



Preliminary Technical Datasheet

BondLynx[®]

Bis-Diazirine Crosslinking Adhesive

BondLynx[®] is a revolutionary new type of adhesive that takes advantage of chemical crosslinking to form ultra-strong covalent bonds between a wide range of “impossible to bond” materials.

Features and Benefits

- Failure resistant adhesion: strong covalent chemical bonds replace conventional mechanical bonds
- Easily bonds challenging polyolefin polymer materials: polyethylene, polypropylene, polystyrene, acrylics, etc.
- Can even form bonds to fluoro-polymers under some conditions.
- Also bonds polymers to glass, ceramics, wood, paper, textiles, leather, elastomers, and some metals (eg. Al)
- Easy activation with moderate heating or near-UV light.

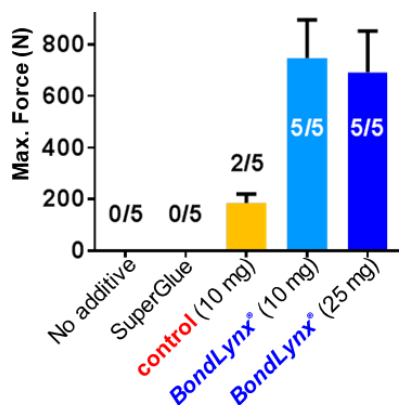
Physical Properties

Melting Point	34 °C; can be handled as a liquid or crystalline solid
Solubility	Dispersible in a wide range of organic solvents
Stability	Exceptionally stable; can be recovered from concentrated sulfuric acid
Reactivity	Crosslinks any aliphatic polymer through C-H insertion reactions.
Activation	Long-wave ultraviolet (UV) irradiation (350nm) or heating (110° or 140°C)

Confirmed Substrates

High- and low-density polyethylene (HDPE & LDPE)
Ultra High Molecular Weight Polyethylene (UHMWPE)
Polypropylene (PP), polystyrene (PS) and polycaprolactone (PCL), plus polyisoprene elastomers
Aramid and UHMWPE fabrics for ballistics apparel; polyurethanes and natural fibers for textiles
Good adhesion even with dissimilar materials (e.g., fluoropolymer:PP bonding)

Representative adhesion data* from lap-shear experiments of HDPE|HDPE bonding:



Lap-shear data confirm adhesion for HDPE samples treated with BondLynx[®] bis-diazirine adhesive (in blue) but not for a mono-diazirine control (shown in red). Numbers indicate the total number of samples that had sufficient adhesion for testing.

*Science, 2019, 875–878.