Technical Data Sheet

MCU MIOTOPCOAT®

mcu coatings
best in corrosion protection

Product and Technology Description

MCU-Miotopcoat is a single component moisture cure polyurea coating. MCU-Miotopcoat is a micaceous iron oxide (MIO), aliphatic, matte finish, topcoat. It provides superior resistance to UV, weathering, atmospheric chemicals and abrasion. It also offers excellent fungal protection. The MIO in this topcoat ensures outstanding barrier protection and reinforces its film strength and inter and intra-coat adhesion. MCU-Miotopcoat provides long term protection while retaining its aesthetic appearance, even in harsh environments.

MCU-Miotopcoat is suitable for immersed environments, splash zones and areas with frequent condensation.

Technology Features

1 component – minimal preparation and no pot-life limitations
Can be applied in 6 % to 99 % relative humidity
Cures quickly, even at -20 °C, 45 minute recoat possible
Can be applied at ambient temp. to 50°C & steel to 75°C
High surface tolerance
Exceptional corrosion resistance
Excellent abrasion resistance
Good chemical resistance
Superior Flexibility - No cracking, flaking or peeling
Moisture resistant after 30 minutes
High resistance to blistering
Typical service temperatures -45°C to 145°C *
Excellent adhesion to most substrates and sound aged coatings
UHP WJ, dry/wet blasting & power tool cleaning

Product Specific Features
Excellent fungal protection
Frequent condensation
Superior weathering, atmospheric chemicals and abrasion
Wide DFT tolerance
Excellent wetting out properties
Suitable for immersion & atmospheric exposure
Excellent impact resistance
Anti-Carbonation system topcoat

Areas of Use

Substrates
Ferrous – mild steel / cast iron
Non-ferrous metals
Metallized coatings
Galvanised metal
Aluminium
Stainless steel
FRP
Wood
(and most sound old coatings)

Possible uses
Structural steel
Bridges
Oil & gas storage / offshore platforms / refineries
Port facilities / ships / wharves / jetties
Material handling equipment
Wind energy / hydropower / transmission tower sectors
Pipes / pumps / valves
Chemical processing plants / paper mills
Steel tanks
Floors
Water and wastewater treatment sites

Specifications

Resin type:	Aliphatic polyurea
Pigment type:	MIO and colour agents
Sheen:	Matt
Colour:	Standard colours
Volume solids:	63%±2.0%
VOC:	310 g/l
Theoretical coverage:	25µm DFT: 25.2 m2/l
Recommended film thickness:	
Wet:	80 - 160 µm - no thinners
Dry:	50 - 100 µm

Performance test data:

Adhesion (ASTM D4541): >15 MPa (2175 PSI)
Impact (ASTM 2794): direct 160; reverse 20
Prohesion (ASTM G85 5,000 hours): scribe rate 9.5; No blistering
Flexibility (AST D522): 1 ½" to 1/8" Mean Elongation: 31%
Dry Heat Resistance: continuous 145 °C
Salt Spray (ASTM B117): +10,000 hours (several systems)
Norsok M-501: Passes several 2 & 3 coat systems
ISO 12944 C5 I & M: Passes several 2 & 3 coat systems

Shipping Information

Shelf life:	15 months from date of manufacture if stored unopened between -5 °C & 30 °C in a cool, dry place
Density:	1.7 ± 0.12 kg/l
Flash point:	38.5 °C
UN proper shipping name:	UN 1263, PAINT, Class 3, Packaging Group III

Drying Times and Temperatures *– 75µm DFT (allow additional time for higher film builds)*

Temperatures RH at 60% *	Tack free		Recoat minimum & maximum *		Full cure	
	Without MCU-Quickcure	*with MCU-Quickcure*	*without MCU-Quickcure*	*with MCU-Quickcure*	*Without MCU-Quickcure*	*with MCU-Quickcure*
-20 °C	20 hours	15 hours	72 hours / Indef	12 hours / Indef	**	**
-10 °C	15 hours	10hours	24 hours / Indef	8 hours / Indef	**	**
0 °C	7 hours	5 hours	18 hours / Indef	2 hours / Indef	**	**
10 °C	30 minutes	20 minutes	10 hours / Indef	1.5 hours / Indef	10 days	10 days
25 °C	10 minutes	10 minutes	5 hours / Indef	1 hour / Indef	7 days	7 days
40 °C	10 minutes	10 minutes	3 hours / Indef	45 min / Indef	5 days	days

Refer to MCU-Quickcure Technical Data Sheet for additional information

* Cohesive adhesion between applications exceeding the above recoat times will diminish slightly over time, however, still far exceeds international standards (ISO 12944,16276, 4624). For extended overcoating times outside of the above, ensure the surface is clean and free of contaminants.

