Sodium Acid Pyrophosphate

Section 1. Product and Company identification

Product Name: Sodium Acid Pyrophosphate

Trade names: Sodium Acid Pyrophosphate; SAPP-Gr; SAPP-Pw; Hi-R-221; Hi-R-222; Hi-B-281; Hi-B-283; Hi-B-391; Hi-B-393; Hi-B-401; Hi-B-403.

Synonyms: Disodium Diphosphate; Pyrophosphoric acid, disodium salt; Disodium Dihydrogen Pyrophosphate; SAPP.

Fertilizer formula: Not applicable

Chemical formula: $Na_2H_2P_2O_7$

Material uses : Food processing-leavening agent, sequestrant, emulsifier, buffer.

Cosmetics- toothpastes, cleaners.

Industries- metal treatment, textile, water treatment, drilling mud.

Section 2. Composition/Information on Ingredients

Chemical name	CAS-No	EINECS-No	%	Classification
Sodium Acid Pyrophosphate	7758-16-9	231-835-0	100	R36/37/38

(See full text of R-phrases in chapter 16.)

Section 3. Hazards Identification

Physical State and Appearance : White powder or granular.

Emergency Overview: Irritating to eyes, respiratory system and skin.

See Section 11 for Toxicological Data

Section 4. First - Aid Measures

Symptoms: Causes irritation to the respiratory tract. Symptoms may include coughing and sneezing. Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Causes irritation to skin and eyes. Symptoms include dryness or cracking.

Skin contact: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Cold water may be used. Get medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Eyes contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation develops or persists or if visual changes occur.

Ingestion: If victim conscious and alert, give 2-3 glasses of water to drink DO NOT INDUCE VOMITING. Do not give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Inhalation: If respiratory irritation or distress occurs, remove victim to fresh air. Get medical attention if respiratory irritation or distress continues.

Notes to Physician: No specific antidote, medical staff contacts Poisons Information Center. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Sodium phosphates have a hypothetical risk of hypernatremia and hypocalcamia. Sodium, phosphate and calcium levels should be monitored.

Section 5: Fire-Fighting Measures

Flammability of the product: Not combustible.

Hazardous Decomposition Materials (Under Fire) Conditions: Not combustible Thermal decomposition products are dependent on temperature. Oxides of sodium, oxides of phosphorous.

Fire Fighting Media and Instructions: Use extinguishing media suitable for surrounding materials.

Protective Clothing (Fire): Fire Fighting should wear positive self-contained breathing apparatus (SCBA) and full turnout gear.

Special Remarks on Explosion hazard: Non-explosive.

Section 6: Accidental Release Measures

Wear protective clothing . Ventilate area of spill.

Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

Prevent the product from spreading into the environment.

Section 7: Handling and Storage

Keep away from incompatible materials (see section 10).

Safety phrases

Avoid contact with skin and eyes.

Avoid breathing dust.
Keep container tightly closed.
Use only in well ventilated area.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of insufficient ventilation, wear suitable respiratory equipment.

Storage:
Stored in an area that is cool, dry, well ventilated, isolated from strong bases and strong oxidizing agents.

Section 8: Exposure Control / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Eyes: Safety glasses
Body: Long-sleeved clothing to minimize skin contact
Respiratory: Dust respirator. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.
Hands: Gloves.
Feet: Not applicable. (or working shoes).

Personal Protection in case of Large Spill: Safety glasses. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product

Exposure Guidelines: Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements.

Threshold values: ACGIH-TLV 10 mg/m^3 (TWA)*
ACGIH-TLV 3 mg/m^3 (TWA)**
OSHA-PEL 15 mg/m^3 (TWA)***
OSHA-PEL 5 mg/m^3 TWA)**

*nuisance dust - inhalable particulate
**nuisance dust - respirable particulate
*** total dust

