

Cryo Adhesive EPIFIL-9661

(Used as an Adhesive for the End Fitting Reinforcement of Polyimide Pipelines & as a Matrix Resin for the Kevlar Composite over Wrap on LOX Feed Polyimide Pipelines)

Adhesive EPIFIL-9661 is three part room temperature curing adhesive. Part A is a urethane modified epoxy resin, prepared by the co-reaction of epoxy, polyol and isocyanate. Part-B is a mixture of amine hardeners and Part-C is a Silane Coupling agent. This adhesive system presently finds different applications such as matrix resin for Aramid (Kevlar) composite over-wrap on Liquid Oxygen (LOX) feed polyimide pipelines, for reinforcing the metallic end fittings made of SS-321 and the fibre glass tape to the LOX and LH2 polyimide pipe lines and as a coating material for glass phenolic composite which perform as a thermal isolator between the mix ratio controller and (MRC)/apparent velocity regulator (AVR) valve and the motor in the cryogenic stages of GSLV.

Salient Features

- Three-component, RT curable, toughened, low viscous polymer liquid adhesive
- Increased pot life [up to approx. 3hrs.]
- Good bond ability with PI film as well as SS materials
- Flight qualified

Properties	Values
Epoxy value (equivalents/kg) of Part-A	3.5 – 4.5
Viscosity at 30 °C (cps) of Part-A	450 –700
Amine Value (mg KOH/g) of Part-B	340-400
Viscosity at 30 °C (cps) of Part-B	350-500
Pot life at 25 °C (minutes)	180 (minimum)
Hardness Shore D (after 7 days cure at RT (30±5 °C)	65 (minimum)
Lap Shear Strength (PI-PI on Aluminium alloy back up) at RT (at 25 °C), (in kg/cm ²)	40 (minimum)
Lap Shear Strength (PI-Fibre glass tape on SS-321 bac up) at RT (air conditioned room, at 25°C), (in kg/cm ²)	40 (minimum)