TECHNICAL DATA SHEET

Rev. N° 0 - 02.11.2021

3MS.007
Silica-Based Adhesives

COTRONICS CORP
High Temperature Specialty Materials Since 1971

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 a wide range of high temperature adhesives. These silica-based products are available in a paste form and can generally dry at room temperature, even though low heat curing is also possible.

Areas of application:

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

Applications:

- Ready-to-use bond for steel, iron, lead, ceramics, and metals in general.
- Bonding materials with low expansion coefficient such as glass, quartz, and sapphire.

Advantages:

- Max. operating temperature: up to 1,370 °C
- Resistant
- Low expansion

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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Resbond™ 905

Two-component low expansion adhesive, 1,371 °C

The Resbond™ 905 adhesive contains fused silica (quartz) and the 905T binder which optimises the homogeneity of the adhesive.

Properties

- Very low expansion coefficient
- Operating temperature: up to 1,371 °C

Applications

- Quartz, corderite and lithium-alumina ceramics

Implementation

- 905T binder for greater uniformity of the adhesive

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Resbond™ 940LE & 940HE

Resbond™ 940LE - Two-component, low expansion, fast curing, 1,370 °C

The Resbond™ 940LE adhesive is composed of silica (quartz) and a colloidal binder. The perfect adhesive for bonding low expansion materials, such as quartz lamps, optic fibres or halogen lamps on a high speed production line.

Applications

- Bonding very low expansion materials
- Quartz lamps, optic fibres or halogen lamps
- On a high speed production operations

Implementation

- With a colloidal binder

Resbond™ 940HE – Two-component high expansion adhesive, 980 °C

The Resbond™ 940HE adhesive is used for bonding and moulding very high expansion parts, for example heating elements.

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Thermeez™ 7030

"Epoxy-like" adhesive and sealing putty, 950 °C

The Thermeez™ 7030 adhesive brings the ease of use of epoxides into the field of ceramic adhesives.

Properties

- Fireproof and resistant to acids, alkalis, solvents and corrosion
- Operating temperature up to 950 °C
- Guarantees a gas-tight seal even at high temperatures

Applications

- Pipe and pump seals, flanges, diesel engines, heating plants and bonding sensors or ceramic textiles
- Repairing cracked pipes
- Can be used on steel, lead, ceramics and most metals

Implementation

- Mix the products with water, then apply the creamy paste to the intended surface
- Curing in 24 to 36 hours at room temperature
- Fast curing in 4 hours at 65 °C

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Technical Data

Property	Unit	905	940LE	940HE	7030
Max. Operating Temperature	°C	1,371	1,370	980	980
Components		2	2	2	2
Appearance		Paste	Paste	Paste	Paste
Filler		SiO_2	SiO_2	SiO_2	SiO_2
Compressive Strength at 20 °C	MPa	22	24.1	29	34.5
Flexural Strength at 20 °C	MPa	14.5	14.5	10	10
Thermal Conductivity	$W.m^{-1}.K^{-1}$	1.44	0.72	1.2	1.2
Thermal Expansion	$10^{-6}.K^{-1}$	0.5	0.7	13.5	13.5
Dielectric Strength	kV/mm	7.8	4.9	3.9	3.9
Resistivity	Ω.m	10^{9}	10^{6}	10^{7}	10^{7}
Mix Ratio	Powder - Binder	100 - 60	100 - 45	100 - 33	100 - 20
Cure at Room Temperature		-	24 hrs	24 hrs	24 hrs at 36 C
Fast Cure		2 hrs at 120 °C	5-15 min at 93 °C	5-15 min at 93 °C	4 hrs at 65 °C
Post-Cure		-	-	-	-

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