

**Save up to 20% of your production costs  
by increasing your cutting speed**

Cutting costs for 1,800 gears [€]

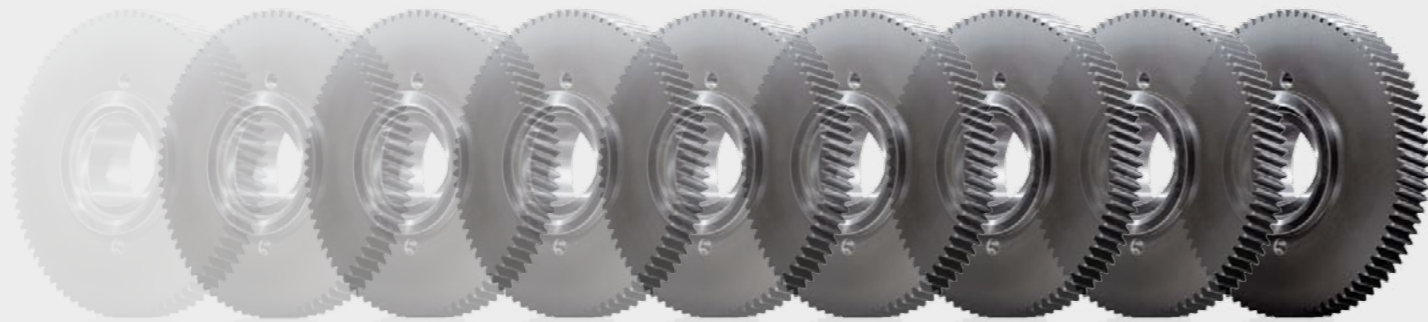
**BALINIT® ALCRONA PRO**

 **200 m/min**  
Cutting speed

**288 €**  
savings with  
**BALINIT®  
ALTENSA**

**BALINIT® ALTENSA**

 **300 m/min**  
Cutting speed



**Benefit from the BALINIT ALTENSA high-performance coating**  
**Contact us now!**

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## **BALINIT ALTENSA**

### **Speed pays off**

The high-speed solution for productive  
gear cutting



**Cutting Tools**



# BALINIT ALTENSA: because productivity, time and cost are the deciding factors

Gear cutting applications such as hobbing, gear shaping and bevel gear cutting must meet continually rising requirements: Shorter and shorter machining times are required in order for productivity to be increased while reducing costs at the same time. You can attain this goal by using the innovative high-speed coating solution BALINIT® ALTENSA from Oerlikon Balzers. With it, you will benefit from unique coating properties that allow for extremely fast cutting speeds and high temperatures, leading to huge productivity gains as well as cost efficiency. Be ahead of the times: take advantage of the many benefits offered by Oerlikon Balzers, a worldwide technological leader in the field of hard coating solutions.

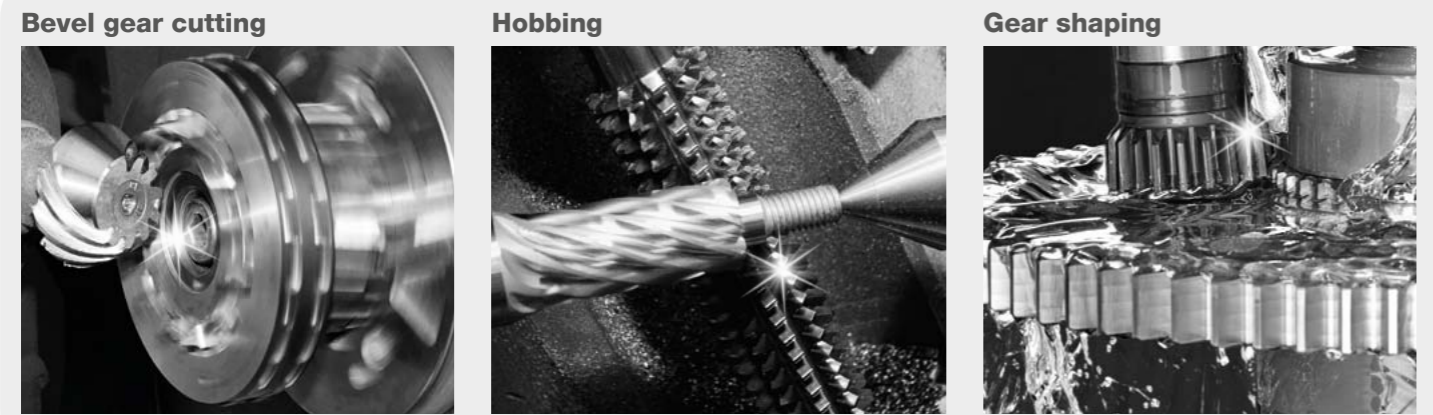
## Benefit from these coating properties

