

Properties

cardient® DRUIDS is a biologically and chemically inert barrier-coating, featuring anchor molecules on its surface. The anchor molecules are made of permanently bonded amino groups which bind active agents and functional molecules covalently. Hence a coated surface is given a novel functionality meeting specific requirements. An optimal interface with the surrounding biological environment is made possible.

The immobilization of pharmaceutical agents, proteins or protein fragments, DNA-segments etc. can be made permanent or temporarily by means of linker molecules.

The excellent biocompatibility of cardient® DRUIDS has been proven in numerous laboratory experiments.

Coating thickness	20 - 200 nm
Contact angle (water)	30 - 60 °
Processing temperature	< 50 °C
Density of anchor molecules	adjustable between 0 - 2 per nm ²

Combining cardient® DRUIDS with other coatings (e. g. cardient® HydroX) a multi-layer – coating-system can be created with additional properties, such as defined hydrophilicity or hydrophobicity.

Application areas

- Polymer materials.
- Metals.
- Ceramics.
- Temperature sensitive materials.

Examples

- Coating of implants: functionalization of surfaces by immobilization of growth-enhancing, adhesion or coagulation inhibiting, and anti-inflammatory agents.
- Coating of contact surfaces for biosensors and analytical devices e.g. for functionalization with antibodies for molecule specific and more sensitive measurements.
- Coating of laboratory equipment, such as multi-well and micro-channel plates etc. for cell cultivation and molecular analysis. For example a specific tissue environment can be simulated by the immobilization of organic molecules, leading to improved cell proliferation and differentiation.

Coating process

The coating is precipitated in a reactive plasma process. The characteristic properties of the coating are determined by the ion proportion and ion energy of the plasma gas, but also by the pressure of the process- and doping-gases.

cardient® DRUIDS is precipitated at temperatures below 50 °C, which permits the coating of polymers as well as metals and ceramics.

Depending on the material, an adapted binding-layer will be used, ensuring an optimal adhesion of cardient® DRUIDS on the substrate.

