Material Name: Tetrasodium Pyrophosphate, Anhydrous
ID: C1-158

**Section 1 - Identification**

Part Number: Technical and Food Grades; Powder
Chemical Name: Tetrasodium Pyrophosphate
Product Use: For Commercial Use, Not To Be Used As A Pesticide
Synonyms: Anhydrous tetrasodium pyrophosphate; Diphosphoric acid, tetrasodium salt; Pyrophosphoric acid, tetrasodium salt; Sodium pyrophosphate; Sodium diphosphate; Sodium phosphate; Tetrasodium diphosphate; and TSPP.

**RESTRICTIONS on USE**

NOT TO BE USED AS A PESTICIDE. THIS PRODUCT IS NOT TO BE USED IN VIOLATION OF ANY PATENTS. CHEM ONE LTD. DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR APPLICATION. IN NO EVENT SHALL CHEM ONE LTD. OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF BUSINESS PROFITS OR SPECIAL DAMAGES, EVEN IF CHEM ONE LTD. OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SO THE FOREGOING LIMITATION MAY NOT APPLY.

Manufacturer: Quimir, S.A. DE C.V.
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 +1 (703) 527-3887

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 – Hazard(s) Identification**

**GHS HAZARDS**

**Hazard Classes**
- Acute toxicity, oral
- Serious eye damage

**Signal Word:** Danger

**Pictograms:**

**Hazard Statements**

**PHYSICAL HAZARDS:** None

**HEALTH HAZARDS:**
- H30: Harmful if swallowed
- H318: Causes serious eye damage

**ENVIRONMENTAL HAZARDS:** None
Safety Data Sheet

Material Name: Tetrasodium Pyrophosphate, Anhydrous

ID: C1-158

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children
P202: Do not handle until all safety precautions have been read and understood
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear eye protection/face protection.

RESPONSE STATEMENTS:

P301+P312+P330: IF SWALLOWED: Call a POISON CENTER /doctor if you feel unwell. Rinse mouth.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

STORAGE STATEMENTS:

None

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations

Hazards not otherwise classified (HNOC):

No data available

** Section 3 - Composition / Information on Ingredients **

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-88-5</td>
<td>Tetrasodium Pyrophosphate</td>
<td>95-100</td>
</tr>
</tbody>
</table>

Synonyms: Anhydrous tetrasodium pyrophosphate; Diphosphoric acid, tetrasodium salt; Pyrophosphoric acid, tetrasodium salt; Sodium pyrophosphate; Sodium diphosphate; Sodium phosphate; Tetrasodium diphosphate; and TSPP.

** Section 4 - First Aid Measures **

Emergency Overview
Odorless white powder or granules. Causes serious eye damage. May cause irritation to skin, and respiratory tract. Decomposition of this product yields toxic fumes of phosphorus oxides, sodium oxides and phosphine. Firefighters should wear full protective equipment and clothing.

Potential Health Effects: Eyes
Tetrasodium Pyrophosphate causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Potential Health Effects: Skin
Product may cause mild to moderate irritation of the skin. Symptoms may include redness, swelling, rash, and itching.

Potential Health Effects: Ingestion
Ingestion of large amounts may cause irritation to the mouth and gastric system. Symptoms may include nausea, vomiting, abdominal pain, and diarrhea. Probable oral lethal dose (human) 0.5-5 g/kg, between 1 oz and 1 pint (or 1 lb) for 70 kg person (150 lb).

Potential Health Effects: Inhalation
Inhalation of dusts can cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath. Chronic exposures to high concentrations of dust may cause increased mucus flow in the nose and respiratory system airways. This condition usually disappears after exposure stops.

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 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  * * *

General Fire Hazards
Tetrasodium Pyrophosphate 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, acid smoke and toxic gases.

Hazardous Combustion Products
Decomposition of this product yields toxic fumes of phosphorus oxides, sodium oxides and phosphine.

Extinguishing Media
Use any media suitable for surrounding fires.

Fire Fighting Equipment/Instructions
Water spray may be used to cool containers and help prevent rupture. Firefighters should wear full protective gear and equipment.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 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. Wipe down area routinely to avoid the accumulation of dusts.

