

Product and Technology Description

Single component, waterborne, acrylic polymer with insulating microspheres.

MCU-Insulat 230® is a liquid ceramic insulation coating, consisting of a mixture of ceramic beads blended into a high-quality acrylic polymer. MCU-Insulat 230® thermally insulates industrial applications, thereby providing an effective, inexpensive alternative to the high cost of typical insulation systems, it also protects the substrate from corrosion. Due to its excellent reflectivity and emissivity, it provides excellent insulation for structures and equipment from radiant energy gain. 98% of the radiant energy that comes in contact with MCU-Insulat 230® is either reflected or emitted, only 2% of the radiant energy is absorbed. MCU-Insulat 230® also performs very well at protecting personnel from hot or cold equipment.

MCU-Insulat 230® physically adheres to the surface and retains its flexibility thereby preventing corrosion and rust formation because it expands and contracts with the surface to which is applied. The use of MCU-Insulat 230®, in place of other insulation systems, reduces both the space and weight for any given structure or piece of equipment.

MCU-Miozinc® primer should be used in temperatures up to 145 °C. For higher temperatures up to 420 °C use MCU-Zinc HH®.

Technology Features

Excellent radiant reflectivity and emissivity properties that significantly reduce radiant energy gain
Low thermal conductivity - excellent insulation properties
Provides excellent personal protection against burns
Lighter weight than alternative insulations.

Moisture resistant - helps to prevent corrosion and rust
Easy application/installation
Reduces or eliminates condensation
High UV resistance

Areas of Use

Pipe and valve insulation
Tank insulation
Roof coating
Refrigeration paint

Interior and exterior wall insulation
Interior and exterior ducting
Concrete/brick buildings
Anti-condensation, oil & gas, shipping, etc.

Specifications

Resin type: Acrylic
Pigment type: Insulative pigment
Sheen: Matt
Colours: White and grey
Volume solids: 75.0% ± 2.0%

Theoretical coverage: @500µm DFT: 1.5m²/l

Recommended film thickness:

Wet: (min. / max.) 1,120 – 22,200 µm
Dry: (min. / max.) 840 – 16,650 µm

Recommended per coat:

Wet: (min. / max.) 330 - 890 µm
Dry: (min. / max.) 248 - 668 µm

Coverage & thickness may increase up to 20% due to aeration from mixing & method of application

Performance test data:

Cross Hatch Adhesion (ASTM 3359): 100% passed, no failures
Flame Spread (ASTM E84-98): passes, no flame spread
Smoke Developed (ASTM E84-10): passes, minimal developed
Accelerated Aging (ASTM G53): passes
Emittance (ASTM E408-71): 0.94
Service Temperature: Continuous: 230 °C
Maximum Surge: 230 °C
Humidity Chamber (ASTM D-4585): passes
Salt spray Chamber (ASTM B-117): passes
Thermal Conductivity: 0.059 W/m/K
Reflectivity: 0.90

Shipping

Shelf life: 12 months from date of manufacture if stored between 5 °C and 30 °C in a cool, dry place. DO NOT FREEZE

Density: 0.53 kg/l ± 0.

Drying Times and Temperatures

At 50% relative humidity and 24°C:

- ◆ tack free: 3 hours
- ◆ recoat minimum: 12 hours
- ◆ full cure: 24 hours

Surface Preparation

Application

All methods need after surface preparation a surface profile of 25-75 µm.

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

Ferrous Metal

Prepare surfaces by ISO 8504-2 methods to ISO 8501-1 Sa 2 or SSPC-SP6/NACE No.3 (visual standard SSPC vis 1) Commercial Blast Cleaning, or, by SSPC-SP12/NACE 5.0 High or Ultra High pressure water jetting methods 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 6 M, 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.

Galvanised Metals/ Stainless Steel

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 8501-1 St2 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. Then apply a MCU-Coatings® paint as a primer. Supplement stainless steel surface preparation with ISO 8501-1 St2 SSPC-SP2 and SSPC-SP3 hand and power tool cleaning, mechanical abrasion or sweep blast to create surface profile and support mechanical adhesion. Then apply the recommended MCU-Coatings® primer under MCU-Insulat 230. Contact your MCU-Coatings® technical representative for further information.

For industrial and professional use only.

Consult the material Safety Data Sheet for descriptive handling and safety information.

Mixing

Power mix coating using a mud paddle at slow speed (max 200 rpm so as NOT TO DAMAGE the insulation spheres) until homogenized.

Surface Temperature

Minimum 10 °C and 3 °C above dew point. Coating will not dry below 10 °C. Can be applied directly to surfaces with temperatures up to 230 °C.

Methods and Equipment

Apply MCU-Insulat 230® on a dry, clean substrate which is free from oil, grease, wax, dirt, rust or corrosion.

Only use spray equipment with maximum fluid pressure (on paint) not exceeding 15 bar. Allow product to completely dry between coats. Elevating temperature of substrate will accelerate recoat time. Maximum surface temperature during application is 230 °C. When higher temperatures consult MCU Coatings® technical staff. For vertical wall (not pipe structure) best keep under 200 °C. Brush may be used to touch-up, but is not recommended for full application. For roof application all applicators should wear sunglasses.

Coating Thickness Build-up

Each layer has a dry time of 12 hours under room temperature conditions. For the first 2 layers, apply a mist coat of 300 µm DFT maximum and let it fully dry. Following layers can be applied up to 800 µm DFT maximum each layer. Let each layer fully dry before applying the next

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, is 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 requisite skill and know-how in the industry, and therefore the Buyer must satisfy itself as to the suitability of the products for its own particular use, and it shall be deemed that the 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.