

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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

Chemical Name: Sodium Nitrite, Technical Grade

Product Use: For Commercial Use

Synonyms: Nitrous acid, sodium salt; Anti-rust; Diazotizing salts; Dusitan sodny; Erinirit; Filmerine; Natrium nitrit; NCI-CO2084

Supplier Information

Chem One Ltd.

14140 Westfair East Drive

Houston, Texas 77041-1104

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. Sodium Nitrite may not be mixed with other compounds for use as metal working fluids.

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

CAS #	Component	Percent
7632-00-0	Sodium Nitrite	> 98%

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview

Sodium Nitrite is a white granular or crystalline solid. Harmful if inhaled. May be fatal if swallowed. May be absorbed through the skin. Overexposure may produce symptoms such as palpitations, headache, blood pressure drop, and visual disturbances. This product reacts with amines to produce carcinogenic nitrosamines. Sodium Nitrite is deliquescent and will adsorb moisture from the air. Sodium Nitrite is not combustible, however, as an organic solid, dusts of this product may create an explosion hazard in the presence of a source of ignition. Sodium Nitrite is an oxidizer, which can increase the intensity of fire. Toxic fumes may be produced in fire. Firefighters should wear full protective equipment and clothing.

Hazard Statements

DANGER! OXIDIZER - KEEP AWAY FROM ORGANIC MATERIAL. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED. HARMFUL OR FATAL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAUSES EYE AND SKIN IRRITATION. MAY BE ABSORBED THROUGH THE SKIN. DO NOT MIX WITH AMINES. Do not get in eyes or on skin. Do not breathe dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

Potential Health Effects: Eyes

Exposure to particulates or solution of this product may cause irritation of the eyes with symptoms such as stinging, tearing, redness and pain.

Potential Health Effects: Skin

Product may be absorbed through the skin. Prolonged or repeated contact with this product may cause irritation and possibly dermatitis. Skin may become flushed or turn blue.

Potential Health Effects: Ingestion

May be fatal if swallowed. May cause discomfort, nausea or vomiting. Symptoms may include palpitations, headache, blood pressure drop, cyanosis and visual disturbance. Product may cause methemoglobinemia if swallowed.

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, sneezing, and chest discomfort.

HMIS Ratings: Health Hazard: 3* Fire Hazard: 2 Physical Hazard: 3

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 15 minutes. Seek immediate medical attention.

First Aid: Skin

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

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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

First Aid: Ingestion

DO NOT INDUCE VOMITING. If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.

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: Notes to Physician

Provide general supportive measures and treat symptomatically.

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

Flash Point: Explodes at 537 deg C (1000 deg F)

Method Used: Not applicable

Upper Flammable Limit (UEL): Not applicable

Lower Flammable Limit (LEL): Not applicable

Auto Ignition: 1000 deg F (538 deg C)

Flammability Classification: Not applicable

Rate of Burning: Not applicable

General Fire Hazards

Material is non-combustible but will accelerate the burning of combustible materials. Contact with organic matter will ignite by friction. Toxic nitrogen oxides will be released in fire involving this material. If large quantities are involved, or the material is finely divided, an explosion may result. Sodium Nitrite explodes at temperatures above 1000 deg F or when in contact with cyanides, ammonia salts, cellulose, lithium, potassium and ammonia, or sodium thiosulfate. Containers may explode in fire.

Hazardous Combustion Products

Nitrogen oxides and oxygen.

Extinguishing Media

Do not use dry chemicals, CO₂, Halon or foams. Use water in very large amounts of water as needed.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Prevent the spread of any released product to combustible objects.

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 3 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). DO NOT USE SAWDUST.

Clean-Up Procedures

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.. If a vacuum is used for spill clean-up, only an explosion-proof vacuum should be used, due to the potential for dust explosion. Do not allow the spilled product to enter public drainage system or open water courses. 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. Keep materials which can burn away from spilled material. 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.

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

*** 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. Avoid accumulation of dusts of this product. Wherever dust clouds may be generated, eliminate sparks, flames and other ignition sources. Periodically wash-down areas where this product is used to avoid dust accumulation. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Sodium Nitrite at 460 deg F in contact with a combustible container in which it is shipped undergoes vigorous decomposition reaction producing propellant-type burning until container is consumed. Keep container tightly closed when not in use. If this product is transferred into another container, only use portable containers and tools approved for oxidizing solids. 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). Store containers away from wood, cardboard boxes, and other combustible materials. Storage areas should be made of corrosion and 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). Refer to NFPA 43A, *Liquid, Solid Oxidizers*, for additional information on storage.

