

NGK Ceramics Save Energy, Water and Costs with Cooling Horizon Solutions

CASE STUDY | Automotive Industry



| The client's needs

For several years, NGK Ceramics has been optimizing its Cooling Water Treatment program, initially switching to a phosphate-based treatment to eliminate zinc discharge. Further optimization of the treatment program was implemented in response to performance limitations, and regulatory requirements related to metal discharges. Additionally, the system experienced under-deposit corrosion, posing a threat to process reliability. Due to the absence of automated control functions, there were concerns about the risk of chemical overdosing or underdosing and addressing biological risks became a key issue.

| The solution

An onsite audit was performed to assess improvement opportunities:

- **Corrosion and deposition:** the previous phosphate-based treatment was replaced with Veolia's patented E.C.O.Film* technology (Engineered Carboxylate Oxide). This phosphate-free program offers superior corrosion protection through an engineered film enriched with a Surface Film Formation Catalyst.
- **Microbiological treatment:** The program was optimized by transitioning from a two-drum approach (8 drums/y) to a targeted delivery biocide, Spectrus* TD1100E (2 drums/y).
- **Automation and monitoring:** TrueSense* Ready Set Go & Truesense MonitAll* were set to continuously monitor and optimize treatment performance. The E.C.O.Film* program enables easy online measurement and control via a direct tracer probe, with field measurements for calibration also performed by a probe.

| The results

Environmental & Operational Benefits:

- Reduced Phosphate Discharge: Minimizes environmental impact.
- Enhanced System Protection: Optimal defense against corrosion and deposition.
- Resource Efficiency: Increased cycles of concentration significantly reduce water and energy consumption.
- Sustainable Chemical Management:
 - 4,200 kg/year less chemicals delivered, cutting transport and CO₂ emissions.
 - Simplified handling, reduced chemical unloading time.
- Improved Safety.
- Continuous dosing control and stable operation require less staff.
- Supports client's environmental goals and enhances brand image.



Belgium South-West

| The client

Belgium – NGK Ceramics Europe is a manufacturer of ceramic catalyst supports (substrates) and a long-standing strategic supplier to the global automotive industry. Their main products are used in vehicle emission control systems to reduce harmful exhaust emissions. A subsidiary of NGK Insulators Group, the company is committed to ensuring that its ceramic technologies play a key role in CO₂ separation and recovery, as well as in the development of advanced batteries and sensors for automotive.

Key Figures

- 20 k€/yr

TCO Savings for the customer

- 10.415 m³/y

Water saved

28,3 t CO₂eq/yr

Total GHG saved