



# *Uniceram Advanced Materials, Inc.*

.....A provider of quality ceramic products.....





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## **Company Introduction**

Allow us to introduce our company, Uniceram Advanced Materials, Inc. a provider of quality ceramic products.

We have a wide array of products that serve a broad spectrum of industrial applications. Our products, typically, may be classified to four categories on basis of their end use:

- Insulators
- Wear Resistant Parts
- Porous Filters
- Refractory Products

Our core ability is the ability to customize and innovate. With the backing of the solid experience of our product development team, we are in a position to manufacture products as per our customer's pricing and technical requirements. For us, component geometry is not a restriction. As we say, if you can draw it, we CAN make it.

Uniceram Advanced Materials has dedicated manufacturing units at two locations around the world. Both these locations are ISO 9001 certified. Our expertise in supply chain management enables us to have the optimum quality at the optimum price.

We have been in this field for more than 25 years and have developed the technology indigenously, so have total mastery over managing the efficiency of the applications. We believe in adding competitive advantage to the client by enhancing the operational effectiveness of their processes.

Uniceram Advanced Materials is a quality conscious organization: All our vendors are ISO9001 Certified for their quality assurance in design, development, production and delivery. This shows our commitment to quality. We believe in setting very high standards to exceed the expectations of our customers.

If you have any queries about our products or need more information, feel free to contact us.

We look forward to having a long and a mutually beneficial business relationship with you. Count on us to deliver the best, always!

Thanks,

**The Uniceram Team**

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# *Uniceram Advanced Materials, Inc.*

## Our Product Range:

### + **Wear Resistant Parts-**

- Textile and Wire Drawing guides
- Mechanical and Chemical Seals
- Alumina Grinding Media
- Yttria Stabilized Zirconia Microgrinding Media and Structural Ceramics
- Ceramic Coatings

### + **Insulators-**

- Resistor Casing
- Fuse Bodies
- Ignitors
- Heat Resistant Interlocking Beads

### + **Porous Filters-**

- Honey Comb Filters
- Acid Filters
- Vaporization wicks

### + **Refractory Materials-**

- Crucibles
- Ferrules
- Thermocouple Sheaths and other labware.
- Coil Supports
- Infra-Red Heaters
- Assay Testing Ceramics
- Ceramic Rollers for Tile Industry
- Refractory products for Steel, Iron, Glass and Cement Industry
- Water Ground Mica



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## **What is Thermal Spray Coating?**

A coating is produced by a process in which molten or semi-molten particles are applied by impact onto a substrate. The impacting molten particles rapidly solidify on the substrate to form a coating. This process is called a “cold process” (relative to the substrate material being coated) as the substrate temperature can be kept low during processing avoiding damage, metallurgical changes and distortion to the substrate material.

### **Process:**

Thermal spray coating involves heating a material, in powder or wire form, to a molten or semi-molten state. The material is propelled using a stream of gas or compressed air to deposit it, creating a surface structure on a given substrate. The coating material may consist of a single element, but is often an alloy or composite ceramic with unique physical properties that are only achievable through the thermal spray process.

Thermal spray coatings can be the most cost-effective means of protecting substrate surfaces from wear or corrosion. Other primary uses of thermally sprayed coatings include dimensional restoration, maintaining precise clearances, and modifying thermal and electrical properties.

## **Commonly used Ceramic Coating Materials**

- ❖ Grey Alumina
- ❖ Titanium Dioxide
- ❖ White Alumina
- ❖ Chromium Oxide
- ❖ Alumina – Titania composite
- ❖ Chromium Oxide Silica composite
- ❖ Zirconia
- ❖ Zirconium Oxide composite



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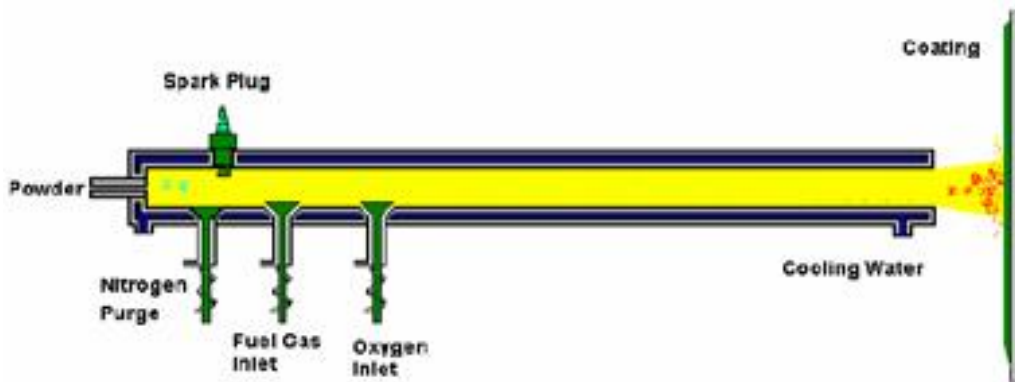
## Commonly used Ceramic Coating Materials (Contd...)

- ❖ Magnesium Zirconate
- ❖ Yttria stabilized Zirconia

## Properties Of Thermal Spray Coatings

COATING TYPE	MAX. COATING THICKNESS POSSIBLE	MAX. COATING HARDNESS POSSIBLE
Metals & Alloys	20 microns to a few mm	60 HRC
Ceramics	50 microns to 1000 microns	72 HRC
Carbides	20 microns to 500 microns	72 HRC

## Detonation Spray Process:



*Schematic View of the Detonation Process*



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## **Features and Benefits**

- ❖ Excellent bond strength of the coatings
- ❖ Very dense coatings. Porosity less than 1%
- ❖ Higher thickness coatings easily possible
- ❖ Higher productivity
- ❖ Better coating characteristics in terms of hardness, wear & corrosion resistance.
- ❖ Versatile process, ensuring wide range of coatings
- ❖ Can be easily automated
- ❖ Low substrate temperature enables spraying of precision components
- ❖ Less downtime

## **Special Properties Provided By Thermally Sprayed Coatings**

- ❖ Enhances Tribological (Wear Resistant) Characteristics.
- ❖ Increases Corrosion Resistance.
- ❖ Boosts Heat & Oxidation Resistance.
- ❖ Alters Electrical Conductivity or Resistivity.
- ❖ Make the material Abradable or Abrasive, depending on the need.

If you have any further queries, please feel free to contact us at [info@uniceramusa.com](mailto:info@uniceramusa.com)