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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:**

Tetrapotassium pyrophosphate

EINECS Number: 230-785-7

CAS Number: 7320-34-5

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

Other identifiers: TKPP

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

**Industrial / professional uses:**

- Manufacture of TKPP
- Formulation of mixtures containing TKPP
- Formulation of materials containing TKPP
- Industrial use as a binding agent in ceramic materials and in ceramics, cement and plasters
- Industrial use as an additive/pigment/auxiliary in plastics, resins, paints, coatings, mastics and inks
- Industrial use as an intermediate
- Industrial use as a reactive processing aid in chemical synthesis
- Industrial use in metal surface treatment
- Industrial use in dyes and auxiliary chemicals for textiles and leather
- Industrial use in water and wastewater treatment
- Industrial use in washing and cleaning products
- Industrial oil well and other drilling fluid applications, liquefying and conditioning earths
- Professional use as a binding agent in ceramic materials and in ceramics, cement and plasters
- Professional use as an additive/pigment/auxiliary in plastics, resins, paints, coatings, mastics and inks
- Professional use as a laboratory reagent – intermediate
- Professional use as a laboratory reagent – processing aid
- Professional use for metal surface treatment
- Professional use in water and wastewater treatment
- Professional use in washing and cleaning products
- Professional use as a fertiliser

**Consumer uses:**

- Consumer use as a binding agent in ceramic materials and in ceramics, cement and plasters
- Consumer use of substance in paints, coatings, mastics, plastics, resins etc.
- Consumer use of washing and cleaning products
- Consumer use as a fertiliser
- Consumer use of cosmetics, dentifrice and oral care products
- Consumer use in food, animal feeds, medical and pharmaceutical products

**Service life:**

- Industrial service life of ceramic articles or articles containing cement, refractories or plaster
- Professional service life of ceramic articles or articles containing cement, refractories or plaster
- Consumer service life of ceramic articles or articles containing cement, refractories or plaster
- Industrial service life of paper, wood and plastic articles
- Professional service life of paper, wood and plastic articles
- Consumer service life of paper, wood and plastic articles
- Industrial service life of leather and textile articles
- Professional service life of leather and textile articles
- Consumer service life of leather and textile articles

No known uses advised against.

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### 1.3 Details of the supplier of the safety data sheet:

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

### 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):

Eye Irritation 2, H319:Causes serious eye irritation

### 2.2 Label elements

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

Name: Tetrapotassium pyrophosphate

Index Number: Not applicable

CAS Number: 7320-34-5



Signal word: Warning

Hazard Statements:

H319: Causes serious eye irritation.

Precautionary Statements:

Prevention:

P264: Wash hands thoroughly after handling.

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

Response:

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

P337+P313: If eye irritation persists: Get medical advice/attention.

**NOTE: Information in Section 2.2 MUST be consistent with the information provided on the supplier's labels.**

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### 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
Tetrapotassium pyrophosphate	230-785-7	7320-34-5	>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: tetrapotassium 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

Rinse out mouth and then drink plenty of water (approx. 500 ml). In case of symptoms consult doctor.

#### Skin Contact

In case of contact with skin, rinse with plenty of water and soap.

#### Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

### 4.2 Most important symptoms and effects, both acute and delayed

Tetrapotassium pyrophosphate causes irritation. No delayed effects are noted.

### 4.3 Indication of any immediate medical attention and special treatment needed

No specific information available.

## **SECTION 5. Fire fighting measures**

### **5.1 Extinguishing media**

**Suitable extinguishing media:**

Tetrapotassium pyrophosphate is not flammable. Use fire fighting measures that suit the environment; CO<sub>2</sub>, 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 tetrapotassium 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**

Tetrapotassium pyrophosphate is to be transported and stored in cool, dry conditions and in the original packaging. This product is hygroscopic.

Do not store with acids. Do not use light alloy containers.

### **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: General dust exposure limit: 10 mg/m<sup>3</sup> (inhalable fraction), 3 mg/m<sup>3</sup> (alveolic fraction). *German TRGS 900 (2006)*.

[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 <sup>3</sup>
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 <sup>3</sup>
Oral	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	Consumer uses of inorganic phosphates (sodium and potassium pyrophosphates) do not contribute 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 route are not attributable to the cation but

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		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:

PNECs were not calculated as no hazard was identified for the environment.

### 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 or Dust mask according to DIN EN 140 or 149 (FFP1 or FFP2).

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: Wear 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 10.7 – 10.9	As measured in the water solubility study (EU Method A.6)
Melting point/freezing point	>300°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

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		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	2.61 at 21.0°C	EU Method A.3.
Solubility(ies)	Water: 67.2 to 69.9 % w/w at 20.0 ± 0.5°C (very soluble)	EU Method A.6 A temperature range 10 to 30°C had no 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 tetrapotassium 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**

May react with strong acids.

**10.4 Conditions to avoid**

None identified.

**10.5 Incompatible materials**

Strong acids.

**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	LD50 = >2000 mg/kg bw/day. Not classified.	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 'Acute Oral Toxicity'
Dermal	LD <sub>50</sub> = 2000 mg/kg bw/day	Rabbit, equivalent to OECD 402 Klimisch reliability 1
Inhalation	LC <sub>50</sub> = > 1.1 mg/L	Rat, EPA OPP 81-3, OECD 403, EU Method B.2. . Klimisch reliability 1.
Skin corrosion/irritation	Not irritating to skin	Rabbit, equivalent to OECD 404. Klimisch reliability 2
Serious eye/damage/irritation	Irritating to eyes – category 2.	Rabbit, equivalent to OECD 405. Klimisch reliability 2
Respiratory or skin sensitisation	Non- 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.	Tetrapotassium pyrophosphate is not expected to produce germ cell genotoxic damage.
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	

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	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. NOAEL: 500 mg/kg bw/day	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents), Klimisch reliability 2 (read-across from analogous substance).
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 <sub>50</sub> = > 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 <sub>50</sub> = > 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 <sub>50</sub> = > 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 <sub>50</sub> = > 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

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

### 12.3 Bioaccumulative potential

Tetrapotassium pyrophosphate hydrolyses to orthophosphate and sodium ions in aqueous and biological systems. The degradation products of tetrapotassium 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 Tetrapotassium 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, tetrapotassium 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)

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provided here are indicative and based on the data in the REACH dossier for the pure substance only and 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)

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

**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).

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### 15.2 Chemical Safety Assessment.

A Chemical Safety Assessment is available for tetrapotassium pyrophosphate.

## 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**