



**SAFETY DATA SHEET**  
Resinoid Bonded Abrasives  
For Cutting and Grinding Metals  
SDS #1

**1. IDENTIFICATION**

**Product Identity / Trade Name:** Grinding and Cutting Wheels, Resinoid (Type 1, Type 27, Type 28, Type 29),  
Cup Wheels (Type 11) Cones and Plugs (Type 16, Type 17 and Type 18)  
Mounted Point.

**Product Use:** Abrasive materials used for cutting and grinding metals.

**Restriction on Use:** Use only as directed

**2. HAZARD(S) IDENTIFICATION**

**Classification:** This product is not classified as hazardous in accordance with the OSHA Hazard Communication Standard (29CFR 1910.1200).

**Hazards not otherwise classified:** Most of the dust/fumes generated in the cutting and grinding process is from the base material. The exposure to the dust/fumes from the material the potential hazard from this exposure must be evaluated.

**Label Elements:**

None required.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

| Chemical name        | CAS No.    | Concentration |
|----------------------|------------|---------------|
| Aluminum Oxide       | 1344-28-1  | 0-95          |
| Zirconium Oxide      | 1314-23-4  | 0-80          |
| Cured Phenolic Resin | N/A        | 1-30          |
| Nitrile Compounds    | N/A        | 1-20          |
| Fluoride Compounds   | N/A        | 1-20          |
| Iron Pyrite          | 12068-85-8 | 0-20          |
| Woven Fiberglass     | N/A        | 0-15          |
| Calcium Compounds    | N/A        | 0-15          |
| Sulfur               | 7704-34-9  | 0-15          |
| Calcium Oxide        | 1305-78-8  | 1-10          |

|                             |            |         |
|-----------------------------|------------|---------|
| Cryolite                    | 15096-52-3 | 1-10    |
| Cured Epoxy Resin           | N/A        | 1-10    |
| Calcium Carbonate           | 1317-65-3  | 0-5     |
| Iron Oxide                  | 1309-37-1  | 0-5     |
| Graphite                    | 7782-42-5  | 0-5     |
| Aluminum Potassium Fluoride | 14484-69-6 | 0-0.5   |
| Potassium Fluoroborate      | 14075-53-7 | 0.1-0.5 |
| Titanium Dioxide            | 13463-67-7 | 0.1-0.5 |

The specific identity and/or exact percentage has been withheld as a trade secret.

#### 4. FIRST-AID MEASURES

**Ingestion:** If grinding dust is swallowed, seek medical attention.

**Inhalation:** If overexposed to grinding dust, remove victim to fresh air and get medical attention.

**Eye Contact:** Flush eyes thoroughly with water, holding open eyelids. Get medical attention if irritation persists. Obtain immediate medical attention for foreign body in the eye.

**Skin Contact:** Wash dust from skin with soap and water. Launder contaminated clothing before reuse.

**Most important symptoms/effects, acute and delayed:** May cause mechanical eye and skin irritation. Inhalation of dust may cause nose, throat and upper respiratory tract irritation. Prolonged inhalation of high concentration of dust may cause adverse effects on the lungs. Prolonged overexposure may cause damage to the respiratory tract, bones and teeth by inhalation.

**Indication of immediate medical attention and special treatment, if necessary:** Immediate medical attention is not required.

#### 5. FIRE-FIGHTING MEASURES

**Suitable (and unsuitable) extinguishing media:** Use any media that is appropriate for the surrounding fire.

**Specific hazards arising from the chemical:** This product is not combustible, however, consideration must be given to the potential fire or explosion hazards from the base material being processed. Many materials create flammable or explosive dusts or turnings when machined or ground.

**Special protective equipment and precautions for fire-fighters:** Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:** Wear appropriate respirator and protective clothing as needed to avoid eye contact and inhalation of dust.

**Environmental precautions:** Avoid release into the environmental. Report releases as required by local, state and federal authorities.

**Methods and materials for containment and cleaning up:** Pick up, sweep up or vacuum and place in a container for disposal. Minimize generation of dust.

#### 7. HANDLING AND STORAGE

**Precautions for safe handling:** Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling and use, especially before eating, drinking or smoking. Refer to ANSI B7.1, Safety Requirements for the Use, Care and Protection of Abrasive Wheels for additional information. Consider potential exposure to

components of the base materials or coatings being ground. Refer to OSHA's substance specific standards for additional work practice requirements where applicable.

