



# Plibrico Company, LLC

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# Technical Data Sheet

## Plibrico 90-S

Product # 10033

Available Internationally As:

Plico 90-S

### Product Description:

A 90% alumina, phosphate bonded plastic refractory. Non wetting to aluminum alloys.

**Standard Packaging:** 55 # / 25 kg Carton

**Shelf Life:** 6 months

**Service Limit:** 3400 °F 1870 °C

**Contact Limit:** N/A °F N/A °C

**Bulk Density - In Service:** 172 pcf 2755 kg/m<sup>3</sup>

**Bulk Density - To Place:** 187 pcf 2996 kg/m<sup>3</sup>

**Minimum Time To Firing:** 0 hr

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

5 cc

Chemistry (calcined) %					
Al <sub>2</sub> O <sub>3</sub>	89.8	Alk	0.3	MgO	0.1
SiO <sub>2</sub>	5.9	TiO <sub>2</sub>	0.6	ZrO <sub>2</sub>	
CaO	0.1	P <sub>2</sub> O <sub>5</sub>	2.7	Other	
Fe <sub>2</sub> O <sub>3</sub>	0.7	SiC			

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

### Coefficient of Thermal Expansion (reversible):

4.9 x 10<sup>-6</sup> in/in/°F / 8.8 x 10<sup>-6</sup> mm/mm/°C

Thermal Conductivity	btu*in/hr*ft <sup>2</sup> *°F	W/m°C
500°F / 260°C	17.1	2.46
1000°F / 540°C	15.4	2.22
1500°F / 815°C	14.4	2.07
2000°F / 1090°C	14.5	2.09

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	-0.8	2500	17.0	1500	10.3		
1500	820	-1.0	7000	48.0	2000	13.8	2700	18.6
2000	1090	-0.4			2200	15.2	1800	12.4
2500	1370	-0.5			3000	20.7	600	4.1
3000	1650	-0.8			3500	24.1		

**Other Data:** Material ordered in either Stiff (SF), Standard (SD), or Export (EX) workability. PREVENT MATERIAL FROM FREEZING: During cold weather this material must be shipped and stored in a warm place to prevent freezing. In warm weather, store in a cool dry place to prevent drying out.

Release Date: 1 Aug 2019

Heat Up Guide: Schedule A

ASTM Class: C 673 90% 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.