

Aluminum Titanite

Titan Series

Premium Ceramic for Aluminum Industry



Aluminum Titanite

Aluminum titanate (Al_2TiO_5) is a polycrystalline ceramic material that is normally prepared by reactive sintering of alumina and titanium powders, forming a solid solution of stoichiometric proportions. Due to its good chemical resistance, low thermal conductivity, and high thermal shock resistance (as a result of a low thermal expansion coefficient), aluminum titanate can be an appropriate material for various technological applications such as foundry parts.

Aluminum titanite ceramic dosing/riser tubes are widely used in the aluminum low pressure die casting industry due to its excellent thermal performance, non-sticking characteristic and competitive price. It plays an important role in producing high quality products while keeping the production cost low.

Rethink from the Source

Standard Ceramic's material laboratory has developed the **next generation Aluminum Titanite** powder, with all material locally sourced and synthesized in house.

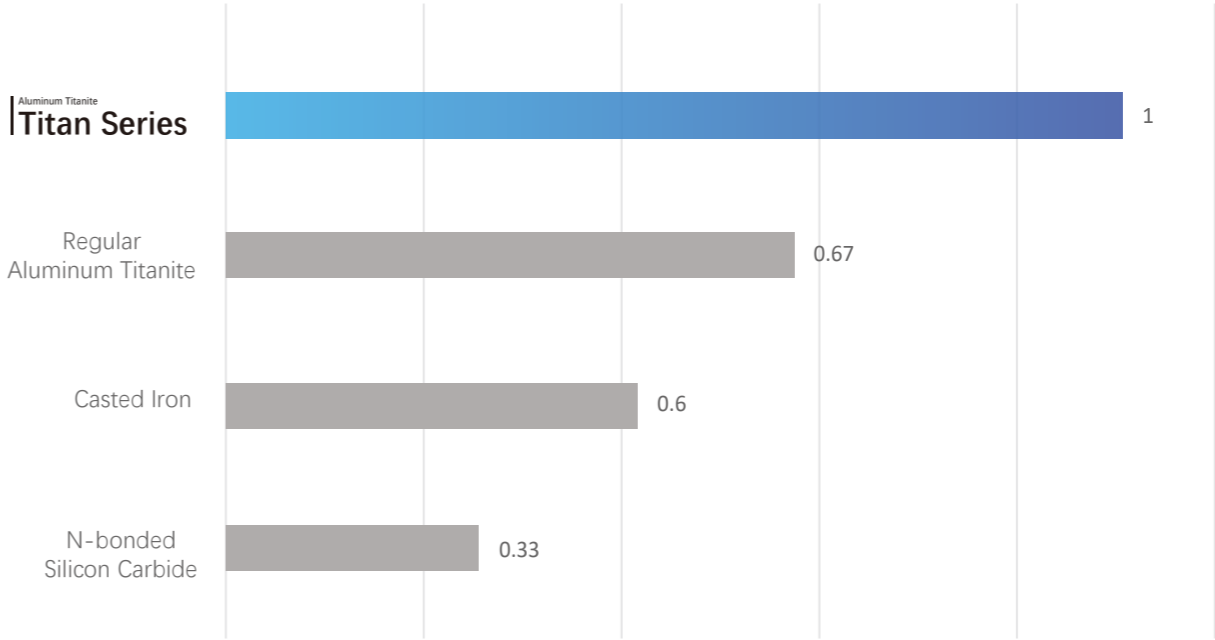
Impressive Strength

The **Titan** series products are able to perform with higher bending strength than the previous generation thanks to our newly developed isostatic pressing techniques.

Extended Lifetime

Combining with low thermal conductivity, low coefficient of thermal expansion and very high thermal shock resistance, the result is **longer lifetime** and much less maintenance.

