

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Sodium Carbonate Peroxyhydrate (Sodium Percarbonate), Technical Grade

Product Use: For Commercial Use

Synonyms: Sodium Carbonate Peroxide, Carbonic acid disodium salt, compound with hydrogen peroxide (TSCA).

Supplier Information

Chem One Ltd.

8017 Pinemont Drive, Suite 100

Houston, Texas 77040-6519

Phone: (713) 896-9966

Fax: (713) 896-7540

Emergency # (800) 424-9300 or (703) 527-3887

General Comments: FOR COMMERCIAL USE ONLY; NOT TO BE USED AS A PESTICIDE.

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

| CAS # | Component | Percent |
|-----------|-------------------|---------|
| 497-19-8 | Sodium Carbonate | 65-70% |
| 7722-84-1 | Hydrogen Peroxide | 25-30% |

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). Sodium Percarbonate is created by, e.g., solution crystallization of sodium carbonate and hydrogen peroxide ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$) and the CAS # is 15630-89-4.

*** Section 3 - Hazards Identification ***

Emergency Overview

Sodium Carbonate Peroxyhydrate is a white solid in granular or powder form. May cause severe eye irritation. May be harmful if swallowed. May cause skin and respiratory tract irritation. This product is an oxidizer and can act to initiate and sustain the combustion of combustible materials. This material releases oxygen upon decomposition. Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

Hazard Statements

DANGER! OXIDIZER. KEEP AWAY FROM ORGANIC MATERIAL. CONTACT WITH ORGANIC OR COMBUSTIBLE MATERIALS SUCH AS WOOD, PAPER, OIL, ETC., MAY CAUSE FIRE. HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION OR BURNS. HARMFUL IF INHALED. Keep from contact with clothing. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing dusts or particulates. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Potential Health Effects: Eyes

Contact of this product or solutions of this product with the eyes will cause severe irritation, pain, reddening, and watering.

Prolonged contact with this product or solutions of this product may cause conjunctivitis, ulceration and corneal abnormalities.

Potential Health Effects: Skin

Depending on the duration of skin contact, skin overexposures may cause reddening, discomfort, and irritation. Additionally, contact with solutions containing this product can cause whitening/bleaching. Repeated skin over-exposures to low concentration can result in dermatitis (inflammation and reddening of skin).

Potential Health Effects: Ingestion

Ingestion of this product can irritate the tissues of the mouth, esophagus, and other tissues of the digestive system. Symptoms of exposure can include nausea, vomiting and diarrhea. If swallowed, this product may produce large quantities of oxygen gas, which can cause severe damage by physical pressure. Ingestion of large volumes of this product may be fatal.

Potential Health Effects: Inhalation

Breathing dusts or particulates generated by this product can lead to irritation of the nose, throat or respiratory system. Symptoms of such exposure could include coughing, shortness of breath, nasal congestion and a sore throat. Repeated or prolonged inhalation of Sodium Percarbonate dust or mists or sprays from solutions can cause perforation of the nasal septum.

HMIS Ratings: Health Hazard: 2 Fire Hazard: 0 Physical Hazard: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. Seek immediate medical attention.

First Aid: Skin

Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 4 - First Aid Measures (Continued) ***

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. If breathing has stopped, apply artificial respiration. Get immediate medical attention.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not flammable

Method Used: Not applicable

Upper Flammable Limit (UEL): Not applicable

Lower Flammable Limit (LEL): Not applicable

Auto Ignition: Not applicable

Flammability Classification: Not applicable

Rate of Burning: Not applicable

General Fire Hazards

When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases. This product is an oxidizer, which can act to sustain the combustion of flammable materials, especially if solutions containing this product are allowed to evaporate to dryness on combustibles. Closed containers may rupture violently in the heat of a fire.

Hazardous Combustion Products

This product decomposes to form hydrogen peroxide, carbon oxides, sodium oxides, oxygen and heat.

