3MS.005
Zirconium Oxide-Based Adhesives

Summary

Physical variables included in this documentation are provided by way of indication only and do not, under any circumstances, constitute a contractual undertaking. Please contact our technical service if you require any additional information.

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Overview

Final Advanced Materials is collaborating with Cotronics to offer highly effective adhesive products. Zirconium oxide-based products meet the increasing demand of high temperature adhesives and special refractory.

Areas of application:

- Research and development, electronics, metallurgical, industrial and nuclear applications, etc.

Applications:

- Filing
- Coating
- Bonding
- Impregnating

Advantages:

- Excellent stability at high temperature
- Use in harsh environments, both reducing and oxidising
- Resistance to most solvents and chemical products

Safety

Do not inhale the powders! Wear a mask when handling in large quantities.

Avoid all contact with the eyes or skin.

In the event of an accident, quickly clean skin and eyes with water and consult a doctor.

We will provide you with the material safety data sheets.

info@final-materials.com

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COTRONICS CORP
High Temperature Specialty Materials Since 1971

Resbond™ 904

The Resbond™ 904 adhesive is a smooth, creamy paste prepared solely with zirconium oxide. This composition gives it a thermal resistance in continuous use superior to that of many materials. It is commonly used for binding ceramics and graphite.

Properties

- Thermal resistance up to 2,200 °C
- Good resistivity
- Resistant to oxidisation and erosion
- No wetting
- Can be used in reducing or oxidising atmospheres
- Resistant to many solvents and chemicals

Applications

- Welding
- Brazing
- Bonding and coating
- Conductor seals
- Protection of thermocouples
- Instrumentation
- Preparation of bricks and moulds
- Handling liquid metals
- Thermocouples

Implementation

- Easy to use
- Curing at room temperature

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Resbond™ 940

The Resbond™ 940 adhesive is fast-setting thanks to its specific activator 940T-1. This acts by catalysis and ensures perfect adhesion after 5 to 15 minutes at 93 °C. For optimal conditions, post-curing can be carried out at 120 °C for 4 hours.

Properties

- Thermal resistance up to 1,100 °C
- Fast setting

Applications

- Depositing
- Coating
- Bonding
- Impregnation
- Sealing heat and dielectric shields
- Encapsulating temperature sensors
- Bonding steatite bases on lamps in a high speed production chain

Implementation

- In thick or thin layers
- On metals, quartz, graphite, ceramics, high temperature insulators
- Mix the two components according to the recommended mix ratio to obtain a smooth, uniform paste.

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Technical Data

Property	Unit	904	940
Max. Operating Temperature	°C	2,200	1,093
Components		1	2
Appearance		Paint	Paste
Filler		ZrO_2	ZrO_2
Compressive Strength at 20 °C	MPa	41.4	27.6
Flexural Strength at 20 °C	MPa	20.7	12.4
Thermal Conductivity	$W.m^{-1}.K^{-1}$	2.16	1.15
Thermal Expansion	$10^{-6}.K^{-1}$	7.4	8.1
Dielectric Strength	kV/mm	9.75	4.9
Resistivity	Ω.m	10^6	10^6
Mix Ratio	Powder - Binder	-	100-28
Cure at Room Temperature		24 hrs	24 hrs
Fast Cure		4 hrs at 65 °C	5-15 min at 93 °C
Post-Cure		-	4 hrs at 120 °C

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