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NOTICE : Important information

Please note that this generic exposure scenario is by no means intended to be mandatory, prescriptive or exhaustive. The content of this document is intended for guidance only and whilst the information on uses covered is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk. Ultimately, it is for each company to assess the appropriateness and completeness of the information on a case-by case basis and decide what elements they wish to adopt or to add. In particular, the preparation and content of the e-SDS is the legal responsibility of each company for its own products placed on the market, and the user should verify, complete, correct or adapt this generic document appropriately.

No representations or warranties are made with regards to its completeness or accuracy, in particular regarding the list of uses that are covered, and no liability will be accepted by [the consortium members] for damages of any nature whatsoever resulting from the use of or reliance on the information.

The consortium members acknowledge that any activities carried out under REACH have to be carried out in full compliance with EU competition law, in particular but not limited to Articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU) as well as any applicable national laws.

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Tetrasodium pyrophosphate

EINECS Number: 231-767-1

CAS Number: 7722-88-5

REACH Registration number: [to be filled in by company]

Other identifiers: TSPP

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

Industrial / professional uses:

- Production of tetrasodium pyrophosphate
- Formulation of mixtures containing TSPP
- Formulation of materials containing TSPP
- Industrial use of washing and cleaning products
- Industrial use of binding agent in ceramic materials and in ceramics, cement and plasters
- Industrial use in metal surface treatment
- Industrial use in metal-working fluids, lubricants, greases, heat transfer and hydraulic fluids
- Industrial use in dyes and auxiliary chemicals for textiles and leather
- Industrial use as an additive/pigment/auxiliary in plastics, resins, paints, coatings, mastics and inks
- Industrial use of TSPP as an intermediate
- Industrial use in water and wastewater treatment
- Industrial use of oil well and other drilling fluid applications, liquefying earths, muds, clays
- Professional use of washing and cleaning products
- Professional use of binding agent in ceramic materials and in ceramics, cement and plasters
- Professional use in metal surface treatment
- Professional use in metal-working fluids, lubricants, greases, heat transfer and hydraulic fluids
- Professional use in dyes and auxiliary chemicals for textiles and leather
- Professional use as an additive/pigment/auxiliary in plastics, resins, paints, coatings, mastics and inks
- Professional use as a laboratory chemical
- Professional use in water and wastewater treatment
- Professional use as a stabiliser for toothpastes, cosmetics and other cosmetic uses
- Professional use of horticulture products containing TSPP

Consumer uses:

- Consumer use of washing and cleaning products
- Consumer use as a binding agent in ceramic materials and in ceramics, cement and plasters
- Consumer use of paints, varnishes, coatings, mastics and ink products
- Consumer use as stabiliser for toothpastes, cosmetics and other cosmetic uses
- Consumer use of horticulture products containing TSPP

No known uses advised against.

1.3 Details of the supplier of the safety data sheet:

[Insert relevant details including contact name, address, phone number, email here]

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1.4 Emergency telephone number:

[Insert suitable emergency number and hours of operation]

SECTION 2. Hazards identification

2.1 Classification of the substance

2.1.1 According to Regulation (EC) No. 1272/2008 (EU CLP):

Acute toxicity (oral) 4, H302: Harmful if swallowed.
Eye Damage 1, H318: Causes serious eye damage

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 (EU CLP):

Name: Tetrasodium pyrophosphate
Index Number: Not applicable
CAS Number: 7722-88-5



Signal word: Danger

Hazard Statements:

H302: Harmful if swallowed.
H318: Causes serious eye damage.

Precautionary Statements:

Prevention:

P264: Wash ... thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.

Response:

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330: Rinse mouth.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

NOTE: Information in Section 2.2 MUST be consistent with the information provided on the supplier's labels. The above is a selection of 6 statements. Other possibilities exists:

P310: IF IN EYES: Immediately call a POISON CENTER or doctor/physician

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P501: Dipose of contents/container to...

2.3 Other hazards

The material is not considered to be PBT or vPvB.

