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# M. A. FORD MFG. CO., INC.

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## MATERIAL SAFETY DATA SHEET DATA SHEET MP TC — 1 REVISION DATE 11-1-1985

### SECTION I

MANUFACTURER'S NAME M.A. FORD MFG. CO., INC.	EMERGENCY TELEPHONE NO. (319) 391-6220
P.O. BOX 3628, DAVENPORT, IOWA 52808	
PRODUCT INFORMATION  CEMENTED TUNGSTEN CARBIDE AND HIGH SPEED STEEL CUTTING TOOLS	

### SECTION II — HAZARDOUS INGREDIENTS

Constituent . . . . .	TLV	CAS#
Tungsten Carbide. . . . .	5mg/M <sup>3</sup>	12070-12-1
Titanium Carbide. . . . .	Not Available	12070-08-5
Tantalum Carbide. . . . .	5 mg/M <sup>3</sup>	12070-06-3
Chromium Carbide. . . . .	.5 mg/M <sup>3</sup>	12012-35-0
Cobalt. . . . .	.1 mg/M <sup>3</sup>	7440-48-4
Nickel. . . . .	1.0 mg/M <sup>3</sup>	7440-02-0
Iron. . . . .	Not Available	7439-89-6
Tungsten. . . . .	5 mg/M <sup>3</sup>	7440-33-7
Copper. . . . .	1 mg/M <sup>3</sup>	7440-50-8

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### SECTION III — PHYSICAL DATA

APPEARANCE: Cemented tungsten carbide is a medium grey hardmetal with high hardness and compressive strength. Its tensile and impact strength is comparatively low as with all brittle materials. High speed steel has higher hardness and compressive strength and lower tensile and impact strength than other alloy steels.

### SECTION IV — FIRE AND EXPLOSION HAZARD DATA

No fire or explosion hazard.

### SECTION V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE  
SEE SECTION II.

EFFECTS OF OVEREXPOSURE  
Dust produced during usage, and particularly grinding, can produce toxic effects in susceptible persons. Recommended reference: "Control of Cobalt Exposures During Wet Process Tungsten Carbide Grinding, "American Industrial Hygiene Association Journal, December 1975.

EMERGENCY AND FIRST AID PROCEDURES  
Eye contact - flush with water. If irritation occurs seek medical attention. Skin contact - wash with soap and water. If irritation persists seek medical attention. Inhalation - if symptoms of pulmonary involvement develop avoid exposure and seek medical attention.

### SECTION VI — REACTIVITY DATA

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STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIOINS TO AVOID
	WILL NOT OCCUR	X	

### SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Not applicable	
WASTE DISPOSAL METHOD	
High reclaim value - recycle	

### SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) (Grinding) NIOSH approved respirator for metal fumes and dust when above TLV		
VENTILATION	LOCAL EXHAUST X (Grinding)	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES		EYE PROTECTION Normal good safety practice
OTHER PROTECTIVE EQUIPMENT See Section IX		

### SECTION IV — SPECIAL PRECAUTIONS

Tools made of cemented carbide, in common with all brittle materials, may fragment in service, particularly under conditions of impact or upon release from high compressive loading. Precautions should be taken to ensure protection for personnel and equipment from flying fragments and sharp edges when working with carbide tools.

Additional safety considerations should be taken when working with tools rotating at high velocity, long slender tools or tools with long shanks. Tools with these characteristics have the potential to whip or fracture and be thrown from the machine at great speed. Special guard structures should be devised for the machine, to prevent the tool from injuring personnel should it be loosened during or after the cutting operation.