SAFETY DATA SHEET	SILVER FERN CHEMICAL INC
SAPP	 Date of issue: 25 June 2009 Date of revision: 6 May 2015

Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP)

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: SAPP
Trade names: Sodium Acid Pyrophosphate; SAPP-Gr; SAPP-Pw; R-221; R-222; B-281; B-283; B-391; B-393; B-401; B-403.
Synonyms: Disodium Diphosphate; Pyrophosphoric acid, disodium salt; Disodium Dihydrogen! Pyrophosphate; SAPP; Sodium pyrophosphate;
Chemical formula: H4O7P2.2Na
Fertilizer formula: Not applicable
Product type: Solid (powder or granular)
CAS number: 7758-16-9
EC number: 231-835-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation: Food processing- leavening agent, sequestrant, emulsifier, buffer. Cosmetics- toothpastes, cleaners. Industries- metal treatment, textile, water treatment, drilling mud.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Distributor:
Silver Fern Chemical, Inc.
2226 Queen Anne Ave North
Suite C
Seattle, WA 98109 USA
1-866-282-3384

Website: www.silverfernchemical.com

E-mail address: info@silverfernchemical.com

1.4 Emergency telephone number

Emergency telephone number: INFO-TRAC +1-800-535-5053;
Outside USA & Canada +1-352-323-3500

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance to Regulation(EC) No. 1272/2008 (CLP/GHS)

Ingredient name	CLP/GHS Classification
Sodium Acid Pyrophosphate	Eye Irrit.2 H319

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC

Ingredient name	EU Classification
Sodium Acid Pyrophosphate	Xi; R36

See section 16 for full text of the R phrases or H statements declared above.
See section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms:

Signal word: Warning

Hazard statements:
H319: Causes serious eye irritation.

Precautionary Statements:
P264: Wash thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P337+313: Get medical advice/attention.

2.3 Other hazard

Substance meets the criteria for BBT according to Regulation (EC) No. 1907/2006, Annex XIII:
Not applicable
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:
Not applicable
Other hazard which do not result in classification:
Not applicable

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:

Prodact/ Ingredient name	Identifiers	%	EU Classification	CLP/GHS Classification

Sodium Acid Pyrophosphate	CAS number: 7758-16-9 EC number: 231-835-0 REACH: 01-2119489793-19	100	Xi; R36	Eye Irrit.2; H319

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

Eyes contact: In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.

Skin contact: Avoid prolonged or repeated contact with skin. After handling, always wash hands thoroughly with soap and water. Get medical attention if irritation develops.

Inhalation: Avoid breathing dust. If inhaled, remove to fresh air.

Ingestion: If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Dusts may cause upper respiratory tract irritation. Ingestion of large quantities may cause gastrointestinal irritation. Dusts may cause mild skin irritation. Dusts have a dehydrating effect and may cause irritation at high concentration

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote, contact 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.

Section 5: Fire-Fighting Measures

5.1 Extinguishing media

Suitable: Use an extinguishing agent suitable for surrounding fire.
Not suitable: N/A

5.2 Special hazards arising from the substance or mixture

Non-combustible.
Hazardous thermal decomposition products: Nitrogen oxides, metal oxide/oxides.

5.3 Advice for firefighters

Special protective equipment for fire fighters: Fire-fighters should wear appropriate protective equipment and self contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark: Move containers from fire area if possible to do so without risk.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective clothing. Ventilate area of spill. Avoid contact with skin and eyes.

6.2 Environmental precautions
Do not let this chemical enter the environment. Avoid contact of spilt material and runoff with soil and surface waterways.

6.3 Methods and materials for containment and cleaning up
Small spill: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.
Large spill: As for small spill

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.

6.4 Reference to other sections
See Sections 1 for emergency contact information.
See Section 8 for information on a appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7: Handling and Storage

7.1 Precautions for safe handling
Handling: Minimize dust generation and accumulation. Do not breathe dust. Avoid contact with skin and eyes. Wash thoroughly after handling.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information measures.

7.2 Conditions for safe storage, including any incompatibilities
Storage: Keep containers tightly closed, in a dry, cool and well ventilated place. Protect from humidity. Do not store together with strong bases and strong oxidizing agents. Keep away from heat, sparks and open flame. Use original container.

