SECTION 1 – MATERIAL IDENTIFICATION

Trade/Material Name: Aluminum Oxide Vitrified Product, Alundum

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>SUBSTANCE DESCRIPTION</th>
<th>PERCENT</th>
<th>CAS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide, Non-fibrous</td>
<td>30.000-97.000</td>
<td>1344-28-1</td>
</tr>
<tr>
<td>Amorphous Silica, Fused</td>
<td>2.000-35.000</td>
<td>60676-86-0</td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3. HAZARDS IDENTIFICATION

INHALATION ACUTE EXPOSURE EFFECTS
Dust may be slightly irritating to eyes and respiratory tract at high concentrations.

INHALATION CHRONIC EXPOSURE EFFECTS
May affect breathing capacity. For products containing Amorphous Silica, Fused, there is limited evidence in animals that excessive and prolonged exposure to this chemical may cause pulmonary fibrosis.

EYE CONTACT ACUTE EXPOSURE EFFECTS
Dust may irritate eyes.

SKIN CONTACT ACUTE EXPOSURE EFFECTS
Some may experience skin irritation from dust.

INGESTION ACUTE EXPOSURE EFFECTS
No known adverse effects, but ingestion not recommended.

SECTION 4. FIRST AID MEASURES

INHALATION
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately.

SKIN CONTACT
Wash affected areas with soap and water. Obtain medical assistance.

EYE CONTACT
Wash with large amounts of water. Obtain first aid and medical assistance, if needed.

INGESTION
Call poison control center, hospital emergency room or physician immediately.

SECTION 5. FIRE FIGHTING MEASURES

FIRE FIGHTING PROCEDURES
Not Applicable

HAZARDOUS PRODUCTS/COMBUSTION
PROTECTION
Respirators are required when airborne contaminant levels exceed the
TLV(s).
EYE PROTECTION
Always WEAR SAFETY GLASSES or some type of eye protection when
grinding.
OTHER PROTECTION
Use of this product may create elevated sound levels. Hearing
protection should be worn where required (see OSHA 29 CFR 1910.134
and other applicable regulations).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
APPEARANCE & ODOR
Solid article. Odorless.

SECTION 10. STABILITY AND REACTIVITY
INCOMPATIBILITIES

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
VENTILATION PROTECTION
Recommend using local exhaust ventilation when general ventilation is
not keeping the airborne concentration below the TLV.
RESPIRATORY PROTECTION
Respirators are required when airborne contaminant levels exceed the
TLV(s).
EYE PROTECTION
Always WEAR SAFETY GLASSES or some type of eye protection when
grinding.
OTHER PROTECTION
Use of this product may create elevated sound levels. Hearing
protection should be worn where required (see OSHA 29 CFR 1910.134
and other applicable regulations).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
APPEARANCE & ODOR
Solid article. Odorless.

SECTION 10. STABILITY AND REACTIVITY
INCOMPATIBILITIES

SECTION 6. ACCIDENTAL RELEASE MEASURES
CLEAN-UP
Follow normal clean up procedures.

SECTION 7. HANDLING AND STORAGE
HANDLING
Always HANDLE AND STORE wheels in a CAREFUL manner.
Always VISUALLY INSPECT all wheels before mounting.
Always CHECK MACHINE SPEED against the established maximum safe
operating speed MARKED ON THE WHEEL.
Always CHECK MOUNTING FLANGES for equal and correct diameter.
Always USE MOUNTING BLOTTERS.
Always be sure WORK REST is properly adjusted.
Always USE A SAFETY GUARD covering at least one-half of the grinding
wheel.
Always allow NEWLY MOUNTED WHEELS to run at operating speed, with
guard in place, for at least one minute before grinding.
Always TURN OFF COOLANT before stopping wheel to avoid creating
an out-of-balance wheel.

SECTION 6. ACCIDENTAL RELEASE MEASURES
None.
HAZARD RATING SOURCE
NFPA
HEALTH
1
FLAMMABILITY
0
REACTIVITY
0
OTHER

SECTION 5. FIRE FIGHTING MEASURES
FIRE FIGHTING
FIRE FIGHTING USE water and extinguishing agents.

SECTION 4. TRANSPORTATION INFORMATION
TRANSPORTATION
Marking: 0
Hazard Class: 0
Class: None
Division: 0
Packing Group: 0
Special Requirements: None
Avoid acids of all types with a pH < 4.0.

DECOMPOSITION
In use, dusts and decomposing odors may be generated. In most cases, the material removed from the workpiece will be significantly greater than the grinding wheel components. Coolants may produce other decomposition products.
For products containing phenol and formaldehyde resin, thermal decomposition may produce trace amounts of phenol and formaldehyde.
For products containing inorganic fluorides, thermal decomposition may produce trace amounts of fluorides.

SECTION 11. TOXICOLOGICAL INFORMATION
CARCINOGENICITY
Silica, Amorphous, Fused - IARC-3, NIOSH-X
LD50/LC50
Values are not appropriate or available.

SECTION 12. ECOLOGICAL INFORMATION
CHEMICAL FATE
Vitrified products do not appreciably decay.

SECTION 13. DISPOSAL CONSIDERATIONS
WASTE DISPOSAL
Use standard landfill methods consistent with applicable Federal, State, Provincial and local laws.
Products with listed fluorides may have slightly soluble fluoride swarf.
RECYCLING PROGRAM - the Company has developed a grinding wheel recycling program. If you are interested in returning your stubs, information can be obtained by dialing Customer Service.

SECTION 14. TRANSPORT INFORMATION
HAZARD CLASS
This product is not hazardous as defined by the Department of Transportation. (USA)
This product is "Not Regulated" under the Transportation of Dangerous Goods Act. (CAN)

SECTION 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>SUBSTANCE DESCRIPTION</th>
<th>UNITS</th>
<th>OSHA</th>
<th>ACGIH</th>
<th>MOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide, Non-fibrous</td>
<td>MG/M3</td>
<td>15.0000</td>
<td>10.0000</td>
<td>10.0000</td>
</tr>
<tr>
<td>Amorphous Silica, Fused</td>
<td>MG/M3</td>
<td>0.1000</td>
<td>0.1000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

LEGEND:
EXPOSURE LIMIT DESCRIPTIONS
CA PROP 65
Not Applicable
TSCA
Section 8(b) - Inventory Status
All components of this product are registered under the regulations of the Toxic Substance Control Act.
DOMESTIC SUBSTANCE LIST
All components of this product are found on the Domestic Substance List.

SECTION 16. OTHER INFORMATION

DISCLAIMER
The information and recommendations set forth herein are taken from sources believed to be accurate as of the date hereof; however, the Company makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.

KEY TO ABBREVIATIONS:
EQ=Equal LT=Less Than GT=Greater Than
AP=Approximately TR=Trace ND=No Data available