

# POWDERS

## HOT PRESS MATRIX POWDERS

TECHNICAL DATA

### PRODUCT DESCRIPTION

Kennametal is a leader in hot-press diamond tool matrix technology. This method of manufacture is a single-stage process to manufacture diamond tooling wherein compacting and sintering occur simultaneously.

Kennametal offers a full line of ready-to-press powders engineered for a variety of cutting conditions. Our powders have excellent self bonding and firmly anchor wear material (diamond/hard metal) into the matrix.

Kennametal offers several base-metal classes of matrices and hard additives such as various tungsten carbide species or tungsten metals modify the matrices to regulate wear resistance.



### APPLICATIONS

Production of tools used in stone cutting; asphalt cutting; concrete cutting; diamond-impregnated coring bits; and saw segments for marble, concrete, and asphalt.

### TYPICAL PHYSICAL PROPERTIES

#### FUSION BOND POWDERS

Based on tungsten, tungsten carbide, and select auxiliary components, this line employs copper-based alloys as the fusible binder for liquid-phase sintering. Fusion bonds are versatile and do not require high cold pressures, or extended time at temperature due to their "low" fusion temperatures.

With Kennametal Hot Press Matrix Powders, the liquid phase that forms has minimal reaction with the hard components (tungsten and/or tungsten carbide particles). This process of hot consolidation enables a wide range of alloys and carbide species to be used to meet any



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#### TYPICAL PHYSICAL PROPERTIES (CONTINUED)

Product ID	Grade Code	Hardness (HRb)	Sintering Temp. (C)	Sintering Pressure (kg/cm <sup>2</sup> )	Density (g/cc)	Base Metal(s)	Hard Additive Type	Hard Additive Weight (%)	Stone Application	Construction Application(s)
1583493	DMHPM080	98-102	900	350	12.04	Zn, Cu	WC	74	Sandstone	Asphalt/Green Concrete
1583500	DMHPM089	93-97	950	350	11.87	CuSn	WC	72	Sandstone	Asphalt/Green Concrete
1583471	DMHPM059	84-86	900	350	12.74	CuSn	W	67	Sandstone	Asphalt/Green Concrete
1583443	DMHPM010	97-101	1000	350	11.13	Fe,CuSn,Cu	WC/W2C	60	Sandstone	Asphalt/Green Concrete
1583396	DMHPM003	116-120	950	350	10.92	Ni,Fe,Cu	WC/Co	60	Sandstone	Asphalt/Green Concrete
1583395	DMHPM002	112-116	950	350	9.36	Ni,Fe,Cu	WC/Co	40	Sandstone	Asphalt/Cured Concrete
1569608	DMHPM061	105-109	900	350	11.26	Zn, Cu, Ni	WC	59	Limestone	Cured Concrete
1569509	DMHPM079	104-108	900	350	11.35	Zn, Cu	WC	54	Limestone	Green Concrete
1583503	DMHPM094	103-107	850	350	11.73	CuSn, Co	W	50	Limestone	Green Concrete
1583394	DMHPM001	102-106	925	250	8.45	Ni,Fe,Cu	WC/Co	20	Limestone	Block
1583454	DMHPM026	102-106	900	350	12.48	Zn, Cu	W and WC	63	Limestone	Cured Concrete
1583474	DMHPM065	101-105	900	350	13.65	Zn, Cu	W	70	Granite	Cured Concrete
1569507	DMHPM060	92-96	900	350	12.55	Zn, Cu	W	67	Granite	Cured Concrete
1583472	DMHPM062	101-105	900	350	11.85	Zn, Cu, Ni	W and WC	63	Granite	Cured Concrete
1583441	DMHPM008	101-105	1000	350	9.44	Fe,CuSn,Cu	WC	30	Granite	Cured Concrete
1583442	DMHPM009	100-104	1000	350	10.14	Fe,CuSn,Cu	WC	45	Granite	Cured Concrete
1583466	DMHPM051	99-103	850	350	13.17	CuSn, Co	W	52	Granite	Cured Concrete
1583479	DMHPM072	98-102	850	350	13.46	CuSn	W	69	Abrasive Marble	Cured Concrete
1583400	DMHPM007	95-99	1000	350	8.7	Fe,CuSn,Cu	WC	15	Abrasive Marble	Masonry
1583494	DMHPM081	95-99	825	350	8.79	CuSn, Co	-	-	Abrasive Marble	Masonry
1583495	DMHPM082	88-92	850	350	8.78	CuSn, Co	-	-	Marble	Refractory
1583399	DMHPM006	84-88	850	350	8.04	CuSn, Fe, Co	-	-	Marble	Masonry
1583502	DMHPM092	83-87	850	350	9.21	CuSn, Co	W (5%)	-	Non-abrasive Marble	Wall Saw
1583398	DMHPM005	82-86	850	350	8.2	CuSn, Fe, Co	-	-	Non-abrasive Marble	Wall Saw
1583505	DMHPM096	82-86	900	350	8.8	CuSn, Co	-	-	Non-abrasive Marble	Wall Saw
1583397	DMHPM004	79-83	850	350	8.35	CuSn, Fe, Co	-	-	Non-abrasive Marble	Wall Saw

Customized sizes and solutions are available upon request.

#### PACKAGING

Product typically ships in 50-lb. (25-kg) metal drums.

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