BALIQ for Microtools

Revolutionary smooth coatings for micromachining

BALIQ MICRO ALCRONOS
BALIQ MICRO TISINOS
BALIQ MICRO ALTINOS
BALIQ coatings for microtools redefine the benchmark and process reliability in micromachining

The technological progress

- Revolutionary smooth and defect-free coatings with outstanding adhesion
- High coating thickness precision for very sharp edges
- Low susceptibility to sticking of BALIQ® coatings
- High wear resistance of BALIQ® coatings even under severe thermal stress and extreme service temperatures

The hands-on advantages

- Smooth chip removal without mechanical post-treatment, high coating surface quality for high component quality
- Ultimate tool precision
- Prevention of adhesion and build-up edges even with difficult-to-machine materials
- High thermal stability and oxidation resistance of tools with small dimensions, highly reproducible tool service life

BALIQ coatings for demanding micro cutting applications

**BALIQ® MICRO ALCRONOS**

**Microdrilling stainless steel**

- Tool: Microdrill Ø 1.0 mm
- Workpiece: Steel 1.4571 X6CrNiMoTi1712 (AISI 316Ti, SUS 316 Ti)
- Cutting parameters: $L_a$: 20 x d
- Wet
- Source: Tool manufacturer

**BALIQ® MICRO ALCRONOS**

**Microdrilling steel**

- Tool: Microdrill Ø 0.6 mm
- Workpiece: Steel 1.3505 100Cr6 (AISI 52100, SUS SUJ 2)
- Cutting parameters: $v_c$ = confidential
- $L_a$: confidential
- Wet
- Source: Tool manufacturer

All given data are approximate values and they depend on application, environment and test conditions.
Even very fine surface structures can be reliably machined

Allows precise, high-performance coatings even for very small tool diameters

Reliable production of critical and expensive components

New manufacturing options with high process reliability and efficiency

BALIQ® MICRO TISINOS
Micromilling hardened steel

Tool
Ballnose endmill Ø 1.0 mm

Workpiece
Steel 1.2083 X42Cr13 (AISI 420J2) 52 HRC

Cutting parameters
$v_c = 80$ m/min
$f_t = 0.02$ mm
$a_e = 0.04$ mm
$a_p = 0.04$ mm
Dry

Source
Tool manufacturer

Tool life [m]

0 5 10 15 20 25 30 35 40 45 50 55 60

Competitor (Arc) BALIQ® MICRO TISINOS

+ 96%

BALIQ® MICRO TISINOS
Micromilling hardened steel

Tool
Ballnose endmill Ø 2.0 mm

Workpiece
Steel 1.2379 X155CrVMo121 (AISI D2, JIS SKD11) 62 HRC

Cutting parameters
$v_c = 130$ m/min
$f_t = 0.04$ mm
$a_e = 0.1$ mm
$a_p = 0.1$ mm
Dry

Source
Oerlikon Balzers Cutting laboratory

Tool life [m]

0 30 60 90 120 150

Competitor (HiPIMS) BALIQ® MICRO TISINOS

+ 117%
Discover a new world of possibilities with BALIQ for Microtools
Get in touch with us today!

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