

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## Bacterial Amylase - A01740

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

#### 1.1 Product identifier

**Product name:** Bacterial Amylase

**Product No.:** A01740

**SDS No.:** 906007

**Material No.:** 025098

**CAS No.:** Not applicable.

**EC No.:** Not applicable.

**Index No.:** Not applicable.

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

**Identified use(s):** Enzymatic mixture for use in educational science experiments.  
Professional use only.

**Uses advised against:** Follow supplier's recommendations on correct use of the product.

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

**Supplier:** Philip Harris Manufacturing Ltd.  
Unit 72, Gazelle Road  
Weston Industrial Estate  
Weston-super-Mare  
BS24 9BJ

**Telephone:** +44 (0)1934 413 606

**Fax:** +44 (0)1934 626 421

**E-mail:** [sdsinfo@philipharrismanufacturing.co.uk](mailto:sdsinfo@philipharrismanufacturing.co.uk)

#### 1.4 Emergency telephone number

**In case of emergency, call:** +44 (0)1934 413 606  
Monday – Thursday: 08:30 – 17:00 UK time  
Friday: 08:30 – 13:00 UK time

### SECTION 2: Hazard Identification

#### 2.1 Classification of the substance or mixture

##### 2.1.1. Classification according to Regulation (EC) No. 1272/2008 (CLP)

Resp. Sens. 1; H334

##### 2.1.2. Classification according to Directive 67/548/EEC & Directive 1999/45/EC

Xn; R42

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## 2.2 Label elements

### 2.2.1. Label according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictogram(s):



Signal Word:

Danger.

Hazard Statement(s):

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statement(s):

P261: Avoid breathing vapour.  
P284: Wear respiratory protection.  
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
P501: Dispose of contents/container to hazardous waste collection point for disposal in accordance with local, regional, national or international regulations.

Supplemental Hazard information (EU):

None.

## 2.3 Other hazards

The product does not meet the criteria for PBT or vPvB substances.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical name	% w/w	CAS No.	EC No.	Index No.	Classification (Regulation (EC) No. 1272/2008 (CLP))	Classification (Directive 67/548/EEC)
Amylase, $\alpha$ -	50-70	9000-90-2	232-565-6	647-015-00-4	Resp. Sens . 1; H334	Xn; R42

See Section 16 for full description of R phrases and H statements.

## SECTION 4: First Aid Measures

### 4.1 Description of first aid measures

**INHALATION:** Remove person to fresh air and keep in a position comfortable for breathing. Keep warm and at rest. If experiencing respiratory symptoms, obtain immediate medical attention.

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**SKIN CONTACT:** Take off immediately all contaminated clothing. Rinse skin with plenty of water. If irritation develops and persists, get medical attention. Contaminated clothing should be washed before reuse.

**EYE CONTACT:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, making sure to rinse under eyelids. If eye irritation persists, get medical attention.

**INGESTION:** Do not induce vomiting. Provided the patient is conscious, rinse mouth out with water and give 200-300 mL of water to drink. Never give anything by mouth to an unconscious person. If symptoms develop, get medical attention.

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

Inhalation may cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed. Skin contact may cause slight irritation. Eye contact may cause slight irritation and redness. Ingestion may cause gastrointestinal irritation.

## 4.3 Indication of any immediate medical attention and special treatments needed:

In case of accident or if you feel unwell, seek medical advice immediately. Show this Safety Data Sheet to the doctor in attendance. If breathing is laboured, oxygen should be administered by qualified personnel.

## SECTION 5: Fire-fighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Use extinguishant suitable for surrounding fire. Water spray, alcohol-resistant foam, CO<sub>2</sub> or dry powder.

**Unsuitable extinguishing media:** None identified.

### 5.2 Special hazards arising from the substance or mixture

Containers exposed to fire may burst due to a build-up of pressure.

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Combustion may liberate toxic fumes: Carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides.

### 5.3 Advice for fire-fighters

A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying with water. Do not allow to enter drains, sewers or watercourses.

## SECTION 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

Provide adequate ventilation to minimise exposure to vapour. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate (See Section 8).

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## 6.1.2 For emergency responders

Keep unnecessary personnel away. Wear suitable protective clothing (See Section 8). Take off contaminated clothing and wash it before reuse.

## 6.2 Environmental precautions

Do not allow to enter watercourses or surface water drainage (storm drains). Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

## 6.3 Methods and materials for containment and cleaning up

### 6.3.1 For containment

Stop the leak if it is safe to do so. Contain the spillage with sand, earth or any suitable adsorbent material.

### 6.3.2 For cleaning up

Use sand, earth or any suitable non-combustible adsorbent material to adsorb spillages. Transfer the contaminated adsorbent material into a sealable container for disposal. Dispose of contaminated material as waste according to Section 13. Wash spill area with large amounts of water (discharge to foul sewer only).

### 6.3.3 Other advice

None.

## 6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for waste disposal.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Provide adequate ventilation to minimise exposure to vapour. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wear suitable personal protective equipment (See Section 8).

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Storage in a refrigerator will prolong useful life. Recommended storage temperature: 0 – 25°C. Protect from direct sunlight.

Keep away from: strong oxidising agents.

### 7.3 Specific end use(s)

Enzymatic mixture for use in educational science experiments. Professional use only.

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## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Workplace exposure limits

Source: EH40/2005, 2<sup>nd</sup> Ed., 2011.

No occupational exposure limits assigned.

