

Parylene Coatings

All Parylene coatings are created using a monomer deposition process in a vacuum chamber. The monomer condenses and polymerises on the surface and forms a conformal and uniform coating which follows the surface topology.

	Parylene N	Parylene C	Parylene D	Silicone
Density (g/cm ³)	1.11	1.29	1.42	1.1 - 1.3
Friction Coefficient Static / Dynamic	0.25 / 0.25	0.29 / 0.29	0.33 / 0.31	–
Absorption of Water %/day	0.01	0.06	Less than 0.1	0.1
Moisture transmission rel. to Silicone	0.25	0.06	0.04	1
Dielectric V/μm	280	230	220	–
Thermal Properties Perm. / Short Time °C	90 / 120	125 / 200	160 / 300	–
Hardness Rockwell	R85	R80	R80	Shore A40-45
Refractive Index	1.661	1.639	1.669	1.43
Processing Temperature	Room temperature			



Parylene N

This is an outstanding coating for silicone and other elastomers. Most commonly it is used to coat printed circuit boards. This is the lowest cost coating which meets most application requirements.

This grade of Parylene has a very low dielectric strength making it suitable for electronic devices. It also has excellent penetration into small spaces and gaps.



Parylene C

Our standard and most widely used Parylene coating. This is one of the most robust variants.

It has excellent properties when protecting against moisture and gas penetration. The additional chlorine molecule in each monomer adds hydrophobic properties and is used in many applications including LEDs, Medical & Automotive.



Parylene D

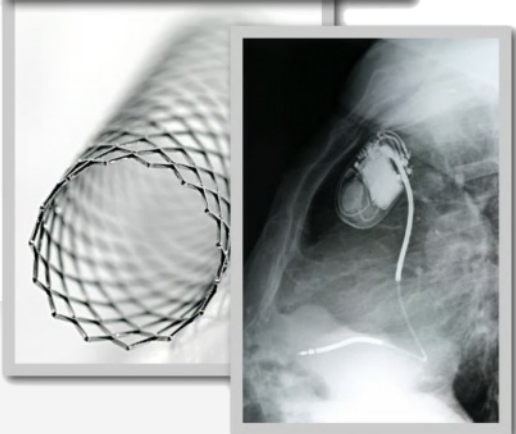
A high thermal stability coating for demanding applications which is extremely hydrophobic.

Often used in PCB applications for Automotive, Electronics, Aerospace and Defence applications.

Medical Products

Medical instruments and implants benefit from a fully biocompatible coating which makes it possible to produce health enhancing products. They can be used to insulate electrical components, add lubricity and improve biocompatibility.

Parylene coating from TiXX serve as an enduring protection. With TiXX Parylene Coatings your medical products become safer and more resistant to corrosion and damage.



Medical products have to endure difficult conditions

- Exposure to moisture, chemicals/solvents
- Sub-zero temperatures
- Most extreme environments
- Water condensation

Parylene is often the best solution

- Parylene conforms to the USP Class IV and is biocompatible
- Resistant to strong acids and alkalis
- Parylene has been approved by the US FDA
- It withstands humidity and dust and protects sensitive electronics from rough environmental conditions
- Optically transparent
- It has greater abrasion resistance and dry lubricity than PTFE.

Parylene is an optically transparent polymer that is applied as a monomer in its gaseous phase in a vacuum at room temperature and is completely pore free. With this procedure tricky surfaces and structures e.g. sharp edges, undercuts and small gaps can be coated evenly. In one process operation thicknesses from 1µm to 50µm can be applied.