

What Can You Do with Ebeam?

Cure

Pre-polymer (liquid)

Polymer

Polymer (solid)

Ebeam can cure (polymerize) liquid prepolymer resins into solid coatings, inks, and /or adhesives. Optical clarity is not an issue; ebeam can cure through opaque inks or metallized lamination. No initiator or solvent required!

Ebeam breaks polymer chains; these pieces can then bond together in new ways to form a linked network. Crosslinking generally improves heat resistance and shrink properties.



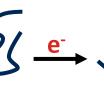
Linear Polymer



Crosslinked Polymer

Crosslink

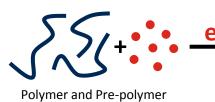




Degraded Polymer

If the polymer chains remain broken, it is called chain scission. Crosslinking and scission occur in concert; the dominating reaction is dependent on the polymer chemistry.

If a polymer is exposed to ebeam in the presence of a pre-polymer, the two can become bonded. Grafting can be used to change the surface properties of a film.



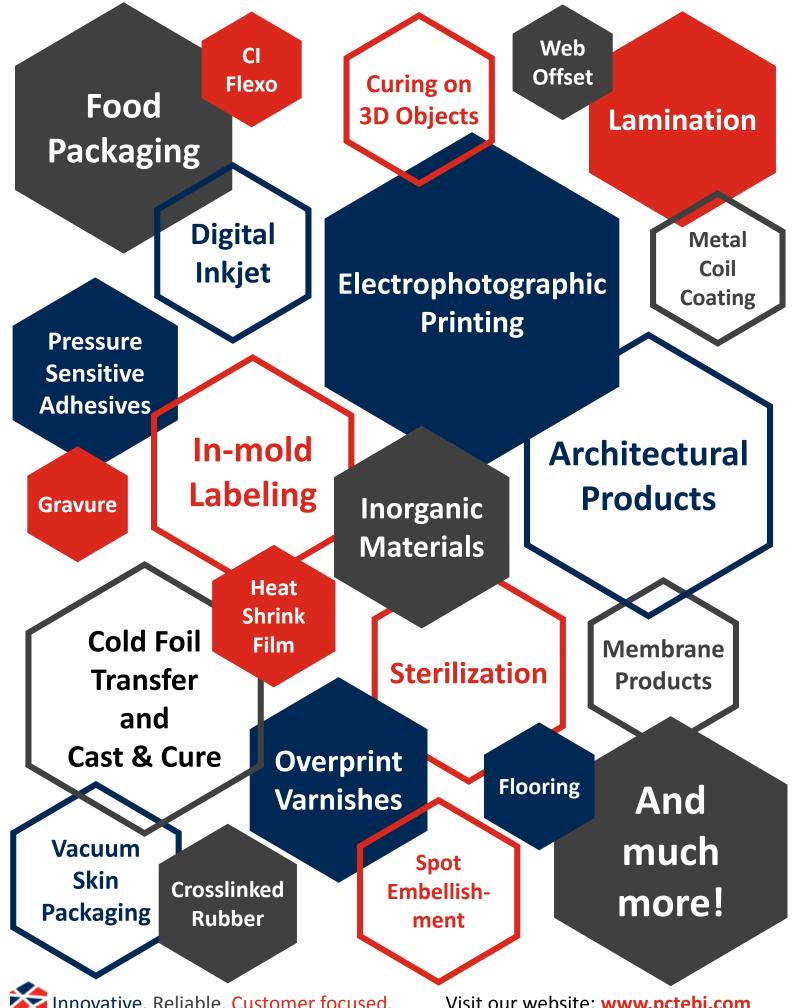
Grafted Polymer

Graft

The core principle of electron beam technology is accelerated electrons break chemical bonds. What happens afterward (bonds remain broken, reform, and/or initiate a reaction) is chemistry. How this principle is used to create new ebeam applications is up to your ingenuity!

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