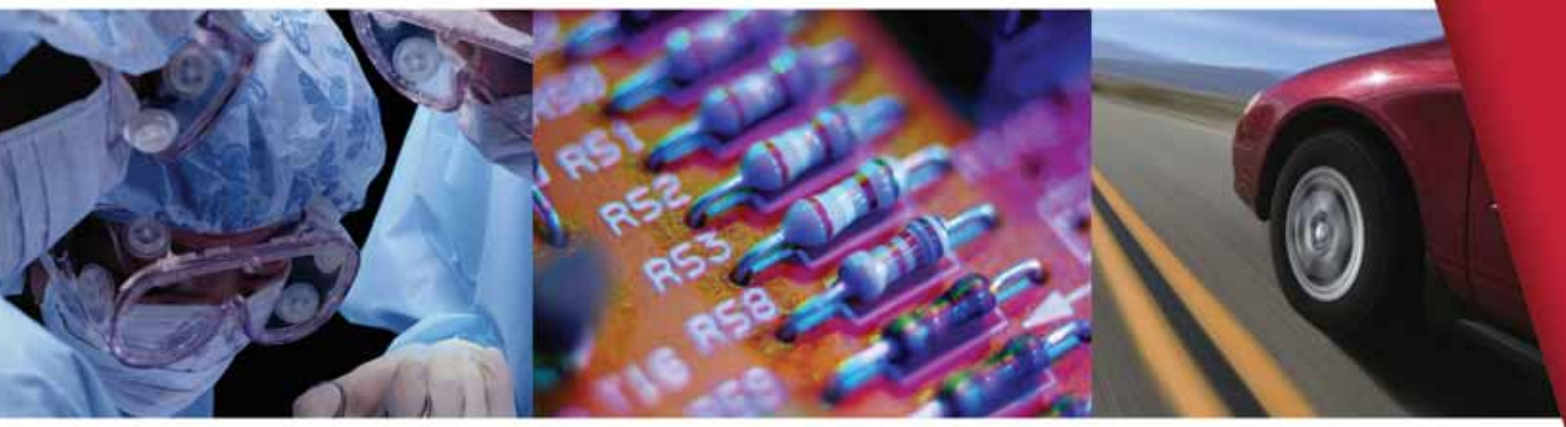
SPECIALTY COATING SYSTEMS™



SCS Parylene Dimer

Parylene coatings are ultra-thin, pinhole-free conformal coatings that are deposited via a vapor deposition process. The family of Parylene polymers is known for having excellent moisture, chemical and dielectric barrier properties. Parylene coatings also have a low coefficient of friction and are biocompatible and biostable. These properties have enabled SCS Parylenes to protect critical components and assemblies in the electronics, medical, automotive and military industries.

SCS Parylene dimer, the chemical precursor in the Parylene deposition process, is a stable, white powder – and its quality is critical. SCS dimer is manufactured under cGMP guidelines exclusively for Specialty Coating Systems.

SCS dimer is non-toxic and non-hazardous and emits no volatile organic compounds during storage, processing, handling or deposition. SCS dimer is also certified to meet the European Union's RoHS directive 2002/95/EC.

SCS Parylene dimer is available in three forms: DPX-N, DPX-C and DPX-D. Each has its own properties and application advantages.

SCS DPX-N (di-para-xylylene)

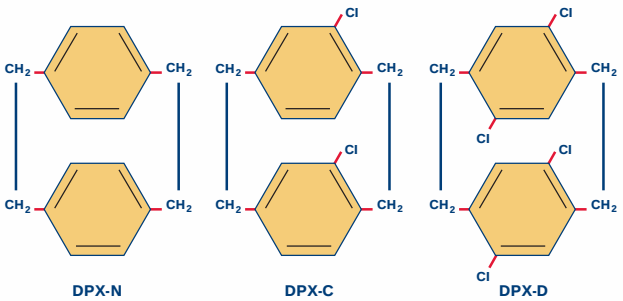
SCS DPX-N is the basic member of the Parylene dimer family. Its monomer vapor has exceptionally high throwing power (ability to penetrate deep crevices). The film properties of Parylene N include excellent dielectric strength and particularly high surface and volume resistivities. SCS Parylene N film is qualified to MIL-I-46058C and IPC-CC-830 specifications.

SCS DPX-C (dichloro-di-para-xylylene)

SCS DPX-C is the most commonly used form of Parylene dimer. The film properties of Parylene C include particularly low permeability to moisture and gases such as nitrogen, oxygen, carbon dioxide, hydrogen sulfide, sulfur dioxide and chlorine. Parylene C also offers excellent dielectric properties. SCS Parylene C film is qualified to MIL-I-46058C and IPC-CC-830 specifications and is UL (QMJU2) recognized.

SCS DPX-D (tetrachloro-di-para-xylylene)

SCS DPX-D has two chlorine atoms on each benzene ring, giving the polymer the best chemical resistance of the Parylenes, particularly to oxidizing agents such as nitric and sulfuric acids. Parylene D films also offer protection at higher temperatures (up to 120°C in air).



SCS PARYLENE DIMER

Dimer Composition, Nomenclature and Physical Properties

Feature	Parylene N	Parylene C	Parylene D
Chemical family	p-xylylene	p-xylylene	p-xylylene
Chemical name	(2.2) Paracyclophane	Dichloro (2.2) Paracyclophane	Tetrachloro (2.2) Paracyclophane
Synonyms	DPX-N Di-para-xylylene	DPX-C Dichloro-di-para-xylylene	DPX-D Tetrachloro-di-para-xylylene
CAS number	1633-22-3	28804-46-8	30501-29-2
CAS name	Tricyclo(8.2.2.2.4,7) hexadeca-4,6,10,12,13,15-hexaene	Tricyclo(8.2.2.2.4,7) hexadeca-4,6,10,12,13,15-hexaene, dichloro	Tricyclo(8.2.2.2.4,7) hexadeca-4,6,10,12,13,15-hexaene, tetrachloro
Formula	$C_{16}H_{16}$	$C_{16}H_{14}Cl_2$	$C_{16}H_{12}Cl_4$
Molecular weight	206	277	346
Melting point (760 mm Hg)	285°C / 545°F	175°C / 347°F	108°C / 226°F
Vapor pressure (20°C, extrapolated)	<1 mm Hg	<1 mm Hg	<1 mm Hg
Solubility in water (% by weight)	insoluble	insoluble	insoluble
Percent volatiles by volume[a]	nil	nil	nil
Evaporation rate (Butyl acetate = 1)	N / A	N / A	N / A

[a]California SCQMD Rule No. 443.1 VOCs not applicable.

General Health Hazard Data

No exposure limits to Parylene dimer or polymerized Parylene coating have been established by ACGIH or OSHA. Material safety data sheets are available for each of the three types of Parylene dimer. These documents are available by contacting SCS.

SCS dimers are stable, and there are no listed conditions to avoid, no listed incompatibility with other materials and no hazards associated with polymerization.

Ordering

SCS dimers are available in multiple weights and containers, and in most cases, dimer is shipped the next business day. Orders may be placed by contacting one of the following SCS locations:

World Headquarters

7645 Woodland Drive
Indianapolis, IN 46278
United States

TF 800.356.8260
P 317.244.1200
F 317.240.2739

United Kingdom

Forsyth Road, Sheerwater,
Woking
Surrey, GU21 5RZ
United Kingdom

P 44.1483.541000
F 44.1483.541050

Singapore

14 Tuas Avenue 10
Singapore 639138

P 65.6862.8687
F 65.6861.4958

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