

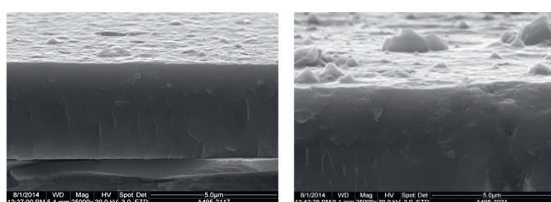
# SISTRAL®-ULTRAFINE

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 (Strongly Poisoned Cathode Surface) technology allows a considerable reduction of the surface roughness.

## 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.

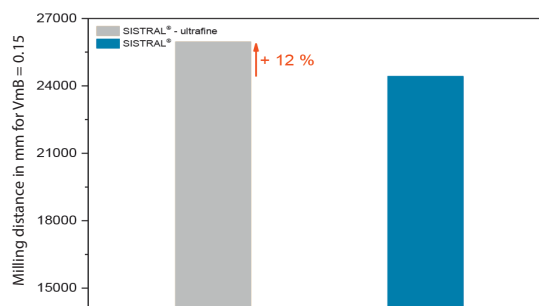


Scanning electron microscope fracture patterns of SISTRAL®-ultrafine (left) and SISTRAL® (right) coatings.

## COATING PROPERTIES

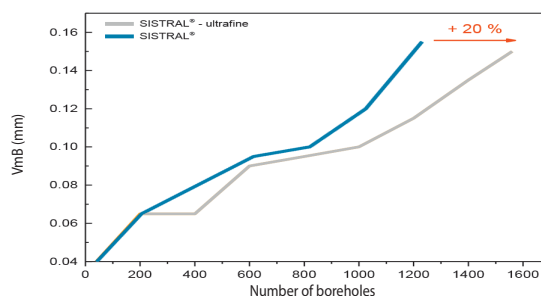
Hardness	2,500 ± 300 HV (possible increase of hardness up to >3,000HV in application)
Max. application temperature	900 °C / 1,650 °F
Coating thicknesses	2 - 3 µm
Colour	anthracite blue

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.



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



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%