SAFETY DATA SHEET

REVISION: 08/26/2015

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RESIN BOND GRINDING PRODUCTS
DIAMOND OR CUBIC BORON NITRIDE

1. PRODUCT & COMPANY INFORMATION

1.1 PRODUCT IDENTIFIER(S)
PRODUCT NAME: RESIN BOND GRINDING PRODUCTS
DIAMOND OR CUBIC BORON NITRIDE

STOCK NUMBER: VARIOUS

1.2 COMPANY INFORMATION
ABRASIVE TECHNOLOGY, INC
8400 GREEN MEADOWS DR.
LEWIS CENTER, OHIO 43035

TELEPHONE 740-548-4100 (8:00 am TO 5:00 pm EST)
FAX 740-548-7617

1.3 EMERGENCY PHONE NUMBERS
NORTH AMERICA (24 HRS) CHEMTREC 800-424-9300
OUTSIDE NORTH AMERICA (COLLECT) 703-527-3887

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Signal word: Warning!

Hazard statements

H317 – May cause an allergic skin reaction
H332 + H351 – Harmful if inhaled; Suspected of causing cancer
H335 – May cause respiratory irritation

2.2 GHS Label elements, including precautionary statements

Pictograms

GHS07

GHS08

Hazard statements

H317 – May cause an allergic skin reaction
H332 + H351 – Harmful if inhaled; Suspected of causing cancer
H335 – May cause respiratory irritation

Precautionary statements

P201 – Obtain special instructions before use.
P202 – Do not handle until all safety precautions have been read and understood
P260 – Do not breathe dust/fume(s)/gas/mist/vapors/spray
P264 – Wash thoroughly after handling
P270 – Do not eat/drink/smoke when using this product
P272 – Contaminated work clothing should not be allowed out of the workplace
P280 – Wear protective gloves/clothing/eye protection/face protection
P302 + P352 – If on skin: Wash with plenty of soap and water
P308 + P313 –If exposed or concerned: Get medical attention
P332 + P313 – If skin irritation occurs: Get medical attention

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

RESIN BONDED WHEELS MAY CONTAIN ANY OF THE FOLLOWING INGREDIENTS, BUT NOT NECESSARILY ALL OF THEM. TAKE APPROPRIATE PRECAUTIONS.

		SARA 313			ACGIH	
CHEMICAL NAME	**COMMON NAME**	**Y/N**	**CAS #**	**OSHA PEL**	**TLV**	**CARCINOGEN**
CARBON	***	N	7440-44-0	***	3.5 mg/m³	N/CLASS 4
INDUSTRIAL DIAMOND	***	N	7782-40-3	***	***	N/CLASS 4
CUBIC BORON NITRIDE	CBN	N	10043-11-5	***	***	N/CLASS 4
SILICON CARBIDE	***	N	409-21-2	15 mg/m³	10 mg/m³	N/CLASS 4
ALUMINUM OXIDE	***	N	1344-28-1	5 mg/m³	10 mg/m³	N/CLASS 4
CALCIUM OXIDE	LIME	N	1305-78-8	5 mg/m³	2 mg/m³	N/CLASS 4
FERRIC OXIDE	IRON OXIDE	N	1309-37-1	***	5 mg/m³	N/CLASS 4
CHROMIUM OXIDE	CHROME OXIDE	Y	1308-38-9	***	0.5 mg/m³	N/CLASS 4
GRAPHITE	***	N	7882-42-5	***	2 mg/m³	N/CLASS 4
COBALT	***	N	7440-78-4	0.05 mg/m³	***	Y/CLASS 3
COPPER	***	N	7440-50-8	***	1 mg/m³	N/CLASS 4
SILVER	***	N	7440-22-4	0.01 mg/m³	***	N/CLASS 4
TUNGSTEN CARBIDE	CARBIDE	N	12070-12-1	5 mg/m³	5 mg/m³	N/CLASS 4
ALUMINUM POWDER	***	N	7429-90-5	***	10 mg/m³	N/CLASS 4
NICKEL POWDER	***	N	7440-02-0	1 mg/m³	1 mg/m³	Y/CLASS 2B
FURFURAL	***	Y	98-01-1	5 ppm	2 ppm	Y/CLASS 3
CURED RESIN	RESIN	N	***	***	***	N/CLASS 4
TITANIUM HYDRIDE	***	N	7704-98-5	10 mg/m³	10 mg/m³	N/CLASS 4

COMPOSITION IS PROPRIETARY.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution. Remove contacts if present and able to do so easily. Continue rinsing with water.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation as some of the dust(s) can be flammable.