#### DMELs (Workers)

Substance	Route	Acute/short-term exposure		Long-term exposure	
		Systemic effects	Local effects	Systemic effects	Local effects
Amylase, α-	Inhalation	-	-	0.00006 mg/m <sup>3</sup>	0.00006 mg/m <sup>3</sup>
	Dermal	-	-	-	-

#### PNECs

Substance	Aqua (fresh water)	Aqua (marine water)	Aqua (intermittent releases)	Sewage Treatment Plants	Sediment (fresh water)	Sediment (marine water)	Soil	Oral
Amylase, α-	0.0052 mg/L	0.00052 mg/L	0.0052 mg/L	65 mg/L	Exposure not expected	Exposure not expected	-	No bioaccumulation potential.

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Provide adequate ventilation to minimise exposure to vapour.

#### 8.2.2 Personal protection

##### Eye protection:

If eye-protection is not integral to the respirator being worn, wear goggles or safety glasses with side shields giving complete protection to eyes (EN 166).

##### Skin protection:

##### Hand protection:

Chemical-resistant gloves conforming (EN 374). Butyl rubber, natural rubber or neoprene gloves are recommended. Contact glove supplier to confirm suitable glove material, thickness and breakthrough times.

##### Other:

Long sleeve protective clothing.

##### Respiratory protection:

If case of insufficient ventilation, wear a respirator (EN 140) with a P3 particle filter or better (EN 143).

##### Thermal hazards:

Not applicable.

#### 8.2.3 Environmental exposure controls

Inform environmental manager of all incidents involving this product.

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## SECTION 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Liquid.
Odour:	Characteristic.
Odour threshold:	Not available.
pH:	Not available.
Melting/freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability (solid; gas):	Not available.
Upper/lower flammability or explosive limits:	Not available.
Vapour pressure:	Not available.
Vapour density:	Not available.
Relative density:	Not available.
Solubility(ies):	Soluble in water. Amylase, $\alpha$ -: 1-100 g/L
Partition coefficient: n-octanol/water:	Not available. Amylase, $\alpha$ -: Log Pow $\leq$ -2.95 (21°C)
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not applicable.
Explosive properties:	Not explosive.
Oxidising properties:	Not oxidising.

### 9.2 Other information

None known.

## SECTION 10: Stability and Reactivity

10.1	Reactivity	Reacts with oxidising agents.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	No hazardous reactions expected during normal use.
10.4	Conditions to avoid	Avoid extreme temperatures. Storage in a refrigerator will prolong useful life. Recommended storage temperature: 0 – 25°C. Protect from direct sunlight.
10.5	Incompatible materials	Strong oxidising agents.

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**10.6 Hazardous decomposition products** Combustion may liberate toxic fumes: Carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides.

## SECTION 11: Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity** Not classified. May cause discomfort if swallowed.

No data are available for the mixture. The following data are for the ingredients:

Amylase,  $\alpha$ -:  
LD<sub>0</sub> (oral/rat): > 1911 mg/kg  
LC<sub>50</sub> (inhalation/rat/4 h): > 4.96 mg/L air (analytical)

**Skin corrosion/irritation** May cause slight skin irritation.

**Serious eye damage/irritation** May cause slight eye irritation.

**Skin sensitisation** Not classified. The product does not contain substances classified as skin sensitisers above the classification thresholds.

**Respiratory sensitisation** May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Germ cell mutagenicity** Not classified. The product does not contain substances classified as mutagenic above the classification thresholds.

**Carcinogenicity** Not classified. The product does not contain substances classified as carcinogenic above the classification thresholds.

**Reproductive toxicity** Not classified. The product does not contain substances classified as toxic to reproduction above the classification thresholds.

**Specific Target Organ Toxicity – single exposure** Not classified. The product does not contain substances classified for specific target organ toxicity following a single exposure above the classification thresholds.

**Specific Target Organ Toxicity – repeated exposure** Not classified. The product does not contain substances classified for specific target organ toxicity following repeated exposure above the classification thresholds.

**Aspiration hazard** Not classified. Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

**Inhalation** May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Skin contact** May cause slight skin irritation.

**Eye contact** May cause slight eye irritation.

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## Ingestion

May cause gastrointestinal irritation.

## Symptoms related to the physical, chemical and toxicological characteristics

Inhalation may cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed. Skin contact may cause slight irritation. Eye contact may cause slight irritation and redness. Ingestion may cause gastrointestinal irritation.

## Mixture versus substance Information

No data available.

## Other information

None.

## SECTION 12: Ecological Information

### 12.1 Toxicity

Not classified.

No data are available for the mixture. The following data are for the ingredients:

Amylase,  $\alpha$ -:

NOEC (*Oncorhynchus mykiss*): 58.3 mg/L active enzyme protein, 96h

EC<sub>50</sub> (*Daphnia magna*): 212 mg/L active enzyme protein, 48 h

NOEC (*Daphnia magna*): 106 mg/L active enzyme protein, 48 h

EbC<sub>50</sub> (*Desmodesmus subspicatus*): 2.5 mg/L active enzyme protein, 72 h

ErC<sub>50</sub> (*Desmodesmus subspicatus*): 5.2 mg/L active enzyme protein, 72 h

NOEC (*Desmodesmus subspicatus*): 1.3 mg/L active enzyme protein, 72 h (biomass)

NOEC (*Desmodesmus subspicatus*): 2.6 mg/L active enzyme protein, 72 h (growth rate)

### 12.2 Persistence and degradability

Amylase,  $\alpha$ -:

Readily biodegradable.

