

**Material Safety Data Sheet**  
 May be used in conformity with  
 OSHA's Hazard Communication Standard,  
 29 CFR 1910.1200. Standard must be  
 consulted for specific requirements.

#49-92-3220 #49-92-5000 #49-92-5040  
 #49-92-4310 #49-92-5005 #49-92-5060  
 #49-92-4370 #49-92-5020 #49-92-5060  
 U.S. Department of Labor  
 Occupational Safety and Health Administration  
 (Non-Mandatory Form)  
 Form Approved  
 OSHA No. 1218-0072



IDENTITY (As Label or Label and Tag) **FORM 17** **GROUP "E" (HAZARDOUS CUT-OFF BLADES)**  
 Addressive Wheel  
 Note: Blank spaces are not permitted if any part is not applicable or not known. (b) (1) (A)

Manufacturer's Name: **Hilwaukee Electric Tool Corp.**  
 13135 Waac Lisbon Road  
 Brookfield, WI 53005

Emergency Telephone Number: **413-238-5925**  
 Telephone Number for Information: **414-781-3600**  
 Date Prepared: **10/86**

Signature of Preparer (Person): *[Signature]*  
 Name: **Robert J. [Name]**  
 Position: **Health Associated in Engineering, Inc.**

**Section II - Hazardous Ingredients/Identify Information**

Hazardous Component (Specify Chemical Name, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (Approx)
Silicon Carbide, SiC	N/A	15 mg/m <sup>3</sup>	N/A	34.70
Cryolite, Sodium Aluminum Fluoride	N/A	15 mg/m <sup>3</sup>	N/A	7.46
Negallyte				
Phenol-Formaldehyde Resin	N/A	15 mg/m <sup>3</sup>	N/A	44.07
Carbon Black, C	N/A	3.5 mg/m <sup>3</sup>	N/A	7.50
Ethacrylate, Amorphous silica SiO <sub>2</sub>	N/A	0.8 mg/m <sup>3</sup>	N/A	5.78
Acrylic Resin	N/A	15 mg/m <sup>3</sup>	N/A	38
Pigment, Inorganic, Yellow	N/A	15 mg/m <sup>3</sup>	N/A	19

**Section III - Physical/Chemical Characteristics**

Boiling Point	Specific Gravity (4-20 = 1)	N/A
Vapor Pressure (mm Hg)	N/A	N/A
Vapor Density (Air = 1)	N/A	N/A
Specific Gravity in Water	N/A	N/A

Appearance and Odor: **none**  
 Solid, various colors, may have slight phenolic odor.

**Section IV - Fire and Explosion Hazard Data**

Flash Point (Closed Cup)	Flammable Limits	Upper	Lower
None	None	N/A	N/A
Explosioning Media	None	N/A	N/A
Special Fire Fighting Procedures	None	N/A	N/A
None	None	N/A	N/A
Unusual Fire and Explosion Hazards	N/A	N/A	N/A

**Section V - Reactivity Data**

Stability	Unstable	N/A	Conditions to Avoid
Stable	X	none	none

Incompatibility (Materials to Avoid): **none**

Hazardous Decomposition or Byproduct: **none**  
 Conditions to Avoid: **none**

Hazardous Polymerization: **none**  
 Will Not Occur: **X**

**Section VI - Health Hazard Data**

Route(s) of Entry	Inhalation?	Yes	Swi?	Ingestion?
None	no	no	no	no

Hazardous (Acute and Chronic) **none**  
 Pneumonoconiosis, allcinosis, amyotonia

Chronicity: **no** **WAC Monograph?** **no** **OSHA Regulated?** **no**

Signs and Symptoms of Exposure: **deposits of dirt in eyes, ears and nasal passages; irritation of the mucous membranes; coughing; sneezing.**

Medical Conditions Generally Aggravated by Exposure: **nasal, bronchial or pulmonary conditions which tend to facilitate breathing**

First Aid and First Aid Procedures: **Remove to fresh air, irrigate eyes, contact physician if necessary.**

**Section VII - Precautions for Safe Handling and Use**

Steps to be Taken in Case Material is Released or Spilled: **Normal clean-up procedures**

Waste Disposal Method: **Standard landfill methods consistent with applicable state and federal regulations**

Regulations: **Provisions to be Taken in Handling and Storing**  
**Normal handling and storage methods using caution not to drop or crush**

