

wico[®]cure

Corrosion protection and temperature resistance

wico[®]cure coatings maintain the performance of metal components. In contact with liquid media they protect complex structures.

The layers consist mainly of nanometer-thin elastic SiO₂ and are organically optimized.

wico[®]cure deposits evenly over the entire surface, also on smallest

parts of internal surfaces such as in plate heat exchangers.

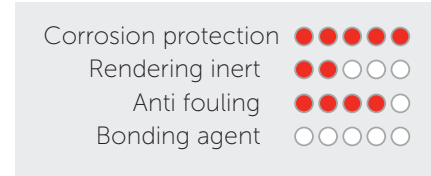
The coating is true to contour and also suitable for components with sharp edges. The thermal conductivity of the component is maintained.

wico[®]cure has no influence on the cross-section in pipelines or

on other common manufacturing tolerances.

Fields of application:

Plate heat exchangers and internal flow components



| Properties | |
|-----------------------------|---|
| Coating process | Chemical Vapour Deposition (CVD) |
| Coating material | SiO ₂ , organically functionalized |
| Coating temperature | 250 - 300 °C 480 °F -570 °F |
| Color | Transparent iridescent |
| Layer thickness | 200 – 800 nm * |
| Type of coating | Inside coating Outside coating |
| Substrates | Stainless steel, Copper, Aluminum and their alloys |
| Temperature resistance | min. 100°C * |
| Corrosion protection factor | > 1.000 (in 25 % -H ₂ SO ₄ 65 °C) |
| pH-resistance | pH 1 bis pH 7 (pH 10 *) |
| Approvals | ROHS-, REACH-compliant |

* according to application

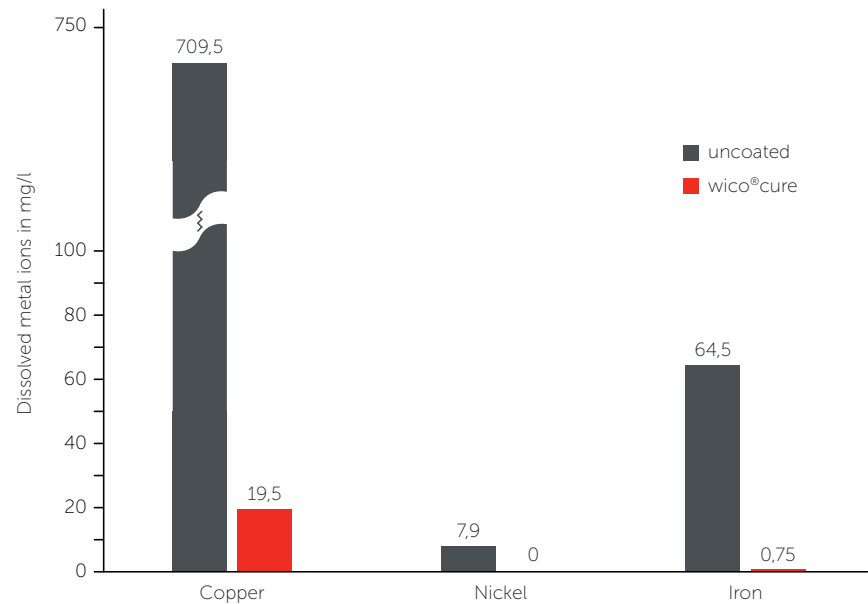
Characteristics

- Minimizes metal ingress in liquids, especially in the running-in phase
- Extends the service life of liquid media in closed circuits (e.g. oil or cooling water)
- Anti-scaling effect



Metal leaching in oil

wico@cure delays the aging of oil, as significantly fewer metal ions can dissolve in oil.



Aging test with mineral oil (SAE-W30) in copper-brazed heat exchangers after 2,000 hours at 120 °C (393 K).

Protection against corrosion in acidic media

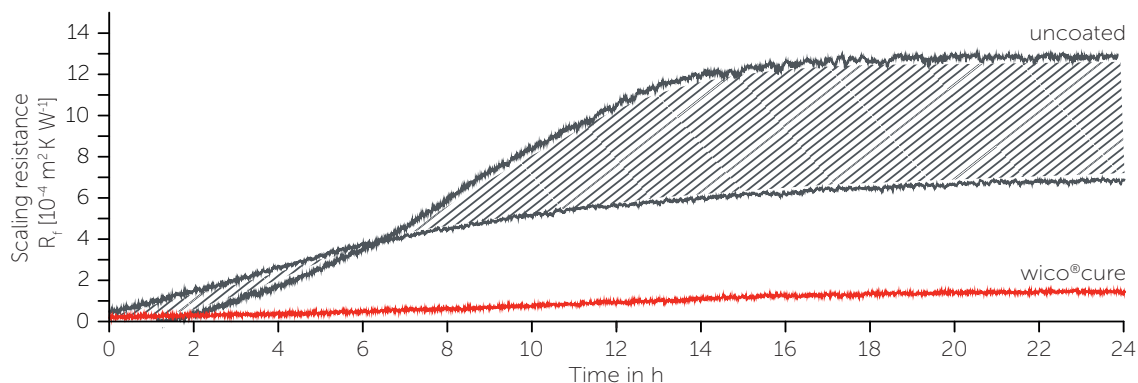
wico@cure significantly reduces metal migration in acid.

| Substrate | 1.4401 (X5CrNiMo17-12-2) | | | AW6060 (AlMgSi0,5) | CW024A (Cu-DHP) |
|--------------------------|--------------------------|---------------|---------------|--------------------|-----------------|
| | Iron (mg/l) | Chrome (mg/l) | Nickel (mg/l) | Aluminum (mg/l) | Copper (mg/l) |
| uncoated | 975 | 200 | 135 | 700 | 8.698 |
| wico@cure | 0,02 | 0,01 | 0,01 | 0,87 | 58,7 |
| Protection factor | | | 13.500 | 805 | 148 |

Values determined in a short-term acid test: test solution of 25% H₂SO₄, or mixed acid based on sulfuric acid.

Anti-scaling behavior

In the scaling test, the formation of deposits on coated specimens is reduced by a factor of 4 compared to uncoated specimens.



Scaling resistance on aluminum specimens at 65 °C (388 K) for 24 hours in a test solution of sodium sulfate Na₂SO₄ and calcium nitrate Ca(NO₃)₂.

Contact

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