

Material Safety Data Sheet

Material Name: PDS Phosphorous Planar Diffusion Source

ID: MSDS-700

*** Section 1 - Chemical Product and Company Identification ***

Foundry Filter Materials: PH950, PH1000N, PH1025

Chemical Name: Article

Product Use: Not intended for food and drug use.

Manufacturer Information

Saint-Gobain Ceramics

Boron Nitride

168 Creekside Drive

Amherst, NY USA 14428-2027

Phone: 1 (716) 691-2052

Fax: 1 (716) 691-2090

Emergency # 1-800-424-9300 (CHEMTREC)

General Comments

NOTE: CHEMTREC emergency telephone number is to be used in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Substance	Percent
66402-68-4	Ceramic materials and wares, chemicals	100
13827-38-8	Silicon pyrophosphate (**See NOTE Below)	20-70

Substance Related Regulatory Information

This preparation may be regulated, have exposure limits or other information identified as the following: Nuisance particulates.

Component Information/Information on Non-Hazardous Components

This material is considered an "article" under 29 CFR 1910.1200 (Hazard Communication). The information in this MSDS is provided for situations where this article may be deformed creating dusts or fumes which may be potentially hazardous.

**NOTE: This is not a separate component, it is included in the Ceramic materials and wares. See "Section 11: Toxicological Information" for more information.

*** Section 3 - Hazards Identification ***

Emergency Overview

Product is an odorless, inert white wafer. This wafer is an article and is not expected to result in exposure to hazardous substances under normal conditions of use. However, during unusual mechanical or thermal processing operations, it may be possible to produce irritating vapors or nuisance dust that may cause mechanical irritation to eyes, skin and respiratory tract.

Potential Health Effects: Eyes

Direct contact with abraded powder may cause conjunctivitis. Vapors released during thermal processing may cause eye irritation. Contact with heated material may cause thermal burns.

Potential Health Effects: Skin

Abraded powder may cause irritation to the skin. When heated, preparation can cause thermal burns. Vapors released during thermal processing may cause skin irritation.

Potential Health Effects: Ingestion

Ingestion of this preparation is unlikely. However, ingestion may produce gastrointestinal irritation and disturbances.

Potential Health Effects: Inhalation

Inhalation of dusts/vapors/fumes generated by mechanical or thermal processing may cause respiratory irritation with coughing, choking, shortness of breath and pulmonary edema. Prolonged overexposure to phosphorous vapors may result in chronic pneumoconiosis (fibrotic changes in the lung).

HMIS Ratings: Health: 0 Fire: 0 Reactivity: 0 Pers. Prot.: safety glasses, gloves

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Material Safety Data Sheet

Material Name: PDS Phosphorous Planar Diffusion Source

ID: MSDS-700

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention. If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately.

First Aid: Skin

For skin contact, wash immediately with soap and water. If irritation persists, get medical attention. If hot product contacts skin, cool under running water and get medical attention.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

First Aid: Inhalation

If preparation dusts/ vapors/ fumes are inhaled, immediately remove the affected person to fresh air. Seek medical attention.

First Aid: Notes to Physician

People exposed to thermal processing fumes should be observed for delayed pulmonary edema.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not available

Upper Flammable Limit (UFL): Not available

Auto Ignition: Not available

Rate of Burning: Not available

General Fire Hazards

This preparation will not burn.

Hazardous Combustion Products

Thermal decomposition may produce toxic or corrosive vapors, including oxides of phosphorous and silicon, phosphoric acid, and hydrides of phosphorous.

Extinguishing Media

Use methods for the surrounding fire.

Fire Fighting Equipment/Instructions

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Not required.

Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Sweep up or gather material and place in appropriate container for disposal.

Evacuation Procedures

Not required.

Special Procedures

Prior to disposal, consult an approved waste disposal operative to ensure regulatory compliance.

*** Section 7 - Handling and Storage ***

Handling Procedures

If this preparation is processed at temperatures greater than 600° C, do not breathe vapors or fumes. Avoid contact with skin and eyes. Use this preparation with adequate ventilation. Wash thoroughly after handling. Do not reuse the empty container. Not for food and drug use.

Storage Procedures

Store in a cool, dry, well-ventilated area.

Material Safety Data Sheet

Material Name: PDS Phosphorous Planar Diffusion Source

ID: MSDS-700

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

Follow recommended exposure limits.

