

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

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

Chemical Name: Sodium Hexametaphosphate Coarse Powder, Granular or Plate as Technical , FCC certified grades
Product Use: For Commercial Use
Synonyms: SHMP, Glassy sodium, Vitrafos, Metafos, Sodium polyphosphate, Metaphosphoric acid, Sodium metaphosphate
Supplier Information
Chem One Ltd. Phone: (713) 896-9966
14140 Westfair East Drive Fax: (713) 896-7540
Houston, Texas 77041-1104 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
68915-31-1	Sodium Hexametaphosphate	> 90

This product, commonly called "sodium hexametaphosphate" or "sodium polyphosphates glassy", is a mixture of many polymers for which the CAS number is 68915-31-1, the chemical formula is $Na_{(x+2)} P_x O_{(3x+1)}$, where $x=6$ to 21. An alternate CAS number 10124-56-8 is specific for sodium hexametaphosphate, $Na_6O_{18}P_6$, molecular weight 611.77.

Component Related Regulatory Information
No information available.

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 Hexametaphosphate is a glassy, white solid found in plate, granular or powder forms. Dusts of this product may cause mild irritation to the eyes, skin, nose and throat. Sodium Hexametaphosphate may react violently with strong oxidizers. Product is not combustible. Use extinguishing media appropriate for surrounding fire. Thermal decomposition of this product produces irritating vapors and toxic gases (e.g. phosphorous oxides and sodium oxide). Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

Hazard Statements

CAUTION! MAY CAUSE RESPIRATORY TRACT IRRITATION. MAY CAUSE EYE AND SKIN IRRITATION. Avoid contact with eyes and skin. Avoid breathing 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 mild irritation of the eyes with symptoms such as stinging, tearing, redness and pain.

Potential Health Effects: Skin

Alkalies penetrate skin slowly. The extent of damage therefore depends on duration of contact. Chronic poisoning (from skin contact), may occur. Repeated skin contact may lead to dermatitis (red, cracked skin). Symptoms are generally alleviated when exposure ends.

Potential Health Effects: Ingestion

Ingestion of this product (especially in large volumes) can be irritating because of its alkalinity and hypertoxicity to the tissues of the mouth, esophagus, and other tissues of the digestive system. Symptoms of exposure can include vomiting, diarrhea, and nausea. This compound is thought to be hydrolyzed to (ortho) phosphates before absorption, which may induce a metabolic acidosis. If appreciable amounts of the intact polymer are absorbed from the alimentary tract, hypocalcemic tetany may be a danger due to the binding (chelation) of ionized calcium. Hypocalcemic tetany apparently occurred in a single case of water softener poisoning. The estimated fatal dose of sodium phosphates is 50 g.

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. Symptoms are generally alleviated when exposure ends.

HMIS Ratings: Health Hazard: 1 Fire Hazard: 0 Physical Hazard: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

*** 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 if any adverse effect occurs.

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.

First Aid: Ingestion

Have victim rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING.** Immediately give large amounts of water. If vomiting occurs naturally, rinse mouth and repeat administration of water. Obtain medical advice immediately. Never give anything by mouth to a victim who is unconscious or having convulsions.

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: 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

Sodium Hexametaphosphate is not combustible, and does not contribute to the intensity of a fire. Closed containers exposed to heat may explode. When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases. If heated to very high temperatures, this material may melt, with the production of steam through water loss.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, and oxides of sodium and phosphorus.

Extinguishing Media

Use methods for the surrounding fire and other materials involved in the fire.

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: 1 Fire: 0 Instability: 0 Other:

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

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. 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. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

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 launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

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

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.

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

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

The exposure limits given are for Particulates Not Otherwise Classified (PNOC).

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 engineering methods to control hazardous conditions. This includes exhaust ventilation directly to the outside and using a corrosion-resistant ventilation system separate from other exhaust ventilation systems.

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). Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear chemical safety goggles. If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Use impervious gloves. Gloves should be tested to determine their suitability for prolonged contact with this material. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. 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

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

*** 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 plate, granule or powder	Odor: Odorless
Physical State: Solid	pH: 7.0 (1% solution)
Vapor Pressure: Zero	Vapor Density: Not applicable
Boiling Point: 1500 deg C (2732 deg F)	Freezing/Melting Point: 550 deg C (1022 deg F)
Solubility (H2O): Freely soluble.	Specific Gravity: 1.25
Freezing Point: Not applicable	Particle Size: Not determined
Softening Point: Not applicable	Bulk Density: Not available
Molecular Weight: See section 2	Chemical Formula: See sect 2

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

Chemical Stability

Product is normally stable.

Chemical Stability: Conditions to Avoid

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

Incompatibility

This material is incompatible with oxidizers - reactions may be violent.

Hazardous Decomposition

Carbon dioxide, carbon monoxide, and oxides of sodium and phosphorus.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Poisonous by intravenous route. Mildly toxic by intraperitoneal, ingestion and subcutaneous routes. Chronic: Long term skin overexposure to this product may lead to dermatitis (red, itchy skin).

Sodium and potassium hexametaphosphates, polyphosphates, tripolyphosphates, pyrophosphates, and other phosphates used as water softeners form complexes with calcium and, after ingestion, are capable of seriously reducing the serum level of ionic calcium. They have less corrosive effect on mucous membranes than sodium or potassium hydroxide. Hydrolysis of the polymeric phosphates can also produce acidosis.

