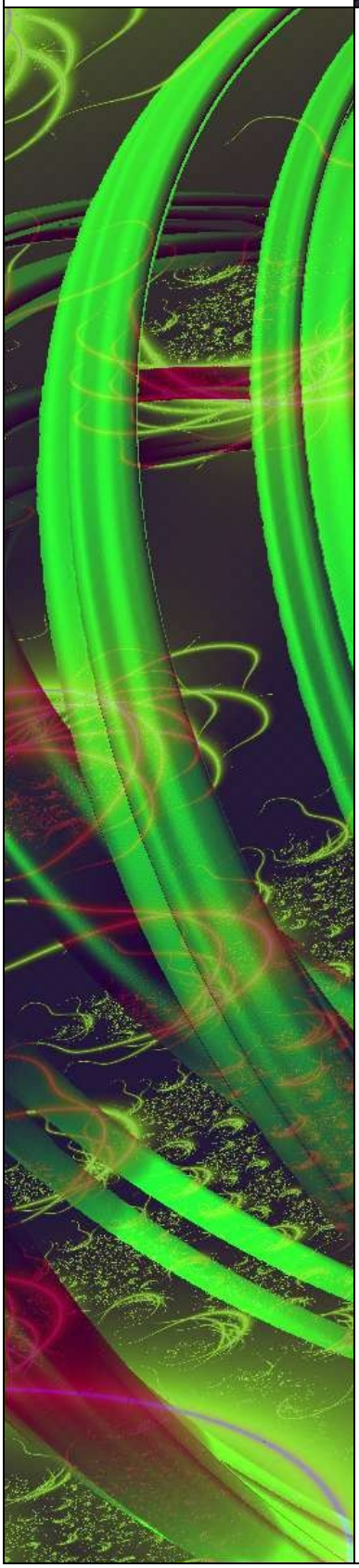
NTTF Coatings
advanced surface technologies

Parylene



Properties

Parylene is an optical transparent polymer that is applied in its gaseous phase in a vacuum and is completely porefree. Tricky surfaces and structures e.g. sharp edges, undercuts and small gaps that cannot be coated by using liquid based processes can be coated evenly. In one process operation thicknesses from 0,1 to 50 µm can be applied. Three different types of Parylene are available.

- Parylene N,
- Parylene C,
- Parylene D.

Parylene is an excellent electrical isolator. This characteristic has a special meaning because Parylene, unlike other polymer materials, hardly absorbs any water and is resistant to the diffusion of water. Parylene is therefore well suited for coating electronic components and assemblies. In addition Parylene is very well for coasting medical products such as implants and is FDA approved.

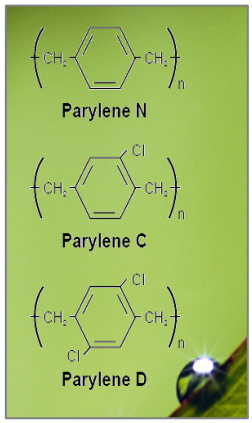
Overview of characteristics:

- good mechanical and very good electric characteristics,
- transparent (depending on thickness of coating),
- excellent protection against corrosion,
- lubricious surface,
- FDA-approved bio-material,
- chemically inert and acid and solvent proof,
- temperature stable,
- excellent barrier against water.

	Parylene N	Parylene C	Parylene D
Density (g/cm³)	1.110	1.289	1.418
Friction coefficient	0.25	0.29	0.31
Absorption of water %/day	0.01	0.06	-
Processing temperature	Room temperature		

Usage

- Plastics.
- Ceramics.
- Metals and Alloys.
- Glass.
- Paper.



Application areas

- Medical devices and biological devices.
- Electronic devices, in particular PCBs.
- Automotive and aerospace industry.
- Corrosion protection (e.g. coating of magnets etc.).
- Protection of documents.

Coating Process

The base material is di-para-Xylylen respectively halogenated substitutes that form stable connections at a temperature of 150 °C. These are evaporated in an evaporation container and are fed through a high temperature zone. Through pyrolysis a highly reactive di-radical monomer is created that polymerizes immediately on surfaces to form a chain-like polymer para-Xylylen, in short Parylene.

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