

Issue Date 17-Apr-2015

Revision Date 17-Apr-2015

Version 1

1. IDENTIFICATION

Product identifier

Product Name Phosphorus Pentabromide

Other means of identification

Product Code 6500
UN/ID no. UN2691
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

Harrell Industries, Inc.
 2495 Commerce Drive
 Rock Hill, SC 29730

www.harrellindustries.com

Emergency telephone number

Company Phone Number 803-327-6335
Fax Number 803-327-7808
24 Hour Emergency Phone Number 800 633-8253 (PERS)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

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


Skin corrosion/irritation	Category 1
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Label elements

Emergency Overview

Danger

Hazard statements
 Causes severe skin burns and eye damage



TOXIC! TOXIC BY INHALATION, SKIN CONTACT, AND INGESTION. CAUSES BURNS. REACTS VIOLENTLY WITH WATER! IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE). IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. REMOVE ALL CONTAMINATED CLOTHING IMMEDIATELY. WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION. STORE

UNDER NITROGEN.

Appearance Dark brown to yellow
crystals

Physical state Solid

Odor Sharp bromine odor

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash skin thoroughly after handling

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

Corrosive. Redness, pain, blurred vision can occur. Can cause burns and permanent eye damage.

May cause blindness.

Rapidly absorbed through the skin with systematic poisoning effects to follow.

This material is extremely destructive to tissue of the mucus membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi as well as chemical pneumonitis and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Poison. Symptoms may include burning pain in mouth and throat, abdominal pain, nausea, vomiting, headache, dizziness, muscular weakness, central nervous system effects, increase in heart rate, irregular breathing, coma, and possibly death.

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Not applicable

Unknown acute toxicity

100% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Synonyms

None.

Formula

PBr₅

Chemical Name	CAS No.	Weight-%
Phosphorus Pentabromide	7789-69-7	95 min

4. FIRST AID MEASURES

Description of first aid measures

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

Skin contact

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician immediately. Wash clothing before reuse. Discard contaminated shoes.

Inhalation

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

Ingestion

Wash out mouth with water given the person is conscious. Get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms

No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical.

Unsuitable extinguishing media DO NOT USE WATER.

Specific hazards arising from the chemical

Emits toxic fumes under fire conditions. Water hydrolyzes this material liberating acidic gas which, in contact with metal surfaces, can generate flammable and/or explosive hydrogen gas.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions 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

Evacuate area! Ventilate area of spill. Wear appropriate personal protective equipment. Absorb spilled material with an inert material (e. g., vermiculite, dry sand, earth), and place in a closed chemical waste container. Do not use combustible materials, such as saw dust. Wash spill site after material pickup is complete. Do not flush to sewer!.

Environmental precautions

Environmental precautions

See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment

Keep in suitable, closed containers for disposal.

Methods for cleaning up

Absorb with inert materials (e.g., vermiculite, dry sand, earth). Do not use combustible materials, such as saw dust. Do not flush to sewer!!. Wash spill site after pickup is complete.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions

DO NOT ALLOW CONTACT WITH WATER! Keep in a tightly closed container. Store under nitrogen. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Containers of this material may be hazardous when empty since they retain product residues; observe all warnings and precautions listed for the product. CORROSIVE. POISON.

Incompatible materials

Water spray. Strong bases. Alcohols. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Use chemical safety goggles and/or full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear protective butyl rubber gloves. Wear protective Neoprene™ gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Sharp bromine odor
Appearance	Dark brown to yellow crystals	Odor threshold	No information available
Color	Dark brown to yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	No information available	
Water solubility	No information available	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	430.56
VOC Content (%)	No information available
Density	No information available

Bulk density No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Trifluoroacetic acid: Moisture and incompatibles. Heat.

Incompatible materials

Water spray. Strong bases. Alcohols. Acids.

Hazardous Decomposition Products

Hydrogen bromide gas. Phosphine. phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	No data available
Inhalation	Harmful by inhalation.
Eye contact	Causes eye burns.
Skin contact	Harmful if absorbed through the skin. Causes burns.
Ingestion	Harmful if swallowed. Causes burns.

Information on toxicological effects

Symptoms Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, shortness of breath, headache, nausea.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

12. ECOLOGICAL INFORMATION

Ecotoxicity

100% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

<u>DOT</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
Reportable Quantity (RQ)	2 kg
<u>TDG</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>MEX</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>ICAO (air)</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>IATA</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>IMDG</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>RID</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>ADR</u>	Regulated
UN/ID no.	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II
<u>ADN</u>	Regulated

UN Number	UN2691
Proper shipping name	Phosphorus Pentabromide
Hazard Class	8
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphorus Pentabromide 7789-69-7	X	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards 0	Flammability 0	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Personal protection X

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Revision Note

No information available

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