

Alumina

Description

Alumina (Al_2O_3), processed from bauxite, comes in many forms and purities, from 85% to 99.999%. Typically, protection tubes are formed from 99% pure Al_2O_3 . The ceramic material has a white color.

Advantages

- ✓ Good resistance to oxidizing and reducing atmospheres
- ✓ Better mechanical strength vs. mullite
- ✓ Gas tight
- ✓ Abrasion resistant
- ✓ Low silica content (will not contaminate platinum thermocouples)

Limitations

- ✓ Requires secondary protection tube for added mechanical (shock/impact) strength in some applications
- ✓ May be attacked by wet fluorine gas, hydrofluoric acid and phosphoric acid.

Maximum exposure temperature

3450°F (1900°C)

Thermal Conductivity

Moderate (35-40 W/m•°K at room temperature)

Typical applications

- ✓ A wide variety, including food, plastics and petrochemical