



CARBONLAFER

W-C:H

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CarbonLafer is a multi-layer coating based on Tungsten carbide (W-C:H) suitable for all applications where it is necessary to **reduce friction between mechanical components** and where the aim is to reduce the use of lubricants.

Its main characteristics are: **low coefficient of friction, high adhesion and hardness designed** to withstand heavy mechanical loads.

CarbonLafer is suitable for use on medical devices according to ISO 10993-5 and also for **food contact** according to REG EU 1935/2004.

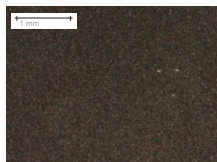
MAIN APPLICATION

- Gears, for noise, friction and temperature reduction
- Components of automatic machines
- Surgical instruments
- Movable parts of moulds to reduce friction and seize up risks

COATING PROPERTIES

VISUAL FEATURES

Surface



Values	Measurement parameters of color According to ISO11664-4
40 ± 50	L* Brightness
-1 ± 1	a* Color coordinate
2 ± 3	b* Color coordinate

NOTES:

Non-functional requirement, indicative values

PHYSICAL FEATURES

Measure	Values	Measurement
Coating thickness*	1 ± 3 μm	Calotest on sample
Coating hardness***	1200 ± 200 HV	Nanoindentation 6mN/20s
Roughness Ra**	0,05 ÷ 0,15 μm	From sample with Ra < 0,03μm
Coefficient of friction**	0,1 ÷ 0,2	Pin on disk, dry, against Al ₂ O ₃

NOTES:

* depends on the application.

** depends on the test conditions.

TECHNOLOGICAL FEATURES

Coating technology	Magnetron sputtering
Chemical composition	W-C:H
Structure	Multilayer
Coating temperature	180°C
Maximum working temperature	380°C
Biocompatibility	Non-cytotoxic according to ISO10993-5:2009
Food compatibility	Complies with EC Regulation No 1935/2004