



Titanium Nitride (TiN)
Type 190-AN (**NAS 907B**)



Titanium Carbon Nitride (TiCN)
Type 190-TiCN (**NAS 907B**)



Titanium Aluminum Nitride (TiAlN)
Type 190-TiAlN (**NAS 907B**)

Titanium Nitride (TiN) - Gold (2900 HV)*

- TiN coating is a great general - purpose coating that will only help in cutting applications.
- Results in drilling through steel range from 2 times to 6 times life span.
- General machining practices run TiN coated tools at roughly the same speeds and feeds as uncoated.
- You can push it **10–25%** faster, but may compromise tool life.
- TiN is the lowest cost single layer coating.
- Manufactured to **NAS 907B** aerospace specification

Titanium Carbon Nitride (TiCN) - Pink to Purple (4000 HV)*

- Better in stainless steel than TiN.
- Making this coating a better choice for interrupted cut applications, or hand operated applications.
- This coating is also a general -purpose coating that likes to run at slow to medium speeds.
- Adding a layer of TiCN to a cutting tool will increase its life span up to 5 times or 10 times.
- Manufactured to **NAS 907B** aerospace specification

Titanium Aluminum Nitride (TiAlN) - (4500 HV)*

- AlTiN/TiAlN coating is great choice in machining stainless steels (all) at any speed.
- This coating can run much faster than other coatings. AlTiN works best in high heat applications where continuous cutting tip temperature of 1,000 degrees can be maintained.
- However, the end user still needs to be cautious to not exceed the limitations of the high-speed steel.
- TiAlN is a high-performance coating which excels in abrasive and difficult-to-machine materials such as **cast iron, aluminum alloys, tool steels, and nickel alloys.**
- Manufactured to **NAS 907B** aerospace specification

**Coating hardness is measured in HV (hardness in Vickers).
Heat - treat M2 as the base drills before coating would measure 880 HV (65RC)*