Section 9: Physical and Chemical Properties

General information:
Physical state: Solid (powder or granular)
Color: White
Odor: Odorless
Odor threshold: Odorless
Molecular weight: 221.94 g/mol
pH: 3.5-5.0 (Conc.(%w/w): 1) [Acidic]
Boiling point : Not applicable
Flash point: Not applicable
Flammability: Not applicable
Explosive properties: Not explosive
Oxidizing properties: Not oxidizer
Vapor pressure: <0.001 kPa (<0.01 mm Hg) at 20°C (68°F)- Not Volatile
Relative Density: 2.3 g/cm^3
Water solubility: Soluble in water
Octanol/water partition coefficient: <1 the product is more soluble in water
Viscosity: Not Viscous
Vapor density: Not Volatile
Evaporation rate (butyl acetate=1): Not Volatile
VOC: Not an organic compounds
Apparent (Bulk) Density: 0.7-1.0 g/cm^3
Decomposition range: > 180°C (356°F)- release of water of constitution, becomes polyphosphates
Melting range : > 630°C (1166°F)

Section 10: Stability and Reactivity

Stability and Reactivity: The product is stable under normal handling and storage conditions described in Section 7.

Conditions to avoid: Extreme humidity, excess heat.

Incompatibility with various substances: Strong oxidizing agents, strong bases, moisture.

Hazardous Decomposition products: Under fire- oxides of phosphorous, oxides of sodium.

Hazardous polymerization: Will not occur.

Section 11: Toxicological Information

Potential Acute Health Effects on human:

Eyes: Dusts have a dehydrating effect and may cause irritation at high concentration.
Skin: Dusts may cause mild skin irritation. Prolonged contact with the dry powder may cause drying or chapping of the skin.
Inhalation: Dusts may cause upper respiratory tract irritation.
Ingestion: Ingestion of large quantities may cause gastrointestinal irritation, vomiting and diarrhea.

Potential Chronic Health Effects on human:

Carcinogenic Effects: This product does not contain any substances that are considered by IARC, NTP, OSHA, EU or ACGIH to be "probable" or "suspected" human carcinogens.
Mutagenic Effects: Not applicable.
Teratogenic Effects: Not applicable.

Medical Conditions Possibly Aggravated by Overexposure: Inhalation of product may aggravate existing chronic respiratory desease.

Toxicity Data:

LD_{50} (oral, mouse) 2650 mg/kg

Special Remarks on Toxicity to animals: Very low toxicity for humans or animals.

Section 12: Ecological Information

Biodegradability: No applicable, since inorganic substance.
Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc. : Absent.
Degradability in sewage works: Slow hydrolysis to orthophosphate form.
Mobility: Soluble in water.
Persistence: Not applicable, since inorganic substance.
Substances, which contribute to eutrophication: Phosphates, 64% as P_2O_5

13: Disposal Considerations

Waste Information: Waste must disposed of in accordance with federal, state and local environmental control regulations.
EPA Hazardous Waste: NO

14: Transport Information

Regulatory Information	UN number	Proper shipping name	class	Packing group	Label	Additional information
DOT Classification	NOT regulated	-	-	-		-
IMDG class	NOT regulated	-	-	-		-
IATA-DGR class	NOT regulated	-	-	-		-

15: Regulatory Information

Labeling in accordance with EC directives: Xi

R-phrases:
R36/37/38 Irritating to eyes, respiratory system and skin.
S-phrases:
S24/25: Avoid contact with skin and eyes.
S22: Avoid breathing dust.
S07: Keep container tightly closed.
S51: Use only in well ventilated area.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S38: In case of insufficient ventilation, wear suitable respiratory equipment.

16: Other Information

Full text of R-phrases with No. appearing in section 2:
R36/37/38 Irritating to eyes, respiratory system and skin.

National Fire Protection Association Hazard Ratings- NFPA (R):

1 Health Hazard Rating - Slight
0 Flammability Rating - Minimal
0 Instability Rating - Minimal

National Paint & Coating Hazardous Materials Identification System – HMIS (R):

1 Health Hazard Rating - Slight
0 Flammability Rating - Minimal
0 Instability Rating - Minimal

Hazard Material Information System (U.S.A.):

Health	1
Fire Hazard	0
Reactivity	0
Personal Protection	C

Key Legend Information:
ACGIH- American Conference of Govermental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
TLV- Threshold Limit Value
PEL- Permissible Exposure Limit
TWA- Time Weighted Average
STEL- Short Time Exposure Limit
NTP- National Toxicology program
IARC- International Agency for Research on Cancer
ND- Not Determined
N/A- Not available
R-phrases- Risk phrases
S-phrases- Safety phrases