

TiAlN PRODUCT FAMILY

Titanium Aluminium Nitride

The entire TiAlN group of PVD coatings is characterized by great hardness and great temperature stability. This makes the TiAlN-based coatings very widely applicable for tribological purposes.

All TiAlN coatings are suitable for chip removal tasks in steel, just as they will often be a preferred choice for punching and shaping tasks in unalloyed and low-alloyed steel.

We make two different TiAlN-based coatings.

TiAlN-nano

A durable all-round coating

TiAlN-nano is made up of many nanometre-thin layers, which makes the coating very strong and resistant to impact and indentations. This means that the coating is suitable for chip removal as well as punching and forming operations in black steel.

Examples of the use of TiAlN-nano are: Chip removal processing of steel, cast iron or fibre-reinforced polymers as well as punching and forming of low-alloy steel plates.

The coating is very suitable for continuous use at high temperatures and is excellent as wear protection on plastic moulding tools that work in e.g. glass and coloured materials.

The coating also has good abrasive properties against certain types of plastic. TiAlN-nano is suitable for laying on tools made of both hard metal and hardened steel, such as e.g. HSS or others with a hardness of more than approx. 60 HRC.

TiAlN-nano is one of our standard coatings, which usually performed 1-2 times per week.

TiAlN-LT²

For temperature-sensitive base materials

Several tools and wear components are made of steel, types which are tempered at low temperatures. For such temperature-sensitive parts, the Danish Technological Institute has developed a special TiAlN coating, which is produced at such a low process temperature (< 150 °C) that it can be used on all low-tempered steel materials.

Traditionally, it is difficult to achieve the great hardness of TiAlN at low process temperatures, but with a special pulse technique we have developed the coating TiAlN-LT², which has a hardness of 2600 HV.

TiAlN-LT² is suitable for e.g. improving release of plastic moulds and for precision tools and measuring equipment, as long as the hardness is at least 60 HRC.

TiAlN-LT² is one of our many special coatings, which is performed as needed.

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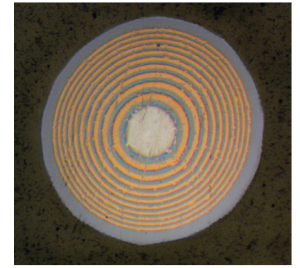


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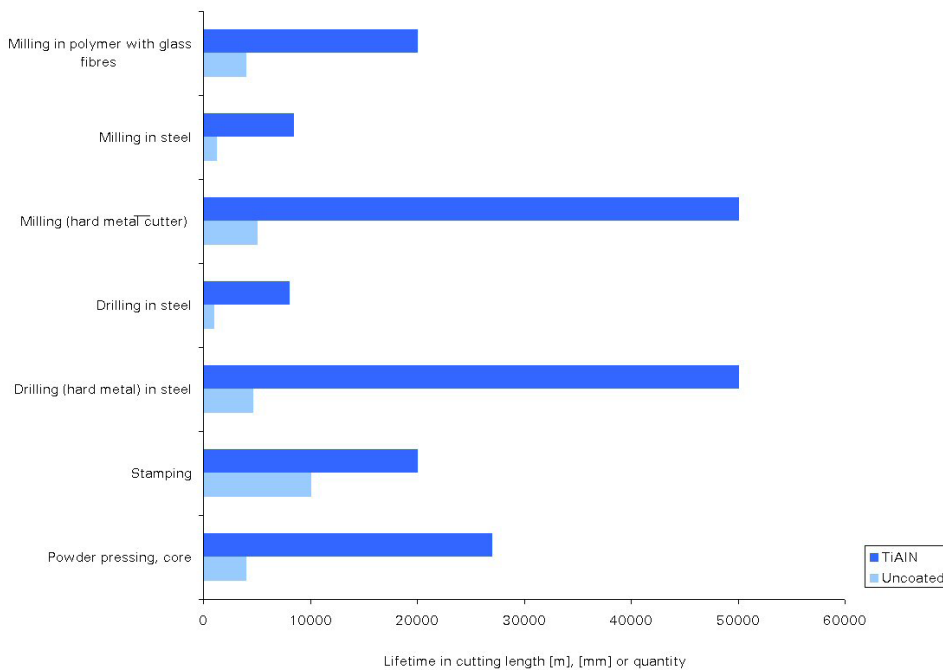
Titanium Aluminium Nitride

Colour: Bluish black



PRODUCT VARIATIONS	TiAlN-LT ²	TiAlN-nano
Micro hardness [HV]	Approx. 2600	Approx. 3000
Process temperature [°C]	< 150	< 150
Application temperature, max. [°C]	800	800
Friction coefficient against steel	0,3	0,3
Processing method	PVD	PVD
Coating type	Single layer	Nanocomposite
Standard layer thickness [µm]	1-3	1-3

Examples of increased tool life with TiAlN



For clarity reasons, specific operation details are not included. The figure is based on actual operation data received from our customers. The chart is to be considered only as an illustration of the increased functionality achieved when using the TiAlN coatings.

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