Other Precautions: **Do not use at speeds greater than the not-to-exceed speed printed on the hub assembly.**

**Section VIII - Control Measures**

Respiratory Protection (Specify type): **OSHA or NIOSH approved respirators may be required.**

Local Exhaust	Recommended	Special	Other
None	Recommended	N/A	N/A

Personal Control: **Eye Protection Recommended**

Other Protective Clothing or Equipment: **Keep clothing and area clean.**

PRODUCT DATA SHEET

GROUP E

MASONRY CUT-OFF BLADES

GENERAL DESCRIPTION

Masonry cut-off blades are produced in sizes from 6" diameter to 20" diameter for use on stationary masonry saws, circular saws and tuck point saws. They are made with a variety of grains and are all fiberglass reinforced.

COMPOSITION

The composition includes varying combinations of silicon carbide, cryolite, aluminum oxide and garnet grains; carbon black or graphite fillers; thermosetting phenolic binder resins; acrylic resin and inorganic pigment coatings and fiberglass reinforcing.

SAFETY

1. Masonry cut-off blades are intended for industrial use by qualified personnel only.
2. During use, a fine nuisance dust is produced by the gradual erosion of the wheel and by the material that is being worked. They should be used with point-of-use ventilation whenever possible. Nose and mouth respirator masks are recommended to prevent excessive inhalation, and safety glasses are recommended for eye protection.
3. Do not smoke or eat while using these wheels. Wash hands thoroughly after use and keep clothing brushed clean or vacuumed.
4. Leather gloves or similar hand protection is suggested during use.



5. Grinding wheels produce sparks when used on steel and many other materials.
  - a) Do not use them near flammable materials such as paper, fabrics, wood shavings, sawdust, or other flammable dusts.
  - b) Never use them where flammable gases or vapor are present in the air.
6. Never use grinding wheels at speeds greater than the not-to-exceed speed painted on the hub assembly.

SAFETY USE TIPS

These tips are designed as a guide for the individual user. They are based on the premise that grinding is a safe operation where a few basic rules are followed but that grinding wheels are dangerous where improperly used.

DO

1. Always handle and store wheels in a careful manner.
2. Visually inspect all wheels, before mounting, for possible damage.
3. Make sure that the maximum operating speed for the machine does not exceed the listed wheel speed.
4. Check the mounting flanges for equal and correct diameter.
5. Use mounting blotters when supplied with wheels.
6. Be sure the work rest is set at or above the wheel center and not more than 1/8" away from the wheel.
7. Always use a safety guard covering at least 1/2 of the wheel.
8. Allow newly mounted wheels to run at operating speed and with guard in place for at least one (1) minute before grinding.

- 9. Always wear safety glasses or other type of eye protection when grinding.
- 10. Turn off coolant before stopping the wheel to avoid creating an out-of-balance condition.

DO NOT

- 1. Never use a wheel that has been dropped.
- 2. Never force a wheel onto an arbor or alter the size of the mounting hole. If the wheel does not fit the machine, get one that will.
- 3. Never exceed the maximum operating speed printed on the hub assembly.
- 4. Never use mounting flanges on which the bearing surfaces are not clean and flat.
- 5. Do not over-tighten the mounting nut.
- 6. Do not grind on the side of the wheel.
- 7. Do not start the machine unless the wheel guard is in place.
- 8. Never jam work into the wheel.
- 9. Never stand directly in front of the wheel when the grinder is started.
- 10. Do not grind material for which the wheel is not designed.
- 11. Never use grinding wheels near flammable materials such as fabrics, paper, wood shavings, sawdust or other flammable dusts.
- 12. Never use grinding wheels when flammable gases or vapors are present in the air.

PRODUCT BY USE

STATIONARY MASONRY SAWS

Blades for stationary masonry saws are available in 12" to 20" diameters. All standard blades are internally reinforced with fiberglass while the 14" diameter Grand'deur line is externally double reinforced with fiberglass for additional safety and durability. These blades are available in four different formulations for use on extra hard, hard, medium and soft materials. (see next section)

CIRCULAR SAWS

Blades for portable circular saws are available in 6" through 10" diameters. All blades are internally reinforced with fiberglass for strength. They are available in three different formulations for hard, medium and soft materials. (see next section)

TUCK POINT SAWS

Blades for tuck point saws are available in 7" and 8" diameters and are coded green. They are fiberglass reinforced and are specially formulated for tuck point grinding.