7.3 **Specific end use(s):** N/A

Section 8: Exposure Control / Personal Protection

8.1 Control parameters

Occupational exposure limit values:

Ingredient name	Occupational exposure

	limits
Sodium Acid Pyrophosphate	ACGIH-TLV 10 mg/m3 (TWA), nuisance dust - inhalable particulate ACGIH-TLV 3 mg/m3 (TWA), nuisance dust - respirable particulate OSHA-PEL 15 mg/m3 (TWA), total dust OSHA-PEL 5 mg/m3 (TWA), nuisance dust - respirable particulate

Deraived effects levels:
Recommended occupational and consumer exposure limit values (following from the preformed CSA):

Exposure pattern	Derived No Effect Level (DNEL)	
	Workers	**General population**
Oral	N/A	N/A
Dermal	N/A	N/A
Inhalation	2.79 mg/m³	0.68 mg/m³

8.2 Exposure controls
Enginnering Measures
Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Person Protective measures
Respiratory protection: Disposable particulate mask. Be sure to use an approved/certified or equivalent equipment.Wear appropriate respirator when ventilation is inadequate.
Hand protection: Wear protective disposable vinyl gloves to prevent skin exposure.
Eye protection: Wear protective safety glasses.
Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties
Appearance: Solid (powder or crystalline), White
Odour: Odourless
Odour threshold: Odourless
pH: >=3.8 - <=3.9
Melting point/Freezing point: 450°C
Initial boiling point/boiling range: Not applicable
Flash point: Not applicable

Evaporation rate: Not volatile (butyl acetate=1)
Flammability: Not flammable
Upper/lower flammability or explosive limits: N/A
Vapor pressure: <0.001 kPa (<0.01 mm Hg) at 20°C (68°F)- Not Volatile
Vapor density: Not volatile
Relative Density: 2.63 g/cm^3 at 22.5°C
Solubility(ies): Water solubility- 170 g/L at 20°C
Partition coefficient Octanol/Water: <1, the product is more soluble in water
Auto-ignition temperature: Not applicable
Decomposition temperature: 220°C
Viscosity: Not viscous
Explosive properties: Not explosive
Oxidizing properties: Not oxidizer

9.2 **Other information:**
Molecular weight: 222-224 g/mol
Specific gravity: 1.77 at 3.98°C
VOC: Not an organic compounds
Apparent (Bulk) Density: 0.7-1.0 g/cm^3
Mass median diameter: >4.61 – 4.87 µm

Section 10: Stability and Reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability
The product is stable under normal handling and storage conditions described in Section 7.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
Extreme humidity, excess heat.

10.5 Incompatible materials
Strong oxidizing agents, strong bases and moisture.

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

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

Product/ingredient name	Test	Species	Dose

Sodium Acid Pyrophosphate	LD50, Oral LD50, Oral LC50, Inhalation LD50, Dermal	Rat Rat Rat Rat	3600 mg/kg 1.8 g/kg (male) > 0.58 mg/L air, 4h >2000 mg/kg

Skin corrosion/irritation: Not irritating.

Serious eye damage/irritation: Irritating to eyes.

Respiratory or skin sensitization: Not sensitizing.

Germ cell mutagenicity:
Negative In vitro mutagenicity and genotoxicity evidence suggests a low potential for germ cell mutagenicity. The following studies have been conducted on Na, and K pyrophosphates: Bacterial Reverse Mutation Assay; AMES (OECD 471) and In vitro cytogenicity study in mammalian cells (OECD 473). Whilst these studies look specifically at the effects in somatic cell lines the results are still relevant to the potential of the test material to induce mutagenicity in germ cell lines.
Negative in vivo genotoxicity data.

Carcinogenicity: This product does not contain any substances that are considered by IARC, NTP, OSHA, EU or ACGIH to be “probable” or “suspected” human carcinogens.

Reproductive toxicity:
Four key studies (One study report, four different test animals) are available to assess the teratogenic potential of disodium dihydrogenpyrophosphate (Morgariedge, 1973) in mice, rats, hamsters and rabbits. This study is considered to be adequate to fulfil this endpoint. In addition supporting data on the analogous substance tetrasodium pyrophosphate is provided to support a lack of developmental toxicity potential for sodium and potassium pyrophosphates.

