

Hexavalent Chrome Alternatives for aluminium surface treatment

SOL-GEL

SOL-GEL materials are innovative chrome-free coatings designed to protect aircraft substrates, while being compliant with environmental regulations. **SOL-GEL** coatings can be customized to provide different functions on aerospace surface finishing operations:

- ⇒ improved paint adhesion
- ⇒ act as a corrosion resistant barriers
- ⇒ replace chromated conversion coatings
- ⇒ act as corrosion resistant primers and /or primary coating systems

SOCOGEL HCP

Heat cured anti-corrosion sol-gel

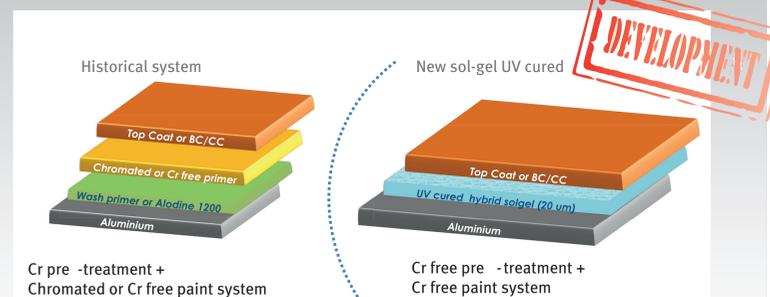
| | |
|--------------------|--|
| Format | 3 component (3K) |
| Curing | 30 min @ 230°F (110°C) |
| Dry film thickness | 3-7 µm (0.12-.027 mil) |
| Conductivity | No |
| SST w/o paint | 336 hrs (unclad Aluminium) 1000 hrs (clad Aluminum) |
| SST with paint | 3000 hrs |
| Paint adhesion | Cr paint systems ✓ Non-Cr paint systems ✓ |
| Chem. resistance | Skydrol, organic solvent, synt. lubricant |



Spray gun or robotic application

SOCOGEL UV CURED

UV cured anti-corrosion hybrid sol-gel

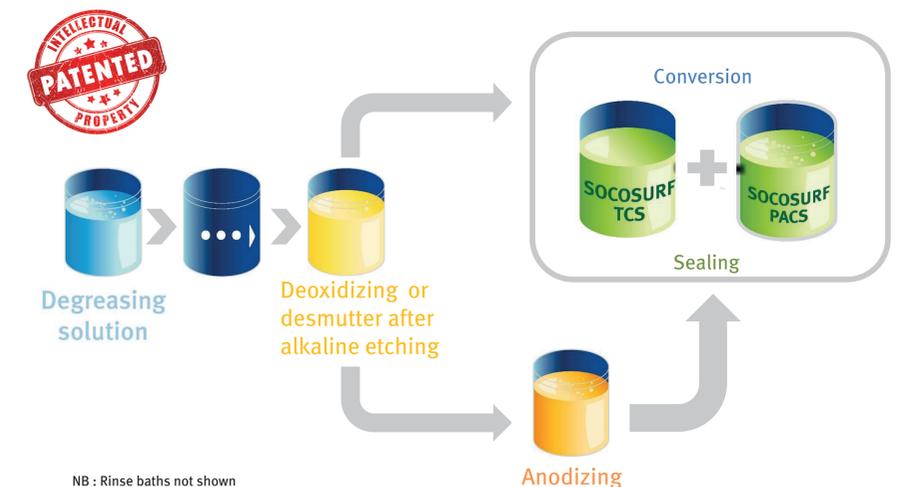


| | |
|--------------------|--|
| Format | 1 component (1K) |
| Curing | Ready to use – Automated UV cured (H-lamp), RT |
| Dry film thickness | 20-25 µm (0.8-1.0 mil) |
| Conductivity | No |
| SST w/o paint | 3000 hrs (bare Aluminium) |
| SST with paint | > 3000 hrs |
| Filiform corrosion | 1000 hrs* ✓ |
| Paint adhesion | Cr paint systems ✓ Non-Cr paint systems ✓ |
| Chem. resistance | Water, humidity, skydrol, organic solvent, kerosene, de-icing fluid, synt. lubricant |

* Depending on paint system

SOCOSURF TCS/PACS

Socosurf TCS - Trivalent Conversion and Sealing
Socosurf PACS - Passivation After Conversion and Sealing



NB: Rinse baths not shown

Integration of the new process in the aluminium alloys surface treatment line

| | |
|--------------------------------|--|
| Format | 2 step process |
| Conversion | |
| Film thickness | 0.20-0.25 µm (0.008-0.01 mil) |
| Coating weight | 30 mg/ft ² |
| Conductivity | Before 168 hrs SST 2040 µΩ/inch ² After 168 hrs SST: 5220 µΩ/inch ² |
| SST w/o paint | 336 hrs |
| Paint adhesion | Cr paint systems ✓ Non-Cr paint systems ✓ |
| Sealing after anodizing | |
| SST w/o paint | 3000 hrs |
| Paint adhesion | Cr paint systems Non-Cr paint systems |