

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

## Section 1 - Identification

**Product Name** Red phosphorus

**CAS No** 7723-14-0

**Synonyms** None

**Product Code** **78189**

**Address** ThermoFisher Scientific Australia Pty Ltd  
5 Caribbean Drive, Scoresby  
VICTORIA 3179, Australia

**Emergency Tel.** **CHEMTREC®**  
**03 9757 4559 or +613 9757 4559**

**Telephone / Fax Numbers** Tel: 1300 735 292  
Fax: 1800 067 639

**E-mail address** ANZinfo@thermofisher.com

**Recommended Use** Laboratory chemicals.

**Uses advised against** This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

## Section 2 - Hazard(s) Identification

### Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

#### Physical hazards

Flammable solids

Category 1

#### Health hazards

No hazards identified

#### Environmental hazards

Chronic aquatic toxicity

Category 3

### Label Elements



Flame

**Signal Word****Danger****Hazard Statements**

H228 - Flammable solid

H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P240 - Ground and bond container and receiving equipment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P403 - Store in a well-ventilated place

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information****Section 3 - Composition and Information on Ingredients**

Component	CAS No	Weight %
Phosphorus	7723-14-0	>95

**Section 4 - First Aid Measures**

<b>Inhalation</b>	Remove from exposure, lie down. Remove to fresh air.
<b>Ingestion</b>	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.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
<b>First Aid Facilities</b>	Eyewash, safety shower and washroom.
<b>Most important symptoms and effects</b>	No information available.
<b>Notes to Physician</b>	Treat symptomatically.

## Section 5 - Fire Fighting Measures

**Suitable Extinguishing Media**

Dry chemical, soda ash, lime or sand.

**Extinguishing media which must not be used for safety reasons**

Carbon dioxide (CO<sub>2</sub>).

**Hazardous Decomposition Products**

Oxides of phosphorus, Phosphorus trihydride (phosphine).

**Decomposition Temperature**

300°C

**Specific Hazards Arising from the Chemical**

Combustible material.

**Special protective equipment and precautions for fire fighters**

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

**Emergency procedures**

Ensure adequate ventilation.

**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.

**Methods for Containment and Clean Up****Clean-up methods - small spillage**

Avoid dust formation. Use spark-proof tools and explosion-proof equipment. Provide adequate ventilation. Sweep up and shovel into suitable containers for disposal.

**Clean-up methods - large spillage**

Typically only supplied in small quantities as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

**Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## Section 7 - Handling and Storage

**Precautions for Safe Handling**

Avoid contact with skin and eyes. Avoid contact with skin and clothing. Avoid breathing vapors or mists. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools.

**Conditions for Safe Storage, Including any Incompatibilities**

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

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## Section 8 - Exposure Controls and Personal Protection

### Exposure limits

**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]  
 Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia **DE** - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Phosphorus	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>			TWA: 0.01 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 0.02 mg/m <sup>3</sup>

### Biological limit values

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

### 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

Wear safety glasses with side shields (or goggles) Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber	See manufacturers	-	AS/NZS 2161	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

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.

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

#### Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

#### Recommended Filter type: Recommended half mask:-

Particulates filter conforming to EN 143 (or AUS/NZ equivalent)  
 Particle filtering: EN149:2001 (or AUS/NZ equivalent)  
 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

**Information on basic physical and chemical properties**

<b>Appearance</b>	Dark red	
<b>Physical State</b>	Solid	
<b>Odor</b>	Slight	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	590 °C / 1094 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	No information available	
<b>Flash Point</b>	No information available	<b>Method -</b> No information available
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available	
<b>Vapor Pressure</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	Insoluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Autoignition Temperature</b>	215 °C	
<b>Decomposition Temperature</b>	300°C	
<b>Viscosity</b>	Not applicable	Solid
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<b>Other information</b>		
<b>Molecular Formula</b>	P	
<b>Molecular Weight</b>	30.96	

**Section 10 - Stability and Reactivity**

<b>Reactivity</b>	No
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Keep away from open flames, hot surfaces and sources of ignition, Excess heat, Exposure to light, Incompatible products.
<b>Incompatible Materials</b>	Halogens, Metals, copper, Oxidizing agent.
<b>Hazardous Decomposition Products</b>	Oxides of phosphorus. Phosphorus trihydride (phosphine).
<b>Hazardous Polymerization</b>	No information available.

**Section 11 - Toxicological Information****Information on Toxicological Effects****Product Information**

<b>(a) acute toxicity;</b>	
<b>Oral</b>	Based on available data, the classification criteria are not met
<b>Dermal</b>	Based on available data, the classification criteria are not met

<b>Inhalation</b>	Based on available data, the classification criteria are not met		
<b>Component</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
Phosphorus	>15000 mg/kg (Rat Female)		LC50 = 4.3 mg/L ( Rat ) 1 h
<b>(b) skin corrosion/irritation;</b>	Based on available data, the classification criteria are not met		
<b>(c) serious eye damage/irritation;</b>	Based on available data, the classification criteria are not met		
<b>(d) respiratory or skin sensitization;</b>			
<b>Respiratory</b>	Based on available data, the classification criteria are not met		
<b>Skin</b>	Based on available data, the classification criteria are not met		
<b>(e) germ cell mutagenicity;</b>	Based on available data, the classification criteria are not met		
<b>(f) carcinogenicity;</b>	Based on available data, the classification criteria are not met		
	There are no known carcinogenic chemicals in this product		
<b>(g) reproductive toxicity;</b>	Based on available data, the classification criteria are not met		
<b>(h) STOT-single exposure;</b>	Based on available data, the classification criteria are not met		
<b>(i) STOT-repeated exposure;</b>	Based on available data, the classification criteria are not met		
<b>Target Organs</b>	None known.		
<b>(j) aspiration hazard;</b>	Not applicable		
	Solid		
<b>Other Adverse Effects</b>	See actual entry in RTECS for complete information		
<b>Symptoms / effects, both acute and delayed</b>	No information available		

