

1. IDENTIFICATION

Product identifier: Resin Bonded CBN & Diamond Products
Trade Name: Grinding Wheels or Stones

Manufacturer/ Distributor: Radiac Abrasives, Inc.
A Tyrolit Company
1015 S. College Avenue
P.O. Box 1410
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2. HAZARD(S) IDENTIFICATION

The hazard identification is based on a formalistic procedure as the hazard statements of the ingredients are summarized in section 3. This does not correspond to the hazardousness of the product itself.

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. This dust may present a fire or dust explosion hazard and may present a serious health hazard.

Classification:

Physical	Health	Environment
Not Hazardous	Carcinogen Category 1A Skin Sensitization Category 1 Specific Target Organ Toxicity – Repeat Exposure Category 1	Aquatic Acute Toxicity Category 1 Aquatic Chronic Toxicity Category 1

Hazards not otherwise classified: None

Symbol(s)



Signal word
Danger!

Hazard statement(s)
H317 May cause an allergic skin reaction.
H351 May cause cancer by inhalation.
H372 Causes damage to lungs through prolonged or repeated exposure.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust or fume.

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H410 Very toxic to aquatic life with long lasting effects.

P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P273 Avoid release to the environment.
 P280 Wear protective gloves, protective clothing, eye protection and protective clothing.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 If skin irritation or rash occurs: Get medical attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P308 + P313 If exposed or concerned: Get medical attention.
 P391 Collect spillage.
 P405 Store locked up.
 P501 Dispose of contents and container in accordance with local and national regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures:

Chemical name	CAS No.	Concentration
Cubic Boron Nitride	10043-11-5	≤60%
Diamond	7782-40-3	≤60%
Nickel	7440-02-0	≤30%
Copper	7440-50-8	≤30%
Silver	7440-22-4	≤30%
Silicon Carbide	409-21-2	≤30%
Aluminum Oxide	1344-28-1	≤30%
Nickel Phosphide	12035-64-2	≤24%
Cured Resin	NA	≤20%
Phosphorus	7723-14-0	≤5%
Calcium Oxide	1305-78-8	≤3%
The specific identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.		

4. FIRST-AID MEASURES

Inhalation: Remove victim to fresh air. If irritation or other symptoms persist, get medical attention.

Skin contact: No first aid should be required. If contact with dust occurs, do not rub or scratch. Remove contaminated clothing. Rinse exposed skin with cold water then wash skin with soap and water. Get medical attention if irritation or rash occurs. Launder clothing before re-use.

Eye contact: Flush eyes with large quantities of water, while holding the eyelids apart. Get medical attention if irritation develops or persists.

Ingestion: Not an anticipated route of exposure. If swallowed, drink 1 or 2 glasses of water to dilute. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

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Most important symptoms/effects, acute and delayed: Dust may cause mechanical eye, skin and respiratory irritation. Dust particles may cause abrasive injury to the eyes. May cause skin sensitization (allergic reaction). Inhalation of fumes may cause metal fume fever with flu-like symptoms. Prolonged inhalation of dust or fumes from this product may cause perforation of the nasal septum and damage to the lungs. This product contains nickel, which is suspected of causing cancer based on animal studies. Risk of cancer depends on duration and level of exposure.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is required for eye contact.

5. FIRE-FIGHTING MEASURES

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

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. Toxic metal fumes and oxides are emitted when product is heated above the metal point.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Contain water used in firefighting from entering sewers or natural waterways.

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions: Avoid contamination of water supplies and environmental releases. Report spills as required to authorities. Prevent release to the environment.

Methods and materials for containment and cleaning up: Carefully collect dry material, avoiding the creation of airborne dust. Place in a suitable container for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not breathe dust. Use with adequate ventilation. Avoid eye and skin contact with grinding dust. Wear suitable gloves, eye protection and appropriate protective clothing according to the operation. Wash thoroughly after handling. 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:

Cubic Boron Nitride	None Established
Diamond	None Established
Nickel (as elemental)	1.5 mg/m ³ TWA ACGIH TLV (Inhalable) 1 mg/m ³ TWA OSHA PEL

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Copper	1 mg/m3 TWA ACGIH TLV (as dust) 1 mg/m3 TWA OSHA PEL (as dust) 0.2 mg/m3 TWA ACGIH TLV (as fume) 0.1 mg/m3 TWA OSHA PEL (as fume)
Silver (metal)	0.1 mg/m3 TWA ACGIH TLV (dust and fume) 0.2 0.01 mg/m3 TWA OSHA PEL
Silicon Carbide	3 mg/m3 TWA ACGIH TLV (respirable fraction), 10 mg/m3 TWA (inhalable fraction) 15 mg/m3 TWA OSHA PEL (total dust), 5 mg/m3 TWA (respirable fraction)
Aluminum Oxide	5 mg/m3 ACGIH TLV (respirable fraction) (as Al metal) 15 mg/m3 TWA OSHA PEL (total dust), 5 mg/m3 TWA (respirable fraction)
Nickel Phosphide	None Established
Cured Resin	None Established
Phosphorus	None Established
Calcium Oxide	2 mg/m3 TWA ACGIH TLV 5 mg/m3 TWA OSHA PEL

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

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: Impervious gloves recommended.