Extinguishing Media

In case of fire, use water fog, dry chemical, carbon dioxide or regular foam.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. If possible control runoff from fire control or dilution water to prevent environmental contamination.

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 1 Other: Oxidizer

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information).

Clean-Up Procedures

Keep combustible materials away from spilled material. Small releases can be cleaned-up wearing gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up. Avoid contamination of soil, and prevent spill residue from running to groundwater or storm drains.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and laundry before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling. Avoid accumulation of dusts of this product. Remove contaminated clothing immediately. Keep away from all heat sources. Sodium Percarbonate is corrosive to aluminum and lead. Containers that contain this product should not be made of these materials. See Section 10 (Reactivity and Incompatibilities for additional information on metals that are incompatible with Sodium Percarbonate at elevated temperatures.

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 7 - Handling and Storage (Continued) ***

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored. Refer to NFPA 43A, *Liquid, Solid Oxidizers*, for additional information on storage.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

When Sodium Percarbonate comes in contact with water or any other contaminant, it releases hydrogen peroxide. Follow the recommended exposure limits for hydrogen peroxide.

B: Component Exposure Limits

The exposure limits given are for Hydrogen Peroxide (7722-84-1)

ACGIH 1.4 mg/m³ TWA

OSHA 1.4 mg/m³ TWA

NIOSH 1.4 mg/m³ TWA

DFG MAKs 1.4 mg/m³ TWA,

Engineering Controls

Use general mechanical ventilation and local exhaust in confined or enclosed spaces.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent Standards of Canada. Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses (or goggles). If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. The following NIOSH Guidelines for Hydrogen Peroxide are presented for further information.

Up to 10 ppm: Any Supplied-Air Respirator (SAR).

Up to 25 ppm: SAR operated in a continuous in a continuous-flow mode

Up to 50 ppm: SAR with a full facepiece or any Self-Contained Breathing apparatus with a full facepiece (SCBA).

Up to 75 ppm: Any SAR with full facepiece operated in positive pressure mode.

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Positive pressure, full-facepiece SCBA, or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

Escape: Full-facepiece respirator with high-efficiency particulate filter(s), or escape-type SCBA.

NOTE: The IDLH concentration for Hydrogen Peroxide is 75 ppm.

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area. Use good hygiene practices when handling this material.

*** Section 9 - Physical & Chemical Properties ***

Physical Properties: Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

Appearance: White powder
Physical State: Solid
Vapor Pressure: Not applicable
Boiling Point: Not applicable
Solubility (H₂O): 14 g/100mL
Softening Point: Not applicable
Molecular Weight: 314

Odor: Odorless
pH: 10.5 (1% solution)
Vapor Density: Not applicable
Freezing/Melting Point: 50 deg C (122 deg F) [decomposes]
Specific Gravity: Not available
Particle Size: Not determined
Bulk Density: 1.0-1.2 g/cm³
Chemical Formula: 2Na₂CO₃•3H₂O₂

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Product is stable when dry.

Chemical Stability: Conditions to Avoid

Avoid moisture, high temperatures, and exposure to incompatible materials.

Incompatibility

This material is incompatible with organic materials, heavy metals, oils and greases. Contamination with moisture, acids, reducing agents and metallic ions may cause decomposition. Reactions may be violent. The anhydrous reaction of Sodium Percarbonate and phosphorus pentoxide, initiated by local heating, can generate relatively high temperatures. Decomposition by acids with effervescence; combines with water with evolution of heat. Sodium Percarbonate applied to red hot aluminum can cause an explosion. Sodium Percarbonate can react violently with 2,4,6-trinitrotoluene. Mixtures of ammonia and Sodium Percarbonate in gum arabic solution (marking ink) can explode when warmed. Sodium Percarbonate ignites and burns fiercely in contact with fluoride. Contact with burning lithium will liberate the more reactive sodium on contact. Sodium Percarbonate corrodes aluminum and lead at room temperature. Sodium Percarbonate attacks iron, copper and nickel at high temperatures (greater than 1220 to 1500 deg C). It is not clear whether moisture must be present for corrosion to occur with anhydrous sodium carbonate. Mixtures of Sodium Percarbonate and magnesium, phosphorus pentoxide may cause explosion. Mixtures of Sodium Percarbonate and ammonia and silver nitrate can explode when warmed.