### 12.3 Bioaccumulative potential

No potential to bioaccumulate.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

The product does not contain substances assessed to be PBT or vPvB.

### 12.6 Other adverse effects

None known.

## SECTION 13: Disposal Considerations

### 13.1 Waste treatment methods

To be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.



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## SECTION 14: Transport Information

### ADR

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

### ADN

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

### RID

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

### IATA/ICAO

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

### IMDG

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	The product is not intended to be transported in bulk.

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## SECTION 15: Regulatory Information

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

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 1907/2006 as amended. The product has been classified in accordance with Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

### 15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out.

## SECTION 16: Other Information

### Full text of relevant R-phrases and/or H-statements:

<b>Hazard Statement(s):</b>	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Supplemental Hazard information (EU):</b>	None.
<b>Risk phrase(s):</b>	R42: May cause sensitisation by inhalation.

### Abbreviations:

CAS:	Chemical Abstracts Service;
DMEL:	Derived Minimal Effect Level
DNEL:	Derived No Effect Level
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC <sub>50</sub> :	Effective Concentration 50%
EL <sub>50</sub> :	Effective Loading rate 50%
EbC <sub>50</sub> :	Concentration at which 50% reduction in biomass is observed
ErC <sub>50</sub> :	Concentration at which 50% reduction in growth rate is observed
IC <sub>50</sub> :	Inhibitory Concentration 50%
LC <sub>50</sub> :	Lethal Concentration 50%
LD <sub>50</sub> :	Lethal Dose 50%
LL <sub>50</sub> :	Lethal Loading rate 50%
LCLo:	Lowest lethal concentration
LOEL:	Lowest Observed Effect Level
NOEC:	No Observed Effect Concentration
NOEL:	No Observed Effect Level
PBT:	Persistent, Bioaccumulative and Toxic
PNEC:	Predicted No Effect Concentration
vPvB:	Very Persistent and Very Bioaccumulative

### References:

Supplier's Safety Data Sheets for ingredients  
ECHA disseminated REACH dossiers  
ECHA Classification & Labelling Inventory  
Approved Classification and Labelling Guide (Sixth edition)  
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP)

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Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)

## Disclaimer:

THE INFORMATION PRESENTED HEREIN IS BELIEVED TO BE ACCURATE, BUT IS NOT WARRANTED TO BE, WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM, IN ADVANCE OF NEED, THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

## Version history:

SDS Number:	906007
Version:	1.0
Issue date:	21/01/2014
Previous Version:	-
Issue date of previous version:	-
Sections changed from previous version:	-

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## Sodium Carbonate / Soda Ash 025306

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

#### 1.1 Product identifier

**Product name:** Sodium Carbonate / Soda Ash  
**Product number:** 025306  
**SDS number:** 905067  
**CAS No.:**  
**EC No.:**  
**Index No.:**

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

**Identified use(s):** Laboratory chemicals. Manufacture of substances.  
**Uses advised against:** Follow supplier's recommendations on correct use of the product.

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

**Supplier:** Philip Harris Manufacturing Limited.  
Unit 72, Gazelle Road  
Weston Industrial Estate  
Weston-super-Mare  
BS24 9BJ

**Telephone:** +44 (0)1934 413 606  
**Fax:** +44 (0)1934 626 421  
**E-mail:** [sdsinfo@philipharrismanufacturing.co.uk](mailto:sdsinfo@philipharrismanufacturing.co.uk)

#### 1.4 Emergency telephone number

**In case of emergency, call:** +44 (0)1934 413 606 (Mon – Fri, 08:30 – 17:00 UK time)

### SECTION 2: Hazard Identification

#### 2.1 Classification of the substance or mixture

##### 2.1.1. Classification according to Regulation (EC) No. 1272/2008 (CLP)

Eye irritation (Category 2), H319

##### 2.1.2. Classification according to Directive 67/548/EEC & Directive 1999/45/EC

Xi Irritant R36

#### 2.2 Label elements

##### 2.2.1. Label according to Regulation (EC) No. 1272/2008 (CLP)

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Hazard pictogram(s):



Signal Word:

Warning

Hazard Statement(s):

H319 Causes serious eye irritation.

Precautionary Statement(s):

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

Supplemental Hazard information (EU):

None

## 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical name	% w/w	CAS No.	EC No.	Index No.	Classification (Regulation (EC) No. 1272/2008 (CLP))	Classification (Directive 67/548/EEC)
Soda Ash	105.99 g/mol	497-19-8	207-838-8	011-005-00-2	Eye Irrit. 2; H319	Xi, R36
Formula: $\text{CNa}_2\text{O}_3$						

See Section 16 for full description of R phrases and H statements.

## SECTION 4: First Aid Measures

### 4.1 Description of first aid measures

**INHALATION:** Remove person to fresh air and keep comfortable for breathing. Keep warm and at rest. If irritation persists or if you feel unwell, obtain immediate medical attention.

**SKIN CONTACT:** Take off immediately all contaminated clothing. Rinse skin with soap and plenty of water. Obtain immediate medical attention. Contaminated clothing should be washed before reuse.

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**EYE CONTACT:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, making sure to rinse under eyelids. Obtain immediate medical attention.

**INGESTION:** Do not induce vomiting. Provided the patient is conscious, rinse mouth out with water and give 200-300 mL of water to drink. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and / or in section 11.

