SISTRAL®-ULTRAFINE

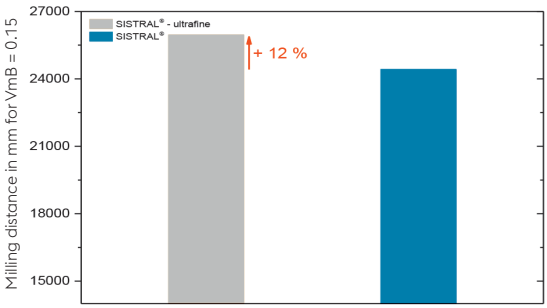
The nanostructured “ultrafine” coating for high-performance metal cutting

The nanostructured SISTRAL®-ultrafine coating represents a further new development from the “ultrafine” coating series, specially developed for the high speed cutting (HSC) of very abrasive or hard materials (steel > 54 HRC) in dry, high-speed applications. The use of SPCS (**S**trongly **P**oisoned **C**athode **S**urface) technology allows a considerable reduction of the surface roughness.

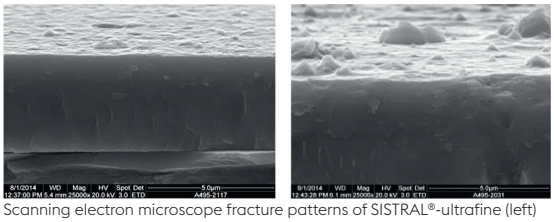
The reduction of macroparticle deposition results in a smoother surface layer and low-defect layer structure. This provides a higher wear resistance and improved durability due to friction reduction, especially for hard, dry and high-performance cutting.

APPLICATIONS

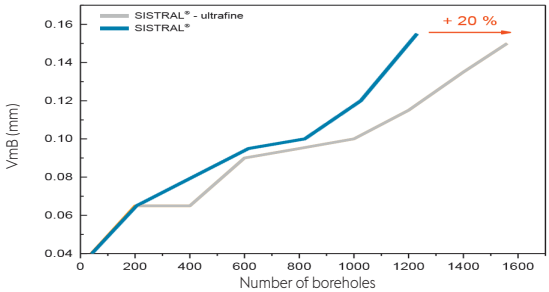
Cutting	Hard, dry and high-performance cutting Drilling, turning, sawing
Other	Other areas of application which demand extremely high resistance towards oxidation and wear as well as high hot hardness.



Maximally achieved milling distance for a wear mark width of 0.15 mm when hard milling of Vanadis 10 (62 HRC).
Cutting parameters:
v_c =100 m/min, v_f =1,337 mm/min,
a_p=10 mm, a_e=0.02 mm



Scanning electron microscope fracture patterns of SISTRAL®-ultrafine (left) and SISTRAL® (right) coatings.



Wear mark width as a function of the number of boreholes reached in 1.4571.
Drilling parameters:
v_c =80 m/min, v_f=0.08 mm/rev, a_p=20 mm, Avilub 10%

COATING PROPERTIES

Hardness	3,500 ± 500 HV
Max. application temperature	900 °C / 1,650 °F
Coating thicknesses	2 - 3 µm
Colour	anthracite blue

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ONE STEP AHEAD.