Clean-Up Procedures
Small releases can be cleaned-up wearing gloves, goggles and suitable body protection. Pre-wetting of material is recommended to prevent dust. Vacuum up the spilled material. 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. Prevent contamination of spill or clean-up rinsate to sewers or soil.

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
Flush soiled area with large amounts of water to remove any traces of product. Wear personal protective equipment. Avoid inhalation of dusts. Ventilate area.

### 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.

Storage Procedures
Store at room temperature in a dry, well-ventilated place out of direct sunlight. Keep separate from strong acids. Avoid dust build-up. Keep container tightly closed when not in use. 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). 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. Do not cut, grind, weld, or drill near this container. 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
Tetrasodium Pyrophosphate (7722-88-5)
ACGIH: 5 mg/m³ TWA
OSHA: 5 mg/m³ TWA (Vacated 1989 PEL)
NIOSH: 5 mg/m³ TWA

Engineering Controls
Ventilation must be sufficient to effectively remove and prevent buildup of dust or fumes that may be generated during handling or thermal processing. Use general ventilation and use local exhaust, where possible, 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). Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

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
Wash hands thoroughly after handling material. Do not eat, drink or smoke in work areas. Have a safety shower or eye-wash fountain available.

**Protective Clothing Pictograms:**

- Splash Goggles
- Gloves
- Protective Apron
- Dust Respirator

---

### Section 9 - Physical & Chemical Properties

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.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White</td>
</tr>
<tr>
<td>Physical State</td>
<td>Powder or granules</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0</td>
</tr>
<tr>
<td>Initial boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>and boiling range</td>
<td></td>
</tr>
<tr>
<td>Solubility (H2O)</td>
<td>6.7 g/100 ml @ 25 deg C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>0.8-0.9 g/cm³ (loose)</td>
</tr>
<tr>
<td>VOC</td>
<td>Not determined</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>pH</td>
<td>10.2 (1% solution)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>1810 deg F (988 deg C)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.45 (H2O=1)</td>
</tr>
<tr>
<td>Particle Size</td>
<td>Not determined</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>265.94</td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper Flammable Limit (UFL)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
</tbody>
</table>

### Section 10 - Chemical Stability & Reactivity Information

**Chemical Stability**
Stable under conditions of normal temperature and pressure. Slow dehydration (efflorescence) can occur in dry air. Tetrasodium Pyrophosphate is stable in alkaline aqueous solutions, but will hydrolyze rapidly in acidic conditions to orthophosphate. Tetrasodium Pyrophosphate slowly hydrolyzes to disodium phosphate in neutral aqueous solutions.

**Chemical Stability: Conditions to Avoid**
Contact with incompatible materials, high temperatures.

**Incompatibility**
Strong acids - may react violently. Strong oxidizing agents (e.g. perchlorates, peroxides). Solutions may be corrosive to aluminum, iron and other reactive metals.

**Hazardous Decomposition**
Thermal decomposition products include phosphorus oxides and sodium oxides.
**Acute and Chronic Toxicity**

**A: General Product Information**
Tetrasodium pyrophosphate is an irritant of the eyes, skin, and respiratory tract because of its alkaline, corrosive nature. Tetrasodium pyrophosphate may cause moderate eye irritation. Symptoms may include redness, tearing, and swelling of the exposed eye. Direct contact of tetrasodium pyrophosphate to the rabbit eye caused severe irritation and corneal injury. Tetrasodium Pyrophosphate may cause mild to moderate irritation of the skin. Symptoms may include redness, swelling, rash, and itching of the exposed skin. Ingestion of large amounts may cause irritation to the mouth and gastric system, and may induce metabolic acidosis and hypocalcemia. Symptoms may include nausea, vomiting, abdominal pain, and diarrhea. When administered orally to rats at 1.8% to 3% of the diet for 4 to 6 months, Tetrasodium Pyrophosphate caused kidney damage, possibly due to the deposition of calcium pyrophosphate or orthophosphate crystals. Inhalation of dusts can cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