Hazardous Decomposition

Hydrogen peroxide, carbon oxides, sodium oxides and oxygen. Sodium Percarbonate begins to decompose at 400 degrees C to evolve carbon dioxide gas.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

May cause eye irritation or burns. Sodium Percarbonate may cause skin, nose, throat and respiratory tract irritation. Harmful if swallowed.

Chronic: Long term skin overexposure to this product may lead to dermatitis (red, itchy skin).

B: Component Analysis - LD₅₀/LC₅₀

Sodium Percarbonate (15630-89-4):

LD₅₀ Oral-mouse: 2050 mg/kg; LD₅₀ Intraperitoneal-rat: 542 mg/kg; Behavioral: somnolence (general depressed activity); Lungs, Thorax, or Respiration: dyspnea; LD₅₀ Oral-rat: 2400 mg/kg; Behavioral: somnolence (general depressed activity); Lungs, Thorax, or Respiration: dyspnea

Sodium Carbonate (497-19-8):

Standard Draize test- skin - rabbit: 500 mg/24 hours: Mild; Standard Draize test - eye - rabbit: 100 mg/24H: Moderate Rinsed with water- eye: rabbit: 100 mg/30 seconds: Mild; Standard Draize test:eye: rabbit: 50 mg: Severe; LD₅₀: Oral-rat: 4090 mg/kg; LD₅₀: Oral: mouse: 6600 mg/kg; LC₅₀: Inhalation - mouse: 1200 mg/m³/2 hours; LD₅₀ - Intraperitoneal - mouse: 117 mg/kg; LD₅₀: Subcutaneous - mouse: 2210 mg/kg; LC₅₀: Inhalation:- guinea pig: 800 mg/m³/2 hours

Hydrogen Peroxide (7722-84-1):

Oral-mouse LD₅₀: 2 gm/kg; Skin-Rat LD₅₀: 4060 mg/kg ; Skin-mouse LD₅₀: 12 gm/kg; Inhalation-rat LC₅₀: 2 gm/m³/4 hours: Lungs, Thorax, or Respiration: pulmonary emboli; Intravenous-Rabbit, adult LD₅₀: 15 g/kg; Subcutaneous-rat LD₅₀: 620 mg/kg; Subcutaneous-mouse LD₅₀: 1072 mg/kg; Intraperitoneal-mouse LD₅₀: 880 mg/kg; Intravenous-rabbit LD₅₀: 15 gm/kg; Behavioral: convulsions or effect on seizure threshold

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 11 - Toxicological Information (Continued)***

B: Component Analysis - TDL_o/LDL_o

Sodium Carbonate (497-19-8):

TCL_o (Inhalation-Mammal-species unspecified) 16200 µg/m³/17 weeks (Intermittent): change in sensation of smell; respiratory depression; TDLo (Intrauterine-mouse) 84800 ng/kg: female 4 day(s) after conception: Reproductive: Fertility: pre-implantation mortality

Hydrogen Peroxide (7722-84-1):

Oral-Mouse TDLo: 144 g/kg/26 weeks-continuous: Equivocal tumorigenic agent; Oral-Mouse TD: 168 g/kg/30 weeks-continuous: Equivocal tumorigenic agent; Skin-Rabbit, adult LDLo: 500 mg/kg; Skin-Pig LDLo: 2 g/kg; Inhalation-Mouse LCLo: 227 ppm; Inhalation-mouse LCLo: 227 ppm; Inhalation-rat TCLo: 67 ppm/6 hours/6 weeks-intermittent: Skin and Appendages: dermatitis, irritative (after systemic exposure); Related to Chronic Data: death; Inhalation-rat TCLo: 10 mg/m³/5 hours/17 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: monoamine oxidase; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases; Inhalation-mouse TCLo: 57 ppm/6 hours/6 weeks-intermittent: Skin and Appendages: dermatitis, irritative (after systemic exposure); Related to Chronic Data: death; Inhalation-dog TCLo: 7 ppm/6 hours/26 weeks-intermittent: Skin and Appendages: dermatitis, other (after systemic exposure); Skin and Appendages: hair

Carcinogenicity

A: General Product Information

This product is not considered to be carcinogenic.

B: Component Carcinogenicity

Hydrogen Peroxide (7722-84-1)

TLV: A3 -Confirmed animal carcinogen with unknown relevance to humans.

IARC: 3 - Not classifiable as to carcinogenicity in humans.

Epidemiology

No information available.

Neurotoxicity

No information available.

Mutagenicity

Human mutation data are available for Hydrogen Peroxide, a component of this product, these data were obtained during clinical studies on specific human tissues exposed to high doses of this compound.

Teratogenicity

No information available.

Other Toxicological Information

No information available.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

The components of this product will react with other substances or be degraded over time into other inorganic compounds and oxygen. This product is expected to be harmful to aquatic life in low concentration.

B: Ecotoxicity

Hydrogen Peroxide (7722-84-1):

Chlorophyll Content (*Microcystis* mollusk) 48 hours = 1.7 mg/L/94% decrease/static/photo period 14 hours L: 10 hours D; Chlorophyll Content (*Raphidiopsis* alga) 24 hours = 6.8 mg/L/20% decrease/static/continuous illumination; Chlorophyll Content (*Raphidiopsis* alga) 24 hours = 6.8 mg/L/45% decrease/static/continuous illumination; Chlorophyll Content (*Raphidiopsis* alga) 24 hours = 17.01 mg/L/50% decrease/static/continuous illumination; Chlorophyll Content (*Raphidiopsis* alga) 48 hours = 6.8 mg/L/35-45% decrease/static/continuous illumination; Chlorophyll Content (*Raphidiopsis* alga) 24 hours = 17.01 mg/L/100% decrease/static/continuous illumination; Chlorophyll Content (*Raphidiopsis* alga) 48 hours = 17.01 mg/L/100% decrease/static/continuous illumination; Chlorophyll Content (*Ankistrodesmus* alga) 24 hours = 6.8 mg/L/19% decrease/static/continuous illumination; Chlorophyll Content (*Ankistrodesmus* alga) 24 hours = 6.8 mg/L/51% decrease/static/continuous illumination; Chlorophyll Content (*Ankistrodesmus* alga) 24 hours = 17.01 mg/L/59% decrease/static/continuous illumination; Chlorophyll Content (*Ankistrodesmus* alga) 24 hours = 17.01 mg/L/100% decrease/static/continuous illumination; Chlorophyll Content (*Ankistrodesmus* alga) 48 hours = 17.01 mg/L/100% decrease/static/continuous illumination; Chlorophyll Content (*Anabaena* alga) 24-48 hours = 6.8-17.01 mg/L/no effect/continuous illumination; Chlorophyll Content (*Anabaena* alga) 24 hours = 17.01 mg/L/36% decrease /continuous illumination; Chlorophyll Content (*Anabaena* alga) 24 hours = 6.8-17.01 mg/L/49% decrease /continuous illumination; Chlorophyll Content (*Anabaena* alga) 24 hours = 6.8 mg/L/27% decrease /continuous illumination; TLm (fingerling trout) 24 hours = 40 ppm/salt water; (continued next page)

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

* * * Section 12 - Ecological Information (Continued) * * *

B: Ecotoxicity (continued)

Hydrogen Peroxide (7722-84-1) [continued]:

TLm (white sucker) = 2 mg/L/6 hours/enzyme activity unaffected; TLm (fathead minnow) 0.25 hours = 170 mg/L/ activity of acetylcholinesterase unaffected; TLm (red abalone) 3.5 hours = mg/L/induced spawning; LC₅₀ (*Physa* mollusk) 96 hours = 17.52 mg/L/intermittent/tap water; LC₅₀ (*Ictalurus punctatus* channel catfish) 96 hours = 36.44 mg/L/ intermittent/tap water; LC₅₀ (*Gammarus* scuds crustacean) 96 hours = 4.32 mg/L/ intermittent/tap water.

Environmental Fate

Hydrogen Peroxide (7722-84-1):

Water solubility: Miscible. Degrades quickly, especially in sunlight. Log Kow = -1.36

Sodium Carbonate (497-19-8):

Water solubility = 17-33 g/ 100 mL (20°C); Persistence: Can persist indefinitely.

Major Species Threatened: Plants. Sodium carbonate is extremely toxic to plants. Waters containing high concentration of sodium carbonate cause diarrhea, symptoms of malnutrition, unsatisfactory growth, and may also interfere with reproduction of livestock.

Injurious to various greenhouse plants over a period of 6 months.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

As shipped, this product is not considered a hazardous waste.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 14 - Transportation Information ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

UN/NA #: UN 1479

Shipping Name: Oxidizing solid, n.o.s. (Sodium carbonate peroxyhydrate *or* Sodium percarbonate)

Hazard Class: 5.1

Packing Group: III

Required Label(s): Class 5.1

RQ Quantity: Not applicable.

Additional Shipping Information

The Limited Quantities of Division 5.1 materials exception [49 CFR 173.152 (b)] may be applicable to shipments of Oxidizing solid, n.o.s. (Sodium carbonate peroxyhydrate *or* Sodium percarbonate) if each inner packaging does not exceed 5.0 kg (11 pounds) and packaged in strong outer packages not to exceed 30 kg (66 pounds). Such shipments need not be marked with the Proper Shipping Name of the contents, but shall be marked with the UN Number (1479) of the contents, preceded by the letters "UN", placed within a diamond. The width of the line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. For a shipment by air the class 5.1 label will be required.

International Air Transport Association (IATA):

For Shipments by Air transport: This information applies to air shipments both within the U.S. and for shipments originating in the U.S., but being shipped to a different country

UN/NA #: UN 1479

Proper Shipping Name: Oxidizing solid, n.o.s. (Sodium carbonate peroxyhydrate *or* Sodium percarbonate)

Hazard Class: 5.1

Packing Group: III

Passenger & Cargo Aircraft Packing Instruction: 516

Passenger & Cargo Aircraft Maximum Net Quantity: 25 kg

Limited Quantity Packing Instruction (Passenger & Cargo Aircraft): Y516

Limited Quantity Maximum Net Quantity (Passenger & Cargo Aircraft): 10 kg

Cargo Aircraft Only Packing Instruction: 518

Cargo Aircraft Only Maximum Net Quantity: 100 kg

Special Provisions: None

ERG Code: 5P

LIMITED QUANTITY SHIPMENTS Such shipments must be marked with the proper shipping name, UN number, and must be additionally marked with the words LIMITED QUANTITIES or LTD. QTY. The total weight of each outer packaging cannot exceed 30 kg (66 pounds). For a shipment by air the class 5.1 label will be required.

International Maritime Organization (I.M.O.) Classification

For shipments via marine vessel transport, the following classification information applies.

UN/NA #: UN 1479

Proper Shipping Name: OXIDIZING SOLID, N.O.S. (Sodium carbonate peroxyhydrate *or* Sodium percarbonate)

Hazard Class: class 5.1

Packing Group: III

Special Provisions: 233, 274, 900, 944

Limited Quantities: 5 kg

Packing Instructions: P002

IBC Instructions: IBC06

IBC Provisions: B2

EmS: F-H, S-Q

Stowage and Segregation: Category B.

