

PRODUCT BULLETIN

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**ALLIED
MINERAL**
PRODUCTS, INC.

MATRIPUMP 63ACX

General Information

MATRIPUMP 63ACX is a mullite-based, low cement castable designed for molten aluminum contact applications. This material exhibits outstanding flow characteristics and offers a wide range of installation methods. MATRIPUMP 63ACX offers the following features and benefits:

- > Abrasion resistant
- > Tolerates a wide water range without sacrificing physical properties
- > High strength
- > Excellent non-wetting characteristics

Technical Data

Chemical Analysis*

(Major Components)

Al ₂ O ₃	65.6%
SiO ₂	28.5%
CaO	2.2%
TiO ₂	2.1%
Fe ₂ O ₃	1.0%

*Proprietary ingredients not included

Material Required	2.59 g/cm ³ (162 lb./ft. ³)
Grain Size.....	4.75 mm (4 mesh) and finer
Maximum Application Temperature	1540°C (2800°F)
Installation Method	Pumping, Pouring, Vibrating

Packaged in 25 kg (55 lb.) multi-wall paper bags. Also available in bulk packaging. Storage beyond 6 months is not recommended. Store in a dry location to avoid moisture pickup.

Hydraulic Set and Water Requirements

MATRIPUMP 63ACX has a unique design, enabling the installer to adjust water levels for optimum casting behavior. This product can be installed at a water level between 5.3% and 6.3%.

	<u>Vibrated</u>	<u>Pouring and Pumping</u>
Water Required:	5.3%	6.3%
Working Time:	30 minutes	50 minutes
Initial Set:	2-6 hours	2-6 hours
Final Set:	5-12 hours	5-12 hours

Allied Mineral Products, Inc. supplies a complete line of monolithic refractories for the metals industry. For more information or a complete evaluation of your refractory requirements, please contact your local Allied representative.

Warning: Contains aluminum oxide, aluminosilicate, calcium aluminate cement, and silica. The International Agency for Research on Cancer (IARC) has classified crystalline silica inhaled in the form of quartz or cristobalite carcinogenic to humans. Refer to Material Safety Data Sheet for additional information and disposal instructions. Avoid breathing dust. Wear NIOSH approved respirator during installation, removal, and disposal of product to prevent inhalation of dust. Avoid contact with skin and eyes. Cement powder or freshly mixed castable may cause eye and skin irritation. Steam spalling, which can lead to personal injury, may result from improper drying and firing procedures. In case of eye contact, flush immediately and repeatedly with water and consult a physician. For safest use and optimum performance, proper practices must be followed.

(MXMP63ACX)

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Laboratory Test Bar Data

MATRIPUMP 63ACX

Casting Consistency	Vibrated			Pouring/Pumping		
Casting Water	5.3%			6.3%		
<u>Density</u>	<u>g/cm³</u>	<u>kg/m³</u>	<u>pcf</u>	<u>g/cm³</u>	<u>kg/m³</u>	<u>pcf</u>
After firing to:						
110°C (230°F)	2.59	2590	162	2.53	2530	158
815°C (1500°F)	2.58	2580	161	2.51	2510	157
1090°C (2000°F)	2.53	2530	158	2.48	2480	155
1370°C (2500°F)	2.48	2480	155	2.43	2430	152
<u>Modulus Of Rupture</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>
After firing to:						
110°C (230°F)	16.4	167	2380	11.5	117	1670
815°C (1500°F)	21.8	223	3170	16.6	169	2410
1090°C (2000°F)	28.0	285	4060	23.9	243	3460
1370°C (2500°F)	25.8	263	3740	22.2	226	3220
<u>Hot Modulus of Rupture</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>
After firing to:						
815°C (1500°F)	34.3	350	4980	26.8	273	3890
980°C (1800°F)	27.5	280	3990	28.0	285	4060
<u>Cold Crushing Strength</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>	<u>MPa</u>	<u>kg/cm²</u>	<u>psi</u>
After firing to:						
110°C (230°F)	94	960	13600	57	580	8300
815°C (1500°F)	106	1080	15400	74	760	10800
1090°C (2000°F)	148	1510	21500	134	1360	19400
1370°C (2500°F)	143	1450	20700	110	1120	15900
<u>Permanent Linear Change</u>	<u>%</u>			<u>%</u>		
After firing to:						
815°C (1500°F)	-0.2			-0.2		
1090°C (2000°F)	0.1			0.1		
1370°C (2500°F)	0.7			0.7		
<u>Apparent Porosity</u>	<u>%</u>			<u>%</u>		
After firing to:						
110°C (230°F)	10.1			12.8		
815°C (1500°F)	16.1			18.5		
1090°C (2000°F)	14.7			17.8		
1370°C (2500°F)	16.9			19.1		
<u>Abrasion Loss</u>	<u>cm³</u>			<u>cm³</u>		
After firing to:						
110°C (230°F)	7.0			8.8		
815°C (1500°F)	4.3			5.0		



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