

Signature Coating ALL4

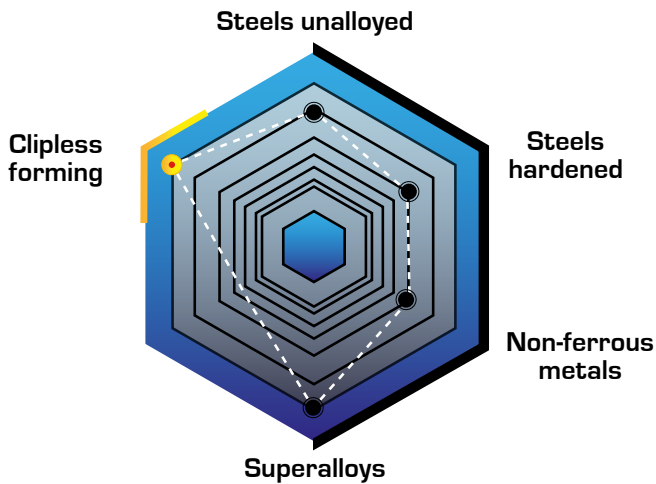
Generic coating for cutting and forming

ALL4 is an AlCrTiN universal coating. It covers a wide range of applications as well as workpiece materials. The coating is particularly suitable for materials that are difficult to machine.

Highlights:

- Covers many application processes in cutting and forming
- Suitable for different workpiece materials
- Very wear-resistant at high temperatures
- Heat-resistant and tough

Characteristics in cutting + chipless forming:

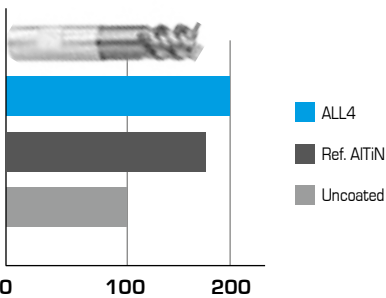


Specifications

| | |
|---|------------------------------|
| Color | grey |
| Nano-hardness [GPa] | 36–38 |
| Coefficient of friction [μ] PoD (at RT, 50% humidity) | 0.5 |
| Coating thickness [μm] | 1–5 |
| Max. service temperature [°C] | 900 |
| Coating temperature [°C] | 400–500 |
| 111 PLUS G3 | (Al, CrTi15) |
| 411 PLUS ECO | (CrTi15, Al, Cr) |
| 411 PLUS TURBO | (Ti, Al, Cr, AlCr30) |
| 1011 G4 | (Cr, AlCr35, AlTi33, AlCr35) |

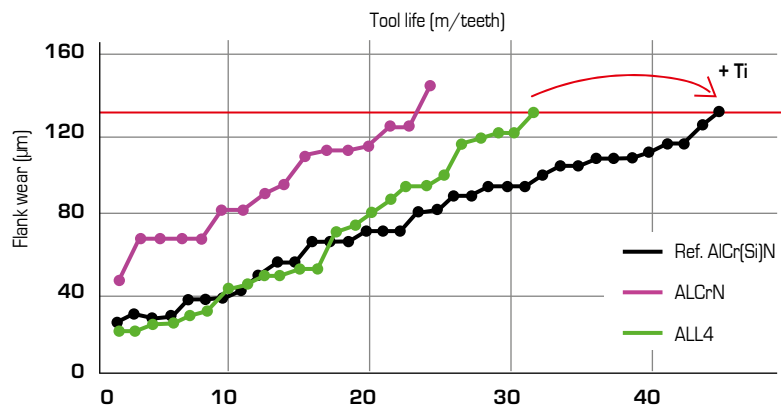
Milling in Inconel 718:

Lifetime in % at VBmax = 0.25 mm



Tool: roughing cutter; D10 × 22 / R1
 Workpiece material: Inconel 718 (200 mm × 200 mm × 36 mm)
 KSS: B-Cool 9665; ap = 12 mm (2×); ae = 0.1 mm; vc = 90 m/min; fz = 0.21 mm
 Post-treatment: drag grinding / wet blasting
 Source: GFE, Germany

Flank wear with HSS hob in 20 MnCr 5:



Tool: HSS hob; D90
 Workpiece material: 20 MnCr 5
 Coolant air; mn = 2.3 mm; vc = 150 m/min; fa = 1.69 mm/rot; zo = 5
 Max. chip thickness hcu = 0.347 mm
 Source: IFQ Magdeburg