## 4.3 Indication of any immediate medical attention and special treatments needed:

In case of accident or if you feel unwell, seek medical advice immediately. If breathing is laboured, oxygen should be administered by qualified personnel.

## SECTION 5: Fire-fighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Water spray, CO<sub>2</sub>, sand, dry powder.

**Unsuitable extinguishing media:** Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sodium oxides.

### 5.3 Advice for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## SECTION 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

Eliminate sources of ignition. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours/spray. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate (See Section 8).

#### 6.1.2 For emergency responders

Keep unnecessary personnel away. Wear suitable protective clothing (See Section 8). Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse.

### 6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

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## 6.3 Methods and materials for containment and clearing up

### 6.3.1 For containment

Stop the leak if it is safe to do so. Contain the spillage with sand, earth or any suitable adsorbent material.

### 6.3.2 For cleaning up

Pick up and arrange disposal without creating dust. Sweep and shovel. Keep in suitable, closed container for disposal according to Section 13.

### 6.3.3 Other advice

For disposal according to Section 13.

## 6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for waste disposal.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Workplace exposure limits

Contains no substance with occupational exposure limit values.

Substance	CAS No.	LTEL (8 hr TWA)		STEL (15 min)		Comments
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 8.2.2 Personal protection

### Eye protection:

Tightly fitting safety goggles. Face shield (8" minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)

### Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

### Hand protection:

The selected protective gloves have to satisfy the specification of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Other:

Long sleeve protective clothing

### Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination. (US) or type ABEK (EN 14387) respirator cartridges as backup to engineering controls. If the respirator is the sole master means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

### Thermal hazards:

. Not applicable

## 8.2.3 Environmental exposure controls

Inform environmental manager of all incidents involving this product.

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	Form: Powder, Colour: White
<b>Odour:</b>	No data available
<b>Odour threshold:</b>	No data available
<b>pH:</b>	No data available
<b>Melting/freezing point:</b>	851 deg C – lit.
<b>Initial boiling point and boiling range:</b>	No data available
<b>Flash point:</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid; gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapour pressure:</b>	No data available
<b>Vapour density:</b>	No data available
<b>Relative density:</b>	2.532 g/cm <sup>3</sup>
<b>Solubility(ies):</b>	106 g/l @ 20 deg C – completely soluble.
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available



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Decomposition temperature:	No data available
Viscosity:	No data available
Explosive properties:	No data available
Oxidising properties:	No data available

## 9.2 Other information

None known.

## SECTION 10: Stability and Reactivity

10.1	Reactivity	No data available
10.2	Chemical stability	Hygroscopic, stable under recommended storage conditions.
10.3	Possibility of hazardous reactions	No data available
10.4	Conditions to avoid	Exposure to moisture
10.5	Incompatible materials	Strong acids
10.6	Hazardous decomposition products	Other decomposition products – no data available. In the event of fire: see section 5

## SECTION 11: Toxicological Information

### 11.1 Information on toxicological effects

Acute toxicity	LD50 Oral – rat – 4,090 mg/kg. LC50 Inhalation – rat – 2h – 5,750 mg/l
Skin corrosion/irritation	Skin – rabbit, Result: Mild skin irritation – 24h
Serious eye damage/irritation	Eyes – rabbit, Result eye irritation – 24 h
Skin sensitisation	No data available
Respiratory sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or conformed human carcinogen by IARC.
Reproductive toxicity	No data available
Specific Target Organ Toxicity – single exposure	No data available
Specific Target Organ Toxicity – repeated exposure	No data available
Aspiration hazard	No data available

### Information on likely routes of exposure

Inhalation	RTECS: VZ4050000, Burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting May be harmful if inhaled. Causes respiratory tract irritation
Skin contact	May be harmful if absorbed through skin. Causes skin irritation

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

Eye contact	May be harmful. Causes eye irritation
Ingestion	Harmful if swallowed
Symptoms related to the physical, chemical and toxicological characteristics	No data available
Mixture versus substance Information	No data available
Other information	No data available

## SECTION 12: Ecological Information

12.1	Toxicity	To fish LC50 – Lepomis macrochirus (Bluegill) – 300 mg/l – 96h To Daphnia magna (Water flea) – 265mg/l – 48h
12.2	Persistence and degradability	No data available
12.3	Bioaccumulative potential	No data available
12.4	Mobility in soil	No data available
12.5	Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required / not conducted.
12.6	Other adverse effects	No data available

## SECTION 13: Disposal Considerations

### 13.1 Waste treatment methods

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

## SECTION 14: Transport Information

### ADR

14.1	UN Number	Not dangerous goods.
14.2	UN Proper shipping name	Not dangerous goods.
14.3	Transport hazard class(es)	Not dangerous goods.
14.4	Packing group	Not dangerous goods.
14.5	Environmental hazards	Not dangerous goods.
14.6	Special precautions for the user	No data available

### ADN

14.1	UN Number	Not dangerous goods.
14.2	UN Proper shipping name	Not dangerous goods.
14.3	Transport hazard class(es)	Not dangerous goods.
14.4	Packing group	Not dangerous goods.
14.5	Environmental hazards	Not dangerous goods.
14.6	Special precautions for the user	No data available

### RID

14.1	UN Number	Not dangerous goods.
14.2	UN Proper shipping name	Not dangerous goods.
14.3	Transport hazard class(es)	Not dangerous goods.
14.4	Packing group	Not dangerous goods.
14.5	Environmental hazards	Not dangerous goods.