B: Component Analysis - LD50/LC50

Sodium Hexametaphosphate:

Oral-rat LD₅₀: 6200 mg/kg; Oral-mouse LD₅₀: 4320 mg/kg; Intraperitoneal-mouse LD₅₀: 870 mg/kg; Subcutaneous-mouse LD₅₀: 1300 mg/kg; Intravenous-mouse LD₅₀: 62 mg/kg

B: Component Analysis - TDLo/LDLo

Intravenous-rabbit LDLo: 140 mg/kg

Carcinogenicity

A: General Product Information

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

B: Component Carcinogenicity

No information available.

Epidemiology

No information available.

Neurotoxicity

No information available.

Mutagenicity

No information available.

Teratogenicity

No information available.

Other Toxicological Information

No information available.

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This compound may be harmful to aquatic life in high concentrations as it could alter the pH of the aquatic environment.

B: Aquatic Toxicity

No information available.

Environmental Fate

No potential for food chain concentration.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

As shipped, product is not considered a hazardous waste by the EPA.

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. 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 ***

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 #: Not Applicable

Shipping Name: Non-regulated

Hazard Class: Not Applicable

Packing Group: Not Applicable

Required Label(s): None

Additional Info:: When shipped as a single bulk package equal to 5000 pounds or more, this material is regulated as a U.S. DOT hazardous material as the following: RQ, UN 3077, Environmentally Hazardous Substance, Solid, n.o.s., (sodium phosphate, tribasic), 9, PG III, Label Class 9.

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 3077

Proper Shipping Name: Environmentally Hazardous Substance, solid, n.o.s. (Sodium Hexametaphosphate)

Hazard Class: 9 (Miscellaneous Dangerous Goods)

Packing Group: III

Passenger & Cargo Aircraft Packing Instruction: 911

Passenger & Cargo Aircraft Maximum Net Quantity: 400 kg

Limited Quantity Packing Instruction (Passenger & Cargo Aircraft): Y911

Limited Quantity Maximum Net Quantity (Passenger & Cargo Aircraft): 30 kg G

Cargo Aircraft Only Packing Instruction: 911

Cargo Aircraft Only Maximum Net Quantity: 400 kg

Excepted Quantities: E1

Special Provisions: A97, A158

ERG Code: 9L

Limited Quantity Shipments: Shipments for air must be marked with the Proper Shipping Name Environmentally Hazardous Substance, solid, n.o.s. (Sodium Hexametaphosphate) and shall be marked with the UN Number (3077) 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.

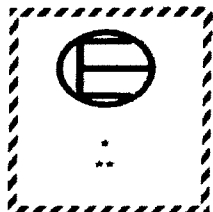
Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g per receptacle and the aggregate quantity of this material per completed package does not exceed 1kg. The inner receptacles must be securely packed in an

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

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:



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.

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

I.M.O. Classification: Sodium Hexametaphosphate is not considered hazardous under IMDG/ I.M.O. regulations.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

Sodium Hexametaphosphate is Generally Accepted as Safe (GRAS) when used as a food additive for humans or animals, when used in accordance with good manufacturing practice or feeding practice. In addition, under FIFRA, residues of Sodium Hexametaphosphate surfactant, wetting agent are excepted from the tolerance requirements when used as a suspending agent or buffer, when used in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations, applied to growing crops or to raw agricultural commodities after harvest.

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 Hexametaphosphate (68915-31-1, alt 10124-56-8)

SARA 302 There are no specific Threshold Planning Quantities for Sodium Hexametaphosphate. The default Federal (EHS TPQ) MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

CERCLA: Final RQ = 5000 pounds (2270 kg) (Listed under 'Sodium phosphate, tribasic')

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Hexametaphosphate	68915-31-1	No	No	No	Yes	No

State Regulations

A: General Product Information

California Proposition 65

Sodium Hexametaphosphate 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 Hexametaphosphate	68915-31-1	Y	N	Y	N	Y	Y

Other Regulations

A: General Product Information

No other information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Sodium Hexametaphosphate	68915-31-1	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

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

Material Safety Data Sheet

Material Name: Sodium Hexametaphosphate

ID: C1-141

Component	CAS #	Minimum Concentration
Sodium Hexametaphosphate	68915-31-1	No disclosure limit

Canadian WHMIS Classification: D2B

ANSI LABELING (Z129.1):

CAUTION! MAY CAUSE SKIN AND EYE IRRITATION. HARMFUL IF INGESTED OR INHALED. Avoid contact with skin, eyes, or clothing. Do not taste or swallow. Avoid breathing dusts and particulates. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH-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.

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

08/21/00 4:29 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd., changed CAS number, Sect 2 and 15, from 10124-56-8 to 6815-31-1, added explanation of nature of polymer mixture, Sect 2, removed mol wt and chemical formula, Sect 9.

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 4:12 PM CLJ Add Shipments by Air information to Section 14, Changed contact to Sue, non-800 Chemtrec Num.

09/29/03: 1:15 PM HDF General review and up-date of entire MSDS. Up-graded Section 10 Reactivity Information. Up-date of HMIS categories. Up-date of Section 8. Up-date of toxicity data, Section 11. Up-date of Section 14.

06/22/05 10:50AM SEP Update IATA Section 14

10/22/07 3:22 PM SEP Update IATA Section 14, DOT RQ note added.

01/04/08 12:45 PM HDF Change NFPA 'Reactivity Hazard' to 'Instability Hazard'.

10/15/08 9:33 AM DLY Changed Chem One Physical Address, Section 1

12/27/2010 2:30 PM SEP Updated IATA

This is the end of MSDS # C1-141