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers which 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.

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

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

The exposure limits given are for Particulates Not Otherwise Classified.

ACGIH: 10 mg/m³ TWA (Inhalable fraction)
3 mg/m³ TWA (Respirable fraction)

OSHA: 15 mg/m³ TWA (Total dust)
5 mg/m³ TWA (Respirable fraction)

DFG MAKs 4 mg/m³ TWA (Inhalable fraction)
1.5 mg/m³ TWA (Respirable fraction)

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

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 with side shields (or goggles) and a face shield, if this material is made into solution. 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

No specific guidelines are available. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. An approved dust and mist air-purifying respirator may be adequate. 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).

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area.

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

*** 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.

Appearance:	White, granular or crystalline solid	Odor:	Odorless
Physical State:	Solid	Bulk Density:	Not available
Vapor Pressure:	Negligible.	Vapor Density:	2.4 (air = a)
Boiling Point:	608 deg F (320 deg C) Decomposes below boiling point	pH:	Aqueous solutions are alkaline
Solubility (H2O):	Readily soluble	Specific Gravity:	2.17 (H ₂ O = 1)
Softening Point:	Not available	Particle Size:	Not available
Molecular Weight:	69.0	Freezing/Melting Point:	519 deg F (271 deg C)
		Chemical Formula:	NaNO ₂

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

Chemical Stability

Sodium Nitrite very slowly oxidizes to nitrate in air. Solutions of sodium nitrite are unstable and should be prepared directly before use.

Chemical Stability: Conditions to Avoid

Avoid high temperatures and ignition sources. Keep away from materials which can burn.

Incompatibility

This product is incompatible with amines, acids, organic materials, permanganates, cyanides, chlorates, iodides, sulfates, urea and ammonium compounds. Incompatible with aminoguanidine salts, butadiene, phthalic acid, phthalic anhydride, reductants, sodium amide, sodium disulfite, sodium thiocyanate, urea wood. Addition of Solid Nitrite to molten amide causes immediate gas evolution, followed by violent explosion. Mixture of sodium nitrite and sodium thiocyanate explodes on heating. Interaction of nitrites when heated with metal aminosulfates ('sulfamates') may become explosively violent owing to liberation of nitrogen & steam. Mixtures with ammonium sulfamate form ammonium nitrate which decomposes violently around 80 deg C. Violent explosion occurs if an ammonium salt is melted with nitrite salt. When sodium nitrite & thiosulfate mixture was heated to evaporate to dryness, violent explosion occurred. Solutions of potassium and sodium nitrite in liquid ammonia form disodium nitrite, which is very reactive & easily explosive. Lithium reacts with sodium nitrite to form lithium sodium hydronitrite, a compound which decomposes violently around 100-130 deg C.

Hazardous Decomposition

Upon heating, nitrogen oxides, and oxygen are released, which increases potential of fire. In contact with all acids, Sodium Nitrite decomposes to form nitrogen oxides.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Sodium Nitrite is toxic by ingestion causing a reduction in oxygen carrying blood cells (methemoglobinemia), reduced blood pressure and cardiac effects. WARNING! Do Not Add Nitrites to Metalworking Fluids under Penalty of Federal Law. Addition of nitrites leads to formation of a substance known to cause cancer.

B: Component Analysis - LD₅₀/LC₅₀

Sodium Nitrite (7632-00-0)

Oral-Mouse LD₅₀: 175 mg/kg; Subcutaneous-rat LD₅₀: 96,600 µg/kg; Intraperitoneal-Mouse LD₅₀: 158 mg/kg; Oral-Rat LD₅₀: 85 mg/kg; Inhalation-Rat LC₅₀: 5500 mg/m³

B: Component Analysis - TCLo

Sodium Nitrite (7632-00-0)

Inhalation-rat TCLo: 125 µg/m³/22 weeks-intermittent: Brain and Coverings: recordings from specific areas of CNS; Blood: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases;

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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

B: Component Analysis - TD/TDL_o/LDL_o

Sodium Nitrite (7632-00-0)