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

14.6 Special precautions for the user Not dangerous goods.

## IATA/ICAO

14.1 UN Number Not dangerous goods.  
14.2 UN Proper shipping name Not dangerous goods.  
14.3 Transport hazard class(es) Not dangerous goods.  
14.4 Packing group Not dangerous goods.  
14.5 Environmental hazards Not dangerous goods.  
14.6 Special precautions for the user No data available

## IMDG

14.1 UN Number Not dangerous goods.  
14.2 UN Proper shipping name Not dangerous goods.  
14.3 Transport hazard class(es) Not dangerous goods.  
14.4 Packing group Not dangerous goods.  
14.5 Environmental hazards Not dangerous goods.  
14.6 Special precautions for the user No data available  
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code Not dangerous goods.

## SECTION 15: Regulatory Information

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

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 1907/2006 as amended. The product has been classified in accordance with Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

### 15.2 Chemical Safety Assessment

A chemical safety assessment is not required and has not been carried out.

## SECTION 16: Other Information

### Full text of relevant R-phrases and/or H-statements:

Hazard Statement(s):	Eye Irrit.	Eye irritation
	H319	Causes serious eye irritation

Supplemental Hazard information (EU): No data available

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

Risk phrase(s):

Xi  
R36

Irritant  
Irritating to eyes.

## Abbreviations:

CAS:	Chemical Abstracts Service;
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC <sub>50</sub> :	Effective Concentration 50%
EL <sub>50</sub> :	Effective Loading rate 50%
IC <sub>50</sub> :	Inhibitory Concentration 50%
LC <sub>50</sub> :	Lethal Concentration 50%
LD <sub>50</sub> :	Lethal Dose 50%
LL <sub>50</sub> :	Lethal Loading rate 50%
LCLo:	Lowest lethal concentration
LOEL:	Lowest Observed Effect Level
NOEL:	No Observed Effect Level
PBT:	Persistent, Bioaccumulative and Toxic.
vPvB:	Very Persistent and Very Bioaccumulative.

## References:

Supplier's Safety Data Sheets for ingredients  
ECHA disseminated REACH dossiers  
ECHA Classification & Labelling Inventory  
Approved Classification and Labelling Guide (Sixth edition)  
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP)  
Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)

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## Version history:

Version:	2.0
Issue date:	17/01/2014
Previous Version:	1.0
Issue date of previous version:	30/07/2007
Sections changed from previous version:	All

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## Potassium Dihydrogen Phosphate (V) 026069

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

#### 1.1 Product identifier

**Product name:** Potassium Dihydrogen Phosphate (V)  
**Product number:** 026069  
**SDS number:** 905068  
**CAS No.:** 7778-77-0  
**EC No.:**  
**Index No.:**

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

**Identified use(s):** Laboratory chemicals. Manufacture of substances.  
**Uses advised against:** Follow supplier's recommendations on correct use of the product.

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

**Supplier:** Philip Harris Manufacturing Limited.  
Unit 72, Gazelle Road  
Weston Industrial Estate  
Weston-super-Mare  
BS24 9BJ

**Telephone:** +44 (0)1934 413 606  
**Fax:** +44 (0)1934 626 421  
**E-mail:** [sdsinfo@philipharrismanufacturing.co.uk](mailto:sdsinfo@philipharrismanufacturing.co.uk)

#### 1.4 Emergency telephone number

**In case of emergency, call:** +44 (0)1934 413 606 (Mon – Fri, 08:30 – 17:00 UK time)

### SECTION 2: Hazard Identification

#### 2.1 Classification of the substance or mixture

##### 2.1.1. Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not a hazardous substance or mixture according to the above regulation.

##### 2.1.2. Classification according to Directive 67/548/EEC & Directive 1999/45/EC

Not a hazardous substance or mixture according to the above regulations.

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## 2.2 Label elements

### 2.2.1. Label according to Regulation (EC) No. 1272/2008 (CLP)

<b>Hazard pictogram(s):</b>	This product does not need to be labelled in accordance with EC directive, or respective national laws.
<b>Signal Word:</b>	Warning
<b>Hazard Statement(s):</b>	None
<b>Precautionary Statement(s):</b>	None
<b>Supplemental Hazard information (EU):</b>	None

## 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical name	% w/w	CAS No.	EC No.	Index No.	Classification (Regulation (EC) No. 1272/2008 (CLP))	Classification (Directive 67/548/EEC)
Synonyms: Prim. Potassium phosphate. Potassium dihydrogen phosphate. Monopotassium phosphate. Formula H <sub>2</sub> KO <sub>4</sub> P	136.09 g/mol;	7778-77-0	231-913-4		No component need to be disclosed according to the applicable regulations.	No component need to be disclosed according to the applicable regulations.

See Section 16 for full description of R phrases and H statements.

## SECTION 4: First Aid Measures

### 4.1 Description of first aid measures

- INHALATION:** Remove person to fresh air and keep comfortable for breathing. Keep warm and at rest. If irritation persists or if you feel unwell, obtain immediate medical attention.
- SKIN CONTACT:** Wash off with soap and plenty of water. Consult a physician.
- EYE CONTACT:** Flush eyes with water as a precaution.

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

**INGESTION:** Do not induce vomiting. Provided the patient is conscious, rinse mouth out with water and give 200-300 mL of water to drink. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) And / or in section 11.

#### 4.3 Indication of any immediate medical attention and special treatments needed:

In case of accident or if you feel unwell, seek medical advice immediately. If breathing is laboured, oxygen should be administered by qualified personnel.

