Unique Polymer Systems

ADVANCED POLYMER SURFACE ENGINEERING TECHNOLOGY

Unique Polymer Systems - Abrasion Resistant Ceramic Carbide Fluid

UPS 'Abrasion Resistant Ceramic Carbide Fluid' is a high performance fluid grade engineering resurfacing compound designed for use in fluid flow environments.

UPS 'Abrasion Resistant Ceramic Carbide Fluid' uses a complex blend of epoxy resins and a polyamino-amide curing system reinforced with carbide and ceramic particles produce a coating with a high level of abrasion and erosion resistance combined with optimum physical and mechanical strength.

UPS 'Abrasion Resistant Ceramic Carbide Fluid' offers outstanding protection against impingement, entrainment and erosion / corrosion conditions.

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

SURFACE PREPARATION

All dust and loose material should be scraped away. Oil and grease should be removed with UPS 'Cleaner'. Surfaces should then be abrasive blast cleaned to a minimum Sa2½ BS7079 Part A1 : 1989 or equivalent with a blast profile of 75 microns (3 mil) corresponding to 'Medium' in BS7079 Part C3/ISO 8503/1. All loose abrasive dust and debris must be blown clear or vacuum-cleaned away.

Equipment that has been salt impregnated should, after blasting be left overnight to allow salts to sweat from the metal. Alternatively, surfaces should be warmed with a blowtorch or similar to bring salts up to the surface. The surface should once again be blast cleaned.

This procedure must be repeated until no further sweating of impregnated salt is evident.

On sections of repair which are not required to bond to the UPS 'Abrasion Resistant Ceramic Carbide Fluid' these surfaces should be treated with UPS 'Release Agent'.

MIXING

UPS 'Abrasion Resistant Ceramic Carbide Fluid' is a two component material comprising resin and hardener components which must be mixed together before use.

Mix the entire contents of the resin and hardener containers. Alternatively, measure three 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 25 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

APPLICATION

Application should not be carried out at temperatures below 5degC nor when relative humidity exceeds 85% or when the surface to be coated is less than 3°C above the dew point.

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 on the same day, otherwise flash blasting will be necessary before application.

Where necessary a reinforcement tape should be stippled into the mixed product and further material applied over the tape.

For large areas the tape should be overlapped.

In areas where a second layer of UPS 'Abrasion Resistant Ceramic Carbide Fluid' is required, this application must be carried out within the initial set time for the first layer, otherwise the surface must be lightly abraded or flash blasted.

Machining of UPS 'Abrasion Resistant Ceramic Carbide Fluid' will cause excessive tool wear so care should be taken to finish the repair to the required size or dimensions. Formers treated with UPS 'Release Agent' can be used to minimise machining.

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

Theoretical Coverage Rate
1.6 m² / kilo at 250 microns dft (17 ft² per kilo at 10 mils)

Volume Capacity
400 cc (24.4 cu ins) per kilo

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Recommended Film Thickness
Wet 250 microns (10 mils)
Dry 250 microns (10 mils)

PHYSICAL CONSTANTS

Mixing Ratio

Resin	Hardener	
3	1	By volume
8	1	By weight

Appearance

Resin	Coloured Paste
Hardener	Amber Liquid

Drying & Cure times at 20°C/68°F

Usable Life	25 minutes
Initial Set	3 hours
Grinding Time	6 hours
Full Mechanical	5 days

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

	Maximum	Continuous
Dry Heat	250°C (480°F)	120°C (248°F)
Wet Heat	120°C (248°F)	70°C (158°F)

PHYSICAL PROPERTIES

Compressive Strength D695	915 kg/per cm² ASTM (13000 psi)
Tensile Strength	195 kg/per cm² (2800 psi) ASTM D1002 (Grit blasted steel)
Flexural Strength D790	635 kg/per cm² ASTM (9000 psi)
Rockwell Hardness ASTM D785	100
Abrasion Resistance D4060	0.065 ml loss per ASTM 1000 cycles (CS17 wheel 1 kg load)
Heat Distortion Temperature ASTM D648	60°C (175°F)
Corrosion Resistance ASTM B117	5000 hours

HEALTH AND SAFETY

As long as normal good practice is observed 'Abrasion Resistant Ceramic Carbide Fluid' can be safely used.

Protective gloves should be worn.

A fully detailed Material Safety Data with the material or is available on request.

PACKAGING

Supplied in 1kg packs.

FOR FURTHER INFORMATION PLEASE CONTACT

UniquePolymerSystems.com
The Engineer's Choice
... for Solutions

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