Riser Tube Lifetime/Cost

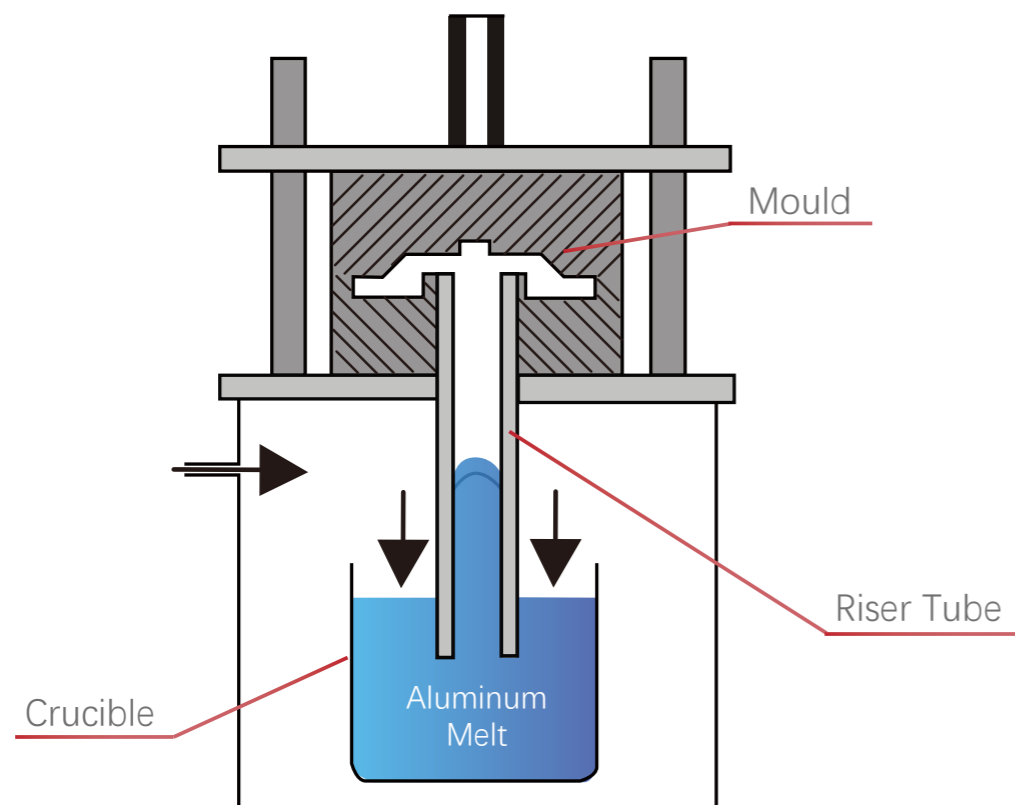


Technical Specifications	
Bending Strength	>60 MPa
Young's Modulus	15 GPa
Compressive Strength	45 MPa
Thermoconductivity	1.6 W/(m · K)
Density	3.35 g/cm ³
Electrical Resistance	10 ¹⁵ Ω · cm
Thermal Shock Resistance	1,520 °C
Max. Operating Temperature	1,100 °C
Coefficient of Linear Thermal Expansion (20 °C - 1000°C)	1.1 x 10 ⁻⁶ m/°C

Riser Tube

Riser Tubes/Stalks are the key part of low pressure die casting machines. During the die casting process, molten aluminum (700-900°C) is pressurized from riser tube to mould cavity every 3~5 minutes.

Compared with traditional casted iron riser tubes, aluminum titanate has much **lower thermal expansion**, excellent **thermal shock resistance** and does not stick to aluminum, these properties ensure every casting maintains the highest standard.