## SECTION 5: Fire-fighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Water spray, CO<sub>2</sub>, sand, dry powder.

**Unsuitable extinguishing media:** Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

Oxides of phosphorus, Potassium oxides.

### 5.3 Advice for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## SECTION 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

Eliminate sources of ignition. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours/spray. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate (See Section 8).

#### 6.1.2 For emergency responders

Keep unnecessary personnel away. Wear suitable protective clothing (See Section 8). Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse.

### 6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

### 6.3 Methods and materials for containment and clearing up

#### 6.3.1 For containment

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

Stop the leak if it is safe to do so. Contain the spillage with sand, earth or any suitable adsorbent material.

## 6.3.2 For cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal according to Section 13.

For disposal according to Section 13.

## 6.3.3 Other advice

Do not let product enter drains.

## 6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for waste disposal.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Workplace exposure limits

Substance	CAS No.	LTEL (8 hr TWA)		STEL (15 min)		Comments
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Contains no substances with occupational exposure limit values.						

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.



# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## 8.2.2 Personal protection

<b>Eye protection:</b>	Tightly fitting safety goggles. Face shield (8" minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)
<b>Skin protection:</b>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands
<b>Hand protection:</b>	The selected protective gloves have to satisfy the specification of EU Directive 89/686/EEC and the standard EN 374 derived from it.
<b>Other:</b>	Long sleeve protective clothing
<b>Respiratory protection:</b>	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination. (US) or type ABEK (EN 14387) respirator cartridges as backup to engineering controls. If the respirator is the sole master means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
<b>Thermal hazards:</b>	. Not applicable

## 8.2.3 Environmental exposure controls

Inform environmental manager of all incidents involving this product.

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	Form: Crystalline, colour White
<b>Odour:</b>	No data available
<b>Odour threshold:</b>	No data available
<b>pH:</b>	No data available
<b>Melting/freezing point:</b>	252.6 deg C
<b>Initial boiling point and boiling range:</b>	No data available
<b>Flash point:</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid; gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapour pressure:</b>	No data available
<b>Vapour density:</b>	No data available
<b>Relative density:</b>	2.338 g/ml at 25 deg C
<b>Solubility(ies):</b>	No data available
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

Viscosity:	No data available
Explosive properties:	No data available
Oxidising properties:	No data available
<b>9.2 Other information</b>	
None known.	

## SECTION 10: Stability and Reactivity

<b>10.1 Reactivity</b>	No data available
<b>10.2 Chemical stability</b>	Stable under recommended storage conditions.
<b>10.3 Possibility of hazardous reactions</b>	No data available
<b>10.4 Conditions to avoid</b>	Exposure to moisture
<b>10.5 Incompatible materials</b>	Strong oxidizing agents
<b>10.6 Hazardous decomposition products</b>	Other decomposition products - No data available

## SECTION 11: Toxicological Information

<b>11.1 Information on toxicological effects</b>	
<b>Acute toxicity</b>	LD50 Dermal – rabbit - > 4,640 mg/kg
<b>Skin corrosion/irritation</b>	No data available
<b>Serious eye damage/irritation</b>	No data available
<b>Skin sensitisation</b>	No data available
<b>Respiratory sensitisation</b>	No data available
<b>Germ cell mutagenicity</b>	No data available
<b>Carcinogenicity</b>	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC
<b>Reproductive toxicity</b>	No data available
<b>Specific Target Organ Toxicity – single exposure</b>	No data available
<b>Specific Target Organ Toxicity – repeated exposure</b>	No data available
<b>Aspiration hazard</b>	No data available

### Information on likely routes of exposure

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation
<b>Skin contact</b>	May be harmful if absorbed through skin. Causes skin irritation
<b>Eye contact</b>	May be harmful. Causes eye irritation
<b>Ingestion</b>	Harmful if swallowed

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## Additional Information

RTECS: To the best of our knowledge, the chemical, physical, and Toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological Information

12.1	Toxicity	No data available
12.2	Persistence and degradability	No data available
12.3	Bioaccumulative potential	No data available
12.4	Mobility in soil	No data available
12.5	Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required / not conducted.
12.6	Other adverse effects	

## SECTION 13: Disposal Considerations

### 13.1 Waste treatment methods

To be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.

## SECTION 14: Transport Information

### ADR

14.1	UN Number	None
14.2	UN Proper shipping name	Not dangerous goods
14.3	Transport hazard class(es)	Not dangerous goods
14.4	Packing group	Not dangerous goods
14.5	Environmental hazards	None
14.6	Special precautions for the user	Not dangerous goods

### ADN

14.1	UN Number	None
14.2	UN Proper shipping name	Not dangerous goods
14.3	Transport hazard class(es)	Not dangerous goods
14.4	Packing group	Not dangerous goods
14.5	Environmental hazards	None
14.6	Special precautions for the user	Not dangerous goods

### RID

14.1	UN Number	None
14.2	UN Proper shipping name	Not dangerous goods
14.3	Transport hazard class(es)	Not dangerous goods
14.4	Packing group	Not dangerous goods
14.5	Environmental hazards	None
14.6	Special precautions for the user	Not dangerous goods

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

## IATA/ICAO

14.1	UN Number	None
14.2	UN Proper shipping name	Not dangerous goods
14.3	Transport hazard class(es)	Not dangerous goods
14.4	Packing group	Not dangerous goods
14.5	Environmental hazards	None
14.6	Special precautions for the user	Not dangerous goods

## IMDG

14.1	UN Number	None
14.2	UN Proper shipping name	Not dangerous goods
14.3	Transport hazard class(es)	Not dangerous goods
14.4	Packing group	Not dangerous goods
14.5	Environmental hazards	None
14.6	Special precautions for the user	Not dangerous goods
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Not dangerous goods

## SECTION 15: Regulatory Information

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

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 1907/2006 as amended. The product has been classified in accordance with Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

### 15.2 Chemical Safety Assessment

A chemical safety assessment is not required and has not been carried out.

## SECTION 16: Other Information

### Full text of relevant R-phrases and/or H-statements:

Hazard Statement(s): None

Supplemental Hazard information (EU): None

# Safety Data Sheet

According to Regulation (EC)  
No. 1907/2006 (REACH)

Risk phrase(s): None

## Abbreviations:

CAS:	Chemical Abstracts Service;
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC <sub>50</sub> :	Effective Concentration 50%
EL <sub>50</sub> :	Effective Loading rate 50%
IC <sub>50</sub> :	Inhibitory Concentration 50%
LC <sub>50</sub> :	Lethal Concentration 50%
LD <sub>50</sub> :	Lethal Dose 50%
LL <sub>50</sub> :	Lethal Loading rate 50%
LCLo:	Lowest lethal concentration
LOEL:	Lowest Observed Effect Level
NOEL:	No Observed Effect Level
PBT:	Persistent, Bioaccumulative and Toxic.
vPvB:	Very Persistent and Very Bioaccumulative.

## References:

Supplier's Safety Data Sheets for ingredients  
ECHA disseminated REACH dossiers  
ECHA Classification & Labelling Inventory  
Approved Classification and Labelling Guide (Sixth edition)  
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP)  
Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)

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## Version history:

Version:	2.0
Issue date:	17/01/2014
Previous Version:	1.0
Issue date of previous version:	30/07/2007
Sections changed from previous version:	All

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006  
Version 5.0 Revision Date 31.10.2012  
Print Date 12.07.2017

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product identifiers

Product name : Potassium hydrogen phthalate

Product Number : P1088  
Brand : Sigma-Aldrich  
CAS-No. : 877-24-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Sigma-Aldrich Company Ltd.  
The Old Brickyard  
NEW ROAD, GILLINGHAM  
Dorset  
SP8 4XT  
UNITED KINGDOM

Telephone : +44 (0)1747 833000  
Fax : +44 (0)1747 833313  
E-mail address : eurtechserv@sial.com

#### 1.4 Emergency telephone number

Emergency Phone # : +44 (0)870 8200418 (CHEMTREC)

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.  
This substance is not classified as dangerous according to Directive 67/548/EEC.

#### 2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

#### 2.3 Other hazards - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms : KHP  
Potassium biphthalate  
Potassium phthalate monobasic  
Phthalic acidmonopotassium salt  
Potassium hydrogen phthalate

Formula :  $C_8H_5KO_4$   
Molecular Weight : 204.22 g/mol

---

#### 4. FIRST AID MEASURES

##### 4.1 Description of first aid measures

###### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

###### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

###### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

###### In case of eye contact

Flush eyes with water as a precaution.

###### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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

no data available

---

#### 5. FIREFIGHTING MEASURES

##### 5.1 Extinguishing media

###### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Potassium oxides

##### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

##### 5.4 Further information

no data available

---

#### 6. ACCIDENTAL RELEASE MEASURES

##### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust.

##### 6.2 Environmental precautions

Do not let product enter drains.

##### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

##### 6.4 Reference to other sections

For disposal see section 13.

---

#### 7. HANDLING AND STORAGE

##### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

##### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 **Specific end uses**  
no data available

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

##### Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 30 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                    |                   |
|--------------------|-------------------|
| a) Appearance      | Form: solid       |
| b) Odour           | no data available |
| c) Odour Threshold | no data available |



d) pH	4
e) Melting point/freezing point	Melting point/range: 295 - 300 °C - dec.
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.640 g/cm <sup>3</sup>
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	no data available
p) Autoignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidizing properties	no data available

**9.2 Other safety information**  
no data available

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**10. STABILITY AND REACTIVITY**

**10.1 Reactivity**

no data available

**10.2 Chemical stability**

no data available

**10.3 Possibility of hazardous reactions**

no data available

**10.4 Conditions to avoid**

no data available

**10.5 Incompatible materials**

Strong oxidizing agents

**10.6 Hazardous decomposition products**

Other decomposition products - no data available

---

**11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute toxicity**

LD50 Oral - rat - > 3,200 mg/kg

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: CZ4326000

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**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

no data available

**12.6 Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.



## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 4.2 Revision Date 03.09.2014

Print Date 01.05.2016

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

#### 1.1 Product identifiers

Product name : Gram's iodine solution

Product Number : HT902

Brand : Sigma

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Sigma-Aldrich Company Ltd.  
The Old Brickyard  
NEW ROAD, GILLINGHAM  
Dorset  
SP8 4XT  
UNITED KINGDOM

Telephone : +44 (0)1747 833000

Fax : +44 (0)1747 833313

E-mail address : eurtechserv@sial.com

#### 1.4 Emergency telephone number

Emergency Phone # : +44 (0)1747 833100

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.  
Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

#### 2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

#### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

No components need to be disclosed according to the applicable regulations.

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Nature of decomposition products not known.

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

---

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Light sensitive. Air sensitive.

