

Nitron DLC



Nitron DLC (Diamolith) is a pure diamond-like carbon coating deposited by Plasma Enhanced Chemical Vapour Deposition (PECVD).

Nitron DLC is deposited using a vacuum based PECVD process. The coating has a number of unique properties to improve performance. DLC coatings are a family of coatings made up primarily of carbon chains in an amorphous structure with sp^2 (triagonal graphite form) and sp^3 tetrahedral DLC (diamond form) bondings.

Nitron DLC is widely used in highly loaded automotive applications such as cam followers, buckets and piston pins.

Nitron DLC is also used as a lubricating, hard wearing coating in all types of sliding applications.

Nitron DLC will reduce wear during the component break-in period and will provide outstanding lubricity to minimise potential wear developing which can result in the virtual elimination of the wear mechanism.

Nitron DLC Guideline Characteristics

Hardness	2000 – 3000 VPN
Colour	Dark grey / black
Oxidation temperature	400°C
Coefficient of friction	0.04 – 0.08 μ
Deposition temperature	180 to 350°C
Thickness	1 – 4 μ m



FDA Compliance

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

Nitron DLC is used on prosthesis components. See below benefits

Biocompatibility

Non toxic, non cyto-toxic, non-gentotoxic and non carcinotoxic.

Adhesion to Substrate

Lc1,10N / Lc2,25N / Lc3,60N
Measured in scratch test carried out to ISO 20502.2005.

Coefficient of Friction

0.04 - 0.08 μ Dependent on surface finish.
Test: 25N load non lubricated.



Medical implant coated with Nitron DLC

Process Specification Development

Wallwork Nitron DLC can be completed to pre-defined standard processing using Wallwork Process Specification PS327 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.

REACH

Nitron DLC is compliant to REACH regulations and is a very good replacement for components currently being hard chrome plated.