

SAFETY DATA SHEET

Preparation Date: 7/21/15

Revision Date: 7/21/15

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: P1110
Product Name: PHOSPHORUS, RED, AMORPHOUS, FINE POWDER

Other means of identification

Synonyms: No information available
CAS #: 7723-14-0
RTECS # TH3495000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Vapors)	Category 4
Flammable solids	Category 2

Label elements

Warning

Hazard statements

Harmful if inhaled
Flammable solids



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Very toxic to aquatic life with long lasting effects
Very toxic to aquatic life

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/./? /equipment
Wear protective gloves/protective clothing/eye protection/face protection

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Phosphorus, red 7723-14-0	7723-14-0	100	*

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

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Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Harmful by inhalation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry powder. Carbon dioxide (CO₂). Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: If water is present, combustion by products include oxides of phosphorus, phosphine, phosphoric acid

Specific hazards: Flammable
Under fire situations, the more hazardous white phosphorus may be formed.
When heated to decomposition it emits irritating fumes.
May ignite with friction or contact with oxidizers.
Catches fire when heated in air to about 260°C and burns with formation of the pentoxide.
Burns with pale green light when heated in an atmosphere of chlorine.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. All equipment used when handling the product must be grounded. Keep away from incompatible materials. Remove all sources of ignition.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Alkalis. Antimony pentafluoride. Barium bromate. Beryllium. Calcium bromate. Magnesium bromate. Potassium bromate. Sodium bromate. Zinc bromate. Bromine. Bromine trifluoride. Cesium. BrN3. CsHC2. Cs3N. Chlorine trifluoride. chlorates. Copper. ClO. CrO3. Cr(OCr)2. NCl. Iodine monobromide. Iodine monochloride. Iodine pentafluoride. Iron. Lanthanum. Nickel. Silver nitrate. Oxygen. Li2C2. Li6CS. Magnesium perchlorate. Manganese. Neodymium. NBr. Nitrogen Dioxide. Nitrogen bromide. Nitrogen chloride. NOF. FNO2. Performic Acid. Platinum. K3N. K2O2. RbHC2. Se2Cl2. SeOF2. SeF4. Na2C2. Na2O2. Thorium. Peroxyformic Acid. Halogen azides. Hexalithium disilicde. Vanadium oxytrichloride. Sodium peroxide..

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Phosphorus, red 7723-14-0	None	= 0.1 mg/m ³ TWA	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
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Phosphorus, red 7723-14-0	= 0.1 mg/m ³ TWA	None	None	0.1 mg/m ³ TWAEV
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Australia and Mexico

Components	Australia	Mexico
Phosphorus, red 7723-14-0	0.1 mg/m ³ TWA	= 0.1 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles or Safety glasses with side-shields
- Skin and body protection:** Long sleeved clothing. Gloves. Chemical resistant apron.
- Respiratory protection:** Effective dust mask. Wear respirator with dust filter.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Solid.	Appearance: Amorphous powder.	Color: Dark red.
Odor: Acrid. Garlic-like.	Taste No information available	Molecular/Formula weight: 30.974 g/mole
Formula: No information available	Flammability: No information available	Flash point (°C): No data available
Flashpoint (°C/°F): No information available.	Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): 260°C (500°F)
Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available	pH: No information available
Melting point/range(°C/°F): 416°C (780.8°F) (sublimes)	Boiling point/range(°C/°F): No information available	Bulk density: No information available
Decomposition temperature(°C/°F): No information available	Density (g/cm3): No information available	Specific gravity: 2.36
Vapor pressure @ 20°C (kPa): 0.026	Evaporation rate: No information available	Vapor density: 4.77
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Very slightly soluble in cold water Insoluble in hot water Insoluble in diethyl ether Insoluble in Ammonia Insoluble in Carbon disulfide Soluble in absolute alcohol

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Reactive with alkalis

Reacts with halogens, halides, selenium oxychloride, iodine, oxygen, chlorine, sulfur, oxidizing materials (i.e. potassium, permanganate, potassium chlorate, peroxide, etc.); finely divided phosphorus with bromates, chlorates, and iodates of barium, calcium, magnesium, potassium, sodium, or zinc.

Reacts with strong alkali to form highly toxic phosphine gas

Phosphorus reacts vigorously below 250°C with any of the following materials: cesium, lithium, potassium, rubidium, sodium, sulfur.

Phosphorus boiled with alkaline hydroxides yields mixed phosphines which may ignite spontaneously in air

Red phosphorus and boron triiodide, lead dioxide, zirconium, or sodium peroxide react with incandescence

Phosphorus ignites the vapor of nitric acid and burns with an intense white light

Chemical stability

Stability:

Stable under recommended storage conditions

Possibility of Hazardous Reactions:

Hazardous polymerization does not occur

Conditions to avoid:

Heat. Ignition sources. Incompatible materials. Avoid dust formation.

