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Technical Data Sheet Plibrico HyRATE 85-S Special

Product # 10046

Available Internationally As:

Plico HR 85-S Special

Product Description:

An 85% alumina, bauxite based, phosphate bonded plastic designed for pneumatic application. Non wetting to aluminum alloys.

Standard Packaging:	# /	kg	Variable wt piece
Shelf Life:	3 months		
Service Limit:	3300 °F	1820 °C	
Contact Limit:	N/A °F	N/A °C	
Bulk Density - In Service:	170 pcf	2723 kg/m ³	
Bulk Density - To Place:	180 pcf	2884 kg/m ³	
Minimum Time To Firing:	0 hr		

Abrasion Loss after 1500°F / 815°C per ASTM C704

11 cc

Chemistry (calcined) %					
Al ₂ O ₃	83.8	Alk	0.2	MgO	0.1
SiO ₂	10.5	TiO ₂	1.3	ZrO ₂	
CaO	0.1	P ₂ O ₅	2.7	Other	
Fe ₂ O ₃	1.3	SiC			

Water Range Per Standard Package		%	Quarts	Liters
Vib Casting	min			
	max			
Casting	min			
	max			
Pumping	min			
	max			

Coefficient of Thermal Expansion (reversible):

4.5 x 10⁻⁶ in/in/°F / 8.1 x 10⁻⁶ mm/mm/°C

Thermal Conductivity	btu*in/hr*ft ² *°F	W/m°C
500°F / 260°C	11.5	1.7
1000°F / 540°C	10.6	1.5
1500°F / 815°C	10.7	1.5
2000°F / 1090°C	11.9	1.7

Temperature		Linear Change% per ASTM C113	CCS per ASTM C133		Cold MOR per ASTM C133		Hot MOR per ASTM C583	
°F	°C		psi	MPa	psi	MPa	psi	MPa
230	110	-0.4	2000	14.0	1200	8.3		
1500	820	-0.5	8000	55.0	1400	9.7	1800	12.4
2000	1090	-0.6			1800	12.4	1000	6.9
2500	1370	0.6			2000	13.8	600	4.1
3000	1650	1.1			1800	12.4		

Other Data:

Release Date: 1 Aug 2019

Heat Up Guide: Schedule A

ASTM Class: C 673 85% Alumina
 Plastic Refractory

Refractory material should be stored in a cool, dry environment.

Note: All data are averaged results of ASTM tests (where applicable) on laboratory specimens. Reasonable variations in data can be expected. Data is not to be used for specification purposes. Product data is periodically updated to reflect product, raw material, process and/or testing changes. Please consult your Plibrico representative to make sure you have the most current data.