**B: Component Analysis - LD50/LC50**
- Tetrasodium Pyrophosphate (7722-88-5)
  - LD50 (Oral-Rat) 300-4000 mg/kg; LD50 (Oral-Mouse) 2980 mg/kg; LD50 (Intraperitoneal-Rat) 59 mg/kg; Behavioral: excitement; Nutritional and Gross Metabolic: weight loss or decreased weight gain; LD50 (Intravenous-Rat) 100 mg/kg; LD50 (Intravenous-Mouse) 69 mg/kg; LD50 (Subcutaneous-Mouse) 400 mg/kg

**C: Component Analysis - LD**
- Tetrasodium Pyrophosphate (7722-88-5)
  - LD (Skin-Rabbit) > 300 mg/kg

**Carcinogenicity**

**A: General Product Information**
No information available.

**B: Component Carcinogenicity**
None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

**Epidemiology**
No information available.

**Neurotoxicity**
No information available.

**Mutagenicity**
Negative results in genotoxicity tests in vitro Paramecium species. Negative results were also obtained in tests using bacteria and yeast cells, with and without enzymatic activation.

**Teratogenicity**
Tetrasodium Pyrophosphate has caused birth defects in chickens, however, it is not considered to be a reproductive hazard in humans. Tetrasodium Pyrophosphate was fed to mice (dose up to 130 mg/kg) and rats (up to 138 mg/kg) on days 6-15 of pregnancy with no effects on pregnancy outcome.

**Other Toxicological Information**
Inorganic phosphates have been studied extensively because of their use as food additives. Very high oral doses (1% in the diet) have produced toxic effects on the kidneys and parathyroid glands.
* * * Section 12 - Ecological Information * * *

Ecotoxicity
A: General Product Information
No information available.

B: Aquatic Toxicity
No ecotoxicity data are currently available for this compound.

Environmental Fate
No information available.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions
A: General Product Information
Waste, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

B: Component Waste Numbers
No EPA Waste Numbers are applicable for this compound.

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
Shipping Name: Not applicable.
Hazard Class: Not applicable
UN/NA #: Not applicable
Packing Group: Not applicable
Required Label(s): Not applicable
RQ Quantity: Not applicable

International Air Transport Association (IATA):
For Shipments by Air transport: Not considered hazardous.

International Maritime Organization (I.M.O.) Classification
I.M.O. Classification: Not considered hazardous under IMDG/ I.M.O. regulations.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations
A: General Product Information
None.

B: Component Analysis
None of this product’s components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

C: Sara 311/312 Tier II Hazard Ratings:
Safety Data Sheet

Material Name: Tetrasodium Pyrophosphate, Anhydrous

ID: C1-158

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Fire Hazard</th>
<th>Reactivity Hazard</th>
<th>Pressure Hazard</th>
<th>Immediate Health Hazard</th>
<th>Chronic Health Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrasodium Pyrophosphate</td>
<td>7722-88-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

State Regulations

A: General Product Information
Other state regulations may apply.

B: Component Analysis - State
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>CA</th>
<th>FL</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrasodium Pyrophosphate</td>
<td>7722-88-5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Other Regulations

A: General Product Information
Not determined.

B: Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
<th>DSL</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrasodium Pyrophosphate</td>
<td>7722-88-5</td>
<td>Yes Active</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

C: Component Analysis - WHMIS IDL
The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrasodium Pyrophosphate</td>
<td>7722-88-5</td>
<td>1% item 1536 (1462)</td>
</tr>
</tbody>
</table>

*** 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 Information: Revised 08/07/98.

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

Revision Log
09/19/00 3:34 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.
08/20/01 5:10 PM CLJ Add Shipments by Air information to Section 14, Changed contact to Sue, non-800 Chemtrec Num.
03/18/21 4:26 AM HDF Checked exposure limits; overall review and up-date, add SARA 311/312 Haz Ratings.
09/30/03 9:50 PM HDF General review and up-date of entire MSDS. Up-date of HMIS categories. Up-date of Section 8. Addition of Stability information, Section 10. Up-date of toxicity data, Section 11. Up-date of Section 14.
06/22/05 2:18 PM SEP Update IATA Section 14
10/23/07 2:21 pm SEP Updated IATA Section 14
10/15/08 10:37 AM DLY Changed Chem One Physical Address, Section 1