* Humidity, temperature, and thicker coatings >75µm DFT will affect drying and curing times

** Product is serviceable but will cure slowly and remain soft for a long period

Surface Preparation

Ferrous Metal

Must use a MCU-Coatings recommended primer. Apply primer to a clean, dry surface. Refer to the primer Technical Data Sheet for additional information.

Prepare surfaces for non-immersion or atmospheric service projects by ISO 8504-2 methods to ISO 8501-1 Sa2 or SSPCSP6 /NACE No. 3 Commercial Blast Clean finish, visual standard SSPC vis 1, OR by SSPC-SP12/NACE No. 5 High or Ultra High pressure water jetting methods to WJ 4M, visual standard SSPC vis 4/NACE vis 7, or by SSPC-TR2/NACE 6G198 Wet abrasive blast cleaning methods to WAB 6M, visual standard SSPC vis 5/NACE vis 9, Wet commercial blast clean finish.

For minimum surface preparation, use conscientious hand and power tool cleaning methods in accordance with ISO 8504-3 or SSPC-SP2 and SSPC-SP3 to remove corrosion and loose or failing paint to ISO 8501-1 St2 or SSPC-SP2 and SSPC-SP3, visual standard SSPC vis 3. Feather the edges of sound, existing paint back to a firm edge.

Blast cleaning methods should produce a minimum 25-50µm surface profile.

Aluminium / Galvanised / Non-Ferrous Metals

Must use MCU-Coatings recommended primers.

Prepare surfaces using SSPC-SP1 Solvent Cleaning and SSPC-SP12/NACE No.5 Low Pressure Water Cleaning methods to remove surface contamination. Supplement weathered galvanised surface preparation SSPC-SP2 and SSPC-SP3 hand and power tool cleaning to remove excessive corrosion and impart surface profile on bare metal. Spot prime clean bare metal with MCU-Coatings recommended primer. Supplement new galvanised surface cleaning with mechanical abrasion to create a surface profile to support mechanical adhesion.

Concrete/Concrete Block

Must use MCU-Coatings recommended primer / sealer coat.

The surface must be touch dry, free of surface contaminants, and in sound condition. Grease and oil should be removed by ASTM D4258-83 (Re approved 1999) and release agents should be removed by ASTM D4259 88 (Reapproved 1999).

Refer to SSPC-SP13/ NACE No. 6 mechanical or chemical surface preparation methods for preparing concrete to suitable cleanliness for intended service. Surface preparation methods should create sufficient surface profile for mechanical adhesion to occur. Ensure surface is thoroughly rinsed and dry prior to coating. Allow a minimum of 7 days cure time for new concrete prior to preparation and application (10 days in cold conditions).

Existing Coatings

Prepare surfaces using SSPC-SP12/NACE No.5 Low Pressure Water Cleaning methods to remove surface contamination. Supplement SSPC-SP12 LPWC with SSPC-SP1 Solvent Cleaning and SSPC-SP2 and SSPC-SP3 Hand and Power Tool clean areas of corrosion and loose or flaking paint (feather the edges of sound, existing paint back to a firm edge), or prepare surfaces using SSPC-SP12/NACE No. 5 High or Ultra High Pressure water jetting to WJ 4. Spot prime clean, bare metal with MCU-Coatings' recommended primer. Sand glossy surfaces to create a profile. Apply a test sample to a small area to determine coating compatibility.

Best Practice

MCU-Miotopcoat is designed for application to a variety of substrates and tightly adhering, previously existing coatings. Apply a test sample to a small area to determine coating compatibility. Spot prime any areas cleaned to bare metal with MCU-Coatings recommended primer.

