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

1.1 Product identifier
Trade name **Potassium dihydrogen phosphate**

Stock number: A12142  
CAS Number: 7778-77-0  
EC number: 231-913-4

1.2 Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24  Scientific research and development

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier: Alfa Aesar GmbH & Co. KG  
A Johnson Matthey Company  
Zeppelinstr. 7b  
76185 Karlsruhe / Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300  
Email: tech@alfa.com  
www.alfa.com
Informing department: Product safety Tel +049 (0) 7275 988687-0

1.4 Emergency telephone number:
Carechen 24: +44 (0) 1235 239 670 (Multi-language emergency number)  
Poison Information Center Mainz  
www.giftinfo.uni-mainz.de  Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

\( \text{GHS07} \)

Skin Irrit. 2 H315  Causes skin irritation.  
Eye Irrit. 2 H319  Causes serious eye irritation.

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

\( \text{Xi: Irritant} \)

R36/38: Irritating to eyes and skin.

Information concerning particular hazards for human and environment: Not applicable

Other hazards that do not result in classification: No information known.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

\( \text{GHS07} \)

Signal word Warning

Hazard statements
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

Precautionary statements
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.  
P362: Take off contaminated clothing and wash before reuse.  
P331: Specific treatment (see on this label).  
P332+P313: If skin irritation occurs: Get medical advice/attention.  
P337+P338: If eye irritation persists: Get medical advice/attention.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.  
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS# Designation: 7778-77-0 Potassium dihydrogen phosphate  
Identification number[s]:  
EC number: 231-913-4

SECTION 4: First aid measures

4.1 Description of first aid measures
After inhalation  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
Seek immediate medical advice.

After skin contact  
Instantly wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.

After eye contact  
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing  
Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed  
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed  
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents Product is not flammable. Use fire fighting measures that suit the surrounding fire.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:  
Phosphorus oxides  
Potassium oxide
5.3 Advice for firefighters  
Protective equipment:  
Wear self-contained breathing apparatus.  
Wear full protective suit.

SECTION 6: Accidental release measures  
6.1 Personal precautions, protective equipment and emergency procedures  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation.  

6.2 Environmental precautions:  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.  

6.3 Methods and material for containment and cleaning up: Collect mechanically.  

Prevention of secondary hazards: No special measures required.

6.4 Reference to other sections  
See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

SECTION 7: Handling and storage  
7.1 Precautions for safe handling  
Handle under dry protective gas.  
Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure adequate ventilation.  

Information about protection against explosions and fires: The product is not flammable.

7.2 Conditions for safe storage, including any incompatibilities  
Storage  
Requirements to be met by storerooms and containers: No special requirements.  
Information about storage in one common storage facility:  
Store away from water.  
Store away from oxidising agents.  
Further information about storage conditions:  
Store under dry inert gas.  
This product is hygroscopic.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and keep away from water.  

7.3 Specific end use(s)  
No further relevant information available.

SECTION 8: Exposure controls/personal protection  
Additional information about design of technical systems:  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters  
Components with critical values that require monitoring at the workplace:  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.  
Additional information: No data.

8.2 Exposure controls  
Personal protective equipment  
General protective and hygienic measures:  
The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Innertly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  

Breathing equipment: Use breathing protection with high concentrations.  
Recommended filter device for short term use:  
Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.  
Protection of hands:  
Check protective gloves prior to each use for their proper condition.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.  

Material of gloves: Nitrile rubber, NBR  
PENETRATION TIME OF GLOVE MATERIAL (IN MINUTES) 480  
Glove thickness: 0.11 mm  
Eye protection:  
Safety glasses  
Face protection  
Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties  
9.1 Information on basic physical and chemical properties  
General Information  
Appearance:  
Form: Crystalline  
Colour: White  
Smell: Not determined.  
Odour threshold: Not determined.  

pH-value: Not applicable.  

Change in condition  
Melting point/Melting range: 253 °C  
Boiling point/Boiling range: Not determined.  
Sublimation temperature / start: Not determined.  
Inflammability (solid, gaseous) Not determined.  
Ignition temperature: Not determined.  
Decomposition temperature: Not determined.  
Self-inflammability: Not determined.  
Danger of explosion: Not determined.  
Critical values for explosion: Lower: Not determined.  
Upper: Not determined.
Trade name Potassium dihydrogen phosphate

Steam pressure: Not applicable.
Density at 20 °C 2,338 g/cm³
Relative density Not determined.
Vapour density Not applicable.
Evaporation rate Not applicable.
Solubility in / Miscibility with Water at 20 °C: 208 g/l
Partition coefficient (n-octanol/water): Not determined.
Viscosity: dynamic: Not applicable.
kinematic: Not applicable.

SECTION 10: Stability and reactivity
10.1 Reactivity No information known.
10.2 Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions Reacts with strong oxidising agents.
10.5 Incompatible materials:
Water/moisture
Oxidising agents
10.6 Hazardous decomposition products:
Phosphorus oxides (e.g. P2O5)
Potassium oxide

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification:
Dermal (LD50): >4640 mg/kg (rabbit)
Skin irritation or corrosion: Causes skin irritation.
Eye irritation or corrosion: Causes serious eye damage.
Sensitisation: No sensitizing effect known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information
12.1 Toxicity
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability No further relevant information available.
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Recommendation
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information
UN-Number
ADR, ADN, IMDG, IATA Not applicable
14.2 UN proper shipping name
ADR, ADN, IMDG, IATA Not applicable
14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA Class Not applicable
Packing group
ADR, IMDG, IATA Not applicable
14.5 Environmental hazards: Not applicable.
14.6 Special precautions for use Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
UN "Model Regulation": -

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Australian Inventory of Chemical Substances is listed.
Standard for the Uniform Scheduling of Medicines and Poisons Substance is not listed.
Trade name **Potassium dihydrogen phosphate**

### National regulations
Information about limitation of use:
Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

### Classification according to VbF:
Not applicable

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

### Other regulations, limitations and prohibitive regulations
**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.
**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**REACH - Pre-registered substances** Substance is listed.

### 15.2 Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

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**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**
- ADR: Agreement concernant la transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- vPvB: very Persistent and very Bioaccumulative
- ACGIH: American Conference of Governmental Industrial Hygienists (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- NTP: National Toxicology Program (USA)
- IARC: International Agency for Research on Cancer
- EPA: Environmental Protection Agency (USA)
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2