



Advanced Hard Coatings

Nitron CA



Nitron CA is a very high performance coating that has a distinctive pale blue / silver appearance.

Nitron CA has exceptional oxidation resistance and hot hardness which makes it suitable for the most demanding cutting and forming tools.

In particular, Nitron CA offers outstanding performance for gear cutting, milling and turning operations.

Nitron CA has exceptional wear resistance at lower speeds and feeds and when under high mechanical loads.

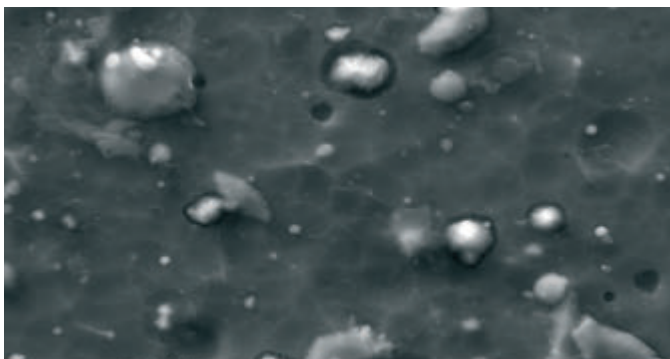
Nitron CA has excellent resistance to heat, maintaining its hardness up to temperatures of 1050°C, so in certain applications can be applied prior to heat treatment without loss of integrity.

Release

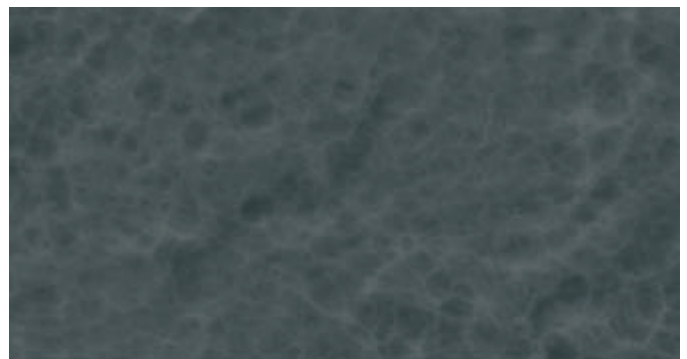
Wallwork Nitron CA is deposited using Wallwork's unique Electron Beam Evaporation processes giving a smooth, droplet free surface that gives exceptional release properties on many materials such as metals, plastics and powders when forming, punching or moulding.

Nitron CA Guideline Characteristics

Hardness	>2500 VPN
Colour	Pale blue / silver
Oxidation temperature	1050°C
Coefficient of friction	0.2 – 0.3 μ
Deposition temperature	Below 450°C
Thickness	1 – 4 μ m



Cathodic Arc: x100 magnification

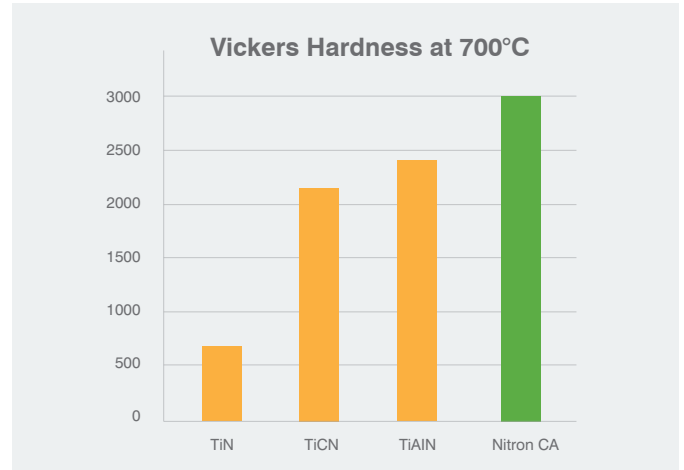


Wallwork Electron Beam: x100 magnification



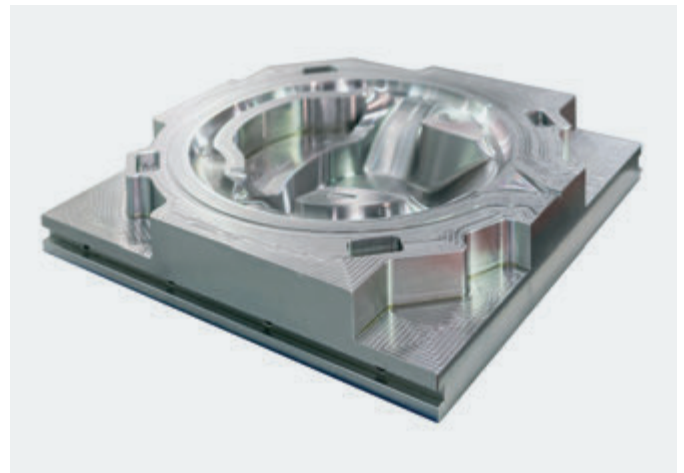
Hardness

Wallwork Nitron CA has the highest hot hardness at typical oxidation temperatures, combined with a good level of ductility. This results in Nitron CA being an excellent coating for cold and hot working mould tools.



FDA Compliance

Wallwork Nitron CA coating is non-reactive, nonabsorbent, non-additive. It has a high resistance to abrasion, and there is little or no likelihood that components of these materials would migrate in significant amounts. Therefore, these coatings satisfy the FDA regulatory guidelines.



Applications

- Gear Cutting
- Milling
- Die Casting
- Forming of Non Ferrous Materials

Process Specification Development

Wallwork Nitron CA can be completed to pre-defined standard processing using Wallwork Process Specification PS332 with process acceptance criteria of coating thickness and adhesion per run.

Part specific Process Specifications to capture all unique cleaning, processing or testing requirements can be created and validated as required; contact Wallwork Cambridge for further details.

Operating Temperature (°C)

The structure of the Nitron CA offers a maximum operating temperature of 1050°C. Nitron CA is an ideal coating on hot forming and is resistant to heat checking.

REACH

Nitron CA is compliant to REACH regulations.

Increased Tool Life

Nitron CA will also reduce abrasive or fretting wear on the tool, reducing downtime and frequency of tool replacement. Nitron CA helps provide erosion resistance in abrasive environments such as turbine blades, or sour service operating environments, potentially increasing service life.