**Conditions for safe storage, including any incompatibilities:** Store in accordance with ANSI B7.1. Protect abrasive wheels from damage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure guidelines:

|  |   |
|--|---|
| Aluminum Oxide                             | 5 mg/m3 ACGIH TLV (respirable fraction) (as Al metal)<br>15 mg/m3 TWA OSHA PEL (total dust)<br>5 mg/m3 TWA OSHA PEL (respirable fraction) |
| Zirconium Oxide (as zirconium compounds)   | 5 mg/m3 TWA ACGIH TLV<br>10 mg/m3 STEL ACGIH TLV<br>5 mg/m3 TWA OSHA PEL  |
| Cured Phenolic Resin                       | None Established  |
| Nitrile Compounds                          | None Established  |
| Fluoride Compounds                         | 2.5 mg/m3 TWA ACGIH TLV<br>2.5 mg/m3 TWA OSHA PEL   |
| Iron Pyrite                                | None Established  |
| Woven Fiberglass                           | 5 mg/m3 TWA ACGIH TLV (inhalable)<br>1 f/cc TWA ACGIH TLV (respirable)  |
| Calcium Compounds                          | None Established  |
| Sulfur                                     | None Established  |
| Calcium Oxide                              | 2 mg/m3 TWA ACGIH TLV<br>5 mg/m3 TWA OSHA PEL   |
| Cryolite (as fluorides)                    | 2.5 mg/m3 TWA ACGIH TLV<br>2.5 mg/m3 TWA OSHA PEL   |
| Cured epoxy resin                          | None Established  |
| Titanium Dioxide                           | 10 mg/m3 TWA ACGIH TLV<br>15 mg/m3 TWA OSHA PEL (total dust)  |
| Calcium Carbonate                          | 15 mg/m3 TWA OSHA PEL (total dust)<br>5 mg/m3 TWA OSHA PEL (respirable fraction)  |
| Iron Oxide                                 | 5 mg/m3 TWA ACGIH TLV (respirable fraction)<br>10 mg/m3 TWA OSHA PEL (fume)   |
| Graphite                                   | 2 mg/m3 TWA ACGIH TLV (respirable fraction)<br>15 mppcf mg/m3 TWA OSHA PEL  |
| Aluminum Potassium Fluoride (as Al metal)  | 5 mg/m3 ACGIH TLV (respirable fraction) (as Al metal)<br>15 mg/m3 TWA OSHA PEL (total dust)<br>5 mg/m3 TWA OSHA PEL (respirable fraction) |
| Aluminum Potassium Fluoride (as fluorides) | 2.5 mg/m3 TWA ACGIH TLV<br>2.5 mg/m3 TWA OSHA PEL   |
| Potassium Fluoroborate (as fluorides)      | 2.5 mg/m3 TWA ACGIH TLV<br>2.5 mg/m3 TWA OSHA PEL   |
| Titanium Dioxide                           | 10 mg/m3 TWA ACGIH TLV<br>15 mg/m3 TWA OSHA PEL (total dust)  |

Note: Consider also components of base materials and coatings being ground.

**Appropriate engineering controls:** Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentration of contaminants below occupational exposure limits.

**Individual protection measures, such as personal protective equipment:**

**Respiratory protection:** Use NIOSH approved respirator if exposure limits are exceeded or where dust exposures are excessive. Consider the potential for exposure to components of the coatings or base material being ground in selecting proper respiratory protection. Refer to OSHA's specific standards for lead, cadmium, etc. where appropriate. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use respirators in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Skin protection:** Cloth or leather gloves recommended.

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

**Other:** Protective clothing as needed to prevent contamination of personal clothing. Hearing protection may be required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance (physical state, color, etc.):** Black, brown or reddish colored solid wheel.

**Odor:** No Odor

|   |  |
|---|--|
| <b>Odor threshold:</b> Not applicable                         | <b>pH:</b> Not applicable                        |
| <b>Melting point/freezing point:</b> Not applicable           | <b>Boiling Point:</b> Not applicable             |
| <b>Flash point:</b> Not applicable                            | <b>Evaporation rate:</b> Not applicable          |
| <b>Flammability (solid, gas):</b> Not combustible             |  |
| <b>Flammable limits: LEL:</b> Not applicable                  | <b>UEL:</b> Not applicable                       |
| <b>Vapor pressure:</b> Not applicable                         | <b>Vapor density:</b>                            |
| <b>Relative density:</b> Not applicable                       | <b>Solubility(ies):</b> Not soluble              |
| <b>Partition coefficient: n-octanol/water:</b> Not applicable | <b>Auto-ignition temperature:</b> Not applicable |
| <b>Decomposition temperature:</b> Not applicable              | <b>Viscosity:</b> Not applicable                 |

## 10. STABILITY AND REACTIVITY

**Reactivity:** Not reactive.

**Chemical stability:** Stable.

**Possibility of hazardous reactions:** None known.

**Conditions to avoid:** None known.

**Incompatible materials:** None known.

**Hazardous decomposition products:** Dust from grinding could contain ingredients listed in Section 3 and other, potentially more hazardous components of the base material being ground or coatings applied to the base material.

## 11. TOXICOLOGICAL INFORMATION

**Routes of exposure:**

**Inhalation:** Dust may cause respiratory irritation.

**Ingestion:** None expected under normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.

**Skin contact:** None expected under normal use conditions. Rubbing product across the skin may cause mechanical irritation or abrasions.

