

## Product and Technology Description

MCU-Aluprime® NS is a single component moisture cure urethane coating, based on aluminium pigments. A penetrating sealer and primer for ferrous and non-ferrous metal substrates provides excellent barrier protection against corrosive elements. MCU-Aluprime® NS is a surface tolerant primer, crevice sealer, intermediate or finish coat in atmospheric and splash zone areas. A tested and proven sealer/primer for Thermal Metal Spray.

MCU-Aluprime® NS has unmatched adhesion and wetting characteristics, even on marginally prepared surfaces. Ideal for use as a penetrating sealer for crevices, and as a tie coat over most existing coatings and may also be used in lead encapsulation systems.

## Technology Features

1 component – minimal preparation and no pot-life limitations  
 Can be applied in 6 % to 99 % relative humidity  
 Dew point restrictions do not apply, or affect durability  
 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  
 Typical service temperatures -45°C to 145°C \*

Excellent adhesion to most substrates and sound aged coatings  
 UHP WJ, dry/wet blasting, laser cleaning, bristle blast & power tool cleaning

## Product Specific Features

Can also be used as a finish coat  
 Lead and asbestos encapsulation  
 Excellent wetting properties  
 Suitable for immersion & atmospheric exposure  
 Recommended for splash zones

## Areas of Use

### Substrates

Ferrous – mild steel / cast iron/ Stainless steel  
 Thermal Metal Spray - TMS  
 Non-ferrous metals  
 Metallized coatings  
 Galvanised metal  
 Aluminium  
 Copper, brass  
 FRP, Wood  
 Concrete  
 (and most sound old coatings)

### Possible uses

Structural steel  
 Transmission towers  
 Bridges  
 Oil & gas storage / offshore platforms / refineries  
 Port facilities / ships / wharves / jetties  
 Material handling equipment  
 Wind energy / hydropower  
 Pipes / pumps / valves  
 Chemical processing plants / paper mills  
 Concrete and steel floors  
 Water and wastewater treatment sites

## Specifications

Resin type: Aromatic urethane  
 Pigment type: Aluminium  
 Sheen: Medium gloss  
 Colour: Aluminium  
 Volume solids: 63%±2.0%  
 VOC: 332 g/l

**Theoretical coverage:** 12.6 m<sup>2</sup>/l @ 50µm DFT

### Recommended film thickness:

Wet: 56 - 80 µm  
 Dry: 35 - 50 µm

### Performance test data:

Adhesion (ASTM D4541): >19 MPa (2755 PSI)  
 Impact (ASTM 2794): Direct 175; reverse 30  
 Prohesion (ASTM G85 5,000 hours): Scribe rate 9.5; No blistering  
 Flexibility (AST D522): 1 ½" to 1/8" Mean Elongation: 38%  
 Dry Heat Resistance: Continuous 145 °C  
 Salt Spray (ASTM B117): +4,500 hours (several systems)  
 Norsok M-501 systems 1 and 3: Passes  
 ISO 12944-6 C5 VH: Passes  
 Testing on various versions of MCU-Aluprime®

## Storage and Shipping Information

Shelf life: 15 months from date of manufacture if stored unopened between -5 °C & 30 °C in a cool, dry place  
 Density: 1.08 ± 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 – 50µm DFT

Temperatures RH at 60% *	Tack free		Recoat minimum & maximum *		Recoat max with itself *	Full cure	
	without MCU-Quickcure	with MCU-Quickcure	without MCU-Quickcure	with MCU-Quickcure	with & without MCU-Quickcure	without MCU-Quickcure	with MCU-Quickcure
-20 °C	20 hours	15 hours	72 hrs / 7 days	12 hrs / 7 days	7 days*	**	**
-10 °C	15 hours	10 hours	24 hrs / 7 days	8 hrs / 7 days	7 days*	**	**
0 °C	7 hours	5 hours	18 hrs / 7 days	2 hrs / 7 days	7 days*	**	**
10 °C	120 minutes	20 minutes	10 hrs / 7 days	1.5 hrs / 7 days	7 days*	10 days*	10 days*
25 °C	60 minutes	10 minutes	5 hrs / 7 days	1 hr / 7 days	7 days*	7 days*	7 days*
40 °C	40 minutes	10 minutes	4 hrs / 7 days	45 min / 7 days	7 days*	5 days*	5 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. If a glaze is visible, lightly scuff the surface as required to prepare for subsequent coats

