. The water should be lukewarm. Add small quantities of this material slowly to large quantities of water stirring constantly all the while to avoid concentration build-up that may result to violent eruption of a highly corrosive solution.

Storage: Hazardous carbon monoxide can form upon contact with food and beverages products in enclosed spaces and can cause death. Do not store near oxidizing agents or acids. Store in a cool, well-ventilated area. Keep away from heat sparks and flames. Keep containers closed. Do not expose sealed containers to temperatures above 40°C. Storage tanks should be in a contained area. To control any spills or leaks.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation required. Ventilation should be corrosion proof. Make-up air should be supplied to balance air that is removed by local or general exhaust ventilation. Ventilate low-lying areas such as sumps or pits where dense vapours may collect.

Personal Protective Equipment (PPE)

Skin Protection: Gloves and protective clothing made from neoprene of PVC should be impervious under conditions of use.

Respiratory Protection: No specific guidelines available. A NIOSH/MSHA-approved full-face piece air-purifying respirator equipped with acid gas, dust, mist, fume cartridges for concentration up to 0.5 ppm chlorine or 2 mg/M3 sodium hydroxide. An air supplied respirator if concentrations are higher or known.

Other Personal Protective Equipment: Wear an impermeable apron and boots. Locate safety shower and eyewash station close to chemical handling area. Take all precautions to avoid personal contact.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Pale yellow liquid with chlorine odor

Boiling Range, °C: Above 100

Melting/Freezing Point, °C: Not available

Vapor Pressure (mm Hg @ 20°C): Not available

Vapor Density (Air = 1): Not available

Specific Gravity (Water = 1): 1.01

Solubility in water: Soluble

Percent Volatile by volume: 70 to 90

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability:

Under Normal Conditions: Unstable. Sodium Hypochlorite solutions decompose slowly. Decomposition is accelerated by heat (temperatures above 40°C) and sunlight stability decreases with concentration, heat, light and decreases in pH. Some metals accelerate the decomposition of Sodium Hypochlorite.

Under Fire Conditions: Not normally a fire hazard. Water content of product prevents ignition.

Conditions To Avoid: High temperatures, sparks, open flames and all other sources of ignition, temperatures above 40°C. Avoid direct sunlight. The heat of sunlight can contribute to instability. Avoid decrease in pH. Avoid moisture contamination. Keep tightly closed to protect quality.

Incompatibility: Violently active with: aldehydes, organic materials and acids. Strong oxidizers Vigorous effervescence results on mixture with acids. Contact with acid will liberate corrosive chlorine gas. Reducing agents. Avoid contact with water, Methanol, combustibles, alkalis, organic halides, and strong bases. May react with organohalogen compounds to from spontaneous combustible compounds. May react explosively with nitro- and chloro-organic compounds, glycols and organic peroxides. Violently polymerizes acetaldehyde and acrylonitrile.

Hazardous Decomposition Products: Thermal decomposition products are toxic and any include oxides of chlorine, sodium and irritating gases. Decomposition causes evolution of oxygen.

Hazardous polymerization: Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity Data

Sodium Hydroxide: LD50 (Dermal, Rabbit) = 1,350 mg/Kg

Sodium Hypochlorite: LD50 (Oral, Mouse) = 5,800 mg/Kg

LD50 (Oral, Rat) = 8,910 mg/Kg

LC50 (inhal'n, Rat, 4h) = 5,250 mg/M3

Carcinogenicity: The ingredient(s) of this product is/are not classed as carcinogenic by ACGIH, IARC, OSHA or NTP.

Reproductive Effects: Sodium Hypochlorite: Reproductivity tests in animals have been negative or inconclusive.

Mutagenicity: No adverse mutagenic effects are anticipated.

Tetratogenicity: No adverse tetratogenic effects anticipated.

SECTION 12. ECOLOGICAL INFORMATION

There is no known published data available for this product.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose waste materials at an approve hazardous waste treatment facility in accordance with local applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage or sewer system.

SECTION 14. TRANSPORT INFORMATION

Canadian TDG Shipping Description

Proper Shipping Name: Corrosive Liquids, NOS (Sodium Hydroxide),
Hazard Class: Class 8 (9.2)
Un Number: UN1760,
Packing Group: II
Label (s)/Placard (s): Corrosive
Regulated Limit (9.2): Sodium Hydroxide: 50 kg, Sodium Hypochlorite: 5 kg
Exemptions: not applicable

US DOT Classification

Proper Shipping Name: Corrosive Liquids, NOS (Sodium Hydroxide),
Hazard Class: Class 8 (9.2)
Un Number: UN1760,
Packing Group: II
Reportable Quantity (CERCLA-RQ): Sodium Hydroxide = 1,000 lbs/454 kg.
Sodium Hypochlorite = 100 lbs/45.4 kg.
Exemptions: Not applicable

SECTION 15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of these products are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of these products are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available

SECTION 16. OTHER INFORMATION

DISCLAIMER: All information presented herein is given in good faith and is based on sources and tests are considered to be reliable but cannot be guaranteed. It is the user's full responsibility to accept risk for the safety, toxicity, handling, storage, and use of the product as well as to determine the suitability of this product for a specific purpose. We can make no warranty as to the results to be obtained in using the product. Therefore the user must assume all risk.

MSDS Prepared by: Discovery/Lancer Group
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