### OPTIMIZED PERFORMANCE

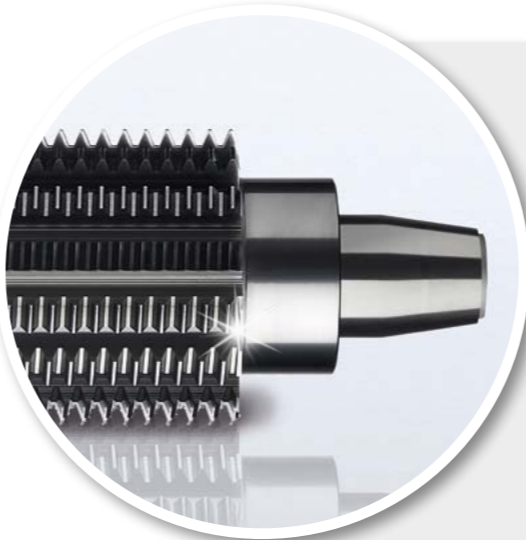
Improved hot hardness	>	Reduced wear at high cutting speed
Increased abrasive wear resistance	>	Reduced flank wear at moderate and high cutting speed Significant improvement for highest cutting speed conditions for all substrate materials (PM-HSS, MC90, carbide)
Lower thermal conductivity	>	Reduced thermal impact on tool substrate (especially for PM-HSS)
Optimized oxidation resistance	>	Longer tool life at dry cutting conditions and high cutting speed

**BALINIT® ALTENSA**  
Productivity gains, cost efficiency and substantial time savings

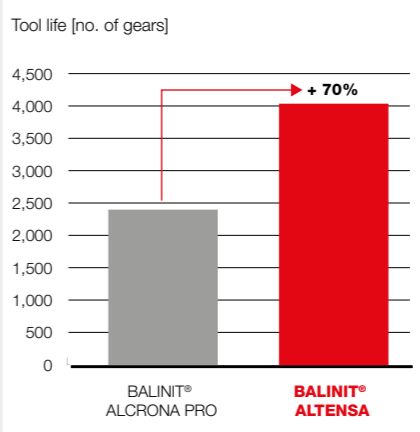
## Application recommendations



# BALINIT ALTENSA: maximum performance for hobs, stick blades and shaper cutters

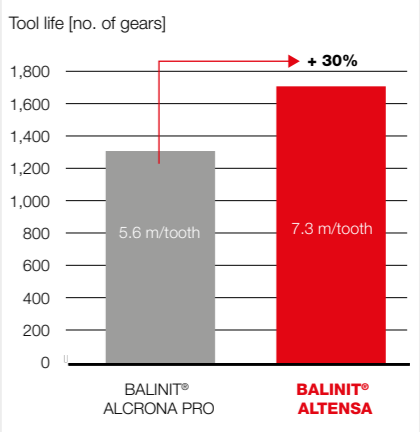


**PM-HSS hob:**  
+ 70% tool life  
at high cutting speed



Tool	PM-HSS hob (S390) D= 70 mm
Workpiece	Gearbox for passenger car Steel 1.7131 (AISI 5115)
Cutting data	Cut 1: v <sub>c</sub> = 200 Cut 2: v <sub>c</sub> = 320 m <sub>n</sub> = 1.52 dry
Source	Automotive supplier France

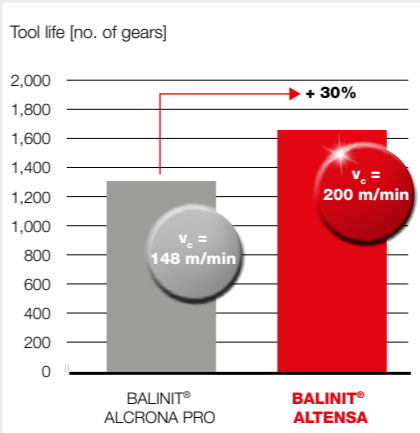
**Carbide hob:**  
+30% tool life  
at high cutting speed



Tool	Carbide hob D = 90 mm
Workpiece	Gearbox for passenger car Steel 1.7149 (~AISI 5120, ~JIS SMnC420(H))
Cutting data	v <sub>c</sub> = 480 m/min m <sub>n</sub> = 2.6 f <sub>a</sub> = 2.6 mm dry
Source	Automotive supplier Germany

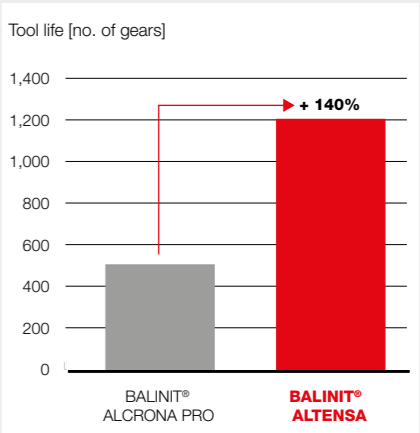


**Stick blades:**  
longer tool life at 35%  
increased cutting speed



Tool	Carbide stick blades
Workpiece	Steel 1.7131 (AISI 5115)
Cutting data	v <sub>c</sub> = 148 m/min -> v <sub>c</sub> = 200 m/min dry
Source	Automotive supplier Germany

**Shaper cutter:**  
+140% tool life at  
moderate cutting conditions



Tool	PM-HSS shaper cutter D=130
Workpiece	Steel 1.7131 (AISI 5115)
Cutting data	m = 1.56 wet
Source	Automotive supplier France