## Section 12 - Ecological Information

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		
Persistence and Degradability	Not readily biodegradable			
Persistence	Insoluble in water.			
Degradability	Not relevant for inorganic substances.			
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.			
Bioaccumulative Potential	May have some potential to bioaccumulate			
Component	log Pow		Bioconcentration factor (BCF)	
Phosphorus			<200 dimensionless	
Mobility	Spillage unlikely to penetrate soil. Is not likely mobile in the environment due its low water solubility			
Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors			
Persistent Organic Pollutant	This product does not contain any known or suspected substance			
Ozone Depletion Potential	This product does not contain any known or suspected substance			

## Section 13 - Disposal Considerations

**Waste from Residues/Unused Products**

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

**Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point.

**Other Information**

Chemical wastes should be disposed through a licensed commercial waste collection service. Do not flush to 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**

UN-No UN1338  
Proper Shipping Name PHOSPHORUS, AMORPHOUS  
Hazard Class 4.1  
Packing Group III

**ADG**

UN-No UN1338  
Proper Shipping Name PHOSPHORUS, AMORPHOUS  
Hazard Class 4.1  
Packing Group III

Component	Hazchem Code
Phosphorus	1WE
7723-14-0 ( >95 )	1Z

**IATA**

UN-No UN1338  
Proper Shipping Name PHOSPHORUS, AMORPHOUS  
Hazard Class 4.1  
Packing Group III

**Environmental hazards** No hazards identified

**Special Precautions** No special precautions required

**Additional information** None known

## Section 15 - Regulatory Information

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

**National Regulations** Australia

See section 8 for national exposure control parameters.

**Standard for the Uniform Scheduling of Medicines and Poisons**

No poison schedule number allocated.

**Australian Industrial Chemicals Introduction Scheme (AICIS)**

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Phosphorus - 7723-14-0	Present	-

**Australian - Illicit Drug Precursors/Reagents Substance List**

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances.

**Chemicals of Security Concern**

This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

Component	Australian - Illicit Drug Precursors/Reagents Substance List	Chemicals of Security Concern
Phosphorus - 7723-14-0	Category 1	Listed in Appendix A

**Legend**

Category 1 - Chemicals that require an End User Declaration with each purchase and may only be sold to 'account customers' or customers that are prepared to open an account. Supply of these chemicals to End Users or Distributors must be delayed for a period of not less than 24 hours

**Chemicals of Security Concern** - for further information see <http://www.chemicalsecurity.gov.au/securityconcerns>

**National pollutant inventory** Subject to reporting requirements

Component	National pollutant inventory
Phosphorus - 7723-14-0	3 tonne/yr. Threshold category 3 total

**Prohibition or notification/licensing requirements**

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

**International Inventories**

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Phosphorus	X	X	231-768-7	-	X	X	-	X	X		X	KE-28713

**Legend:** X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**International Regulations**

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Rotterdam Convention (PIC)** Not applicable

**Basel convention on the control of transboundary movements of hazardous wastes and their disposal**



Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Phosphorus	7723-14-0	Listed	Not applicable	Not applicable	Not applicable

**Authorisation/Restrictions according to EU REACH**

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Phosphorus	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

## Section 16 - Other Information

**Legend**

**AICS** - Australian Inventory of Chemical Substances  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**IECSC** - Chinese Inventory of Existing Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**TWA** - Time Weighted Average  
**IARC** - International Agency for Research on Cancer  
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association  
**MARPOL** - International Convention for the Prevention of Pollution from Ships  
**NZS 5433:2012** - Transport of Dangerous Goods on Land  
**LD50** - Lethal Dose 50%  
**EC50** - Effective Concentration 50%  
**WEL** - Workplace Exposure Limit  
**DNEL** - Derived No Effect Level  
**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative  
**VOC** - (Volatile Organic Compound)

**NZIoC** - New Zealand Inventory of Chemicals  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**ENCS** - Japanese Existing and New Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**CAS** - Chemical Abstracts Service  
**ACGIH** - American Conference of Governmental Industrial Hygienists  
 Predicted No Effect Concentration (PNEC)  
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code  
**ADG** Australian Code for the Transport of Dangerous Goods by Road and Rail  
**OECD** - Organisation for Economic Co-operation and Development  
**LC50** - Lethal Concentration 50%  
**ATE** - Acute Toxicity Estimate  
**RPE** - Respiratory Protective Equipment  
**NOEC** - No Observed Effect Concentration  
**BCF** - Bioconcentration factor  
**PBT** - Persistent, Bioaccumulative, Toxic

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>  
 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.

**Revision Date** 18-Nov-2022  
**Revision Summary** Not applicable.

**This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).**

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**Disclaimer**

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of Safety Data Sheet**