Oral-Man TDLo: 1714 mg/kg/70 minutes: Cardiovascular effects; Oral-Human LDLo: 71 mg/kg: Central nervous system effects, Gastrointestinal tract effects, Blood effects; Oral-Human TDLo: 14 mg/kg: Behavioral: changes in motor activity (specific assay); Vascular: regional or general arteriolar or venous dilation; Gastrointestinal: nausea or vomiting; Oral-man LDLo: 321 mg/kg: Behavioral: coma; Lungs, Thorax, or Respiration: cyanosis; Blood: methemoglobinemia-carboxyhemoglobin; Oral-man TDLo: 1714 µg/kg/70 minutes: Cardiac: pulse rate increase, without fall in BP; Vascular: BP lowering not characterized in autonomic section; Oral-Child LDLo: 22 mg/kg; Oral-rat TDLo: 6080 mg/kg: lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: growth statistics (e.g. %, reduced weight gain), other postnatal measures or effects; Oral-rat TDLo: 22,500 mg/kg/90 days-continuous: Liver: other changes; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: other transferases; Oral-rat TDLo: 17,080 mg/kg/61 days-continuous: Brain and Coverings: changes in surface EEG; Behavioral: somnolence (general depressed activity); Blood: methemoglobinemia-carboxyhemoglobin; Oral-rat TDLo: 4477 mg/kg/26 weeks-intermittent: Blood: methemoglobinemia-carboxyhemoglobin, Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases, Enzyme inhibition, induction, or change in blood or tissue levels: transaminases; Oral-rat TDLo: 134 gm/kg/64 weeks-continuous: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Oral-Rat TDLo: 2190 g/kg/2 years-continuous: Carcinogenic effects; Oral-Rat TDLo: 185 gm/kg/61 weeks-continuous: Lungs, Thorax, or Respiration: changes in lung weight; Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain; Oral-Rat TD: 63 g/kg/95 weeks-continuous: Equivocal tumorigenic agent; Oral-Rat TD: 91 g/kg/2 years-continuous: Equivocal tumorigenic agent, Reproductive effects; Oral-Rat TD: 183 g/kg/2 years-continuous: Equivocal tumorigenic agent, Reproductive effects; Oral-Rat TD: 100 g/kg/2 years-intermittent: Neoplastic effects; Oral-Rat TD: 40 g/kg/56 weeks-continuous: Neoplastic effects; Oral-Rat TD: 365 gm/kg/2 years-intermittent: Tumorigenic: Carcinogenic by RTECS criteria; Gastrointestinal: tumors; Oral-Dog, adult LDLo: 330 mg/kg; Oral-Cat, adult LDLo: 1500 mg/kg; Oral-Rabbit, adult LD₅₀: 186 mg/kg; Inhalation-rat TCLo: 300 µg/m³/4 hours/30 days-intermittent: Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases: catalyses; Subcutaneous-Rat LDLo: 10 mg/kg; Subcutaneous-Mouse LDLo: 150 mg/kg; Subcutaneous-Dog, adult LDLo: 60 mg/kg; Subcutaneous-Cat, adult LDLo: 35 mg/kg; Subcutaneous-rabbit LDLo: 60 mg/kg; Intravenous-Dog, adult LDLo: 15 mg/kg; Intraperitoneal-rat TDLo: 960 mg/kg/30 days-intermittent: Liver: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: catalyses; Related to Chronic Data: death; Intravenous-rabbit LDLo: 80 mg/kg; Peripheral Nerve and Sensation: spastic paralysis with or without sensory change; Behavioral: coma; Kidney, Urethra, Bladder: urine volume increased; Subcutaneous-frog LDLo: 1 gm/kg

Carcinogenicity

A: General Product Information

Sodium nitrite is not considered a carcinogen. However, when this material comes in contact with secondary and tertiary amines, nitrosamines are produced. Nitrosamines are potentially carcinogenic.

B: Component Carcinogenicity

Sodium Nitrite (7632-00-0)

Sodium Nitrite is not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology

No information available.

Neurotoxicity

Animal studies indicate Sodium Nitrite may cause peripheral nerve effects, convulsions or effects on seizure threshold.

Mutagenicity

Sodium Nitrite has tested positive in mammalian and non-mammalian in vitro assays.

Teratogenicity

In reproductive studies, after female mice were fed sodium nitrite there was an increased number of fetal deaths.

