

# PRODUCT BULLETIN

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**ALLIED  
MINERAL**  
PRODUCTS, INC.

## MATRIPUMP 72ACX

### General Information

MATRIPUMP 72ACX is a high purity mullite-based, low cement castable designed for molten aluminum contact applications which require high hot strength and abrasion resistance. This material exhibits outstanding flow characteristics and offers a wide range of installation methods: pumping, pouring, shotcrete or vibrating. Typical applications include linings for aluminum melting and holding furnaces. MATRIPUMP 72ACX offers the following benefits and features:

- > non-wetting to aluminum alloys
- > resistant to abrasion
- > tolerates a wide water range without sacrificing physical properties
- > superior thermal shock properties
- > pumpable and shotcretable

### Technical Data

#### Chemical Analysis\*

(Major Components)

Al <sub>2</sub> O <sub>3</sub>	78.6%	Material Required .....	2.68 g/cm <sup>3</sup> (167 lbs./ft <sup>3</sup> )
SiO <sub>2</sub>	15.6%	Grain Size .....	4.75 mm (4 mesh) and finer
TiO <sub>2</sub>	2.3%	Maximum Use .....	1650°C (3000°F)
CaO	2.2%	Installation Method .....	Pouring, Vibrating or Pumping
Fe <sub>2</sub> O <sub>3</sub>	0.9%		

\* Proprietary ingredients not included

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

MATRIPUMP 72ACX 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 5.4% and 6.0%.

### Hydraulic Set

	<u>Vibrated</u>	<u>Pouring and Pumping</u>
Water Required:	5.4%	6.0%
Working Time:	35 minutes	50 minutes
Initial Set:	2 – 6 hours	2 – 6 hours
Final Set:	6 – 24 hours	10 – 24 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, aluminosilicates, 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. Hydrogen gas may be generated when product is exposed to water. Ignition of hydrogen gas in an enclosed area can lead to personal injury. Proper ventilation should be supplied to avoid gas buildup. For safest use and optimum performance, proper practices must be followed.

(MXMP72ACX)

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# LABORATORY TEST BAR DATA

## MATRIPUMP 72ACX

**Casting Water**

6.0%

**Density**

After firing to:

110°C ( 230°F)

815°C (1500°F)

1090°C (2000°F)

**g/cm<sup>3</sup>**

2.71

2.68

2.61

**kg/m<sup>3</sup>**

2708

2676

2612

**pcf**

169

167

163

**Modulus Of Rupture**

After firing to:

110°C ( 230°F)

815°C (1500°F)

1090°C (2000°F)

**MPa**

17.1

18.7

15.0

**kg/cm<sup>2</sup>**

174.8

190.6

152.7

**psi**

2485

2710

2710

**Hot Modulus Of Rupture**

At: 815°C (1500°F)

**MPa**

32.5

**kg/cm<sup>2</sup>**

332

**psi**

4720

**Cold Crushing Strength**

110°C ( 230°F)

815°C (1500°F)

1090°C (2000°F)

**MPa**

107.5

109.0

81.9

**kg/cm<sup>2</sup>**

1096.3

1111.8

834.7

**psi**

15590

15810

11870

**Abrasion Loss**

After heating to:

110°C ( 230°F)

815°C (1500°F)

**cm<sup>3</sup>**

5.7

4.9

**Permanent Linear Expansion**

After firing to:

815°C (1500°F)

1090°C (2000°F)

**%**

-0.18

0.40

**Apparent Porosity**

After firing to:

110°C ( 230°F)

815°C (1500°F)

1090°C (2000°F)

**%**

11.0

17.9

19.5



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