



FLUTEC LE Coatings

Perfluorocarbon Coating / Impregnating Solutions

Description

Flutec LE12 and LE15 materials are solutions of a low molecular weight perfluorocarbon oligomer in a low boiling point, volatile perfluorocarbon liquid.

Flutec LE12 and LE15 are clear, have very low surface energies and high contact-angles with water.

They are highly chemically resistant to most liquids and solutions not containing fluorine atoms and will repel a variety of oils, lubricants and aqueous solutions of high and or low pH.

Benefits

Films cast from FLUTEC LE12 and FLUTEC LE15. Coatings remain flexible at low temperatures and melt between 60°C and 80°C.

Uses

Items an surfaces coated or impregnated with FLUTEC LE12 and FLUTEC LE15 are simultaneously hydrophobic and oleophobic. This means that the solutions can be used for:

✓ Protecting fully assembled printed circuit boards and other electronics assemblies against condensed, atmospheric moisture.

Areas: External assemblies, intruder alarms, traffic systems, sea-going electronics, agricultural electronics.

✓ Impregnating / coating woven and non-woven fibres for protection against water and chemicals.

Areas: Paper for pet-food container, book protection, coating filter media.

✓ Coating applicator jets and nozzles to prevent clogging and to control shapes of droplets.

Areas: Ink-jet printers, adhesive applicators.

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✓ Preventing migration of a large range of oils, lubricants, fluxes and inks into areas where they are not required.

Areas: Bearing-races, various containers (to ensure complete drainage), adhesive joining "overspill".



✓ Releasing resin mouldings from their moulds.

Areas: 'Cold-cast' resins, RTV-silicones.

Application Methods

Depending upon the specific use, 'FLUTEC' LE12 and 'FLUTEC' LE15 coatings can be applied by

- ✓ dipping
- ✓ spraying
- ✓ brushing
- ✓ flood-coating
- ✓ curtain coating
- ✓ K-bar coating
- ✓ hypodermic or other nozzle 'spotting'

Typical Physical Properties of the Solvent

The solvent used in both Flutec LE12 and LE15 solutions is a FLUTEC Perfluorocarbon having the following typical properties:

Boiling Point, °C	50-60
Pour Point, °C	-90
Density, kg/l	1.7
Viscosity, (kinematic), mm ² /s	0.39
Viscosity, (dynamic), mPa s	0.66
Surface Tension, mN/m	11 – 12
Flash Point	no flash point

Temperature dependant properties are quoted at 25°C unless otherwise stated. The above typical physical properties in no way form or represent product specification



Concentrations Available

The material is available in various concentrations.

<i>Product</i>	<i>Concentration</i>
FLUTEC LE11	1% w/w
FLUTEC LE12	2% w/w
FLUTEC LE15	5% w/w

Properties of the Dry Film

<i>Property</i>	<i>Value</i>
<i>Physical</i>	
Contact Angle with Deionised Water	110°
Surface Energy	18-19 dynes cm ⁻¹
Water Solubility	Insoluble
Flammability	None
Taber Abrasion (SCIO wheels, 250gr. Load)	40% wear after 150 cycles
Chemical Resistance (B.S.3900/G5/method3)	Resistant to a wide range of liquids and solutions
<i>Toxicity</i>	
By ingestion (rat)	Discriminating dose >2000mg/kg body weight
AMES test for mutagenicity	No mutagenic activity as tested in alcohol

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