Avoid breathing vapors, mist or gas.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Wear protective clothing and PPE. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

For industrial or professional use only. Damaged product can break apart during use and cause serious injury to face or eyes. Check product for damage such as cracks or nicks prior to use. Replace if damaged. Always wear eye and face protection when working at sanding or grinding operations or when near such operations. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (gloves, respirators, etc.) as required. Combustible dust may form by action of this product on another material (substrate). Dust generated from the substrate during use of this product may be explosive if in sufficient concentration with an ignition source. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions.

7.2 Conditions for safe storage, including any incompatibilities

No special storage requirements.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Please see information on "Occupational Exposure Limits" in the "COMPOSITION/INFORMATION ON INGREDIENTS" in Section 3.0

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

PERSONAL PROTECTIVE EQUIPMENT

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	**Solid (metal or resin)**
b) Odor	**no data available**
c) Odor Threshold	**no data available**
d) pH	**no data available**
e) Melting point/freezing point	**no data available**
f) Initial boiling point and Boiling range	**no data available**
g) Flash point	**not applicable**
h) Evaporation rate	**no data available**
i) Flammability (solid, gas)	**no data available**
j) Upper/lower flammability or explosive limits	**no data available**
k) Vapor pressure	**no data available**
l) Vapor density	**no data available**
m) Relative density	**no data available**
n) Water solubility	**insoluble**
o) Partition coefficient: N-octanol/water	**no data available**
p) Auto-ignition temperature	**no data available**
q) Decomposition temperature	**no data available**
r) Viscosity	**no data available**
s) Explosive properties	**no data available**
t) Oxidizing properties	**no data available**

9.2 Other safety information **no data available**

10. STABILITY AND REACTIVITY

10.1 Reactivity
This material is considered to be non reactive under normal use conditions.
10.2 Chemical stability
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
No data available
10.4 Conditions to avoid
No data available
10.5 Incompatible materials
None known
10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects
Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Dust from grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

11. TOXICOLOGICAL INFORMATION (CONT.)

Skin Contact:
Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion. Dust created by grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:
No known health effects. May cause additional health effects (see below).

Additional Health Effects:
Prolonged or repeated exposure may cause target organ effects:

Hard Tissue Effects: Signs/symptoms may include color changes in the teeth and nails; changes in development of bone, teeth or nails; weakening of the bones; and/or hair loss.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Carcinogenicity: Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
NICKEL COMPOUNDS	7440-02-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Carbon Black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Nickel	7440-02-0	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Nickel 7	440-02-0	Anticipated human carcinogen	National Toxicology Program Carcinogens

Additional Information:
This document covers only the Abrasive Technology, Inc. product(s). For complete assessment, when determining the degree of hazard, the material being abraded must also be considered.

11. TOXICOLOGICAL INFORMATION (CONT.)

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Copper	Dermal	Rat	LD50 > 2,000 mg/kg
Copper	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.11 mg/l
Copper	Ingestion	Rat	LD50 > 2,000 mg/kg
Nickel	Dermal		LD50 estimated to be > 5,000 mg/kg
Nickel	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.55 mg/l
Nickel	Ingestion	Rat	LD50 > 9,000 mg/kg
Silicon Carbide Mineral	Dermal	Rat	LD50 > 2,000 mg/kg
Silicon Carbide Mineral	Ingestion	Rat	LD50 > 2,000 mg/kg
Aluminum Oxide Mineral	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminum Oxide Mineral	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Aluminum Oxide Mineral	Ingestion	Rat	LD50 > 5,000 mg/kg
Iron	Dermal		LD50 estimated to be > 5,000 mg/kg
Graphite	Ingestion	Rat	LD50 > 2,000 mg/kg
Iron	Ingestion	Rat	LD50 30,000 mg/kg
Inorganic Fluoride	Dermal	Rabbit	LD50 > 2,100 mg/kg
Calcium Oxide	Ingestion	Rat	LD50 > 2,500 mg/kg
Inorganic Fluoride	Inhalation-Dust/Mist (4 hours)	Rat	LC50 4.5 mg/l
Inorganic Fluoride	Ingestion	Rat	LD50 5,000 mg/kg
Aluminum	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminum	Ingestion		LD50 estimated to be > 5,000 mg/kg
Aluminum	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > .888 mg/l
Titanium	Dermal		LD50 estimated to be > 5,000 mg/kg
Titanium	Ingestion		LD50 estimated to be > 5,000 mg/kg
Magnesium Oxide	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Magnesium Oxide	Ingestion	Rat	LD50 3,870 mg/kg
Carbon Black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon Black	Ingestion	Rat	LD50 > 8,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Copper	Rabbit	No significant irritation
Nickel	Rabbit	Minimal irritation
Silicon Carbide Mineral	Rat	No significant irritation
Aluminum Oxide Mineral	Rabbit	No significant irritation
Graphite	Rabbit	No significant irritation
Iron	Rabbit	No significant irritation
Calcium Oxide	Human	Corrosive
Inorganic Fluoride	Multiple animal species	No significant irritation
Aluminum	Rabbit	No significant irritation
Magnesium Oxide	Professio	No significant irritation