Reproductive Data:

Sodium Nitrite (7632-00-0)

Intravenous-cattle TDLo: 36 mg/kg; female 30-31 week(s) after conception: Reproductive: Effects on Embryo or Fetus: other effects to embryo; Oral-mouse TDLo: 1680 mg/kg; male 14 day(s) pre-mating: Reproductive: Fertility: male fertility index (e.g. # males impregnating females per # males exposed to fertile non-pregnant females); Oral-mouse TDLo: 840 mg/kg; male 14 day(s) pre-mating: Reproductive: Paternal Effects: spermatogenesis (incl. genetic material, sperm morphology, motility, and count); (continued on following page)

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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

Reproductive Data (continued):

Sodium Nitrite (7632-00-0)

Oral-mouse TDLo: 2149 mg/kg; male 2 week(s) pre-mating; female 2 week(s) pre-mating 3 week(s) post-birth: Tumorigenic: Carcinogenic by RTECS criteria; Reproductive: Tumorigenic effects: transplacental tumorigenesis; Lungs, Thorax, or Respiration: tumors; Oral-mouse TDLo: 280 mg/kg; female 1-14 day(s) after conception: Reproductive: Specific Developmental Abnormalities: blood and lymphatic systems (including spleen and marrow); Oral-mouse TDLo: 1200 mg/kg; female 6-15 day(s) after conception: Reproductive: Fertility: pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea), Effects on Embryo or Fetus: fetal death; Oral-Rat TDLo: 10,280 mg/kg; female 1-22 day(s) after conception lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: weaning or lactation index (e.g., # alive at weaning per # alive at day 4); Oral-rat TDLo: 6080 mg/kg; lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: growth statistics (e.g. %, reduced weight gain), other postnatal measures or effects; Oral-Rat TDLo: 660 mg/kg (1-22 days preg): Teratogenic effects; Oral-Rat TDLo: 11 g/kg (1-22 days preg/21 days post): Reproductive effects; Oral-Mouse TDLo: 2149 mg/(pre-post-birth): Carcinogenic effects, Teratogenic effects; Oral-mouse TDLo: 280 mg/kg; female 1-14 day(s) after conception: Reproductive: Specific Developmental Abnormalities: blood and lymphatic systems (including spleen and marrow); Oral-Rat TDLo: 10,280 mg/kg; female 1-22 day(s) after conception lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: weaning or lactation index (e.g., # alive at weaning per # alive at day 4);

Other Toxicological Information

None.

*** Section 12 - Ecological Information ***

Ecotoxicity

A. General Product information

Harmful to aquatic life in very low concentrations

B: Aquatic Toxicity

No effect (minnow) 24 hours = 17.1 ppm/fresh water;; TLm (mosquito fish) 48 hours = 7.5 ppm/fresh water

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

This product may be considered an EPA Waste D001 (Ignitable-Oxidizer) or D003 (reactivity).

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.

*** Section 14 – Transportation Information Ground ***

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 49 CFR, IATA and IMDG to assure regulatory compliance.

US DOT 49 CFR 100-185 Revised July 24, 2009 Information

UN/NA #: UN 1500

Shipping Name: Sodium nitrite

Hazard Class: 5.1

Packing Group: III

Required Label(s): 5.1 (Oxidizer) (6.1) (Toxic)

Special Provision: IB8, IP3

Packaging: 172.213

RQ Quantity: For a single package less than the RQ of 100lb (45.4 kg), the RQ designation should be not be used.

Additional Shipping Information

Limited Quantity Shipments: Shipments, except for air, need not be marked with the Proper Shipping Name of the contents, but shall be marked with the UN Number (1500) 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).

Small Quantities for Highway and Rail: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle. The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement of the

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test requirements of 173.4(6) (i). The outside of the package must be marked with the statement "**This package conforms to 49 CFR 173.4 for domestic highway or rail transport only.**"

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 1kg (2.2 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet a drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce. For highway or rail transportation no shipping paper is required. The package must be legibly marked with the following marking:



NOTE: The "*" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "**" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm (3.9 inches) x 100 mm (3.9 inches), and must be durable and clearly visible.

De minimis Exceptions: The maximum quantity of this material per inner receptacle is limited to 1g (0.04 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 100 g (0.22 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce and may be transported by aircraft. If all of the above requirements are met, then this material is not regulated.

