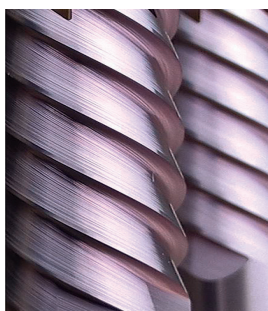


# TiCN-ULTRAFINE

The multipurpose “ultrafine” coating for cutting and forming

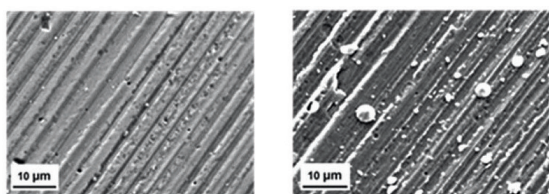
The use of SPCS (**S**trongly **P**oisoned **C**athode **S**urface) technology allows the synthesis of a smooth and defect-reducing arc coating. In cutting applications, The TiCN-ultrafine coating provides significantly improved durability compared to the conventional TiCN arc coating, and also exhibits relatively low friction coefficients as with tribological DLC coatings.



With TiCN-ultrafine coated solid carbide finishing cutter (Ø 10 mm).

## APPLICATIONS

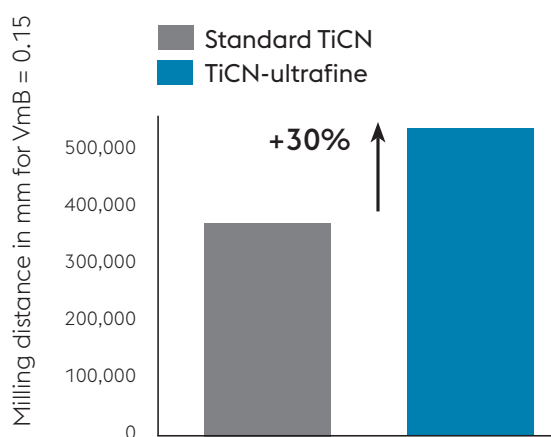
<b>Cutting</b>	The versatile TiCN-ultrafine coating was specifically developed for milling, turning, drilling and cutting operations on high and low alloy steels at moderate thermal loads (max. 400 °C).
<b>Forming</b>	Also suitable for the coating of shaping tools which demand a reduced surface roughness and excellent sliding properties, even with limited use of lubricant.



Scanning electron microscope images of the chip flute of a milling cutter coated with TiCN-ultrafine (left) and TiCN (right).

## COATING PROPERTIES

<b>Hardness</b>	3,500 ± 500 HV
<b>Max. application temperature</b>	400 °C / 750 °F
<b>Coating thicknesses</b>	2 - 3 µm
<b>Colour</b>	anthracite blue



Maximum achieved milling distance for a wear mark width of 0.15 mm, for cooled milling from DIEVAR (48 HRC). Cutting parameters:  $v_c = 150$  m/min,  $v_f = 2006$  mm/min,  $a_p = 10$  mm,  $a_e = 0.02$  mm, QUAKER 370 KLF coolant (concentration 10-20%).