AN ALTERNATIVE TO HEXAVALENT CHROMATES

The phase out of hexavalent chromates

CONVERSION COATING PERFORMANCE STUDY

2024-T3 and 7075-T6 aluminum coupons are processed in CHEMEON TCP-NP and tested in accordance with MIL-DTL-81706B Type II Class 1A methods (brush-on), C (immersion), and D (applicator pen) to meet the requirements of:

- Coating weight in accordance with MIL-DTL-81706B
- Corrosion resistance in accordance with MIL-DTL-81706B Type II Class 1A using a neutral salt fog corrosion test in accordance with ASTM B 117

Panels Meet the Minimum Coating Weight Requirement of 10 mg/ft² in accordance with MIL-DTL-81706B

ANODIC SEAL ADVANTAGES

- 5-10 minute immersion time exceeds 336-hour salt spray for corrosion resistance
- Used at room temperature compared to sodium dichromate seals used at much higher temperatures (195-212°F)
- Very energy and time efficient
- No hexavalent chromium
- Environmentally Friendly

ANODIC SEAL PERFORMANCE STUDY

- 2024-T3, 6061-T6, and 7075-T6 aluminum coupons were anodized in accordance with MIL-A-8625F Type II Class 1
- 2024-T3 and 7075-T6 aluminum coupons were thin film sulfuric acid anodized (TFSAA) in accordance with MIL-A-8625F Type IB Class 1
- Anodized coupons were immersed in TCP-NP for as an anodic seal for 5 minutes at room temperature and set to cure for 24 hours
- Corrosion resistance testing was performed on test coupons using a neutral salt fog corrosion test chamber maintained in accordance with ASTM B 117

336-HOUR CORROSION RESISTANCE

Method C (Immersion)

No pitting at 336 hours neutral salt spray test on 2024-T3 & 7075-T6 aluminum alloys when TCP-NP is applied by spray, brush, immersion, or pen applications.

WET TAPE ADHESION

Method A (Spray)

No intercoat separation or flaking in scribed areas when TCP-NP is applied by spray, brush, immersion, or pen applications.

CONCLUSIONS

CHEMEON TCP-NP (No Prep) is a novel optimized, effective, and efficient trivalent chromium conversion coating:

- Requires fewer pretreatment processing steps than conventional trivalent chromium alternatives
- Is operated at room temperature, mildy acidic, and environmentally friendly
- May be applied by brush, spray, immersion, and applicator pen
- Is an excellent performing conversion coating that exceeds the requirements of MIL-DTL-81706B and MIL-DTL-5541F
- Offers superior corrosion resistance as a room temperature anodizing seal and exceeds the corrosion resistance requirements of MIL-A-16259F

CONTACT

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