\* 95% of cure is reached within the recoat time

\* Humidity, temperature, and higher film build >75µm DFT will affect drying and curing times

\*\* Product is serviceable, will cure slowly, taking longer to reach full cure

## Surface Preparation

### Ferrous Metal

Use SSPC-SP1 solvent cleaning and/or MCU-Ecodegreaser® to remove oil and grease or other contaminants prior to employing surface preparation methods.

Blast Clean surfaces for immersion or severe service projects by ISO 8504-2 methods to SSPC-SP10/NACE No. 2 (ISO Sa 2.5)

Near-White Blast Cleaning, visual standard SSPC vis 1, or by SSPC-SP12/NACE No. 5 high- and Ultra High-Pressure Water Jetting to WJ 2M, visual Standard SSPC vis 4/NACE vis 7, very thorough cleaning finish (not applicable for new steel) or by SSPC-TR2/NACE 6G198 Wet abrasive blast cleaning methods to WAB 10M, visual standard SSPC vis 5/NACE vis 9 Wet near white metal blast clean finish.

Prepare surfaces for non-immersion or atmospheric service projects by ISO 8504-2 methods to SSPC-SP6/NACE No. 3 (ISO Sa2) Commercial Blast Cleaning, visual standard SSPC vis 1, or by SSPC-SP12/NACE No. 5 high- and Ultra High Pressure Water Jetting to WJ 4 M, 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 SSPC-SP2 and SSPC-SP3 (ISO St2 or St3) Hand Tool Cleaning, visual standard SSPC vis 3 to remove corrosion, loose or failing paint to St2 or St3. Feather the edges of sound, existing paint back to a firm edge. Consult your MCU-Coatings® representative for additional information.

Blast cleaning methods should produce a minimum surface profile of 20-50µm.

### Corten Steel

Prepare surfaces using SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods. Supplement SSPC-SP 12 LPWC with ISO 8504-3/SSPC-SP2 or SSPC-SP3 hand or power tool cleaning where areas show excessive corrosion. Use SSPC-SP1 Solvent Cleaning and/or MCU-Ecodegreaser® to remove oil and grease prior to surface preparation.

### Aluminium/Non-Ferrous Metals

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 with ISO 8504-3/SSPC-SP2 and SSPC-SP3 Hand and Power Tool Cleaning to remove excessive corrosion and impart surface profile on bare metal. Supplement new galvanised surface cleaning with mechanical abrasion to impart surface profile and support mechanical adhesion.

### Galvanised Metal

Prepare surfaces using SSPC-SP1 Solvent Cleaning and SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods to remove surface contamination. Supplement weathered and new galvanised surface preparation with: ISO 8501-1 St 2 (SSPC-SP 2 and 3) hand and power tool cleaning; and/or MCU-Ecocleaner® to remove excessive corrosion and impart surface profile on bare metal; and/or with mechanical abrasion to impart a surface profile to support mechanical adhesion.

### Best Practice

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

### Thinner / Reducer

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

### Mixing

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.

### 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:	124-138 bar (1800 – 2000 psi)
Hose:	5 to 10 mm (1/4" to 3/8")
Tip Size:	0.23 - 0.38mm (0.011-0.015 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

## 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,

### 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.

Do not add other solvents to MCU-Coatings® products.

### Application

**Temperature:** - ambient temp. -20°C to 50°C & steel to 75°C  
The 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.

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.