11. TOXICOLOGICAL INFORMATION (CONT.)

	nal judgeme nt	
Carbon Black	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Copper	Rabbit	Mild irritant
Nickel	Rabbit	Mild irritant
Silicon Carbide Mineral	Professio nal judgeme nt	No significant irritation
Aluminum Oxide Mineral	Rabbit	No significant irritation
Graphite	Rabbit	No significant irritation
Iron	Rabbit	No significant irritation
Calcium Oxide	Rabbit	Corrosive
Inorganic Fluoride	Rabbit	Mild irritant
Aluminum	Rabbit	No significant irritation
Carbon Black	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Nickel	Human	Sensitizing
Aluminum	Guinea pig	Not sensitizing

Respiratory Sensitization

Name	Species	Value
Aluminum	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Aluminum Oxide Mineral	In Vitro	Not mutagenic
Graphite	In Vitro	Some positive data exist, but the data are not sufficient for classification
Calcium Oxide	In Vitro	Not mutagenic
Aluminum	In Vitro	Not mutagenic
Magnesium Oxide	In Vitro	Not mutagenic
Carbon Black	In Vitro	Not mutagenic
Carbon Black	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Nickel	Inhalation	similar compou nds	Carcinogenic
Aluminum Oxide Mineral	Inhalation	Rat	Not carcinogenic
Magnesium Oxide	Not Specified	Human and animal	Some positive data exist, but the data are not sufficient for classification
Carbon Black	Dermal	Mouse	Not carcinogenic
Carbon Black	Ingestion	Mouse	Not carcinogenic
Carbon Black	Inhalation	Rat	Carcinogenic

11. TOXICOLOGICAL INFORMATION (CONT.)

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Oxide	Inhalation	respiratory irritation	May cause respiratory irritation	Not available	NOAEL Not available	occupational exposure
Magnesium Oxide	Inhalation	respiratory system	All data are negative	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Nickel	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.001 mg/l	13 weeks
Aluminum Oxide Mineral	Inhalation	pneumoconiosis | pulmonary fibrosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Graphite	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Inorganic Fluoride	Inhalation	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.0005 mg/l	5 months
Inorganic Fluoride	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.00021 mg/l	90 days
Inorganic Fluoride	Ingestion	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.58 mg/kg/day	14 weeks
Aluminum	Inhalation	nervous system | respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Carbon Black	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No adverse effects on aquatic organisms are expected. However, consideration must be given to potential environment effects of the base material being processed.

Ecotoxicity values:
Silicon Carbide: No data available.
Phenol Formaldehyde Polymer: No acute toxicity data available
Zirconium Dioxide: LL50 96 hr Danio rerio >1000 mg/L; EC50 48 hr daphnia magna >100 mg/L:
Aluminum oxide: NOEC 96 hr Salmo trutta >100 mg/L; NOEC 48 hr daphnia magna >100 mg/L; NOEC 72 hr
Selenastrum capricornutum >100 mg/L
Titanium Dioxide: EC50 72 hr Pseudokirchnerella subcapitata 61 mg/L

Persistence and degradability: Biodegradation is not applicable to inorganic substances.
Bioaccumulative potential: No data available.
Mobility in soil: No data available.
Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product - Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

Dispose in accordance with all local, state and national 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

DOT (US)	IMDG	IATA
Not dangerous goods	Not dangerous goods	Not dangerous goods

15. REGULATORY INFORMATION

CERCLA Hazardous Substances (Section 103)/RQ: This product is not subject to CERCLA release reporting. Many states have more stringent spill reporting requirements. Report spills in accordance will all applicable regulations.

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: Toxic chemicals subject to the reporting requirements of 40 CFR part372 (EPCRA):

Copper	7440-50-8
Aluminum	7429-90-5
Nickel	7440-02-0

SARA 311/312 Hazards:

N – Fire Hazard
N – Sudden Release of Pressure
N – Reactivity
N – Acute Health
Y – Chronic Health

California Prop. 65 Components: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity: Titanium dioxide (13463-67-7) 1-2% (cancer). Dust created from cutting, drilling or grinding may contain chemicals known to cause cancer, birth defects or other reproductive harm.

EPA TSCA Inventory: This product meets the definition of an article and is exempt from the TSCA inventory requirements.

16. OTHER INFORMATION

HMIS Rating
Health hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical Hazard 0

NFPA Rating
Health hazard: 1
Fire Hazard: 0
Reactivity Hazard: 0

Further information

User is granted the ability to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Abrasive Technology, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

SDS PREPARATION INFORMATION
ABRASIVE TECHNOLOGY, INC.
DOUGLAS G. ANDERSON
DATE PREPARED: 07/01/2015
DATE REVISED:08/26/2015 **PURPOSE OF REVISION: Information update**