Eye protection: Safety goggles recommended.

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.): Solid of various colors.

Odor: May give off odor during use.

Odor threshold: Not applicable	pH: Not applicable
Melting point/freezing point: Not applicable	Initial boiling point and boiling range: Not applicable
Flash point: Non-Combustible	Evaporation rate: Not applicable
Flammability (solid, gas): Not applicable	UEL: Not applicable
Flammable limits: LEL: Not applicable	Vapor density:
Vapor pressure: Not applicable	Solubility(ies): Very slightly
Relative density: 1.2-1.8	Auto-ignition temperature: Not applicable
Partition coefficient: n-octanol/water: Not applicable	Viscosity: Not applicable
Decomposition temperature: Not applicable	

10. STABILITY AND REACTIVITY

Reactivity: Not reactive

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Chemical stability: Stable

Possibility of hazardous reactions: If nickel powder comes into contact with bromine pentafluoride at ambient or slightly elevated temperatures, ignition will probably occur. Powdered nickel may react violently or explosively with fused ammonium nitrate below 200°C.

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. Toxic metal fumes and oxides are emitted when product is heated above the metal point.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure:

Inhalation: Dust generated from processing may cause respiratory irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, chest pain, and fatigue and muscle pain. Symptoms generally resolve in 24-48 hours.

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

Skin contact: Dust generated from processing may cause abrasive irritation. May cause allergic skin reaction (sensitization).

Eye contact: Contact with dust particles may cause abrasive injury to the eyes.

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. Prolonged inhalation of nickel dust or fumes may cause perforation of the nasal septum and lung damage. Chronic effects may be aggravated by smoking. 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.

Numerical measures of toxicity:

Cubic Boron Nitride: No data available

Diamond: Oral rat LD50 > 2000 mg/kg, inhalation rat LC50 > 5.2 mg/L, dermal rat LD50 > 2000 mg/kg

Nickel: Oral rat LD50 > 9000 mg/kg

Copper: Oral rat LD50 > 2500 mg/kg, inhalation rat LC50 > 5.11 mg/L, dermal rat LD50 > 2000 mg/kg

Silver: Oral rat LD50 > 5000 mg/kg; Skin rat LD50 - > 2000 mg/kg

Silicon Carbide: No data available.

Aluminum Oxide: Oral rat LD50 > 2000 mg/kg, Dermal rat LD50 > 2000 mg/kg

Nickel Phosphide: No data available.

Cured Resin: No data available.

Phosphorus: No data available.

Calcium Oxide: Oral rat LD50 > 2000 mg/kg, dermal rabbit LD50 > 2500 mg/kg

Carcinogenicity: None of the components are listed as a carcinogen or potential carcinogen by OSHA, NTP or IARC.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Cubic Boron Nitride: No data available

Diamond: *Oncorhynchus mykiss* LC50 > 100 mg/L/96hr

Nickel: *Oncorhynchus mykiss* LC50: 15.3 mg/L/96hr, *Pimephales promelas* NOEC 0.057 mg/L/32days

Copper: *Oncorhynchus mykiss* LC50: 0.19 mg/L/96hr

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Calcium Oxide: Oncorhynchus mykiss LC50: 50.6 mg/L/96hr

This product is classified as very toxic to aquatic life with long lasting effects.

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 data available.

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	None
TDG	None	Not Regulated	None	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):

Components	C.A.S. #	WT %
Nickel	7440-02-0	≤30%
Copper	7440-50-8	≤30%
Silver	7440-22-4	≤30%
Phosphorus (Yellow or white)	7723-14-0	≤5%

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.

Canada: This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

16. OTHER INFORMATION

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

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The information and recommendations set forth are taken from sources believed to be accurate. Radiac Abrasives, Inc., a Tyrolit Company, makes no warranty with respect to the accuracy of this information or the suitability of these recommendations, assumes no liability to any user thereof. It is the responsibility of the user to investigate and understand pertinent sources of information to comply with all laws and procedures applicable to the safe use and handling of the product and to determine the suitability of the product for its intended use.

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Resin & Rubber Resin Bonded Abrasive Products

DANGER



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