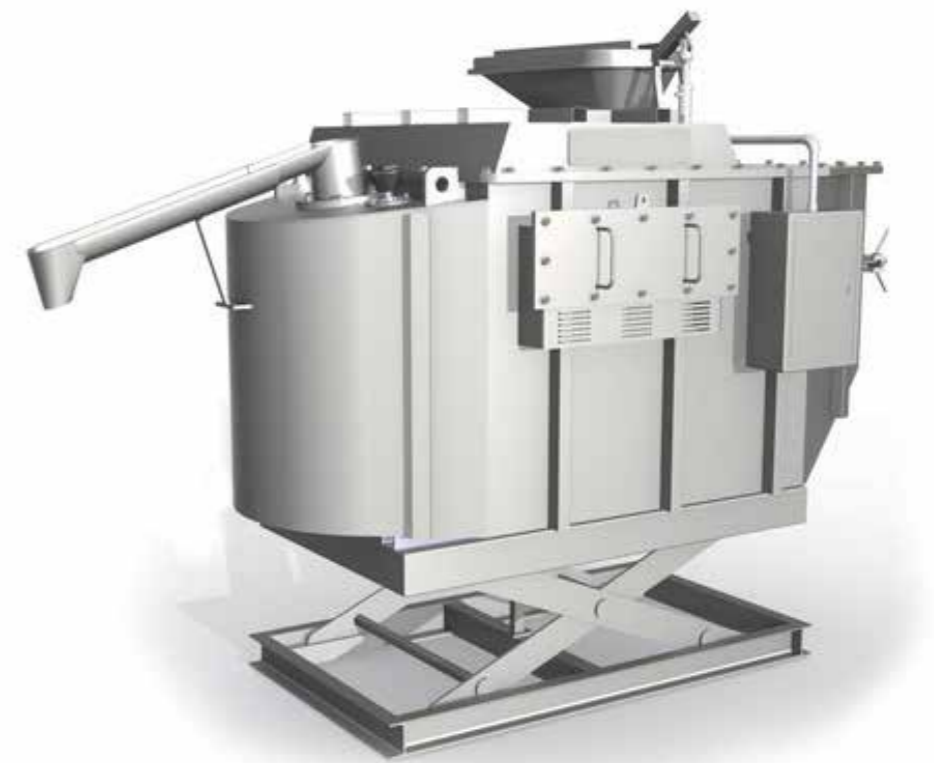
Dosing Tube

As the key component in Dosing Furnaces, dosing tubes are susceptible to high thermal shocks and corrosion.

Advantages:

- Excellent **corrosion resistance**;
- High **temperature resistance** (Max. 1400°C);
- Long service time. With our specially developed Titan powder, the dosing tube can serve as long as **4 months**. This makes sure the downtime caused by tube replacement can be reduced to minimum.

Aluminum Titanite's lower thermal expansion and excellent thermal shock resistance makes it the best suitable material to be used in dosing furnaces.

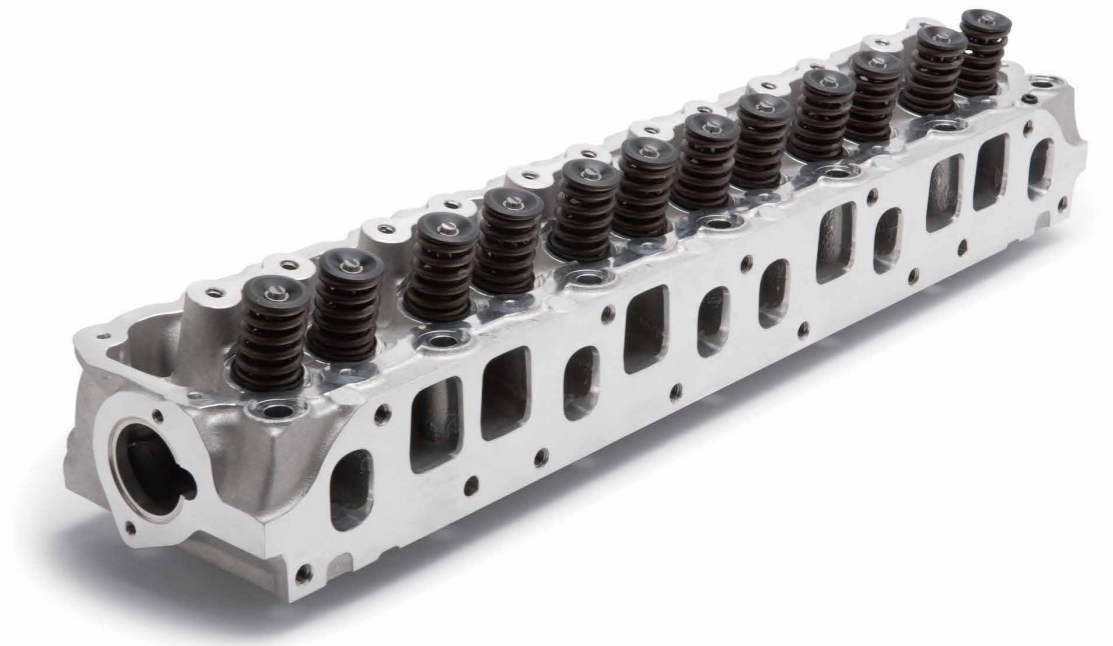




Pouring Sprue

The newly developed Titan series pouring sprue **preserves heat** more efficiently than the traditional Aluminum Titanite sprues, this effectively maintains the temperature of the feeding channel, so that the quality and uniformity of the parts is significantly improved.

As the junction of the gating system and the forming system, pouring sprue plays an important role of the aluminum low pressure die casting system. The long service life is vital for **continuous casting**, downtime caused by parts replacement can be reduced by up to 20% when a good pouring sprue is used.



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