

TECHNICAL DATA SHEET

UPS 226 HAC HIGH ACID CERAMIC



UPS 226 HAC High Acid Ceramic is designed to upgrade and enhance the performance of conventional materials in construction.

Protecting equipment operating in contact with acids and highly aggressive chemicals at elevated temperatures.

Product Information

Product Features

- Resists up to 110°C (230°F) in continuous immersion conditions.
- Designed for application by brush or squeegee.
- Primarily designed for resurfacing and lining metal components.
- Exhibits excellent adhesion to correctly prepared metal surfaces.

Product Applications

Suitable for the coating equipment such as;

Sour oil and gas processing equipment, return tanks, acid treatment vessels, calorifiers, distillation unit, evaporators, condensate extraction pumps, scrubber units, extraction fans, chimneys etc.



Applied by
brush in 2
coats



Full loading
1.5 days



Immersion
conditions
at
temperature
110°C
(230°F).



Surface
Preparation
Mechanical –
Abrasive Blast

Surface Preparation

Metallic Substrates – Abrasive blast cleaning

1. All oil and grease must be removed from the surface using an appropriate cleaner such as UPS 9918 MEK Cleaner.
2. All surfaces must be abrasive blasted to **ISO 8501/4 Standard SA2.5 (SSPC SP10 / NACE 2)** minimum blast profile of 75 microns (3mil) using an angular abrasive.
3. Once blast cleaned, the surface must be degreased and cleaned using UPS 9918 MEK or similar type material.
4. All surfaces must be coated before flash rusting or oxidation occurs.

PLEASE NOTE: For salt contaminated surfaces the area must be abrasive blast cleaned as above, as well as left for 24 hours to allow any ingrained salts to come to the surface. After the 24-hour period the surface must be washed with UPS 9918 MEK Cleaner prior to brush blasting to remove the surface salts. Repeat this process until all ingrained contaminants have been sweated out of the surface.

On surfaces already rebuilt with UPS 105 EG Metal Repair Paste or UPS 200 EG Ceramic Repair Paste no further surface preparation is required where over-coating times place within 3 hours. After this maximum over-coating time has elapsed roughen the surface by flash blasting or other means of abrasion.

Mixing

Prior to mixing please ensure the following:

1. The base component is at a temperature between 15-25°C (60-77°F).
2. The ambient & surface temperature is above 10°C (50°F).
3. The ambient & surface temperatures are not less than 3°C (37.4°F) above the dew point.

Once checked then proceed with mixing the product:

1. Pour approximately one third of the contents of the Activator Unit into the Base container and mix carefully using a spatula.
2. Once the two materials have been blended, add the remainder of the Activator ensuring that as much material is drained from the Activator container as possible.
3. Mix the two components together until they are streak-free.
4. From the commencement of mixing the whole of the material should be used within 25 minutes at 20°C (68°F).

Two Coat Application

Plastic applicator application -

Where possible, the application should be carried out in two coats.

- a) The first coat of material should be applied at a target thickness of 600 microns (24 mil), use the applicator to apply a **very** thin layer of product, forcing it into the blast profile.

PLEASE NOTE: Special attention should be paid to detailed areas such as edges, corner and welds where brush application by stippling may be required.

- b) Immediately after the initial application apply further material by brush or applicator to give the required film build, checking film thickness with a Wet Film Thickness Gauge. Lay off the coating by brush to give a smooth finish.
- c) Allow to harden for a minimum of 16 hours at 20°C (68°F). Before removing any surface bloom by washing with a detergent/water mixture and then clean water. Followed by sweep blasting at reduced pressure using fine grit, and removal of any debris before washing with UPS 9918 MEK Cleaner.
- d) Apply second coat of product at a target thickness of 300 microns (12 mil) once again checking film thickness with a Wet Film Thickness Gauge before finally laying off the coating with a brush to give a smooth finish.

Single Coating Application

1. If a two-coat application is not practical, the product can be applied as above in a single coat at 650 – 850 microns (26 – 34 mil).

PLEASE NOTE: Using this method extreme care is required when carrying out visual inspection of the coating (whilst still wet) to identify any defects which should be corrected.

2. Once cured any surface bloom should be removed by detergent wash and then Wet Sponge tested to identify any pin holes.
3. These should be repaired by manually abrading the surface, cleaning down and applying freshly mixed

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UPS 225 HT at approximately 250 microns (10 mil) thickness to the prepared area.

