

# Polymer Add (Thailand) Co.,Ltd.

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## APPLICATION PROFILE

### FINE CRYOGENICALLY PULVERISED PLA POWDER

#### PRODUCT FORM AND PURPOSE

Fine cryogenically pulverised polylactic acid (PLA) is produced by cooling PLA resin and mechanically reducing it into a controlled fine powder. It is distinct from micronised PLA: the product is intended for processes that require a classified powder rather than pellets, while very fine micronised grades are developed and marketed separately.

#### WHY USE FINE POWDER INSTEAD OF PELLETS

A fine powder provides a larger surface area, more uniform dry distribution and faster heat transfer than pellets. It can be spread as a thin layer, deposited onto a substrate, blended with other powdered ingredients or used to create a controlled temporary polymer phase. In several applications the powder is subsequently fused or melted; its value lies in the controlled form before that stage.

#### PRINCIPAL APPLICATION AREAS

| Application                                  | Specific Use of Fine PLA Powder                                                                 |
|----------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Powder-bed additive manufacturing</b>     | Uniform powder layers for selective thermal fusion and prototype development.                   |
| <b>Rotational moulding development</b>       | Controlled powder distribution and fusion against a heated mould surface.                       |
| <b>Fusion and powder coating</b>             | Dry application followed by heat fusion to form a continuous or textured coating.               |
| <b>Hot-melt adhesive systems</b>             | Metered powder deposition for bonding, lamination and heat-activated assembly.                  |
| <b>Textiles and nonwovens</b>                | Thermally activated binder powder for web bonding, interlining and lamination trials.           |
| <b>Dry-powder lamination</b>                 | Uniform application between films, sheets, fabrics or other substrates before heating.          |
| <b>Fugitive pore former</b>                  | Controlled temporary polymer particles used to generate pores in ceramics and composites.       |
| <b>Controlled-release development</b>        | Potential polymer matrix or carrier feed for specialised agricultural systems.                  |
| <b>Dry blending and compounding</b>          | Improved initial distribution with powdered polymers, fillers and additives before melt mixing. |
| <b>Laboratory and biodegradation studies</b> | Defined PLA particle fractions for controlled technical evaluation.                             |

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## RELEVANCE TO FILM AND MASTERBATCH MANUFACTURERS

The most credible interest is in controlled dry blending, PLA-compatible masterbatch manufacture and development of compostable film compounds based on PLA, PBAT, starch or related materials. Fine PLA powder can distribute more uniformly than pellets before compounding, particularly in small batches or where other ingredients are already powders. During film extrusion, however, the PLA will normally melt; the powder is a processing form rather than a permanent solid filler.

## DEVELOPMENT BASIS

Particle-size distribution, powder flow, bulk density, moisture and thermal behaviour must be agreed for each application. A representative resin sample and the customer's target D50 and upper particle-size limit are required before commercial production. Suitability must be confirmed in the customer's final formulation and process.

*Polymer Add (Thailand) Co., Ltd. | Application Profile | September 2026*