

Oxsilan® for automotive components

The Opel Insignia driving with environmentally-friendly Oxsilan® technology



- ✓ **Significant cost savings in six digit range**
- ✓ **30% increase in productivity**
- ✓ **50% less water consumption**
- ✓ **Quality improvement vs. previous process**
- ✓ **No separate waste water treatment required**

Adam Opel GmbH in Kaiserslautern, Germany, is an important supplier of chassis components. The components manufactured at the Kaiserslautern site include, amongst others, front and rear axles for the Opel Insignia – the car of the year 2009. The new Oxsilan process has been in operation since February 2009. Opel Kaiserslautern is the first plant in the GM-group that has changed to this new conversion coating. Based on these positive results, other Opel sites are examining the potential of switching to Oxsilan.

Oxsilan® – the eco-friendly solution for automotive components



In 2009 the pretreatment stage at the Opel plant in Kaiserslautern was successfully converted from a zinc-phosphate process to the new Oxsilan technology. This led to significant savings in process costs and improvements in quality being achieved by:

- **Reduced energy consumption**
 - No bath heating required since Oxsilan operates at ambient temperature (approx. 25 °C)
- **Reduced water consumption**
 - Removal of one post rinse stage as the Oxsilan process requires significantly less rinsing
 - Simple waste water treatment as virtually no sludge and no hazardous heavy metals are present
 - No need for a separate waste water treatment because of optimized recycling of rinse water
- **Increased productivity**
 - Line speed increased from 2.4 to 3.1 m/min
 - Treatment time with Oxsilan only 60 sec. whereas phosphating required at least 90 sec.

Cost savings at a glance

- 16 % heating costs
- 3 % phosphate sludge elimination
- 5 % water consumption
- 18 % maintenance expenditure (heating circuit, acid rinse)
- 8 % electricity costs
- 50 % waste water treatment

Oxsilan® complies with all global Opel specifications for chassis components

- ✓ Cyclic corrosion test
- ✓ Salt spray test
- ✓ Paint adhesion test
- ✓ Gravelometer test



About Oxsilan®

- Alternative multi-metal process replacing ZnPh and FePh
- Thin and functional coatings of 30 to 80 nm achievable
- Excellent corrosion resistance and paint adhesion
- Fewer process steps – requires no activation and passivation stages
- Operates at ambient temperature (approx. 25 °C)
- Simple waste water treatment (virtually no sludge, zinc and nickel free)
- Easy drop-in solution
- Significant process cost savings (water and energy)



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