COLOR CODING FOR MATERIAL HARDNESS

- 1. Extra hard materials, coded terra cotta red -  
For use on terra cotta, marble, granite, slate, glazed tile, stiff mud brick or acid-proof brick.
- 2. Hard materials, coded yellow - For use on common brick, flagstone, sandstone, verlite block, cement block, light aggregate block, transite, asbestos cement or insulated brick.
- 3. General purpose, medium materials, coded olive green -  
For use on ceramic tile, floor tile, mud brick, Mullite, brick shale, medium hard brick, vitrified pipe, metal cased magnesite, etc.

314

4. Soft materials, turquoise coded - For use on clinder block, limestone block, silica block, vitreous faced block, limestone and any light, soft aggregate shapes.

Material Safety Data Sheet

May be used in conpany with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor  
Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OHS No. 1218-0072  
#49-92-5260

OSHA Form 101 (Rev. 10-1-80)

Note: Blank spaces are not permitted, if any part is not applicable, or "N/A" (6-1-80)

Manufacturer's Name  
Hilwaukee Electric Tool Corp.  
13135 West Lisbon Road  
Brookfield, WI 53005

Emergency Telephone Number  
413-238-5925

Date Prepared  
10/86  
Signature of Preparer (optional)  
NEVTON ASSOCIATES IN ENGINEERING, INC.

Section II - Hazardous Ingredients/Identify Information

Hazardous Components (Specify Chemical Name, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (total)
Cryolite, Sodium Aluminum Fluoride	N/A	15 mg/m <sup>3</sup>	N/A	6.67
Phenol-formaldehyde Resin	N/A	15 mg/m <sup>3</sup>	N/A	40.57
Carborane Oxide	N/A	15 mg/m <sup>3</sup>	N/A	8.51
Aluminum Oxide	N/A	15 mg/m <sup>3</sup>	N/A	33.36
Aluminum Oxide	N/A	0.8 mg/m <sup>3</sup>	N/A	1.79
Acrylic Resin	N/A	15 mg/m <sup>3</sup>	N/A	0.8
Pigment - Inorganic, Various	N/A	15 mg/m <sup>3</sup>	N/A	.05
MAX. PARAFFIN	N/A	2 mg/m <sup>3</sup>	N/A	8.84

315

Section III - Physical/Chemical Characteristics

Boiling Point	Specific Gravity (H <sub>2</sub> O = 1)	N/A
N/A	N/A	N/A
Vapor Pressure (mm Hg)	N/A	N/A
N/A	N/A	N/A
Vapor Density (Air = 1)	N/A	N/A
N/A	N/A	N/A

Stability in Water  
NONE

Appearance and Odor  
SOLID, various colors, may have slight phenolic odor.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
NONE	NONE	N/A	N/A
Emerging Hazards	N/A		
Special Fire Fighting Procedures	NONE REQUIRED		

Unusual Fire and Explosion Hazards  
N/A

VII. FIRE/EXPLOSION/HAZARD DATA

1. FLASH POINT N/A (P)

2. LOWER EXPLOSIVE LIMIT N/A

3. UPPER EXPLOSIVE LIMIT N/A

4. EXTINGUISHING MEDIA N/A

5. SPECIAL FIRE FIGHTING PROCEDURES N/A

VIII. REACTIVITY DATA

(H) AS APPLICABLE

STABLE  UNSTABLE  HAZARDOUS POLYMERIZATION  CORROSIVE

NONE  WATER  ACID  BASE  OXIDATION MATERIAL

PRODUCTS OF DECOMPOSITION

1. N/A

2.

3.

4.

IX. SPILL/LEAK

1. CLEAN UP N/A

2. WASTE DISPOSAL Standard Land Fill

X. SPECIAL PRECAUTIONS

1. HANDLING & STORING Store in a dry area in rooms not subject to extreme temperature changes. Handle with adequate ventilation for nuisance dust. See OSHA 29CFR1910.94 and 29CFR1910.1000

2. WELDING & CUTTING N/A

3. OTHER PRECAUTIONS Refer to: American National Standards Code ANSI B7.1-1978 Section 2.

SIGNATURE OF INDIVIDUAL SUPPLYING INFORMATION

NOTE: PLEASE COMPLETE ALL INFORMATION REGARDING YOUR PRODUCT AS ACCURATELY AS POSSIBLE. THIS INFORMATION WILL BE USED TO DETERMINE WHETHER ANY SPECIAL SAFE HANDLING OR PROTECTIVE PROCEDURES ARE REQUIRED. PROMPT RETURN OF THIS COMPLETED FORM WILL HELP AVOID THE NEED TO FIND AN ALTERNATE SUPPLIER.

ALSO: PLEASE ATTACH ALL LITERATURE REGARDING THE RECOMMENDED USE PROCEDURE FOR THIS PRODUCT.

FOR CUSTOMER USE ONLY

DEPARTMENTS APPROVED FOR

APPLICATIONS APPROVED FOR

RESTRICTIONS/SPECIAL INSTRUCTIONS

APPROVED

REJECTED

SIGNED

DATE

9-94-3291

9-94-3292

9-94-3111

9-94-3131

9-94-3171

9-94-3231

9-94-3251

9-94-3291

MATERIAL SAFETY DATA SHEET

Section 1. Identity of Material

PRODUCT NAME OR NUMBER ABRASIVE WHEELS

SYNONYMS N/A

FORMULA N/A

DO NOT MIX WITH OTHER MATERIALS N/A

HAZARDOUS MATERIAL NUMBER N/A

REACTIVE MATERIALS NUMBER N/A

HAZARDOUS WHEELS

POWDERED RESIN 96

FIBERGLASS REINFORCEMENTS 8

ALUMINUM ARBOR RINGS & PAPER LABELS 1.5

Section 2. Hazard Specifications

HAZARD	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	
COMBUSTIBLE (GAS)																					
FLAMMABLE (LIQUID)																					
FLAMMABLE (SOLID)																					
OXIDIZING (LIQUID)																					
OXIDIZING (SOLID)																					
EXPLOSIVE (LIQUID)																					
EXPLOSIVE (SOLID)																					
TOXIC (GAS)																					
TOXIC (LIQUID)																					
TOXIC (SOLID)																					
IRRITANT (GAS)																					
IRRITANT (LIQUID)																					
IRRITANT (SOLID)																					
ACUTE TOXICITY																					
CHRONIC TOXICITY																					
ENVIRONMENTAL HAZARD																					
HAZARDOUS WHEELS CLASS																					
HAZARDOUS WHEELS CLASS																					

Section 3. Safe Usage Data

HAZARD	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	
COMBUSTIBLE (GAS)																					
FLAMMABLE (LIQUID)																					
FLAMMABLE (SOLID)																					
OXIDIZING (LIQUID)																					
OXIDIZING (SOLID)																					
EXPLOSIVE (LIQUID)																					
EXPLOSIVE (SOLID)																					
TOXIC (GAS)																					
TOXIC (LIQUID)																					
TOXIC (SOLID)																					
IRRITANT (GAS)																					
IRRITANT (LIQUID)																					
IRRITANT (SOLID)																					
ACUTE TOXICITY																					
CHRONIC TOXICITY																					
ENVIRONMENTAL HAZARD																					
HAZARDOUS WHEELS CLASS																					
HAZARDOUS WHEELS CLASS																					

1. SAFETY GLASSES WITH EYE SHIELDS (SIDE SHIELDS)

2. DUST COLLECTORS/VENTILATION SYSTEM

3. NONE

4. PROVIDE ADEQUATE VENTILATION TO ELIMINATE DUST FROM GRINDING OPERATIONS

5. REFER TO ANSI SAFETY CODE B7.1 (1978) SECTION 2



**SECTION 6 - HEALTH HAZARD DATA**

NOTE: STEEL PRODUCTION THE NATURAL STATE DO NOT PRESENT AN INHALATION INGESTION OR CONTACT HAZARD HOWEVER OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRASSING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS TO THE OPERATOR.

MAJOR EXPOSURE PATHS:  INHALATION  SKIN CONTACT  SKIN ABSORPTION  EYE CONTACT  INGESTION.

**EFFECTS OF OVEREXPOSURE**  
**Health Effects/Signs and Symptoms** - Exposure to the constituents of these products will only occur during activities such as welding or burning. However, because of the low toxicity of the components and of the low air levels anticipated during such activities, these products are not considered to be hazardous chemicals as defined by the Federal OSHA Hazard Communication Standard.  
**MEDICAL CONDITIONS POSSIBLY AGGRAVATED:** - Chronic diseases or disorders of the respiratory system.  
**CARCINOGEN INFORMATION:** Not considered to be a carcinogen.

**EMERGENCY AND FIRST AID PROCEDURES**  
**EYE CONTACT:** Flush well with running water to remove particulate.  
**SKIN CONTACT:** Wash area well with soap and water.  
**INHALATION:** Remove to fresh air.  
**INGESTION:** Not considered an ingestion hazard.

**SECTION 7 - SPILL OR LEAK PROCEDURES**  
 SPILL OR LEAK PROCEDURES: N/A

**WASTE DISPOSAL METHODS**  
 Any excess product can be recycled for further use or disposed by methods which are in accordance with local, state and federal regulations.

**SECTION 8 - SPECIAL PROTECTION**  
**RESPIRATORY**  
 Use properly fitted N.I.O.S.H. approved dust fume respirator when Engineering controls are not sufficient to lower exposure levels below the applicable exposure limit.  
**VENTILATION**  
 Utilize local exhaust to keep dust below T.L.V.

**EYE PROTECTION AND PROTECTIVE CLOTHING**  
 SEE SECTION 10

**SECTION 9 - SPECIAL PRECAUTIONS**  
 SEE SECTION 10

**SECTION 10 - WARNING**  
 In normal power grinding operations, the material being ground, such as steel, cast iron, and other materials, will be thrown into the air and may become airborne. The dusts and debris which are thrown into the air may be inhaled. The operator should wear eye protection and use proper grinding technique to avoid injury. The operator should wear a respirator if the dust level is above the applicable exposure limit. The operator should wear a dust mask if the dust level is above the applicable exposure limit. The operator should wear a dust mask if the dust level is above the applicable exposure limit. The operator should wear a dust mask if the dust level is above the applicable exposure limit.

The information on this MSDS was obtained from sources which are reliable. However, the information is provided without any representation or warranty of accuracy or completeness. The user should consult the manufacturer's literature for the most current information. The user should consult the manufacturer's literature for the most current information. The user should consult the manufacturer's literature for the most current information.

(See Page 5 for applicable H.E.T.C.O. Part Numbers.)  
**MATERIAL SAFETY DATA SHEET**

**MILWAUKEE ELECTRIC TOOL CORPORATION, 13135 WEST LISBON ROAD, BROOKFIELD, WI 53005**  
**Chemical Name:** Cemented Tungsten Carbide Product with Cobalt Binder.  
**Trade Name and Synonyms:** All HETCO Coromant Cemented Tungsten Carbide Grades.  
**Chemical Family:** Refractory Metal Carbide **Molecular Weight:** N/A

**PHYSICAL DATA**

Appearance and Odor:	Dark Gray Metal/No Odor
Boiling Point:	N/A
Vapor Pressure (mm Hg):	N/A
Vapor Density (Air=1):	N/A
Solubility in Water:	Insoluble
Specific Gravity (H <sub>2</sub> O=1):	11.0 to 15.5
Percent Volatile by Volume:	0
Evaporation Rate:	N/A
How Best Monitored:	Air sample

**HAZARDOUS INGREDIENTS**

Material	Percent by Weight	OSHA PEL	ACGIH TLV
Tungsten Carbide (limits for Tungsten dust)	50-98%*	—	5 mg/m <sup>3</sup>
Cobalt	2-30%*	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Tantalum Carbide (limits for Tantalum dust)	0.0-20.0%*	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Chromium Carbide (limits for Chromium 1+3 dust)	0.0-5.0%*	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
Chromium 1+3	0.0-5.0%*	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>

\*Depends on grade specifications

**HEALTH HAZARD DATA**

**Routes of Exposure:**  
 Grinding cemented tungsten carbide product will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

**Effects of Overexposure:**  
**Inhalation:** Dust from grinding can cause irritation of the nose and throat. It also has the potential for causing transient or permanent respiratory disease including occupational asthma and interstitial fibrosis in a small percentage of exposed individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Symptoms include productive cough, wheezing, shortness of breath, chest tightness and weight loss. Interstitial fibrosis (lung scarring) can lead to permanent disability or death.

Chemical Name: Cemented Tungsten Carbide Product with Cobalt Binder.

HEALTH HAZARD DATA (Continued)

Skin Contact: Can cause irritation or an allergic skin rash due to cobalt sensitization.

Eye Contact: Can cause irritation.

Ingestion: No information is available regarding ingestion that may have occurred in the tungsten carbide industry. Reports outside the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

Emergency and First Aid Procedures: Applicable for dusts or mists.

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure and seek medical attention.

Skin Contact: If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

Eye Contact: If irritation occurs, flush with large amounts of water. If irritation persists, seek medical attention.

Ingestion: If substantial quantities are swallowed, dilute with a large amount of water. Induce vomiting and seek medical attention.

Carcinogenic Assessment (NTP Annual Report, IARC Monographs, other): None of the components of this material have been identified as known or suspected carcinogens by NTP, IARC or OSHA.

FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A Test Method Used: —  
Flammable Limits: N/A LEL: — UEL: —

Hard Cemented Tungsten Carbide Product is not a fire hazard. Dusts generated in grinding operations may ignite if allowed to accumulate.

Extinguishing Media:

For powder fires, use dry sand, dry dolomite, dry graphite powder.

Special Fire Fighting Procedures:

For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire, fire fighters should use self-contained breathing apparatus.

Chemical Name: Cemented Tungsten Carbide Product with Cobalt Binder.

FIRE AND EXPLOSION HAZARD DATA (Continued)

Unusual Fire and Explosion Hazards:

Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

REACTIVITY DATA

Stability: Unstable Conditions to Avoid: N/A

Stable X

Incompatibility: Contact of dust with strong oxidizers Materials to Avoid: Strong Acids  
may cause fire or explosions.

Hazardous Decomposition Products: None Conditions to Avoid: N/A

Hazardous Polymerization: May Occur

Will Not Occur X

SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released or Spilled:

Ventilate area of spill. Clean up using methods which avoid dust generation such as vacuum (with appropriate filter) to prevent airborne dust levels which exceed the PEL or TLV, wet dust mop or wet clean-up; if airborne dust is generated, use an appropriate NIOSH approved respirator.

Waste Disposal Method:

Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclaim.

SPECIAL PROTECTION INFORMATION

Respiratory Protection:

Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Ventilation:

Use local exhaust ventilation which is adequate to limit personal exposure to respirable airborne dust to levels which do not exceed the PEL or TLV if such equipment is not available, use respirators as specified above.

319

Material Safety Data Sheet  
 May be used to comply with  
 OSHA's Hazard Communication Standard,  
 29 CFR 1910.1200. Standard must be  
 consulted for specific requirements.  
 IDENTITY (as listed on label and label)  
 Abrasive Wheel  
 U.S. Department of Labor  
 Occupational Safety and Health Administration  
 (From Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072  
 #49-93-6100  
 Note: Where appropriate and not prohibited by any laws or regulations, all information is available. The source must be identified in order to protect the

GROUP "P" (METAL CUTTING BLADES)  
 Manufacturer's Name  
 Milwaukee Electric Tool Corp.  
 13133 West Lisbon Road  
 Brookfield, WI 53005  
 Emergency Telephone Number 413-238-5925  
 Temperature Number for Information 414-781-3600  
 Date Prepared 10/86  
 Signature of Preparer (printed) *David J. [Signature]*  
 NEVISON ASSOCIATES IN ENGINEERING, INC.

Section II - Hazardous Ingredients/Identify Information  
 Hazardous Components (Specify Chemical Name, Common Name(s)) OSHA PEL ACGIH TLV Other Limits Recommended % (Approx)  
 Aluminum Oxide, Al<sub>2</sub>O<sub>3</sub> N/A 15 mg/m<sup>3</sup> N/A 12.6  
 Phenyl-Formaldehyde Resin N/A 15 mg/m<sup>3</sup> N/A 40.0  
 Cellulose, Sodium Aluminum Fluoride N/A 15 mg/m<sup>3</sup> N/A 6.8  
 Naphthyl  
 Carbazole-Aluminate, Polyethylsiloxane N/A 15 mg/m<sup>3</sup> N/A 8.5  
 Lithium-Diethylsiloxane N/A 2 mg/m<sup>3</sup> N/A 8.8  
 Ethacrynic Acid/Amorphous Silica, SiO<sub>2</sub> N/A 0.8 mg/m<sup>3</sup> N/A 1.0  
 Pigment, Inorganic/Variou N/A 15 mg/m<sup>3</sup> N/A 0.1  
 Acrylic Resin N/A 15 mg/m<sup>3</sup> N/A 0.2

Section III - Physical/Chemical Characteristics  
 Boiling Point N/A Specific Gravity (60-60 = 1) N/A  
 Vapor Pressure (mm Hg) N/A Melting Point N/A  
 Vapor Density (Air = 1) N/A Evaporation Rate (Butyl Acetate = 1) N/A  
 Solubility in Water NONE