Incompatible Materials:

Oxidizing agents. Alkalis. Antimony pentafluoride. Barium bromate. Beryllium. Calcium bromate. Magnesium bromate. Potassium bromate. Sodium bromate. Zinc bromate. Bromine. Bromine trifluoride. Cesium. BrN3. CsHC2. Cs3N. Chlorine trifluoride. chlorates. Copper. ClO. CrO3. Cr(OCr)2. NCl. Iodine monobromide. Iodine monochloride. Iodine pentafluoride. Iron. Lanthanum. Nickel. Silver nitrate. Oxygen. Li2C2. Li6CS. Magnesium perchlorate. Manganese. Neodymium. NBr. Nitrogen Dioxide. Nitrogen bromide. Nitrogen chloride. NOF. FNO2. Performic Acid. Platinum. K3N. K2O2. RbHC2. Se2Cl2. SeOF2. SeF4. Na2C2. Na2O2. Thorium. Peroxyformic Acid. Halogen azides. Hexalithium disilicde. Vanadium oxytrichloride. Sodium peroxide..

Hazardous decomposition products: No information available

Other Information**Corrosivity:**

Non-corrosive in the presence of glass

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Principal Routes of Exposure:**

Inhalation. Ingestion.

Acute Toxicity**Component Information**

Phosphorus, red - 7723-14-0

LD50/oral/rat = = 3.03 mg/kg Oral LD50 Rat (Loli)

11.5 mg/kg Oral LD50 Rat (RTECS)

LD50/oral/mouse = 11.5 mg/kg Oral LD50 Mouse

LD50/dermal/rat = =100 mg/kgDermal LD50Rat

LD50/dermal/rabbit = No information available

LC50/inhalation/rat = 4.3 mg/L Inhalation LC50 Rat 1 h

LC50/inhalation/mouse = No infomation available

Other LD50 or LC50information = 5 mg/kg Oral LD50 Cat

5 mg/kg Oral LD50 Dog

105 mg/kg Oral LD50 Rabbit

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 3.03mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 11.5mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = 100mg/kg

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LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = 4.3mg/l (1-hr)

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms**Skin Contact:** Causes skin irritation.**Eye Contact:** Causes eye irritation.**Inhalation** Causes respiratory tract irritation..**Ingestion** Red phosphorus is nonvolatile, insoluble, and unabsorbable and is considered nontoxic when ingested. However, it may contain traces of toxic yellow phosphorus (up to 0.6%) and large ingestions may result in adverse systemic effects. May cause irritation of digestive tract, with vomiting, diarrhea, stomach pains. May cause kidney and liver damage. .**Aspiration hazard** No information available**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Chronic Toxicity** Prolonged or repeated ingestion may affect the liver, and kidneys. Prolonged skin contact may cause skin irritation and/or dermatitis. Prolonged or repeated inhalation of phosphorus fumes may cause bronchitis, anemia, cachexia and mandibular necrosis ("phossy" or Lucifer's jaw").**Sensitization:** No information available**Mutagenic Effects:** No information available**Carcinogenic effects:** Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Phosphorus, red	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available**Reproductive Effects:** No information available**Developmental Effects:** No information available**Teratogenic Effects:** No information available**Specific Target Organ Toxicity****STOT - single exposure** No information available**STOT - repeated exposure** No information available**Target Organs:** No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Phosphorus, red - 7723-14-0

Freshwater Fish Species Data: 0.001-0.004 mg/L LC50 *Lepomis macrochirus* 96 h static 1
0.011-0.028 mg/L LC50 *Pimephales promelas* 96 h static 1
100 mg/L LC50 *Brachydanio rerio* 96 h static 1
0.0017-0.0035 mg/L LC50 *Lepomis macrochirus* 96 h flow-through 1
0.015-0.032 mg/L LC50 *Oncorhynchus mykiss* 96 h static 1

Water Flea Data: 0.025 - 0.037 mg/L EC50 *Daphnia magna* 48 h
0.03 mg/L EC50 *Daphnia magna* 48 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Phosphorus, red	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG No: 133
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Symbol(s): R1

TDG (Canada)

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available

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14. TRANSPORT INFORMATION

Packing Group: III
Description: No information available

ADR

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN1338
Proper Shipping Name: Phosphorus, amorphous
Hazard Class: 4.1
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 3L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Product code: P1110

Product name: PHOSPHORUS, RED,
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Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Phosphorus, red	Present	Present KE-28713	Present	Not present	Present	Present	Present 231-768-7

U.S. Regulations

Phosphorus, red

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1520
New Jersey (EHS) List: 1520 100 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Pennsylvania RTK - Special Hazardous Substances Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
 = 1 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Phosphorus, red	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Phosphorus, red	= 0.454 kg final RQ	100 lb TPQ 1	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Phosphorus, red	Not Applicable	04/12/1993 06/30/1998

Canada

WHMIS hazard class:

B4 Flammable solid
 D1A Very toxic materials
 E Corrosive material

Phosphorus, red

B4 D1A E

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -

Phosphorus, red

Phosphorus, red	1 %
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Inventory

Components	Canada (DSL)	Canada (NDSL)
Phosphorus, red	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Phosphorus, red	Not listed	Not listed

EU Classification**R-phrase(s)**

R11 - Highly flammable.

R16 - Explosive when mixed with oxidising substances.

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S -phrase(s)

S 2 - Keep out of the reach of children.

S 7 - Keep container tightly closed.

S43 - In case of fire use Dry Chemical powder, Dry Sand. Never use water

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Components	Classification	Concentration Limits:	Safety Phrases
Phosphorus, red	F; R11 R16 R52-53	No information	S2 S7 S43 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

F - Highly flammable.

**16. OTHER INFORMATION**

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Preparation Date: 7/21/15
Revision Date: 7/21/15
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet