



SAFETY DATA SHEET

Creation Date 30-Nov-2010

Revision Date 02-Jun-2015

Revision Number 4

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: Phosphorus, red
Cat No. : 345975000; 345970000; 345970025
Synonyms None
CAS-No 7723-14-0
EC-No. 231-768-7
Molecular Formula P
Reach Registration Number 01-2119489913-23

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

Recommended Use Laboratory chemicals.
Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category PC21 - Laboratory chemicals
Process categories PROC15 - Use as a laboratory reagent
Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable solids Category 1

Health hazards

Based on available data, the classification criteria are not met

Environmental hazards

Chronic aquatic toxicity Category 3

2.2. Label elements

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015



Signal Word

Danger

Hazard Statements

- H228 - Flammable solid
- H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P273 - Avoid release to the environment
- P233 - Keep container tightly closed

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Phosphorus	7723-14-0	EEC No. 231-768-7	>95	Aquatic Chronic 3 (H412) Flam. Sol. 1 (H228)

Reach Registration Number	01-2119489913-23
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Full text of H- and EUH-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Never give anything by mouth to an unconscious person. Drink plenty of water. Induce vomiting, but only if victim is fully conscious. Call a physician immediately. Get medical attention.
Inhalation	Remove from exposure, lie down. Move to fresh air.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

No information available.

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

ACR34597

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Dry chemical, soda ash, lime or sand.

Extinguishing media which must not be used for safety reasons

Carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

Combustible material.

Hazardous Combustion Products

Oxides of phosphorus, Phosphorus trihydride (phosphine).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

6.2. Environmental precautions

See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Avoid dust formation. Use spark-proof tools and explosion-proof equipment. Provide adequate ventilation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid contact with clothing. Avoid breathing vapors or mists. Do not ingest. Use only in area provided with appropriate exhaust ventilation. Use explosion-proof equipment. Use only non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area. Keep away from oxidizing agents.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

8.1. Control parameters

Exposure limits

List source(s):

Component	Italy	Germany	Portugal	The Netherlands	Finland
Phosphorus		TWA: 0.01 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 0.01 mg/m ³ (8 Stunden). MAK Höhepunkt: 0.02 mg/m ³			

Component	Austria	Denmark	Switzerland	Poland	Norway
Phosphorus	MAK-KZW: 0.2 mg/m ³ 15 Minuten MAK-TMW: 0.1 mg/m ³ 8 Stunden		STEL: 0.02 mg/m ³ 15 Minuten TWA: 0.02 mg/m ³ 8 Stunden		

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Phosphorus		TWA-GVI: 0.1 mg/m ³ 8 satima. STEL-KGVI: 0.3 ppm 15 minutama.			TWA: 0.1 mg/m ³ 8 hodinách. Ceiling: 0.3 mg/m ³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Phosphorus	TWA: 0.1 mg/m ³ 8 tundides.		STEL: 0.3 mg/m ³ TWA: 0.1 mg/m ³	STEL: 0.1 mg/m ³ 15 percekben. CK TWA: 0.1 mg/m ³ 8 órában. AK	

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Phosphorus	TWA: 0.03 mg/m ³				TWA: 0.05 mg/m ³ 8 ore

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Phosphorus		Ceiling: 0.1 mg/m ³ TWA: 0.05 mg/m ³ dust	TWA: 0.1 mg/m ³ 8 urah inhalable fraction STEL: 0.1 mg/m ³ 15 minutah inhalable fraction		

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Derived No Effect Level (DNEL)

Workers

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral Dermal Inhalation				30 mg/kg bw/day

Predicted No Effect Concentration (PNEC) No information available.

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Safety glasses with side-shields Goggles (European standard - EN 166)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

Dark red

Physical State

Solid

Odor

Slight

Odor Threshold

No data available

pH

No information available

Melting Point/Range

590 °C / 1094 °F

Softening Point

No data available

Boiling Point/Range

No information available

Flash Point

No information available

Method - No information available

Evaporation Rate

Not applicable

Solid

Flammability (solid,gas)

No information available

Explosion Limits

No data available

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

Vapor Pressure	0.031	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	2.34	
Bulk Density	No data available	
Water Solubility	Insoluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	215 °C	
Decomposition Temperature	300°C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

Molecular Formula	P
Molecular Weight	30.96

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Hazardous Polymerization	No information available.
Hazardous Reactions	No information available.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Exposure to light. Incompatible products.

10.5. Incompatible materials

Halogens. Metals. copper. Oxidizing agents.

10.6. Hazardous decomposition products

Oxides of phosphorus. Phosphorus trihydride (phosphine).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phosphorus	>15000 mg/kg (Rat Female)		

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;

Respiratory	Based on available data, the classification criteria are not met
Skin	Based on available data, the classification criteria are not met

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

- (e) germ cell mutagenicity; Based on available data, the classification criteria are not met
- (f) carcinogenicity; Based on available data, the classification criteria are not met
There are no known carcinogenic chemicals in this product
- (g) reproductive toxicity; Based on available data, the classification criteria are not met
- (h) STOT-single exposure; Based on available data, the classification criteria are not met
- (i) STOT-repeated exposure; Based on available data, the classification criteria are not met
Target Organs No information available.
- (j) aspiration hazard; Not applicable
Solid
- Other Adverse Effects See actual entry in RTECS for complete information
- Symptoms / effects, both acute and delayed No information available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Phosphorus	LC50: 33.2 mg/L/96h (Danio rerio)	EC50: 10.5 mg/L/48h		

12.2. Persistence and degradability

Persistence

Degradability

Degradation in sewage treatment plant

Not readily biodegradable

Insoluble in water.

Not relevant for inorganic substances.

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential

May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Phosphorus		<200

12.4. Mobility in soil

Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility.

12.5. Results of PBT and vPvB assessment

No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information

Persistent Organic Pollutant

Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors

This product does not contain any known or suspected substance

This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused

Waste is classified as hazardous. Dispose of in accordance with the European Directives

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

Products	on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point.
European Waste Catalogue (EWC)	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Other Information	Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN1338
14.2. UN proper shipping name	PHOSPHORUS, AMORPHOUS
14.3. Transport hazard class(es)	4.1
14.4. Packing group	III

ADR

14.1. UN number	UN1338
14.2. UN proper shipping name	PHOSPHORUS, AMORPHOUS
14.3. Transport hazard class(es)	4.1
14.4. Packing group	III

IATA

14.1. UN number	UN1338
14.2. UN proper shipping name	PHOSPHORUS, AMORPHOUS
14.3. Transport hazard class(es)	4.1
14.4. Packing group	III

14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Phosphorus	231-768-7	-		X	X	-	X	-	X	X	X

National Regulations

Component	France - INRS (Tables of occupational diseases)
Phosphorus	Tableaux des maladies professionnelles (TMP) - RG 5

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

Take note of Dir 94/33/EC on the protection of young people at work

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

ACR34597

SAFETY DATA SHEET

Phosphorus, red

Revision Date 02-Jun-2015

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full Text of H-/EUH-Statements Referred to Under Section 3

H228 - Flammable solid

H412 - Harmful to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - Volatile Organic Compounds

Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date 30-Nov-2010

Revision Date 02-Jun-2015

Revision Summary SDS sections updated.

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

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet