

# Foundry Sand – Ceramsite

**Bauxitic Casting Pearls** (also called '**Ceramsite**') are innovative spherical casting sand developed in the Far East initially for the discerning Japanese markets. With the excellent casting property feedback and lower price. Ceramsite has already conquered the Japanese and Chinese markets, and being considered as a direct replacement for Chrome and Zircon casting grade Sands. Available in a variety of AFS sizes, The Ceramsite offers a "Chrome Free" option where environmental considerations are a real concern.

Our high quality Ceramisite sands are made by fusing, spraying, sieving and purifying high Alumina Calcined Bauxite. They can be used in casting all sizes of steel parts. The spherical shape produces high density material with excellent flow characteristics. The main chemical composition is Al<sub>2</sub>O<sub>3</sub> which provides an excellent refractoriness and stability.

Ceramsite is ball-shaped, high heat-resistant, low heat dilating rate. it has advantage of cost and performance than Chromite sand and zircon sand that provide the effective ways to improve the quality of the foundry, cost-down and less damage to the environment.

## **Ceramsite sand characteristics and casting benefits:**

### **High Al<sub>2</sub>O<sub>3</sub> mineral composition**

- Higher Refractoriness than Silica based sands (around 1850 C°)
- Much lower Thermal Expansion compared to Chromite and

Zircon based sands

- Reduce Burn in
- Compatible with existing resin systems

### Regular spherical shape

- Provide highly smooth surface
- Reduce binder addition
- Excellent air permeability and dispensability (reduce cleaning cost)

### 100% recyclable

- Cost reduce (up to around **40 times against 5-10 times** for chromite based sands)
- Environment respect and health safety

## Thermal expansion :

Sand Type	Linear thermal expansion [ $10^{-6} \cdot K^{-1}$ ]		
	20 – 300°C	20 – 600°C	20 – 800°C
Silice	14.0	23.0	17.0
Chromite	7.1	7.5	7.5
Zircon	3.4	4.1	4.5
Cerabeads	3.5	4.0	4.3
Ceramsite	7.1	7.3	7.2

## Composition :

Al <sub>2</sub> O <sub>3</sub>	78-85%
SiO <sub>2</sub>	8-12%
Fe <sub>2</sub> O <sub>3</sub>	3.5% (max)
TiO <sub>2</sub>	3.5% (max)

Refractoriness	1850C (3362F)
Angle Coefficient	1.1 (max)
Thermal Expansion (at 100°C)	0.15
Thermal Conductivity	0.196 W/m.K
Specific Heat	873 J/kg
Bulk Density	1.9-2.2 g/cm <sup>3</sup>
pH Value	7.65
Shape	Solid Sphere
Binder Content Required	3-4%
Crushability	112