LIMITED QUANTITY SHIPMENTS Such shipments need not be marked with the Proper Shipping Name of the contents, but shall be marked with the UN Number (1479) of the contents, preceded by the letters "UN", placed within a diamond. The width of the line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. The total weight of each outer packaging cannot exceed 30 kg (66 pounds.)

I.M.O. Classification: Sodium percarbonate is not regulated as dangerous goods by the IMO/IMDG.

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

***** Section 15 - Regulatory Information *****

US Federal Regulations

A: General Product Information

No additional information.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4):

Hydrogen Peroxide (7722-84-1) Concentration > 52%:

SARA 302 TPQ = 1000 pounds (450.4 kg); RQ = 1000 pounds (450.4 kg)

C: Sara 311/312 Tier II Hazard Ratings:

| Component | CAS # | Fire Hazard | Reactivity Hazard | Pressure Hazard | Immediate Health Hazard | Chronic Health Hazard |
|---------------------|------------|-------------|-------------------|-----------------|-------------------------|-----------------------|
| Sodium Percarbonate | 15630-89-4 | Yes | Yes | No | Yes | No |

State Regulations

A: General Product Information

California Proposition 65

Sodium Percarbonate is not on the California Proposition 65 chemical lists.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substance lists:

| Component | CAS # | CA | FL | MA | MN | NJ | PA |
|---------------------|------------|-----|-----|-----|-----|-----|-----|
| Sodium Percarbonate | 15630-89-4 | No | No | No | No | Yes | No |
| Sodium Carbonate | 497-19-8 | No | No | No | No | No | No |
| Hydrogen Peroxide | 7722-84-1 | Yes | Yes | Yes | Yes | Yes | Yes |

Other Regulations

A: General Product Information

No other information available.

B: Component Analysis - Inventory

| Component | CAS # | TSCA | DSL | EINECS |
|---------------------|------------|------|-----|--------|
| Sodium Percarbonate | 15630-89-4 | Yes | Yes | Yes |
| Sodium Carbonate | 497-19-8 | Yes | Yes | Yes |
| Hydrogen Peroxide | 7722-84-1 | Yes | Yes | Yes |

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|-------------------|-----------|-----------------------|
| Sodium Carbonate | 497-19-8 | 1 percent |
| Hydrogen Peroxide | 7722-84-1 | 1 percent |

Material Safety Data Sheet

Material Name: Sodium Carbonate Peroxyhydrate

ID: C1-168

*** Section 15 - Regulatory Information (Continued) ***

ANSI LABELING (Z129.1): **WARNING!** OXIDIZER. CONTACT WITH ORGANIC OR COMBUSTIBLE MATERIALS MAY CAUSE FIRE. HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION OR BURNS. HARMFUL IF INHALED. Keep from contact with clothing and other combustible materials. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing dusts or particulates. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH/MSHA-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO₂, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com. Revision date: 06/02/01

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Contact: Sue Palmer-Koleman, PhD

Contact Phone: (713) 896-9966

Revision Log

08/28/00 4:33 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.
06/02/01 9:31 AM HDF Checked exposure limits; made changes to Sect 9; overall review, add SARA 311/312 Haz Ratings.
08/20/01 4:25 PM CLJ Changed contact to Sue, non-800 Chemtrec Num.
02/18/02 11:32 AM HDF Up-date of SARA Hazard Ratings.
02/21/03 12:00 pm HDF General review of entire MSDS. Addition of acute and chronic health hazard information to Section 2. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
09/25/03 4:16 pm SEP updated Sect 14 added per SJC 9/23/03, modified sentence, Section 1 , Component Information.
06/22/05 1:30 pm SEP Update IATA Section 14
09/05/06 4:21 pm SEP Updated DOT and IATA Section 14

This is the end of MSDS # C1-168