



## Savroc - Advanced Coating Solutions

*TripleHard® - Engine Part Protection*

*Savroc develops advanced coatings with superior wear resistance, corrosion protection, and sustainability. Our patented TripleHard® coating outperforms Cr<sup>6+</sup>, eliminating hazardous chemicals while meeting industry standards.*

High hardness | Low friction | Cr<sup>3+</sup>-based | Cr<sup>6+</sup>-free | Corrosion resistant

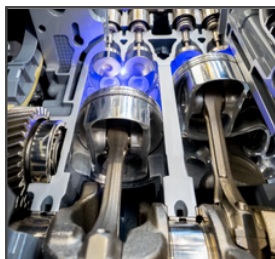
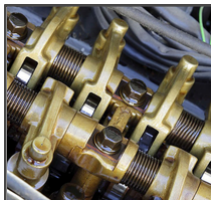
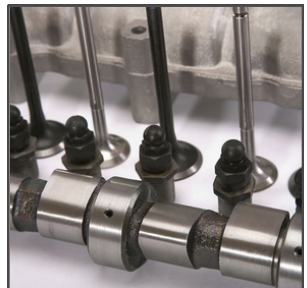
### Why Choose TripleHard®

**Future-proof Compliance:** TripleHard® keeps you REACH compliant without costly re-qualifications.

**Outstanding performance:** 900-1500 HV hardness and superior corrosion resistance give a clearly longer service life than Cr<sup>6+</sup> coatings.

**Lower total cost:** Plug-and-play retrofit to existing Cr lines and a **20× bath life** cut chemical spend and downtime.

**Validated Technology:** Proven in heavy-duty industrial applications with global leaders.



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Schedule a meeting with our experts  
or download more materials.

 [Savroc.com](https://www.savroc.com)

 [Savroc-ltd](#)



**Increased lifespan of components**



**Reduced maintenance costs**



**Environmentally friendly alternative**

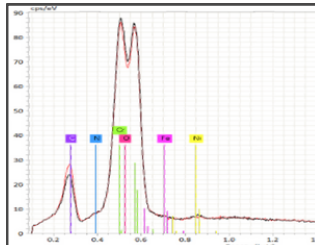
## Comparative Coating Technologies Feature

Feature	Cr <sup>6+</sup> Coating	Nitriding	HVAF	Laser Cladding	TripleHard®
Hardness (HV)	800–1000	1000–1200	1100–1400	900–1300	900–1500
Friction Coefficient	0.2–0.3	0.2–0.3	0.2–0.25	0.2–0.3	0.15–0.2
Cost (€/unit)	Low	Moderate	High	High (energy use)	Low
Environmental Impact	Hazardous (Cr <sup>6+</sup> )	↑ CO <sub>2</sub> (high temp)	Medium	Very high (energy)	Safe (Cr <sup>3+</sup> , no Cr <sup>6+</sup> )
Corrosion Resistance	Good	Moderate	Good	Very high	Excellent
Temperature Resistance (°C)	350–400	500–600	700–800	>800	700
Impact Resistance	Moderate	Poor	Good	High	High
Coating Thickness (µm)	5–200	100–500	60–300	100–800	5–70, in some cases up to 150
Suitability for Sliding Parts	Limited	Limited	Good	Poor	Excellent
Process Complexity	Low	Moderate	High	Very high	Moderate

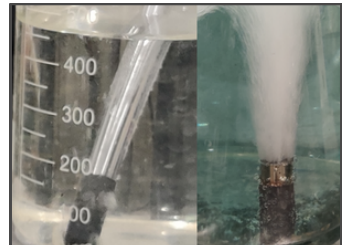
## Analytical Evidence



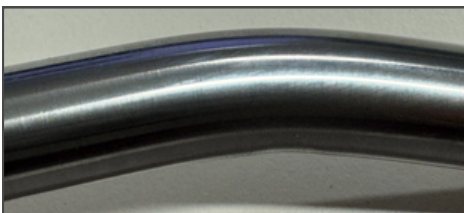
Injector Pins



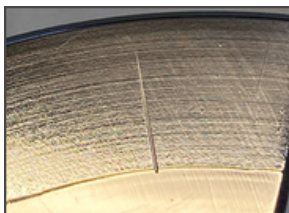
Composition and Microstructure of TripleHard® Alloy



High Corrosion Resistance

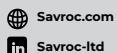


Bend test - No detachment, ensuring strong adhesion



Scratch test - No detachment or cracking, ensuring long-term durability

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