Appearance and Odor  
 Solid, various colors, may have slight phenolic odor.  
 Section IV - Fire and Explosion Hazard Data  
 Flash Point (Method Used) NONE  
 Lower Flammable Limit NONE  
 Upper Flammable Limit N/A  
 Self-Heating Tendency NONE  
 Special Fire Fighting Procedures NONE REQUIRED  
 Unusual Fire and Explosion Hazards N/A

Preparation Safety  
 OSHA 174, Sept. 1985

Section V - Reactivity Data  
 Stability  
 Unstable N/A  
 Stable N/A  
 Incompatibility (Materials to Avoid) X  
 none  
 Hazardous Decomposition or Byproducts  
 none  
 Conditions to Avoid  
 none  
 Hazardous Polymerization  
 May Occur N/A  
 Will Not Occur X  
 Section VI - Health Hazard Data  
 Reported of Entry: Inhalation? Yes  
 Skin? No  
 Ingestion? No  
 Health Hazard (Acute and Chronic) PNEUMONITIS, ALLERGIC, EMPHYSEMA

Signs and Symptoms of Exposure  
 - deposits of dust in eyes, ears and nasal passages; irritation of the mucous membranes; coughing; sneezing  
 - allergic conditions  
 - irritant breathing  
 - Emergency and First Aid Procedures  
 Remove to fresh air, irrigate eyes, contact physician if necessary.

Section VII - Precautions for Safe Handling and Use  
 Steps to be Taken in Case Material is Spilled or Released  
 Normal clean-up procedures

Waste Disposal Method  
 Standard landfill methods consistent with applicable state and federal regulations  
 Precautions to be Taken in Handling and Storage  
 Normal handling and storage methods using caution not to drop or crush

Section VIII - Control Measures  
 Do not use at speeds greater than the not-to-exceed speed printed on the hub assembly.  
 Respiratory Protection (Specify Type)  
 OSHA or NIOSH approved respirators may be required  
 Ventilation  
 Local Exhaust  
 Recommended  
 Mechanical Control  
 Other Protective Clothing or Equipment  
 Eye Protection Recommended  
 Other Protective Equipment  
 NOT REQUIRED

Hygiene Practices  
 Wash Hands and Face  
 Keep Clothing and Area Clean.  
 Page 2  
 OSHA 174, Sept. 1985

Chemical Name: Cemented Tungsten Carbide Product with Cobalt Binder.

SPECIAL PROTECTION INFORMATION (Continued)

Protective Gloves:

Protective gloves or Barrier cream are recommended when contact with dust or mist is likely. Prior to applying the Barrier cream or use of protective gloves, wash thoroughly.

Eye Protection:

Safety glasses with side shields or goggles are recommended.

Other Protective Equipment: N/A

SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling and Storage:

Maintain good housekeeping procedures to prevent dust accumulation during grinding. Avoid dust inhalation and direct skin contact with dust.

Other Precautions:

Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Wash hands thoroughly after handling, before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters) the clothing, rags or other items.

Periodic medical examinations are recommended for individuals regularly exposed to dust or mist.

In case of questions please call:

Milwaukee Electric Tool Corp.  
Gregory C. Krohn, Manager-Safety  
Telephone number: 414-761-3600

Issue Date: 05/25/86  
Revised 11-21-86  
Supersedes: N/A

Although M. E. T. C. O. has attempted to provide current and accurate information herein, M. E. T. C. O. makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, injury of any kind which may result from or arise out of the use of or reliance on the information by any person.

"K" Tapor Bits

48-20-1509  
48-20-1510  
48-20-1511  
48-20-1561  
48-20-1633  
48-20-1635  
48-20-1691  
48-20-1753  
48-20-1755  
48-20-1881  
48-20-1883  
48-20-2001  
48-20-2003  
48-20-2131  
48-20-2133  
48-20-2252  
48-20-2253  
48-20-2371  
48-20-2373  
48-20-2501  
48-20-2503  
48-20-1631  
48-20-1751

"A" Taper Bits

48-20-3180  
48-20-3250  
48-20-3252  
48-20-3310  
48-20-3312  
48-20-3380  
48-20-3381  
48-20-3382  
48-20-3440  
48-20-3470  
48-20-3499  
48-20-3500  
48-20-3501  
48-20-3559  
48-20-3560  
48-20-3619  
48-20-3620  
48-20-3621  
48-20-3690  
48-20-3790  
48-20-3860  
48-20-3795

