

Compostable (Biodegradable) Co-polyester Hot Melt Adhesive

Hot melt adhesives are the most widely used types of industrial adhesives and service a wide range of industries for various applications like paper & packaging, textiles, automotive, footwear, luggage, carpets etc. Hot melt adhesives are polymer based and are thermoplastic in nature, meaning they are solid at room temperature. These adhesives do not utilize water or solvents in order to acquire their adhesive properties, which allows them a very fast set time, a long shelf life, and functionality in a wide range of temperatures.

Compostable (Biodegradable) Co-polyester Hot Melt Adhesive is a drop-in replacement for non-biodegradable **Ethylene-Vinyl Acetate (EVA) and Polyester Resin based Hot Melt Adhesives**. In EVA hot melt adhesive, Ethylene promotes adhesion to non-polar substrates such as polyethylene, and provides mechanical strength, block resistance, and paraffin solubility. Vinyl acetate, on the other hand, promotes adhesion to polar substrates such as paper, and provides flexibility, adhesion, and better low-temperature performance. How the adhesive is formulated influences its properties.

This Compostable (Biodegradable) Co-polyester Hot Melt Adhesive provides similar and even superior adhesion properties (tensile strength, shear strength, bonding strength etc.) as compared to Ethylene-Vinyl Acetate & Polyester Hot Melt Adhesive on variety of substrates.

Applications of Compostable (Biodegradable) Co-polyester Hot Melt Adhesives

- Paper Packaging, Sealing of Corrugated Kraft Paper Cartons, Labelling
- Textiles ---- bonding fabrics for garments and textile lamination processes
- Textiles --- bonding of non-woven fabric interlinings, female hygiene products
- Automotive --- bonding interior components like carpets, headliners etc.
- Footwear, luggage & carpet backing bonding
- Furniture, cabinetry and laminating, PVC edge-banding, sofa manufacturing etc.

Main raw materials: Polybutylene Adipate Terephthalate (PBAT) polymer and modified Gum Rosin

Manufacturing process: Reactive extrusion in twin screw extruder to produce pellets
To produce hot melt adhesive in powder form: ball milling of pellets

Indicative plant & machinery cost: Rs. 2.0 crores for 300 to 500 kg per hour production capacity

We can provide complete technology / know-how for the production of such Compostable (Biodegradable) Co-polyester Hot Melt Adhesive. The first step will be trial production and validation (adhesion & other testing on various substrates). Parallel step will be techno-commercial feasibility of such compostable hot melt adhesive vis-à-vis non-biodegradable EVA & Polyester hot melt adhesives and industrial acceptability. Since the hot melt adhesive is produced from PBAT polymer and other natural biobased gums - the product will surely be compostable in industrial composting conditions as per Indian & International Standards ISO / IS 17088 (2021), ASTM D6400 & EN 13432 and possibly even in soil / open landfills as per Indian & International Standards ISO / IS 17556 (2019), ISO 23517 (2021), ASTM D5988 etc.

We are pleased to introduce ourselves as a technical consultancy organization actively working in the field of Plastic & Rubber Recycling, Biodegradable polymer compound processing and end products, Biobased Chemicals & Polymers, natural fiber thermoplastic composites and sustainable packaging films (based on recycled content & biodegradable polymers).

Best regards,

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