*** Section 14 – Transportation Information Air ***

50th Edition 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 1498

Proper Shipping Name: Sodium nitrite

Hazard Class: 5.1(6.1)

Packaging 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: 100kg

Excepted Quantities: E1

Special Provisions: None

ERG Code: 5P

Limited Quantity Shipments: Shipments for air must be marked with the Proper Shipping Name Sodium nitrite and shall be marked with the UN Number (1500) 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.

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g per receptacle and the aggregate quantity of this material per completed package does not exceed 1kg. The inner receptacles must be securely packed in an intermediate packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg. The completed package must meet a drop test. The requirements are found in 2.7.6.1. The package must not be opened or otherwise altered until it is no longer in commerce. For air transportation no shipping paper is required. The package must be legibly marked with the following marking:

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174



NOTE: The "*" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "**" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm x 100 mm and must be durable and clearly visible.

*** SECTION 14 – Transportation Information Vessel ***

Amendment 34-08 International Maritime Dangerous Goods (IMDG) Code

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

UN/NA #: UN 1500

Proper Shipping Name: SODIUM NITRITE

Hazard Class: 5.1(6.1)

Packing Group: III

Special Provisions: None

Limited Quantities: 5kg

Excepted Quantities: E1

Packing Instructions: P002

Provisions: none

IBC Instructions: IBC08

IBC Provisions: B3

EmS: F-A, S-Q

Stowage and Segregation: Category A: "Separated from" ammonium compounds and cyanides

Limited Quantity Shipments: Shipments need not be marked with the Proper Shipping Name of the contents but must be marked with the UN Number (1500) 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.

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g per receptacle and the aggregate quantity of this material per completed package does not exceed 1000g. The inner receptacles must be securely packed in an intermediate packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg. The completed package must meet a drop test. The requirements are found in 3.5.3.1. The package must not be opened or otherwise altered until it is no longer in commerce. For air transportation no shipping paper is required. The package must be legibly marked with the following marking:



NOTE: The "*" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "**" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm x 100 mm and must be durable and clearly visible.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

EPA Section 12 (b) export notification is required for applicable shipments of Sodium Nitrite.

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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):

Sodium Nitrite (7632-00-0)

SARA 313 form R reporting required for 1.0% de minimus concentration

CERCLA final RQ = 100 pounds (45.4 kg)

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Nitrite	7632-00-0	Yes	Yes	No	Yes	Yes

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

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

State Regulations

A: General Product Information

California Proposition 65

Sodium Nitrite 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 substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sodium Nitrite	7632-00-0	Yes	No	Yes	No	Yes	Yes

Other Regulations

A: General Product Information

Sodium Nitrite is considered a hazardous substance under Section 311 of the Federal Water Pollution Control Act (Clean Water Act).

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Sodium Nitrite	7632-00-0	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 Nitrite	7632-00-0	1%

ANSI LABELING (Z129.1): DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE MAY BE FATAL IF SWALLOWED. CAUSES SKIN, EYE AND RESPIRATORY TRACT 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 vapors or mist. 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:** Vacuum or sweep-up spill, avoiding the generation of dusts. Do not allow spill to contact combustible materials. 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.

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

Material Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

***** Section 16 - Other Information (Continued) *****

Revision Log

08/28/00 4:31 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 4:17 PM CLJ Changed contact to Sue, non-800 Chemtrec Num.
01/16/02 11:59 AM SEP Changed fiber drum and carton, Section 7, to combustible container, and container, respectively.
02/18/02 11:13 AM HDF Up-date of SARA Hazard Ratings
06/24/02 13:00 PM HDF Revision of text to shipping section for clarification of Placarding and Labeling requirements.
07/31/03 12:00 pm HDF General review of entire MSDS. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
10/21/03 7:10 AM HDF Addition of statement to Section I that this material may not be added to metal working fluids. Addition of warning in Section 11 on formation of carcinogenic substance if added to metal working fluids. Addition of EPA Section 12 (b) Export Notification requirement in Section 15.
06/22/05 1:26PM SEP Update IATA Section 14
09/05/06 4:11 pm sep Update DOT and IMO Section 14
10/15/08 9:40 AM DLY Changed Chem One Physical Address, Section 1
09/18/09 MMK Updated Section 14 limited and excepted quantities and exceptions

This is the end of MSDS # C1-174