

Material Safety Data Sheet

Date Printed: 14/DEC/2004

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Version 1.2

According to 91/155/EEC

1 - Product and Company Information

Product Name	PHOSPHORUS, LUMP, RED, 99.999%
Product Number	255939
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
PHOSPHORUS (RED, AMORPHOUS)	7723-14-0	231-768-7	015-002-00-7
Formula	P		
Molecular Weight	30.97 AMU		

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Highly flammable. Explosive when mixed with oxidizing substances.
Very toxic to aquatic organisms.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXPLOSION DATA

Dust Potential: This material, like most materials in powder form, is capable of creating a dust explosion.

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Flammable solid. Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Avoid raising dust. Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS: Heat sensitive.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	0.03 MG/M3
Poland		NDSch	0.24 MG/M3
Poland		NDSP	-

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	0.1 mg/m3

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	0.1 mg/m3, E

Remarks: =1=

EXPOSURE LIMITS - NORWAY

Source	Type	Value
OEL	OEL	0.1 mg/m3

EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	0.1 mg/m3

Remarks: E D

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	0.1 mg/m3
OEL	STEL	0.3 mg/m3

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Solid
	Color: Reddish-brown
	Form: Powder

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	416 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	260 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	0.03 mmHg	21 °C
SG/Density	2.34 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	4.77 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Heat.

Materials to Avoid: Sulfur, Oxidizing agents Copper, Copper alloys, Oxygen, Avoid contact with alkaline hydroxides, Bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: TH3495000

SIGNS AND SYMPTOMS OF EXPOSURE

Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue. Stomach pains, vomiting, diarrhea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 1338
Class: 4.1
PG: III
Proper Shipping Name: Phosphorus, amorphous

IMDG

UN#: 1338
Class: 4.1
PG: III
Proper Shipping Name: Phosphorus, amorphous
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1338
Class: 4.1
PG: III
Proper Shipping Name: Phosphorus, amorphous
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 015-002-00-7

INDICATION OF DANGER: F N

Highly Flammable. Dangerous for the environment.

R-PHRASES: 11 16 50

Highly flammable. Explosive when mixed with oxidizing substances. Very toxic to aquatic organisms.

S-PHRASES: 7 43 61

Keep container tightly closed. In case of fire, use water.

Avoid release to the environment. Refer to special instructions/safety data sheets.

SWITZERLAND

SWISS POISON CLASS: 4

16 - Other Information

WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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