Technical Data & Performance

Coverage Rates

1KG (2.2LB) of fully mixed product will give the following coverage rates -	
1.415m ² at 300 microns	15ft ² at 12mil
1.063m ² at 400 microns	11.5ft ² at 16mil
0.850m ² at 500 microns	9ft ² at 20mil
0.708m ² at 600 microns	7.5ft ² at 24mil
0.607m ² at 700 microns	6.5ft ² at 28mil
0.531m ² at 800 microns	5.7ft ² at 32mil
<i>Please note that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.</i>	

Drying & Cure Times

At 20°C (68°F) the applied materials should be allowed to harden for the times indicated below before being subjected to the conditions indicated. These times will be extended at lower temperatures and reduced at high temperatures:

Useable Life	25minutes
Minimum sweep blast time	16 hours
Maximum sweep blast time	48 hours
Immersion	3 days

For Optimum Performance

After an initial curing period of at least 4 hours at 20°C (68°F), raising the cure temperature progressively to 60 – 100°C (140 – 212°F) for up to 8 hours will result in improved mechanical, thermal and chemical resistance properties.

Appearance

Mixed Material Colour	Grey Viscous Liquid
Base Component Colour	Dark Grey or Light Grey Paste
Activator Component	Amber Liquid

Available Colours

Light Grey | Dark Grey

Over Coating Times

Minimum	The applied material can be over coated as soon as it is touch dry
Maximum	The over coating time should not exceed 3 hours

Where the maximum over coating time is exceeded, the material should be allowed to harden before being abraded or flash blasted to remove surface contamination.

Mixing Ratio

Component	Base	Activator
By Weight	18	1
By Volume	7	1

Density

Base	2.55
Activator	0.97
Mixed	2.35

Volume Capacity

425cc/Kg

Solids Content

100%

Slump Resistance

Nil at 1000 microns

Useable Life

10°C (50°F)	50 minutes
20°C (68°F)	25 minutes
30°C (86°F)	12.5 minutes
40°C (104°F)	6 minutes

Pack Sizes

1KG (2.2LB)	3KG (6.6LB)
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Shelf Life

5 years if unopened and store in normal dry conditions (15-30°C / 60-86°F)

Mechanical Properties

Abrasion Resistance Taber H10 Wheels / 1KG load, Wet	85mg loss / 1000 cycles 0.036cc loss / 1000 cycles
Tensile Shear Adhesion ASTM D1002 (Abrasives Blasted Mild Steel with 75-micron profile)	220kg/cm ² (3,125 psi)
Compressive Strength ASTM D695	983kg/cm ² (13,960 psi)
Corrosion Resistance ASTM B117	Minimum 5000 hours
Flexural Strength ASTM D790	614kg/cm ² (8,710 psi)
Hardness Shore D ASTM D2240	20°C (68°F) – 89 100°C (212°F) – 87 150°C (302°F) – 86 200°C (392°F) – 82 240°C (464°F) – 78
Heat Distortion ASTM D648 At 264psi Fibre Stress	20°C (68°F) Cure – 47°C (117°F) 100°C (212°F) Cure – 126°C (259°F) 150°C (302°F) Cure – 172°C (342°F)

Heat Resistance

Suitable for use in immersed conditions at temperature up to 110°C (230°F).

Resistant to dry heat up to 240°C (464°F) dependent on load.

Chemical Resistance

The product demonstrates resistance to a wide variety of inorganic acids, alkalis, salts and organic media. Refer to the Unique Polymer Systems Technical Centre for advice.

Global Availability

UPS 226 HAC High Acid Ceramic is available from a network of Global Distributors for prompt delivery. For further details and the location of your local distributor, please contact Unique Polymer Systems on:

+44(0) 1531 636300 | sales@uniquepolymersystems.com

Technical Service

Complete technical assistance is available. Please contact Unique Polymer Systems with your requirements:

+44(0) 1531 636300 | sales@uniquepolymersystems.com

The products that we supply are for professional use only, it is your responsibility to read the technical data sheets before you place an order and prior to application of the product

Quality: All Unique Polymer Systems Products are supplied under the scopes of the company's fully documented quality system.

Warranty: Unique Polymer Systems warrants that the performance of the product supplied will conform to the typical descriptions quoted within this Technical Data Sheet provided the material is stored correctly and used according to the procedures detailed in the Technical Data Sheet for the material.

Health & Safety: Please ensure good practice is observed at all times during the mixing and application of this product. Protective gloves must be worn during the mixing and application of this product. Before mixing and applying the material please ensure you have read the fully detailed Material Safety Data Sheet.

Legal Notice: The data contained within this Technical Data Sheet is furnished for information only and is believed to be reliable at the time of issue. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the responsibility of the customer to determine the products suitability for use. Unique Polymer Systems accepts no liability arising out of the use of this information or the product described herein.

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