SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name: Vitrified Bond Grinding Wheels and Mounted Points – Aluminum Oxide

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Manufacturing

1.3. Details of the supplier of the safety data sheet
Weiler Corporation
1 Weiler Drive
Cresco, PA 18326

1.4. Emergency telephone number
Emergency number: 570-595-7495

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
This product as manufactured is defined as an article per 29 CFR 1910.1200. No exposure hazards are anticipated during normal product handling conditions. In most cases, the material(s) removed from the workpiece may present a greater hazard than material released by the product. Based upon the materials that are contained within the working portion of this product it is possible that some dust particles from this product may be generated. The following safety data is presented for potential exposure hazards as associated with the dust particles that are related to this product.

Classification (GHS-US)
Not classified

2.2. Label elements
GHS-US labeling
This product as manufactured is defined as an article, therefore no labeling is required for the product as manufactured.

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>(CAS No) 1344-28-1</td>
<td>≥ 97</td>
<td>Not classified</td>
</tr>
<tr>
<td>Total Impurities (CaO + Fe2O3 + MgO + Na2O + SiO2 + TiO2)</td>
<td>None</td>
<td>1</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aluminosilicate bond</td>
<td>None</td>
<td>≤ 3</td>
<td>Not classified</td>
</tr>
<tr>
<td>Silica</td>
<td>(CAS No) 7631-86-9</td>
<td>0 - 5</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove victim from source of exposure to fresh air. If breathing is difficult administer oxygen. Seek medical attention.

First-aid measures after skin contact: Wash with soap and water. Seek medical advice if skin irritation develops or persists.

First-aid measures after eye contact: Flush with plenty of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

First-aid measures after ingestion: Seek medical attention.
4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: Dusts may cause coughing, shortness of breath. Prolonged breathing of dusts may affect breathing capacity.
Symptoms/injuries after skin contact: Dusts may cause irritation. May cause abrasions.
Symptoms/injuries after eye contact: Dust may irritate or damage the eyes without protection.
Symptoms/injuries after ingestion: None under normal use.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media: Use water, carbon dioxide, foam or dry chemical.
Unsuitable extinguishing media: None.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Toxic fumes may occur. Use respiratory protective equipment.
Explosion hazard: None known.

5.3. Advice for firefighters
Protection during firefighting: Firefighters should wear full protective gear.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
By grinding do not inhale dust. See also item 8.
6.1.2. For emergency responders
No additional information available

6.2. Environmental precautions
Do not discard into the environment.

6.3. Methods and material for containment and cleaning up
For containment: No special measures required.
Methods for cleaning up: Pick up mechanically. Dispose of according to item 13.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Special technical measures are not necessary. When it is used and handled according to specification, the product does not have any harmful effects, according to our experience and the information provided to us. Handle with adequate ventilation for dust.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a dry place.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide (1344-28-1)</td>
<td>Not applicable</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³ (total dust)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ (respirable fraction)</td>
</tr>
</tbody>
</table>

Non Hazardous Ingredients
ACGIH: Not applicable
8.2. Exposure controls

Appropriate engineering controls:
Utilize adequate ventilation to minimize the exposure to airborne particulates and maintain the concentration of contaminants below the occupational exposure limits.

Respiratory Protection:
When exposure limits are exceeded or when the dust concentrations are excessive, approved respirators for those conditions should be used. When selecting the respiratory protection equipment, consideration of the exposure to the coating or the base materials being worked on should be included. Local regulations and standards should be followed where appropriate. The type of respiratory equipment used should be selected according to the contaminant type, form and concentration being produced. Select and use respirators in accordance with applicable regulations and good industrial hygiene practice.

Hand protection:
The use of cloth or leather gloves is recommended.

Eye Protection:
Safety goggles or face shield over safety glasses with side shields.

Hearing Protection:
Hearing protection may be required.

Skin and body protection:
The use of protective clothing should be used as needed to prevent the contamination of personal clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>2072°C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>4.6</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Note: Consideration should be given to the base material and coating that are being worked upon.
Viscosity, dynamic : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
No additional information available.

10.2. Chemical stability
The product is stable at normal handling and storage conditions.
Conditions to be avoided. See item 7. According to our present knowledge the products are soluble in hydrofluoric acid (HF) only. However particular oxides that are included in the ceramic bond (e.g. alkali oxides) can be leached out in strong acid or strong alkali solutions. Ensuring that the pH of the cooling liquid or cooling oil stays around the neutral point is a guarantee that the bond in the grinding wheel will be virtually insoluble. Protect from rain water.

10.3. Possibility of hazardous reactions
Will not occur.

10.4. Conditions to avoid
None.

10.5. Incompatible materials
None.

10.6. Hazardous decomposition products
Not determined.

SECTION 11: Toxicological information
11.1. Information on toxicological effects

Acute toxicity : Not classified

Aluminum oxide (1344-28-1)
LD50 oral rat > 5000 mg/kg

Silica (7631-86-9)
LD50 oral rat > 5000 mg/kg
LD50 dermal rabbit > 2000 mg/kg
LC50 inhalation rat (mg/l) > 2.2 mg/l (Exposure time: 1 h)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Silica (7631-86-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Silica (7631-86-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>(no bioaccumulation expected)</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on ozone layer : No additional information available
Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.
Abrasive tools also include particles of the materials that they have been used on. Therefore, refer to the SDS for the material this product was used on for any information concerning disposal.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not a dangerous good as defined in transport regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Aluminum oxide (1344-28-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
</tr>
<tr>
<td>Listed on SARA Section 313 (Specific toxic chemical listings)</td>
<td></td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
<td>1.0 % (fibrous forms)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Silica (7631-86-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
</tr>
</tbody>
</table>
## 15.2. US State regulations

<table>
<thead>
<tr>
<th>Silica (7631-86-9)</th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica (7631-86-9)</td>
<td>U.S. - Massachusetts - Right To Know List</td>
<td>U.S. - Minnesota - Hazardous Substance List</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

### SECTION 16: Other information

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.