

## Protection upgraded



# SurTec 650

Global Benchmark Technology in the Aerospace Industry

## Best-in-class Bare Metal Corrosion Protection

When it comes to quality, there is no compromise in the aerospace industry. Only the highest demands on bare metal corrosion protection can meet the strict requirements of the aircraft industry. SurTec 650 in particular meets these highly challenging requirements and also has a lower electrical contact resistance, which is of decisive importance for components in the avionics sector. Furthermore, SurTec also shows excellent paint adhesion properties, so that a subsequent coating with primer and/or paint systems, also Cr-free, is possible.

In addition to the application in the aerospace sector, it has recently become apparent that SurTec 650 is an optimal coating for corrosion protection and for the prevention of seal infiltration in the electromobility segment, which is growing right now. Especially for housings for batteries or CPUs, the chromium(VI)-free SurTec 650 proves its outstanding suitability with a combination of conductivity, bondability and bare corrosion protection.

## Added Values

- Optimum corrosion protection results bare and with different paint systems
- Approval: MIL-DTL-81706B for classes 1A and 3
- Low contact resistance < 5000  $\mu\text{Ohm}$  per square inch
- All ingredients REACH registered and REACH compliant
- No Cr(VI); neither in the process solution nor on the treated surface



# Protection upgraded

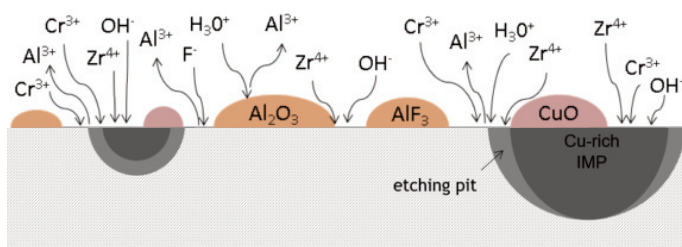
## Performance of SurTec 650 on Different Alloys: Neutral Salt Spray Test according to DIN EN ISO 9227 - Guide Values

Alloy	Protection in NSS [h]
non heat treated wrought and rolled alloys	500
heat treated wrought and rolled alloys	336
high Cu- and high Zn-containing alloys	120-168
cast alloys with Si > 1% and Cu < 0.1%	240*/**
cast alloys with Si > 1% and Cu > 0.1%	24-120*/**

\* less than 3 % corrosion

\*\* Due to cavities and flow limits of the cast, minor corrosion can occur very fast

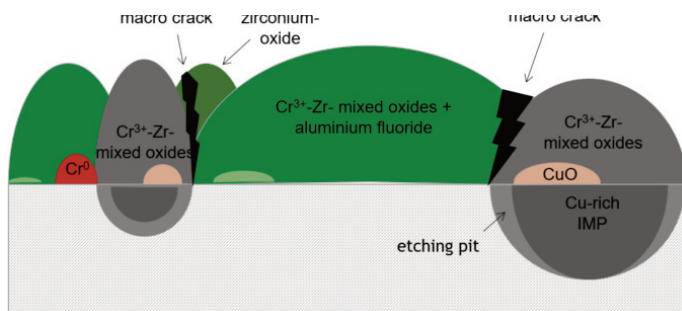
### Trivalent Chromium Passivation Layer Formation



First 1 to 10 seconds

Most of the material turnover takes place during the first 10 seconds of passivation with SurTec 650. This is when the metallic aluminum and aluminum oxides are dissolved. Because of the reducing passivation process on the aluminum surface, the formation of hexavalent chromium in this crucial process step is prevented.

### Final Layer Formation



After 300 seconds

The final layer consists mostly of chromium(III)-zirconium(IV)-(aluminium) mixed oxides. These oxides are very durable and inert and provide a good barrier against corrosive influences.