B: Component Exposure Limits

Ceramic materials and wares, chemicals (66402-68-4)

ACGIH: 10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) (related to Particulates (insoluble or poorly soluble) not otherwise specified (PNOS))

OSHA: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) (related to Particulates not otherwise regulated)

Engineering Controls

Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields.

Personal Protective Equipment: Skin

Wear gloves necessary for type of operation. Use thermal insulating gloves and other clothing as necessary to protect from thermal burns.

Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of vapor/mist/fume/dust, appropriate NIOSH/MSHA respiratory protection must be provided.

Personal Protective Equipment: General

Use good industrial hygiene practices in handling this preparation.

*** Section 9 - Physical & Chemical Properties ***

Appearance: White wafer
Physical State: Solid
Vapor Pressure: Not applicable
Boiling Point: Not applicable
Solubility (H2O): Not applicable
Molecular Weight: Mixture

Odor: Odorless
pH: Not applicable
Vapor Density: Not applicable
Melting Point: Not applicable
Specific Gravity: 1.75

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Avoid strong oxidizing agents. Temperatures above 600° C.

Incompatibility

This preparation may react with strong oxidizing agents. This preparation reacts with hydrofluoric acid.

Hazardous Decomposition

Thermal decomposition may produce toxic or corrosive vapors, including oxides of phosphorous and silicon, phosphoric acid, and hydrides of phosphorous.

Hazardous Polymerization

Will not occur.

Material Safety Data Sheet

Material Name: PDS Phosphorous Planar Diffusion Source

ID: MSDS-700

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Under unusual mechanical or thermal processing operations, this preparation may cause eye, skin and respiratory irritation. If heated to temperatures greater than 875° C, phosphorous vapors may be emitted. Acute exposure to these vapors may result in respiratory tract irritation, chemical pneumonitis, bronchitis and pulmonary edema. Prolonged or repeated exposure to phosphorous vapors may cause lung inflammation with chest pain, difficulty breathing, coughing and possible fibrotic changes in the lung (pneumoconiosis). Necrosis of the jaw may also result. Preexisting lung conditions may be aggravated by exposure to phosphorous vapors. Hematological changes and liver degeneration have been reported in experimental animals exposed to high levels of phosphorous compounds.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Other Toxicological Information

Under normal conditions of use, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate

No information available.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Avoid disposal, attempt to utilize preparation completely. Prior to disposal of unused preparation, consult an approved waste disposal operative to ensure regulatory compliance. All wastes must be handled in accordance with local, state and federal regulations.

*** Section 14 - Transportation Information ***

DOT Information

Shipping Name: Not regulated as a hazardous material.

TDG Information

Shipping Name: Not regulated as dangerous goods.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No information available.

Material Safety Data Sheet

Material Name: PDS Phosphorous Planar Diffusion Source

ID: MSDS-700

B: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Ceramic materials and wares, chemicals (related to Nuisance particulates)	66402-68-4	No	No	No	No	No	Yes ¹

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

A: General Product Information

No information available.

B: Component Analysis - Inventory

Substance	CAS #	TSCA	DSL	EINECS
Ceramic materials and wares, chemicals	66402-68-4	Yes	Yes	Yes
Silicon pyrophosphate	13827-38-8	Yes	Yes	Yes

*** Section 16 - Other Information ***

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists. AICS = Australian Inventory of Chemical Substances. CAS = Chemical Abstract Service. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. CHEMTREC = Chemical Transportation Emergency Center. DSL = Canadian Domestic Substance List. EINECS = European Inventory of New and Existing Chemical Substances. EPA = Environmental Protection Agency. HEPA = High Efficiency Particulate Air. HMIS = Hazardous Materials Identification System. IARC = International Agency for Research on Cancer. IDLH = Immediately Dangerous to Life and Health. NDSL = Canadian Non-Domestic Substance List. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NA = Not available or Not Applicable. SARA = Superfund Amendments and Reauthorization Act. TDG = Transportation of Dangerous Goods. TLV = Threshold Limit Value. TSCA = Toxic Substances Control Act. WHMIS = Workplace Hazardous Materials Information System.

Contact: Technical Service

Contact Phone: (716) 691-2052

This is the end of MSDS # MSDS-700