SECTION 3. Composition / information on ingredients

3.1 Substance:

Name	EC Number	CAS Number	Typical concentration	Concentration Range
Tetrasodium pyrophosphate	231-767-1	7722-88-5	>90% [Taken from SIP - specific company to update where necessary]	[to be provided by company]

Registration Number (if available): [specific to each registrant – insert number here]

EC name: tetrasodium pyrophosphate

Identification of hazardous impurities (where applicable):

All impurities > 1% are other inorganic phosphates or other related inorganic substances, similar to the Registered substance, and which do not significantly affect its toxicological and ecotoxicological properties

All hazardous impurities are < 0.1%

NOTE: The above information on impurities is company specific therefore suppliers to update where necessary and in line with the data that is provided in their joint registration dossier Section 1.2.

SECTION 4. First aid measures

4.1 Description of first aid measures

Inhalation

In case of exposure by inhalation, provide fresh air.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Skin Contact

In case of contact with skin, rinse with plenty of water, remove contaminated clothing.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

Tetrasodium pyrophosphate causes eye damage, the substance is also acutely toxic via the oral route. No delayed effects are noted.

4.3 Indication of any immediate medical attention and special treatment needed

No specific information available.

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SECTION 5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Tetrasodium pyrophosphate is not flammable. Use fire fighting measures that suit the environment; CO₂, extinguishing powder or water jet. Fight larger fires with foam.

Inappropriate extinguishing media:

Not applicable.

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for fire-fighters

In cases where dust particles of tetrasodium pyrophosphate may be present respiratory ventilation is recommended. Wear appropriate eye protection. See Section 8.2.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes.. Use personal protection equipment.

6.2 Environmental precautions

Do not allow concentrated solutions to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up

Shovel up material and recycle if possible. Dispose of contaminated material according to the waste disposal recommendations.

6.4 Reference to other sections

Refer to Section 8 for suitable PPE.

Refer to Section 13 for disposal considerations.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Technical measures: sufficient ventilation and local suction is required in accordance with the details in the annex to the SDS.

Do not eat, smoke or drink.

7.2 Conditions for safe storage, including any incompatibilities

Tetrasodium pyrophosphate is to be transported and stored in cool, dry conditions and in the original packaging.

7.3 Specific end use(s)

See annex for details of end uses covered in the exposure scenarios and CSR. The exposure scenarios detailed in the annex represent a worst case for exposure to humans and the environment.

SECTION 8. Exposure controls / personal protection

8.1 Control parameters

Workplace exposure limits: 8-hr TWA WEL of 5 mg/m³ (EH40/2005 Workplace Exposure Limits, HSE)

[please check occupational limits for the country you supply to and insert limit here if available]

DNELs (worker):

Exposure route	Exposure pattern	DNEL (workers)
Inhalation	Acute systemic effects	As no acute toxicity hazard has identified, there is no requirement to derive acute DNELs. Therefore only long term DNELs have been derived.
	Long term systemic	17.63 mg/m ³
Dermal	Acute systemic effects	As no acute toxicity hazard has identified, there is no requirement to derive acute DNELs. Therefore only long term DNELs have been derived.
	Long term systemic	As the substance to be registered is an inorganic solid, absorption through the skin is not an appropriate route of exposure. Dermal exposure will not result in systemic toxicity and therefore it is not considered to be appropriate to calculate a dermal DNEL.

No DNELs can be derived for local effects as no dose-response relationship can be identified in any of the studies available.

DNELs (general population):

Exposure route	Exposure pattern	DNEL (general population)
Inhalation	Acute systemic effects	As no acute toxicity hazard has identified, there is no requirement to derive acute DNELs. Therefore only long term DNELs have been derived.
	Long term systemic	4.35 mg/m ³
Oral	Acute systemic effects	Exposure based waiving: The derivation of an acute oral DNEL is not considered to be appropriate as the potential acute hazard is not relevant in the context of the use patterns of tetrasodium pyrophosphate. The hazard via the oral route has been accounted for in the derivation of a MTDI (see long-term oral DNEL, systemic effects).
	Long term systemic	Consumer uses of inorganic phosphates (with Na ⁺ , K ⁺ , Ca ²⁺ , Mg ²⁺ and Al ³⁺ cations), besides food and water, do not contribute noticeably to the oral intake of phosphates. Oral intake is predominately via food and water in the form of food additives or similar or from natural sources. It is therefore considered appropriate to use the Maximum tolerable daily intake (MTDI) value of 70 mg/kg bw /day of phosphorus as calculated by the Joint FAO/WHO Expert Committee on Food Additives (JEFCA) as any toxicity effects noted via the oral

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		route are not attributable to the cation but are as a result of high doses of phosphates
Dermal	Acute systemic effects	As no acute toxicity hazard has identified, there is no requirement to derive acute DNELs. Therefore only long term DNELs have been derived.
	Long term systemic	As the substance to be registered is an inorganic solid, absorption through the skin is not an appropriate route of exposure. Dermal exposure will not result in systemic toxicity and therefore it is not considered to be appropriate to calculate a dermal DNEL.

No DNEL can be derived for local effects as no dose-response relationship can be identified in any of the studies available.

PNECs:

No PNECS are calculated as no adverse effects on the environment were noted.

8.2 Exposure controls

Appropriate engineering controls: Ensure work area is well ventilated or exhausted (where appropriate and in line with the exposure scenarios). Provide eye wash station.

Respiratory protection: See annex for details of processes requiring respiratory protection. In case of insufficient ventilation, wear suitable respiratory device such as EN141 or EN405, Type A.

Skin protection: Laboratory coat or overalls and plastic or rubber boots. Store protective clothing separately.

Eye protection: Tightly sealed chemical safety goggles (compliant with EN 166:2001)

Hand protection: Protective gloves: In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).

Layer thickness of gloves at least: 0.4 mm

In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).

Layer thickness of gloves at least: 0.7 mm

. Material of gloves Butyl rubber, BR, Fluorocarbon rubber (Viton), Nitrile rubber, NBR, Natural rubber, NR, Chloroprene rubber, CR, Neoprene gloves

Environmental controls: Refer to Sections 6, 7, 12 and 13 of the SDS.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value	Method
Appearance; including colour and physical state	Solid, white granules	Observed
Odour	Odourless	Observed
Odour threshold	Not available	
pH	pH 9.8 – 9.9	As measured in the water solubility study (EU Method A.6)

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Melting point/freezing point	>800°C	In accordance with Annex XI, Section 1.2. of Regulation (EC) No. 1907/2006 (REACH) a weight of evidence approach has been used to fulfil the endpoint 'Melting Point'.
Initial boiling point and boiling range	Not determined	According to Regulation No. 1907/2006, a study for boiling point is not required for solids which melt above 300°C
Flash point	Not determined	According to Regulation No. 1907/2006, the flash point does not need to be assessed for inorganic chemicals.
Evaporation rate	Not available	
Flammability (Solid, gas)	Not flammable	Based on prediction and use based observations
Upper/lower flammability or explosive limits	Not applicable	
Vapour pressure	Not determined	According to Regulation No. 1907/2006, a study for the vapour pressure need not be conducted if the melting point is above 300°C. For the purpose of environmental fate modelling, the key value for chemical safety assessment has been set at 0.000001 Pa as recommended by the ECHA Guidance document Appendix R.7.13-2: Environmental risk assessment for metals and metal compounds (July 2008).
Vapour density (Air = 1)	Not applicable	
Relative density	2.62 at 21.0°C	EU Method A.3.
Solubility(ies)	Water: 58.5 g/L at 20.0 ± 0.5°C (very soluble)	EU Method A.6 A temperature range 10 to 30°C had significant influence on the observed solubility of the test material. No effect of pH was noted.
Partition coefficient: N-octanol/water	Not determined	According to Regulation No. 1907/2006, the partition coefficient n-octanol/water does not need to be assessed for inorganic chemicals.
Auto-ignition temperature	No auto-ignition anticipated	Based on prediction
Decomposition temperature	Not applicable	
Viscosity	Not determined	Testing not technically possible: According to the relevant OECD guideline (OECD 114) a study cannot be conducted on a substance that is a solid at room temperature.
Explosive properties	Not considered to be explosive	Prediction – in accordance with EU Method A14
Oxidising properties	No oxidising properties	Prediction – in accordance with EU Method A17

9.2 Other information

Testing has been performed on tetrasodium pyrophosphate, in accordance with Annex X of REACH.

SECTION 10. Stability and reactivity

10.1 Reactivity

Non-reactive under recommended storage and handling conditions.

10.2 Chemical stability

Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

None identified.

10.5 Incompatible materials

None identified.

10.6 Hazardous decomposition products

None identified.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Toxicological endpoint	Value (including relevance to CLP criteria)	Method
Acute toxicity		
Oral	LD ₅₀ = >300 <2,000 mg/kg bw/day (1624 mg/kg bw/day). Acute tox, category 4.	Rat, OECD 420 (confirmed by OECD 425). Klimisch reliability 1.
Dermal	LD ₅₀ = 2000 mg/kg bw/day	Rabbit, EPA Fed. Reg. 43:163, 37336-37402. Klimisch reliability 2 – data is derived from structural analogue via read across.
Inhalation	LC ₅₀ = > 0.58 mg/L	Rat, EPA OPP 81-3, OECD 403, EU Method B.2. . Klimisch reliability 2 – data is derived from structural analogue via read-across.
Skin corrosion/irritation	Not irritating to skin	Rabbit, equivalent to OECD 404. Klimisch reliability 2
Serious eye/damage/irritation	Eye damage – category 1.	Acute eye irritation/corrosion (in vivo), OECD 405. Klimisch reliability 1
Respiratory or skin sensitisation	None - sensitiser	Mouse, OECD 429, EU Method B.42. Klimisch reliability 2 – read across from analogous substance. No data to suggest substance is a respiratory sensitiser.
Germ cell mutagenicity	Not considered to be mutagenic.	Tetrasodium pyrophosphate is not expected to produce germ cell genotoxic damage.

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Carcinogenicity	Not considered to be a carcinogen.	Not required for REACH. No data to suggest likelihood of carcinogenicity.
Reproductive toxicity	Not considered to be a reproductive toxicant	
STOT-single exposure – all routes	No STOT SE observed via the oral, dermal or inhalation route	
STOT-Repeated exposure - all routes	Not considered to induce specific organ toxicity after repeated exposure via oral route.	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents), Reliability 2.
Aspiration hazard	No aspiration hazard identified	Not applicable.

The substance has been assessed with regards to the data requirements of Annex X of REACH.

SECTION 12. Ecological information

12.1 Toxicity

Toxicological endpoint	Value (including relevance to CLP criteria)	Species, Method
Acute fish toxicity	96 hr LC ₅₀ = > 100 mg/L 96 hr NOEC = 100 mg/L	Rainbow trout, OECD 203, EU Method C.1. Conducted on analogous substance, reliability 2.
Acute <i>Daphnia</i> toxicity	48 hr EC ₅₀ = > 100 mg/L 48 hr NOEC = >100 mg/L	<i>Daphnia magna</i> , OECD 202, EU Method C.2. Conducted on analogous substance, reliability 2.
Algal growth inhibition	72 hr EC ₅₀ = > 100 mg/L 72 hr NOEC = >100 mg/L Basis for effect: growth rate	<i>Desmodesmus subspicatus</i> (algae), OECD 201, EU Method C.3. Conducted on analogous substance, reliability 2.
Activated Sludge Respiration	3 hr EC ₅₀ = > 1000 mg/L 3 hr NOEC = 1000 mg/L	Activated sludge of a predominantly domestic sewage, OECD 209, EU Method C.11, EPA OPPTS 850.6800. Conducted on analogous substance, reliability 2.

The substance has been assessed with regards to the data requirements of Annex X of REACH

12.2 Persistence and degradability

Tetrasodium pyrophosphate is an inorganic substance, biodegradation studies are not applicable. No further testing is deemed to be necessary.

12.3 Bioaccumulative potential

Tetrasodium pyrophosphate is hydrolysed to orthophosphate and sodium ions in aqueous and biological systems. The degradation products of tetrasodium pyrophosphate 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

No data available:

A batch equilibrium study according to OECD Guideline 106 was deemed to be not applicable to Tetrasodium pyrophosphate for the following reasons:

Firstly, analysis of the test material may not be possible due to interference from the soil extracts that may leach into the aqueous media during the test. This would prevent quantification of the test material.

In addition, the mobility of the test item would be dependent on the anion exchange capacity of the soils as the main component of the test material is an anion. This absorption relationship would not be anticipated to correlate with the organic carbon content of the soils and is considered to be beyond the scope of the OECD 106 method.

