

### High Temperature Ceramic Carbide Compound

**ThistleBond 'High Temperature Ceramic Carbide Compound'** is a high performance fluid grade engineering resurfacing compound specifically developed for high temperature immersion conditions and is ideal for vessels and equipment operating in high temperatures.

**ThistleBond 'High Temperature Ceramic Carbide Compound'** is based on a complex blend of phenolic epoxy resins and a special polyamino-amide curing system reinforced with carbide and ceramic particles to produce a coating with a high level of temperature, abrasion and adhesion properties combined with optimum physical and mechanical strength.

**Before proceeding, please read the following information carefully to ensure that the correct application procedure is fully understood.**

#### SURFACE PREPARATION

All dirt and loose material should be scraped away. Oil and grease should be removed with **ThistleBond 'Cleaner'**. Surfaces should then be abrasive blast cleaned to a minimum Sa2½ BS7079 Part A1 1989 or equivalent with a minimum blast profile of 75 microns (3 mil) corresponding to 'Medium' in BS7079 Part C3/ISO8503/1. All loose abrasive dust and debris must be blown clear or vacuum cleaned away.

Existing steel surfaces which have corroded in a chemical environment may be contaminated by soluble iron salts within corrosion pits. To prepare these surfaces it is recommended that one of the following treatments be carried out prior to final dry abrasive blasting to the specified standard.

- a) Blasting with a mixture of clean water and abrasive.
- b) Initial dry blast cleaning to remove corrosion and surface coatings followed by high pressure clean water jetting (minimum 1000 psi/66 bar).

On sections of repairs which are not required to bond to the **ThistleBond 'High Temperature Ceramic Carbide Compound'** these surfaces should be treated with **ThistleBond Release 'Agent'**.

#### MIXING

**ThistleBond 'High Temperature Ceramic Carbide Compound'** is a two component solvent free product supplied as a resin component and an hardener component which must be mixed together prior to use.

For optimum application properties the materials should be conditioned/warmed to a minimum temperature of 20°C (68°F) prior to mixing.

Mix the entire contents of the resin and hardener containers.

Alternatively measure four volumes of resin component and one volume of hardener into a clean container. The two components should be thoroughly mixed until completely streak free.

The mixed material should be used within 45 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

#### APPLICATION

For ease of application and optimum performance, surfaces should be at a minimum of 20°C prior to **ThistleBond 'High Temperature Ceramic Carbide Compound'** being applied.

The mixed material should be applied to the prepared area using a clean brush or squeegee. Application should be carried out as soon as possible after surface preparation is complete, and certainly the same day, otherwise flash blasting will be necessary before application.

Where necessary a reinforcing tape should be stippled in to the mixed product and further material applied over the tape, ensuring the edges of the tape are overlapped.

All equipment must be cleaned IMMEDIATELY after use with **ThistleBond 'Cleaner'**.

#### Theoretical Coverage Rate

1. m<sup>2</sup>/kilo at 750 microns dft (10.75 ft<sup>2</sup> per kilo at 30 mils)

#### Volume Capacity

750cc (45.7 cu ins) per kilo

#### Recommended Film Thickness

Wet 750 microns (30 mils)

Dry 750 microns (30 mils)

Detailed working recommendations are available from the Technical Centre on request.

**PHYSICAL CONSTANTS**

<b>Mixing Ratio</b>	<b>Resin</b>	<b>Hardener</b>	
	5	1	By weight
	4	1	By volume
<b>Appearance</b>	Resin	Dark Grey/White Paste	
	Hardener	Amber Liquid	
<b>Drying &amp; Cure times at 20°C (68°F)</b>	Usable Life	45 minutes	
	Initial Set	6 hours	
	Minimum Overcoating	6 hours	
	Maximum Overcoating	24 hours	

Allow to cure for at least 24 hours above 20°C before putting into service. The product is designed to post cure in service.

The ultimate heat distortion temperature of the material will be determined by the in service post curing conditions.

**Volume Solids** 100%

**V.O.C.** Nil

**Shelf Life** Use within 5 years of purchase. Store in original sealed containers at temperatures between 5°C (40°F) and 30°C (86°F).

**Operating Temperature**

	<b>Maximum</b>	<b>Continuous</b>
Dry Heat	250°C (482°F)	170°C (338°F)
Wet Heat	180°C(356°F)	150°C(302°F)

**Food Contact** Meets USDA requirements for incidental food contact.

**PHYSICAL PROPERTIES**

<b>Abrasion Resistance</b>	0.086 ml loss per 1000 cycles - 1 kg load/CS17 wheel
ASTMD4060	
<b>Compressive Strength</b>	142 Mpa (20730 psi) post cured
ASTMD695	
<b>Corrosion Resistance</b>	5000 hours
ASTMB117	
<b>Flexural Strength</b>	67 Mpa (9700 psi)
ASTMD790	
<b>Heat Distortion Temperature</b>	149°C(295°F)
ASTMD648	(Post Cured at 120°C for 6 hours)
<b>Tensile Shear Adhesion</b>	195 kg/cm <sup>2</sup> (2800 psi)
ASTMD1002	(Grit Blasted Steel)

**HEALTH AND SAFETY**

As long as normal good practice is observed **ThistleBond 'High Temperature Ceramic Carbide Compound'** can be safely used.

Protective gloves should be worn.

A fully detailed **Material Safety Data Sheet** is either included with the material or is available on request.

**PACKAGING**

Supplied in 3kg packs.

The information provided in this Product Data Sheet is intended as a general guide only and should not be used for specification purposes. The information is given in good faith but we assume no responsibility for the use made of the product or this information because this is outside the control of the company. Users should determine the suitability of the product for their own particular purposes by their own tests. Detailed specifications are available on request from the company.



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FOR FURTHER INFORMATION PLEASE CONTACT