The surface to be coated must be dry, clean, dull, and free from dirt, grease, oil, rust, mill scale, salts or any other surface contaminants that interfere with adhesion.

Ensure welds, repair areas, joints, and surface defects exposed by surface preparation are properly cleaned and treated prior to coating application.

Consult the referenced standards, SSPC-PA1 and your MCU-Coatings' representative for additional information or recommendations.

Application Information

MCU-Miotopcoat can be applied by brush, roller, airless spray, pressure pot, and conventional spray methods. Follow proper mixing instructions before applying.

Mixing

Material temperature should be 3°C above the dew point before opening and agitating. If not, warm the can accordingly, this will prevent moisture intrusion into the open can. Power mix thoroughly prior to application. Do not keep under constant agitation.

If required, apply a solvent float over the material (approx. 2mm) to prevent moisture intrusion, then cover the can.

Reducer

Typically not required. If necessary, thin up to 10% with a recommended MCU-Thinner. See Technical Data Sheet for additional information.

Brush/Roller

Brush:	Natural fibre
Roller:	Natural or synthetic fibre cover
Nap:	5 to 10 mm (higher nap, thicker coat)
Core:	Phenolic

Airless Spray

Pump Ratio:	28-40:1
Pressure:	165-193 bar (2400 – 2800 psi)
Hose:	5 to 10 mm (1/4" to 3/8")
Tip Size:	0.33 - 0.53mm (0.013-0.021 in)
Filter Size:	60 mesh (250 µm)

Conventional Spray

Fluid Nozzle:	E Fluid Tip
Air Cap:	704 or 765
Atomizing Air:	3.1 - 5.2 bar
Fluid Pressure:	1 - 1.4 bar
Hose:	12mm ID; Max 16 metres

Clean-up

MCU-Thinner, MCU-Thinner 25, and MCU-Thinner 50. If MCU-Thinners are not available for cleaning up, use MEK, MIBK, Xylene, a 50:50 blend of Xylene and MEK or MIBK, or acetone.

Do not add unauthorised solvents to MCU-Coatings.

Application

Temperature: - ambient temp. to 50°C & steel to 75°C

Substrate must be visibly dry.

* In extreme environments the resistance will diminish over time

Relative Humidity: 6% to 99%

MCU-Quickcure is advised when relative humidity is below 40%.

Coating Accelerator:

See MCU-Quickcure Technical Data Sheet for information.

Storage

Store off the ground in a dry, protected area in temperature between -5 °C to 30 °C. Containers must be kept sealed when not in use. Use a solvent float to reseal partially used containers.

Safety Precautions

This product is for industrial and professional use only. Consult the Safety Data Sheet.

Warranty

MCU-Coatings warrants its products to be free from defects in materials. MCU-Coatings sole obligation, and Buyer's exclusive remedy, in connection with the products shall be limited, at MCU-Coatings' option to either replace the products not conforming with this warranty, or to credit the Buyer's account with the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to MCU-Coatings in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf- life, or six months from the delivery date, whichever is earlier. Buyer's failure to notify MCU-Coatings of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

MCU-Coatings makes no other warranties concerning the products. No other warranties, whether expressed, implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall MCU-Coatings be liable for consequential or incidental damages.

Any recommendations or suggestions relating to the use of the products made by MCU-Coatings, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having the requisite skill and know-how in the industry, and therefore the Buyer must satisfy itself as to the suitability of the products for their own particular use, and it shall be deemed that Buyer has done so at its sole discretion and risk. Variations in environment, changes in procedures of use or extrapolation of data may cause unsatisfactory results.

Limit of Liability

MCU-Coatings' liability on any claim of any kind, including claims based upon MCU-Coatings' negligence or strict liability for any loss or damage arising out of, connected with, or resulting from the use of the products, shall in no case exceed the purchase price allowable for the products or part thereof that gave rise to the claim. In no event shall MCU-Coatings be liable for consequential or incidental damages. Published Technical Data Sheets are subject to change without notice. Contact your MCU-Coatings representative for the most up to date Technical Data Sheets.