

PRODUCT BULLETIN

2700 Scioto Parkway Columbus, Ohio 43221 USA 614/876-0244 Fax: 614/876-0981
www.alliedmineral.com



**ALLIED
MINERAL**
PRODUCTS, INC.

QUICK CAST[®] 81ACX

General Information

QUICK CAST[®] 81ACX is part of a complete family of products that offers a wide range of installation methods. QUICK CAST[®] 81ACX is a high alumina, low cement castable designed for the most severe environments in molten aluminum applications. QUICK CAST[®] 81ACX offers the following benefits and features:

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

Technical Data

Chemical Analysis*

Al ₂ O ₃	76.7%
SiO ₂	18.7%
CaO	2.2%
TiO ₂	1.4%
Fe ₂ O ₃	0.6%

*Proprietary ingredients not included.

Material Required, Vibration Cast	2.74 g/cm ³ (171 lb/ft ³)
Material Required, Self-flow.....	2.65 g/cm ³ (166 lb/ft ³)
Grain Size	7 mm (3 mesh) and finer
Maximum Use Temperature.....	1540°C (2800°F)
Installation Method	Self-flow/Vibration
Coefficient of Thermal Expansion (CTE).....	6.9 x 10 ⁻⁶ /°C (3.9x10 ⁻⁶ /°F)

Cast Data (4.5% water)

Temperature		Density		PLC [†]	MOR		HMOR*		CCS		Porosity	Abrasion Loss
°C	°F	g/cm ³	lb/ft ³	%	MPa	psi	MPa	psi	MPa	psi	%	cm ³
110	230	2.77	173	-	23.3	3380		-	124.8	18100	7.4	4
816	1500	2.74	171	-0.2	17.4	2530	39.9	5780	122.0	17700	13.8	4.8
1090	2000	2.69	168	0.2	15.3	2220		-	85.5	12400	16.2	6.3
1370	2500	2.71	169	0.4	23.2	3360		-	111.0	16100	12.8	-

† Permanent linear change

* 5.0% Casting Water

Self-flow Data (6.2% water)

Temperature		Density		PLC [†]	MOR		HMOR**		CCS		Porosity	Abrasion Loss
°C	°F	g/cm ³	lb/ft ³	%	MPa	psi	MPa	psi	MPa	psi	%	cm ³
110	230	2.68	167	-	19.9	2890	-	-	110.3	16000	11.1	4.1
816	1500	2.66	166	-0.2	15.7	2270	36.9	5350	79.3	11500	17.8	5.5
1090	2000	2.59	162	2.0	11.5	1670	-	-	51.7	7500	19.8	-
1370	2500	2.72	170	0.4	22.3	3240	-	-	94.5	13700	14.3	-

† Permanent linear change

** 6.5% Casting Water

Hydraulic Set

	<u>Vibrated</u>	<u>Self-flow</u>
Water Required:	4.5-5.0%	6.2-6.5%
Working Time:	40 minutes	>60 minutes
Initial Set:	2-6 hours	2-6 hours
Final Set:	8-24 hours	16-24 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, aluminosilicate, 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. Wear NIOSH approved respirator during installation, removal, and disposal of product to prevent inhalation of dust. Wear long-sleeved, loose-fitting clothing when handling the material. Gloves and eye protection should be worn. Wash with soap and warm water after handling. Wash work clothes separately and rinse out washer. In case of eye contact, flush immediately and repeatedly with water and consult a physician. 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.

MXQC81ACX

Revised 7/1/15

© 2015 Allied Mineral Products, Inc.

THE INFORMATION STATED IS BASED ON THE BEST LABORATORY AND LITERATURE DATA AND IS NOT A WARRANTY OR A GUARANTEE, NOR A VIOLATION OF ANY PATENT. IT IS PRESENTED FOR CONSIDERATION AND VERIFICATION ONLY, AND IS NOT TO BE USED FOR SPECIFICATION PURPOSES.