

Material Safety Data Sheet



Organic Bonded Abrasives, Type 3

1. Product and company identification

Product name	: Organic Bonded Abrasives, Type 3
Trade name	: POLIFLEX Fine Grinding Points, Rubber Bond (GR Bond); POLIFLEX Fine grinding wheels (GR Bond); POLIFLEX Miniature discs PFSC (GR/GHR Bond); POLIFLEX Miniature polishing lenses PF LI (GHR Bond)
Material uses	: Grinding.
Supplier/Manufacturer	: PFERD INC. 30 Jytek Drive Leominster, MA 01453 Tel: (978) 840-6420 Fax: (978) 840-6421 Email: Jim.Haglund@pferdusa.com
MSDS #	: 51
Validation date	: 09/15/2008
Responsible name	: Atrion Regulatory Services, Inc.
Emergency telephone number (with hours of operation)	: 978-790-3249 Contact Person: Mr. Mark Leblanc 8.00 am to 17.30 p.m. Eastern Time

2. Hazards identification

Physical state	: Solid. [Various shapes (wheels, discs, points or lenses).]
OSHA/HCS status	: This product is a manufactured product under the Canadian WHMIS and an Article under the United States Hazard Communication System. Therefore it is EXEMPTED from the regulatory requirements under WHMIS and HCS.
Emergency overview	: Most dust generated will be from the workpiece and not from the abrasive. Breathing dust generated during grinding may cause respiratory irritation. Organic bond mounted points and grinding wheels are manufactured Articles and as such are not considered to be controlled products under O.S.H.A and under W.H.M.I.S. when used in accordance with industry safety standards. Harmful by inhalation and if swallowed. Slightly irritating to the eyes and skin. May cause sensitization by inhalation. Avoid exposure - obtain special instructions before use. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Potential acute health effects	
Inhalation	: Breathing dust generated during grinding may cause respiratory irritation. May cause sensitization by inhalation.
Ingestion	: No known significant effects or critical hazards.
Skin	: Prolonged contact with dust from product may cause irritation.
Eyes	: Dust generated during grinding may irritate eyes.
Potential chronic health effects	
Chronic effects	: Contains material that can cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

2. Hazards identification

Target organs : Contains material which causes damage to the following organs: lungs, upper respiratory tract, eye, lens or cornea, stomach.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
irritation
watering
redness

Medical conditions aggravated by over-exposure : Some grinding operations may cause noise or vibration irritation. Prolonged exposure to elevated noise levels during operations may affect hearing. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated.

See toxicological information (section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Silicon carbide	409-21-2	<90
Aluminum Oxide	1344-28-1	<75
Kaolin	1332-58-7	<3
Silicon dioxide, amorphous	7631-86-9	<3
Sulfur	7704-34-9	<3
Zinc oxide	1314-13-2	<3
Fibre glass	65997-17-3	<3

Canada

Name	CAS number	%
Silicon carbide	409-21-2	<90
Aluminum Oxide	1344-28-1	<75
Kaolin	1332-58-7	<3
Silicon dioxide, amorphous	7631-86-9	<3
Sulfur	7704-34-9	<3
Zinc oxide	1314-13-2	<3
Fibre glass	65997-17-3	<3

The tools may be comprised of 1 or more of the above abrasives and ingredients.

This product is a manufactured product under the Canadian WHMIS and an Article under the United States Hazard Communication System. Therefore it is EXEMPTED from the regulatory requirements under WHMIS and HCS.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- Skin contact** : Wash with soap and water. Get medical attention if symptoms occur.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

- Flammability of the product** : No specific fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Avoid breathing dusts. Do not dry sweep dust. Wet dust with water before sweeping or use a HEPA vacuum to collect dust and clean equipment. Do not use compressed air for cleaning. Wash hands thoroughly after handling.
- Storage** : Store in accordance with ANSI B7.1.

8. Exposure controls/personal protection

United States

Product name

Silicon carbide

Exposure limits

ACGIH TLV (United States, 1/2008).

TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction

TWA: 3 mg/m³ 8 hour(s). Form: Respirable fraction

NIOSH REL (United States, 12/2001).

TWA: 5 mg/m³ 10 hour(s). Form: Respirable fraction

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

Aluminum Oxide

NIOSH REL (United States, 12/2001).

TWA: 5 mg/m³, (as Al) 10 hour(s).

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

ACGIH TLV (United States).

TWA: 10 mg/m³, (Al) 10 hour(s).

Kaolin

ACGIH TLV (United States, 1/2008).

TWA: 2 mg/m³ 8 hour(s). Form: Respirable fraction

NIOSH REL (United States, 12/2001).

TWA: 5 mg/m³ 10 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 10 hour(s). Form: Total

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

Silicon dioxide, amorphous

NIOSH REL (United States, 12/2001).

TWA: 6 mg/m³ 10 hour(s).

Zinc oxide

ACGIH TLV (United States, 1/2008).

STEL: 10 mg/m³ 15 minute(s).

TWA: 2 mg/m³ 8 hour(s).

NIOSH REL (United States, 12/2001).

CEIL: 15 mg/m³ Form: Dust

STEL: 10 mg/m³ 15 minute(s). Form: Fume

TWA: 5 mg/m³ 10 hour(s). Form: Dust and fumes

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Fume

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

Fibre glass

ACGIH TLV (United States).

TWA: 10 mg/m³ Form: Total dust

TWA: 5 mg/m³ Form: Respirable

OSHA PEL (United States).

TWA: 15 mg/m³ Form: Total dust

TWA: 5 mg/m³ Form: Respirable

NIOSH REL (United States).

TWA: 5 mg/m³ Form: Total dust

Canada

Product name

Aluminum Oxide

Exposure limits

CA Alberta Provincial (Canada, 10/2006).

8 hrs OEL: 10 mg/m³ 8 hour(s).

CA British Columbia Provincial (Canada, 7/2007).

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

TWA: 3 mg/m³ 8 hour(s). Form: Respirable dust

CA Ontario Provincial (Canada, 3/2007).

TWAEV: 10 mg/m³ 8 hour(s). Form: Total dust

8 . Exposure controls/personal protection

Silicon carbide	<p>CA Quebec Provincial (Canada, 12/2006). TWA: 10 mg/m³, (as Al) 8 hour(s). Form: Total dust.</p> <p>CA Alberta Provincial (Canada, 10/2006). 8 hrs OEL: 10 mg/m³ 8 hour(s).</p> <p>CA British Columbia Provincial (Canada, 7/2007). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable TWA: 3 mg/m³ 8 hour(s). Form: Respirable</p> <p>CA Ontario Provincial (Canada, 3/2007). TWA: 10 mg/m³ 8 hour(s).</p> <p>CA Quebec Provincial (Canada, 12/2006). TWA: 10 mg/m³ 8 hour(s). Form: Total dust.</p>
Fibre glass	<p>ACGIH TLV (United States). TWA: 10 mg/m³ Form: Total dust TWA: 5 mg/m³ Form: Respirable</p>
Kaolin	<p>CA Alberta Provincial (Canada, 10/2006). 8 hrs OEL: 2 mg/m³ 8 hour(s). Form: Respirable particulate</p> <p>CA British Columbia Provincial (Canada, 7/2007). TWA: 2 mg/m³ 8 hour(s). Form: Respirable</p> <p>CA Ontario Provincial (Canada, 3/2007). TWA: 2 mg/m³ 8 hour(s).</p> <p>CA Quebec Provincial (Canada, 12/2006). TWA: 5 mg/m³ 8 hour(s). Form: Respirable dust.</p>
Sulfur	<p>CA Alberta Provincial (Canada, 10/2006). 8 hrs OEL: 10 mg/m³ 8 hour(s).</p>
Zinc oxide	<p>CA Alberta Provincial (Canada, 10/2006). 8 hrs OEL: 10 mg/m³ 8 hour(s). Form: Dust 8 hrs OEL: 5 mg/m³ 8 hour(s). Form: Fume 15 min OEL: 10 mg/m³ 15 minute(s). Form: Fume</p> <p>CA British Columbia Provincial (Canada, 7/2007). TWA: 2 mg/m³ 8 hour(s). Form: Respirable STEL: 10 mg/m³ 15 minute(s). Form: Respirable</p> <p>CA Ontario Provincial (Canada, 3/2007). TWA: 2 mg/m³ 8 hour(s). STEV: 10 mg/m³ 15 minute(s).</p> <p>CA Quebec Provincial (Canada, 12/2006). TWA: 5 mg/m³ 8 hour(s). Form: fume STEV: 10 mg/m³ 15 minute(s). Form: fume</p>

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Use of this product may create elevated sound levels. Hearing protection should be worn where required.

Personal protection

- Eyes** : Safety glasses.
- Skin** : Lab coat.
- Respiratory** : Respirators are required when airborne contaminant levels exceed the TLV(s).
- Hands** : Cotton gloves.

8 . Exposure controls/personal protection

Personal protective equipment (Pictograms) :



HMIS Code/Personal protective equipment : B

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Solid. [Various shapes (wheels, discs, points or lenses).]

10 . Stability and reactivity

Stability : The product is stable.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : None known.

Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : Dust from grinding could contain ingredients listed in Section 2 and other, potentially more hazardous components of the base material being ground or coatings applied to the base material.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Sulfur	Rat	>8437 mg/kg	LD50 Oral	-

Inhalation : Breathing dust generated during grinding may cause respiratory irritation. May cause sensitization by inhalation.

Ingestion : No known significant effects or critical hazards.

Skin : Prolonged contact with dust from product may cause irritation.

Eyes : Dust generated during grinding may irritate eyes.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Aluminum Oxide	A4	-	-	-	-	-
Kaolin	A4	-	-	-	-	-
Silicon dioxide, amorphous	-	3	-	-	-	-
Zinc oxide	A4	-	-	-	-	-

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

12 . Ecological information

Aquatic ecotoxicity

Product/ingredient name

Product/ingredient name	Species	Exposure	Result
Sulfur	Daphnia	48 hours	Acute EC50 >5000 ppm
	Fish	96 hours	Acute LC50 >10000000 ug/L
Zinc oxide	Fish	96 hours	Acute LC50 1.1 to 2.5 ppm
	Daphnia	48 hours	Acute LC50 98 ug/L Fresh water

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information

DOT/ TDG / IMDG/ IATA : Not regulated.

15 . Regulatory information

United States

HCS Classification : This product is an Article under the United States Hazard Communication System. Therefore it is EXEMPTED from the regulatory requirements HCS.

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Aluminum Oxide; Silicon carbide; Kaolin; Sulfur; Zinc oxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification
 Aluminum Oxide: Immediate (acute) health hazard; Silicon carbide: Immediate (acute) health hazard; Kaolin: Delayed (chronic) health hazard; Sulfur: Fire hazard; Zinc oxide: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: Zinc oxide

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention No products were found.

Clean Air Act (CAA) 112 regulated flammable substances No products were found.

Clean Air Act (CAA) 112 regulated toxic substances No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Aluminum Oxide	1344-28-1	60 - 100
	Zinc oxide	1314-13-2	1 - 5
Supplier notification	Aluminum Oxide	1344-28-1	60 - 100
	Zinc oxide	1314-13-2	1 - 5

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

15 . Regulatory information

State regulations

- : **Connecticut Carcinogen Reporting:** None of the components are listed.
- Connecticut Hazardous Material Survey:** None of the components are listed.
- Florida substances:** None of the components are listed.
- Illinois Chemical Safety Act** None of the components are listed.
- Illinois Toxic Substances Disclosure to Employee Act** None of the components are listed.
- Louisiana Reporting:** None of the components are listed.
- Louisiana Spill:** None of the components are listed.
- Massachusetts Spill:** None of the components are listed.
- Massachusetts Substances:** The following components are listed: Silicon carbide; Aluminum Oxide; Silicon dioxide, amorphous; Sulfur;Zinc oxide
- Michigan Critical Material:** None of the components are listed.
- Minnesota Hazardous Substances:** None of the components are listed.
- New Jersey Hazardous Substances:** The following components are listed: Silicon carbide; Aluminum Oxide; Silicon dioxide, amorphous; Sulfur;Zinc oxide
- New Jersey Spill:** None of the components are listed.
- New Jersey Toxic Catastrophe Prevention Act:** None of the components are listed.
- New York Acutely Hazardous Substances:** None of the components are listed.
- New York Toxic Chemical Release Reporting:** None of the components are listed.
- Pennsylvania RTK Hazardous Substances:** The following components are listed: Silicon carbide; Aluminum Oxide; Kaolin; Silicon dioxide, amorphous; Sulfur;Zinc oxide
- Rhode Island Hazardous Substances:** None of the components are listed.

California Prop. 65

No products were found.

Canada

WHMIS (Canada)

- : This product is a manufactured product under the Canadian WHMIS. Therefore it is EXEMPTED from the regulatory requirements under WHMIS.

Canadian lists

- : **CEPA Toxic substances:** None of the components are listed.
- Canadian ARET:** None of the components are listed.
- Canadian NPRI:** The following components are listed: Aluminum oxide;Zinc
- Alberta Designated Substances:** None of the components are listed.
- Ontario Designated Substances:** None of the components are listed.
- Quebec Designated Substances:** None of the components are listed.

Canada inventory

- : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists

- : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements

- : Organic bond mounted points and grinding wheels are **manufactured Articles** and as such are not considered to be controlled products under O.S.H.A and under W.H.M.I.S. when used in accordance with industry safety standards.

16 . Other information

Hazardous Material Information System (U.S.A.) :

Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	B

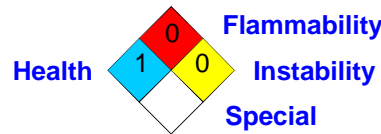
HAZARD RATINGS

4- Extreme
 3- Serious
 2- Moderate
 1- Slight
 0- Minimal

See section 8 for more detailed information on personal protection.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



References

- : ANSI Z400.5, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.