**Eye contact:** Dust may cause mechanical irritation.

**Chronic effects from short- and long-term exposure:** Long-term overexposure to respirable dust may cause lung damage (fibrosis) with symptoms of coughing, shortness of breath and diminished breathing capacity. Chronic effects may be aggravated by smoking. Prolonged overexposure to fluorides may cause a bone condition, fluorosis. Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being ground. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated.

**Carcinogenicity:** Titanium Dioxide is listed by IARC as a group 2B Carcinogen (suspected human carcinogen). Nove of the other components is listed as a carcinogen or potential carcinogen by OSHA, NTP or IARC.

**Additional Information:** This SDS is applicable to product from United Abrasives only. The material being processed must be evaluated to determine any potential hazard.

This product contains titanium dioxide which has caused cancer in rats after high level exposure and inhalation. No exposure to titanium dioxide has been detected through air sampling during tests to simulate use. Thus, there are no health effects associated with titanium dioxide during the normal use of this product.

**Numerical measures of toxicity:**

Aluminum Oxide: LD50 Oral rat >5,000 mg/kg

Zirconium Oxide: Oral rat LD50 >5000 mg/kg

Iron Pyrite: No toxicity data available

Sulfur: Oral rat LD50 >2000 mg/kg, Inhalation rat LC50 >5.43 mg/L/4 hr, Dermal rat LD50 >200 mg/L

Calcium Oxide: Oral rat LD50 >7340 mg/kg

Cryolite: LD50 Oral rat >5,000 mg/kg

Titanium Dioxide: LD50 Oral rat >5,000 mg/kg, Inhalation rat LC50 >6.82 mg/L/4 hr

Calcium Carbonate: No toxicity data available

Iron Oxide: LD50 oral rat > 10000 mg/kg

Graphite: LD50 oral rat > 2000 mg/kg, LC50 inhalation rat > 2 mg/L

Aluminum Potassium fluoride: LD50 oral rat 2150 mg/kg, LC50 inhalation rat > 3.4 mg/L, LD50 dermal rabbit > 2000 mg/kg.

Potassium Fluoroborate: LD50 oral rat > 2000 mg/kg, LC50 inhalation rat > 5.3 mg/L

Titanium Dioxide: LD50 Oral rat >5,000 mg/kg, Inhalation rat LC50 >6.82 mg/L/4 hr

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:**

Aluminum Oxide: 96 hr LC50 Pimephales promelas 35 mg/L

Zirconium Oxide: 96 hr LC50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L

Iron Pyrite: No data available

Sulfur: 96 hr LC50 Oncorhynchus mykiss > 5 µg/L (solubility limit of sulfur), 48 hr EC50 daphnia magna > 5 µg/L (solubility limit of sulfur)

Calcium oxide: 96 hr LC50 Cyprinus carpio >1070 mg/L

Cryolite: No data available

Calcium Carbonate: No data available

Iron Oxide: No data available

Graphite: Danio rerio LC50 > 100 mg/L/96hr

Aluminum Potassium fluoride: Brachydanio rerio LC50 > 10 mg/L/96h

Potassium Fluoroborate: Leuciscus idus LC50: 760 mg/L/96hr

Titanium Dioxide: 48 hr EC50 daphnia magna >500 mg/L

**Persistence and degradability:** Biodegradation is not applicable to inorganic compounds.

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available.

**Other adverse effects:** No hazards to the environment are expected from this product. However, consideration must be given to potential environment effects of the base material being processed.

## 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to

determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

#### 14. TRANSPORT INFORMATION

|     | UN Number | Proper shipping name | Hazard Class | Packing Group | Environmental Hazard |
|-----|-----------|----------------------|--------------|---------------|----------------------|
| DOT | None      | Not Regulated        | None         | None          |                      |
| TDG | None      | Not Regulated        | None         | None          |                      |

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Not applicable – product is transported only in packaged form.

**Special precautions:** None identified.

#### 15. REGULATORY INFORMATION

**SARA Section 311/312 Hazard Categories:** Not Applicable (manufactured articles)

**SARA Section 313:** This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 (Toxic Chemical Release Reporting): None

**California Proposition 65:** WARNING! You create dust when you cut, sand, drill or grind materials such as wood, paint, cement, masonry or metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

#### 16. OTHER INFORMATION

**NFPA Rating:** Health = 1      Flammability = 0      Instability = 0  
**HMIS Rating:** Health = 1\*      Flammability = 0      Physical Hazard = 0  
\*Chronic health hazard

**Date Previous Revision:** 3/31/15

**Date This Revision:** 2/15/17

**Revision Summary:**

8/24/12: Section 3 Updated Composition, Section 8 Updated exposure limits, Section 11 Updated Acute toxicity values.

3/31/15: Changed all sections. Updated format to GHS.

9/30/16: Section 2 Classification, Hazard Phrases, Precautionary Phrases; Section 3 Composition; Section 8 Exposure guidelines; Section 11 Numerical measures of toxicity; Section 12 Ecotoxicity

The preceding information is believed to be correct and current as of the date of preparation of this Material Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of United Abrasives, Inc., it is the user's obligation to assure safe use of this product.