Rotary Carbide

48-87-0120  
48-87-0150  
48-87-0170  
48-87-0180  
48-87-0212  
48-87-0250  
48-87-0253  
48-87-0280  
48-87-0310  
48-87-0370  
48-87-0430  
48-87-0500  
48-87-0560  
48-87-0620  
48-87-0680  
48-87-0750  
48-87-0870  
48-87-1000  
48-87-1120  
48-87-1250  
48-87-1500

One Piece Percussion Carbide Tip Bits

48-20-1500  
48-20-1502  
48-20-1504  
48-20-1560  
48-20-1630  
48-20-1632  
48-20-1634  
48-20-1690  
48-20-1750  
48-20-1752  
48-20-1754  
48-20-1880  
48-20-1882  
48-20-2000  
48-20-2002  
48-20-2130  
48-20-2132  
48-20-2250  
48-20-2251  
48-20-2370  
48-20-2372  
48-20-2500  
48-20-2502

"B" Taper Bits

48-20-3680  
48-20-3750  
48-20-3840  
48-20-3870  
48-20-3100

Extra Length Bits

48-87-0251  
48-87-0502

Runner Drill Percussion Carbide Tip Bits

48-20-6170  
48-20-6180  
48-20-6220  
48-20-6250  
48-20-6251  
48-20-6280  
48-20-6310  
48-20-6311  
48-20-6380  
48-20-6381  
48-20-6382  
48-20-6440  
48-20-6470  
48-20-6500  
48-20-6501  
48-20-6560  
48-20-6620  
48-20-6690  
48-20-6750  
48-20-6880

"1/2" Starter Bits

50-20-6105  
50-20-6110  
50-20-6120  
50-20-6130  
50-20-6140

Percussion Core Drills

50-20-5250  
50-20-5510  
50-20-5760  
50-20-6010  
50-20-6050

321

PRODUCT DATA SHEET  
GROUP F

METAL CUTTING BLADES

GENERAL DESCRIPTION

Metal cutting blades are produced in sizes from 2" diameter to 20" diameter for use on pencil grinders, portable circular saws and chop saws. They are made with a variety of grains and are all fiberglass reinforced. These blades are designed for all ferrous metals, from hard to soft.

COMPOSITION

The composition includes varying combinations of aluminum oxide, ceramic aluminum oxide, cryolite, garnet, iron oxide, zircon and zirconium dioxide grains; carbon black, graphite and lime fillers; thermosetting phenolic binder resins; acrylic resin and inorganic pigment coatings and fiberglass reinforcing.

SAFETY

1. Metal cutting blades are intended for industrial use by qualified personnel only.
2. During use, a fine nuisance dust is produced by the gradual erosion of the wheel and by the material that is being worked. They should be used with point-of-use ventilation whenever possible. Nose and mouth respirator masks are recommended to prevent excessive inhalation, and safety glasses are recommended for eye protection.
3. Do not smoke or eat while using these wheels. Wash hands thoroughly after use and keep clothing brushed clean or vacuumed.
4. Leather gloves or similar hand protection is suggested during use.

5. Grinding wheels produce sparks when used on steel and many other materials.
  - a) Do not use them near flammable materials such as paper, fabrics, wood shavings, sawdust, or other flammable dusts.
  - b) Never use them where flammable gases or vapors are present in the air.
6. Never use grinding wheels at speeds greater than the not-to-exceed speed painted on the hub assembly.

SAFETY USE TIPS

These tips are designed as a guide for the individual user. They are based on the premise that grinding is a safe operation where a few basic rules are followed but that grinding wheels are dangerous where improperly used.

DO

1. Always handle and store wheels in a careful manner.
2. Visually inspect all wheels, before mounting, for possible damage.
3. Make sure that the maximum operating speed for the machine does not exceed the listed wheel speed.
4. Check the mounting flanges for equal and correct diameter.
5. Use mounting blotters when supplied with wheels.
6. Be sure the work rest is set at or above the wheel center and not more than 1/8" away from the wheel.
7. Always use a safety guard covering at least 1/2 of the wheel.
8. Allow newly mounted wheels to run at operating speed and with guard in place for at least one (1) minute before grinding.