Specific target organ toxicity (single exposure): N/A

Specific target organ toxicity (repeated exposure): N/A

Aspiration hazard: N/A

Other effects
Inhalation: Dusts may cause upper respiratory tract irritation. May cause coughing and sneezing. Inhalation of product may aggravate existing chronic respiratory disease.
Ingestion: Ingestion of large quantities may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Skin contact: Dusts may cause mild skin irritation. May cause dryness or cracking. Prolonged contact with the dry powder may cause drying or chapping of the skin.
Eyes contact: Dusts have a dehydrating effect and may cause irritation at high concentration.

Section 12: Ecological Information

12.1 Toxicity

Substance name	Toxicity to fish	Toxicity to crustaceans	Toxicity to algae
Sodium acidpyrophosphate	LC50 (96 h): > 100 mg/L	EC50 (48 h): > 100 mg/L)	EC50 (72 h): > 100 mg/L

Predicted effect concentrations:

Product/ Ingredient name	Type	Compartment Detail	Value	Method Detail
Sodium acidpyrophosphate	PNEC	Fresh water	0.05 mg/l	Assessment Factors
	PNEC	Marine	0.005 mg/l	Assessment Factors

12.2 Persistence and Degradability
Not applicable, since inorganic substance.

12.3 Bioaccumulative potential
Disodium dihydrogenpyrophosphate is hydrolysed to orthophosphate in aqueous and biological systems. The degradation products of disodium dihydrogenpyrophosphate are essential nutrients (food elements) for plants, and stimulate the growth of water plants (macrophytes) and/or algae (phytoplankton) and are ubiquitous in the environment. The potential for bioaccumulation is therefore considered to be minimal.

12.4 Mobility in soil
Soil/water partition coefficient (Koc) : N/A

Mobility: Soluble in water.

12.5 Results of PBT and vPvB assessment
Not applicable

12.6 Other adverse effects
Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: Absent

Substances, which contribute to eutrophication: Phosphates, 54.3-61.6% as P_2O_5

Section 13: Disposal Considerations

13.1 Waste treatment methods
Provisions relating to waste: Directive 2008/98/EC on waste, of 19 November, 2008: Depending on branch of industry and production process, also other EURAL codes may be applicable
06 03 14: solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Product

Methods of disposal: Waste must be disposed of in accordance with federal, state and local

environmental control regulations.

Hazardous waste: N/A

Packing
Empty containers should be taken for local recycling, recovery or waste disposal.

Section 14: Transport Information

14.1 UN number
ADR/RID: IMDG: - IATA: -

14.2 Proper shipping name

DOT: Not regulated

ADR/RID: Not regulated

IMDG: Not regulated

IATA: Not regulated

14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

14.4 Packing group
ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazard
Marine Pollutant: Not known

14.6 Special precautions for user Not available

14.7 Transport to bulk according to Annex II of MARPOL 79/78 and the IBC Code
Not available

Section 15: Regulatory Information

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use
EU Regulation(EC) No.1907/2006 (REACH), No 1272/2008 (CLP)

15.2 Chemical safety assessment
In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance.

15.3 Other information
U.S. - FDA - Food Additives Generally Recognized as Safe (GRAS) • Sodium Acid Pyrophosphate 7758-16-9 21 CFR 182.1087
U.S. – FDA - Total Food Additives List Sourced from EAFUS • Sodium Acid Pyrophosphate 7758-16-9 133.169, 133.173, 133.179, 137.180, 161.190, 182.1087

U.S. - USDA - National Organic Program - Substances Allowed as Ingredients in or on Organic Processed Products • Sodium Acid Pyrophosphate 7758-16-9 (for use only as a leavening agent)

Section 16: Other Information

Full text of R-phrases referred to in section 3:
Xi-irritant
R36: Irritating to eyes

Full text of Hazards Statements referred to in sections 3:
Eye Irrit.- Serious eye irritation
H319: Causes serious eye irritation.

Training advice: Before using/handling the product one must read carefully present SDS.

Recommended restriction: N/A

Key Legend Information:
ACGIH- American Conference of Governmental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
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

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