

Potassium pentahydrogen bis(phosphate)

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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.

Potassium pentahydrogen bis(phosphate)**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier:**

Potassium pentahydrogen bis(phosphate)

EINECS Number: 238-961-5

CAS Number: 14887-42-4

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

Other identifiers: Phosphoric acid, potassium salt (2:1)

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

- Manufacture of potassium pentahydrogen bis(phosphate)
- Formulation of fertilisers (mixtures)
- Formulation of fertilisers (materials)
- Use as an intermediate in fertiliser synthesis
- Professional use as a fertiliser

Consumer uses:

- Consumer use of fertilisers

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]

1.4 Emergency telephone number:

[Insert suitable emergency number and hours of operation]

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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: potassium pentahydrogen bis(phosphate)

Index Number: Not applicable

CAS Number: 14887-42-4



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.**2.3 Other hazards**

The material is not considered to be PBT or vPvB.

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SECTION 3. Composition / information on ingredients

3.1 Substance:

Name	EC Number	CAS Number	Typical concentration	Concentration Range
Potassium pentahydrogen bis(phosphate)	238-961-5	14887-42-4	>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: potassium pentahydrogen bis(phosphate)

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

Remove victim to fresh air. If feeling unwell, immediately seek medical attention.

Ingestion

Rinse out mouth and then drink plenty of water (approx. 500 ml). Do NOT induce vomiting. In case of symptoms consult doctor.

Skin Contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Potassium pentahydrogen bis(phosphate) is irritating to eyes. No delayed effects are noted.

4.3 Indication of any immediate medical attention and special treatment needed

Rinse immediately with plenty of water. Remove contaminated clothing and shoes.

SECTION 5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

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Potassium pentahydrogen bis(phosphate) is not flammable. Use fire fighting measures that suit the environment; CO₂, extinguishing powder, water jet/spray or foam.

Inappropriate extinguishing media:

Not applicable.

5.2 Special hazards arising from the substance or mixture

Contact with metals may release flammable hydrogen.

5.3 Advice for fire-fighters

In Tight protective clothing required. Wear self-contained breathing apparatus, rubber boots and thick rubber gloves. 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.

Dust and/or fine particles; minimize inhalation exposure. Wear impervious safety shoes or rubber boots. Use rubber gloves.

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. Avoid dust production. Flush with plenty of water.

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. Do not breathe dust. Avoid contact with skin, clothing and eyes. Wash hands and other exposed areas with water after handling.

Remove contaminated clothing and shoes. Wash clothing before re-using.

7.2 Conditions for safe storage, including any incompatibilities

Keep packaging closed when not in use. Store in dry, cool, well-ventilated area.

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

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8.1 Control parameters

Workplace exposure limits: General dust exposure limit, German TRGS 900 (2006) 3 mg/m³ measured as alveolic part

[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	17.63mg/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	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 (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 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

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		not result in systemic toxicity and therefore it is not considered to be appropriate to calculate a dermal DNEL.
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No DNEL can be derived for local effects as no dose-response relationship can be identified in any of the studies available.

PNECs:

No PNEC's have been derived as

8.2 Exposure controls

Appropriate engineering controls: Ensure work area is well ventilated or exhausted (where appropriate and in line with the exposure scenarios). Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

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 crystalline powder	Observed
Odour	Odourless	Observed
Odour threshold	Not applicable	
pH	pH 1	As measured in the water solubility study (EU Method A.6)
Melting point/freezing point	127 – 125°C	EU Method A.1
Initial boiling point and boiling range	Not determined - decomposes before boiling	technically not possible - OECD guideline for boiling point determination (OECD 103) is not applicable to substances that undergo a chemical change before the boiling point
Flash point	Not applicable	According to Regulation No. 1907/2006, the flash point does not need to be assessed for inorganic chemicals.
Evaporation rate	Not applicable	

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Flammability (Solid, gas)	Not flammable	EU Method A.10
Upper/lower flammability or explosive limits	Not applicable	
Vapour pressure	0.00147 Pa	EU Method A.4
Vapour density (Air = 1)	Not applicable	
Relative density	3.05 at 23.0°C	EU Method A.3.
Solubility(ies)	Water: 296 g/L at 20.0 ± 0.5°C (very soluble)	EU Method A.6
Partition coefficient: N-octanol/water	Not applicable	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 identified	
Viscosity	Not applicable	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 potassium pentahydrogen bis(phosphate), 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

Contact with metals may release flammable hydrogen gas.

10.4 Conditions to avoid

Fire, heat, moisture.

10.5 Incompatible materials

None identified.

10.6 Hazardous decomposition products

Contact with metals may release flammable hydrogen.

SECTION 11. Toxicological information

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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.	OECD 425, Klimisch reliability 1.
Dermal	LD ₅₀ = 2000 mg/kg bw/day	Rat, OECD 402. Klimisch reliability 1
Inhalation	Not considered to be an inhalation hazard.	
Skin corrosion/irritation	Not irritating to skin.	Rabbit, OECD 404. Klimisch reliability 1.
Serious eye/damage/irritation	Irritating to eyes – category 2.	Rabbit, 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.	Potassium pentahydrogen bis(phosphate) 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 reproductive toxicant NOEL 1000 mg/kg	Rat, OECD 422 Klimisch 2 Test on a structural analogue
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.	Rats and dogs, Variety of sub-acute, sub-chronic data available for potassium pentahydrogen bis(phosphate) and analogous materials. Key study conducted on pentasodium triphosphate. Calcification of the kidneys was noted in animals treated with pentasodium triphosphate. However, as the NOAEL are relatively high a classification for STOT-RE (kidneys) is not applicable. Therefore, on the basis of read across, potassium pentahydrogen bis(phosphate) is not considered to be classified in accordance with Regulation (EC) No. 1272/2008 (EU CLP).
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

Potassium pentahydrogen bis(phosphate)

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

Potassium pentahydrogen bis(phosphate) is an inorganic substance, biodegradation studies are not applicable. No further testing is deemed to be necessary.

12.3 Bioaccumulative potential

The degradation products of potassium pentahydrogen bis(phosphate) 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

12.4 Mobility in soil

No data available:

A batch equilibrium study according to OECD Guideline 106 was deemed to be not applicable to potassium pentahydrogen bis(phosphate) 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.

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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, potassium pentahydrogen bis(phosphate) 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 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)

SAFETY DATA SHEET

Date of issue: 14/12/2017

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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 PRODUCTION 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 potassium pentahydrogen bis(phosphate)

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

Revision date: X

Version: XX

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NB. Please read **NOTICE** on front page

Potassium pentahydrogen bis(phosphate)**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

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Annex: summary of relevant exposure scenarios