12.5 Results of PBT and vPvB assessment

According to the Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.11: PBT Assessment, the PBT and vPvB criteria of Annex XIII to the regulation do not apply to inorganic substances. Therefore tetrasodium pyrophosphate is not considered to require any further assessment of PBT properties.

12.6 Other adverse effects

No sediment or terrestrial toxicity data exists. Substance is not considered to be hazardous to sediment dwelling or terrestrial organisms. According to the criteria of the European classification and labelling system, the substance does not require classification as hazardous for the environment

SECTION 13. Disposal considerations

13.1 Waste treatment methods

Disposal recommendations are made based on the material as supplied. Disposal must be in accordance with current applicable laws and regulations.

Disposal of substance: Dispose of in accordance with national and local regulations for special waste via an appropriately licensed waste contractor. Do not discharge to drains or STP.

Disposal of packaging: Empty containers and clean out appropriately before reuse or disposal. Packaging may be recycled if thoroughly cleaned. Packaging that cannot be cleaned should be disposed of according to national and local regulations for special waste via an appropriately licensed waste contractor.

Regulatory disposal information:

European waste codes: Waste producers need to assess the process used when generating the waste and its contaminants in order to assign the most appropriate waste disposal code(s).

Recommended code: European waste catalogue 16 03 03 inorganic wastes containing dangerous substances

SECTION 14. Transport information

Transport classifications (ADR/RID/IMDG/IATA) are not defined in the REACH Registration Dossier for the substance. The information provided here is therefore not derived from this Dossier and is based on other information available to the Consortium Members. The Transport classifications (ADR/RID/IMDG/IATA) provided here are indicative and based on the data in the REACH dossier for the pure substance only and

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may not be applicable for solutions or other preparations. Please seek advice from your Dangerous Good Safety Advisor.

According to information available: UN transport classification: Not Classified (for pure substance as solid and solution in water)

14.1 UN number			
	LAND (ADR/RID)	SEA (IMDG)	AIR (IATA)
14.2 UN proper shipping name			
14.3 Transport hazard class(es)			
Labels			
14.4 Packing group			
14.5 Environmental hazards			
14.6 Special precautions for user			
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code			

Other Information:

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

[COMPANY TO INCLUDE ANY INFORMATION RELEVANT TO THE COUNTRY OF PRODUCT AND/OR SUPPLY]

This safety data sheet is compliant with Regulation (EC) No 1907/2006 (REACH) (including the amendment, Regulation (EU) No 453/2010 and Regulation (EC) No. 1272/2008 (EU CLP).

15.2 Chemical Safety Assessment.

A Chemical Safety Assessment is available for tetrasodium pyrophosphate.

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SECTION 16. Other information

This SDS supersedes the SDS dated [TO BE COMPLETED BY COMPANY SUPPLYING SDS]

The following amendments have been made:

- SDS has been fully revised and re-written in accordance with Regulation (EU) No 453/2010 and Regulation (EC) No. 1272/2008 (EU CLP).
- Any further amendments to be detailed by supplier of SDS
- Section 2.1: Classification according to Council Directive 67/548/EEC removed in accordance with Regulation (EU) No. 453/2010

Sources of Key data used:

- Registration dossier submitted to ECHA in accordance with Regulation (EC) No. 1907/2006 and therefore a full reference list can be found in the corresponding CSR.

Abbreviations and acronyms used:

AF =	Assessment factor
DNEL =	Derived no effect level
EC50 =	Median effect concentration
LC50 =	Median lethal concentration
LD50 =	Median lethal dose
LEV =	Local Exhaust Ventilation
NOAEL =	No observed adverse effect level
NOEC =	No observed effect concentration
PBT	Persistent bioaccumulative toxic
PEC =	Predicted effect level
PNEC =	Predicted no effect level
PRE =	Personal Respiratory Equipment
OEL =	Occupational Exposure Limit
SDS =	Safety data sheet
STOT-SE =	Specific target organ toxicity – single exposure
STOT-RE =	Specific target organ toxicity – repeated exposure
STP =	Sewage treatment plant
vPvB =	Very persistent very bioaccumulative

Annex: summary of relevant exposure scenarios