Storage class (TRGS 510): Non Combustible Liquids

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**8.2 Exposure controls****Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment****Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**

impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

---

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available

l) Vapour density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

Other decomposition products - No data available  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence (Potassium iodide)

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**SECTION 12: Ecological information**

**12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects**

Harmful to aquatic life.

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**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

---

**SECTION 14: Transport information**

**14.1 UN number**

ADR/RID: -

IMDG: -

IATA: -

**14.2 UN proper shipping name**

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

**14.3 Transport hazard class(es)**

ADR/RID: -

IMDG: -

IATA: -

**14.4 Packaging group**

ADR/RID: -

IMDG: -

IATA: -

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

No data available



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**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

No data available

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

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**SECTION 16: Other information****Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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MATERIAL SAFETY DATA SHEET  
Disodium hydrogen orthophosphate dihydrate

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Disodium hydrogen orthophosphate dihydrate  
**Catalog Numbers:** S/4440/53, S/4440/60, S/4440/65, S/4440/71, S/4450/53, S/4450/60, S/4450/65, S/4450/68, S/4450/71, S/4450/PC70, S/4460/53, SP/0134, SP/0492, SP/0561  
**Synonyms:** Phosphoric acid, disodium salt, dihydrate; Dibasic sodium phosphate, dihydrate; Disodium hydrogen phosphate, dihydrate.  
**Company Identification:** Fisher Scientific UK  
 Bishop Meadow Road, Loughborough  
 Leics. LE11 5RG  
**For information in Europe, call:** (01509) 231166  
**Emergency Number, Europe:** 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#	Hazard Symbols:	Risk Phrases:
10028-24-7	Sodium phosphate, dibasic, dihydrate	100	unlisted		

Text for R-phrases: see Section 16

**Hazard Symbols:** None listed

**Risk Phrases:** None listed

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

*Not available*

**Potential Health Effects**

**Eye:** May cause eye irritation.  
**Skin:** May cause skin irritation.  
**Ingestion:** May cause irritation of the digestive tract.  
**Inhalation:** May cause respiratory tract irritation.  
**Chronic:** No information found.

Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.  
**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.  
**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.  
**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

**Notes to Physician:**

### Section 5 - Fire Fighting Measures

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
- Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

### Section 6 - Accidental Release Measures

- General Information:** Use proper personal protective equipment as indicated in Section 8.
- Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container.

### Section 7 - Handling and Storage

- Handling:** Use with adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Use only in a chemical fume hood.
- Storage:** Store in a cool, dry place. Store in a tightly closed container.

### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:**

Good general ventilation should be sufficient to control airborne levels.

**Exposure Limits**

CAS# 7558-79-4:

CAS# 10028-24-7:

**Personal Protective Equipment**

- Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- Skin:** Wear appropriate protective gloves to prevent skin exposure.
- Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

### Section 9 - Physical and Chemical Properties

- Physical State:** Solid
- Color:** white
- Odor:** Not available
- pH:** Not available
- Vapor Pressure:** Not available
- Viscosity:** Not available
- Boiling Point:** Not available
- Freezing/Melting Point:** Not available
- Autoignition Temperature:** Not applicable
- Flash Point:** Not applicable.
- Explosion Limits: Lower:** Not available
- Explosion Limits: Upper:** Not available
- Decomposition Temperature:** Not available
- Solubility in water:** Soluble in water.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** Not applicable.

**Molecular Weight:**

#### Section 10 - Stability and Reactivity

<b>Chemical Stability:</b>	Stable under normal temperatures and pressures.
<b>Conditions to Avoid:</b>	Incompatible materials.
<b>Incompatibilities with Other Materials</b>	Not available
<b>Hazardous Decomposition Products</b>	Irritating and toxic fumes and gases.
<b>Hazardous Polymerization</b>	Has not been reported.

#### Section 11 - Toxicological Information

**RTECS#:** CAS# 7558-79-4: WC4500000  
CAS# 10028-24-7: None listed

**LD50/LC50:** RTECS:  
**CAS# 7558-79-4:** Draize test, rabbit, eye: 500 mg/24H Mild;  
Draize test, rabbit, skin: 500 mg/24H Mild;  
Oral, rat: LD50 = 17 gm/kg;

RTECS:  
**CAS# 10028-24-7:**

**Carcinogenicity:** Sodium phosphate, dibasic, anhydrous - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Sodium phosphate, dibasic, dihydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Other:** See actual entry in RTECS for complete information.

#### Section 12 - Ecological Information

Not available

#### Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

#### Section 14 - Transport Information

	<b>IATA</b>	<b>IMO</b>	<b>RID/ADR</b>
<b>Shipping Name:</b>	Not regulated as a hazardous material	Not regulated as a hazardous material	Not regulated as a hazardous material
<b>Hazard Class:</b>			
<b>UN Number:</b>			
<b>Packing Group:</b>			

USA RQ: CAS# 7558-79-4: 5000 lb final RQ; 2270 kg final RQ

#### Section 15 - Regulatory Information

##### European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 7558-79-4: 1

CAS# 10028-24-7: 1

Canada

CAS# 7558-79-4 is listed on Canada's DSL List

#### **US Federal**

TSCA

CAS# 7558-79-4 is listed on the TSCA Inventory.

CAS# 10028-24-7 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the Inventory (40CFR720.3(u)(2)).

### Section 16 - Other Information

#### **Text for R-phrases from Section 2**

**MSDS Creation Date:** 12/12/1997

**Revision #3 Date** 10/03/2005

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