UNIMAX Pro

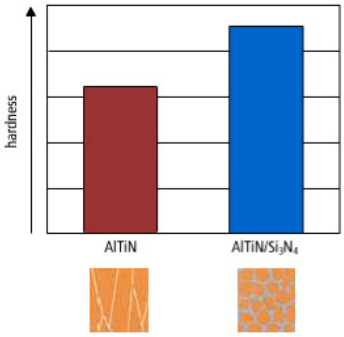
Titanium Aluminum Silicon Nitride

MPI's new nanocomposite ***UNIMAX Pro*** AlTiSiN PVD coating is the new benchmark for hard, dry and high-speed machining applications. ***UNIMAX Pro*** shows extremely high resistance against oxidation in combination with high thermal hardness. This is the result of a special structural composition deposited in our high performance PL1000 PVD coating system. The properties of the new ***UNIMAX Pro*** yield significant advantages for applications formally covered by our standard AlTiN ***UNIMAX*** coating.

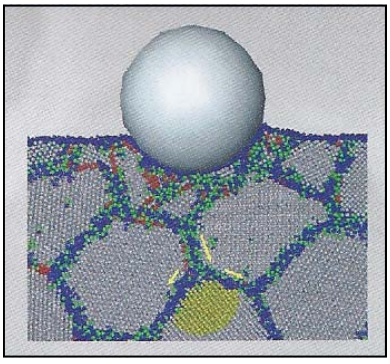
Properties of UNIMAX Pro

Nanocomposite MPI coating (nc-AlTiN) / (a-Si_3N_4)

- Extremely high scratch resistance
- Extremely high heat resistance
- Best for hard machining
- Best for high performance and normal machining conditions



- Stands up to 1832°F without losing its properties
- Hardness 4000Hv
- Friction coefficient 0.7 against steel
- Can be applied only to carbide
- Typical application is milling hard material (up to 65HRc) with ball-nose endmill



Modeling view of the 5 nm average grain size sample at an indentation depth of 20 Ä. The nanocomposite coatings have a higher hardness than conventional coatings. Because the amorphous SiN matrix enwraps (infoldes, covers) the nanocrystallite grains and avoids their growth.