

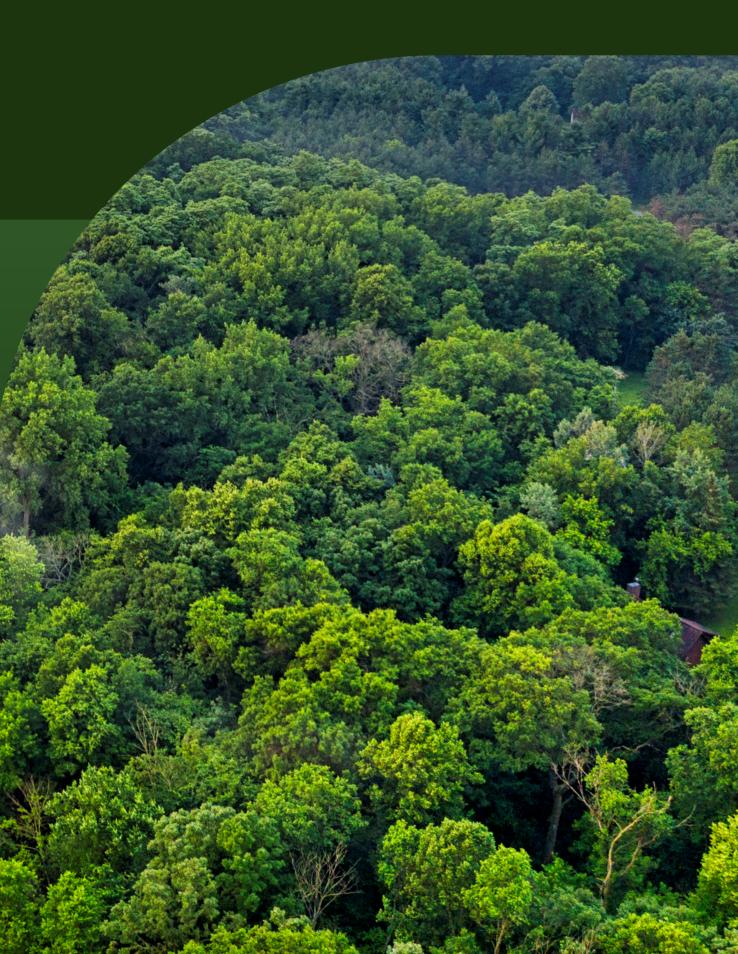
ECO-FRIENDLY COMPOSITE MATERIAL-**STARCH BASED Stone-Plastic Boxes**

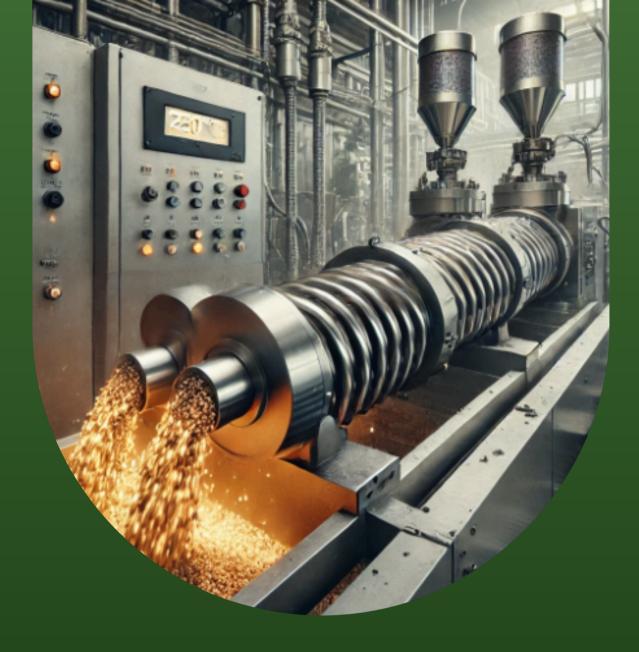




Introduction

Traditional packaging materials rely on tree-based pulp, causing deforestation, biodiversity loss, and ecosystem disruption. The paper production process involves chemical treatments that pollute water and release harmful air pollutants, contributing to acid rain and respiratory issues. Additionally, it has a high carbon footprint, emitting 2.6 kg of CO_2 per kg of paper. This invention offers a sustainable alternative to reduce these environmental impacts.





Convert the mixture into granules using a twin-screw extruder at 230°C.

The main material is a bio-based polymer blend of polylactic acid (PLA) and calcium carbonate (CaCO₃).Mix calcium carbonate with coupling agents, white oil, silicone oil, and PLA in a high-speed mixer to form a viscous substance.



Main Material Composition

Stone-Plastic Boxes Material

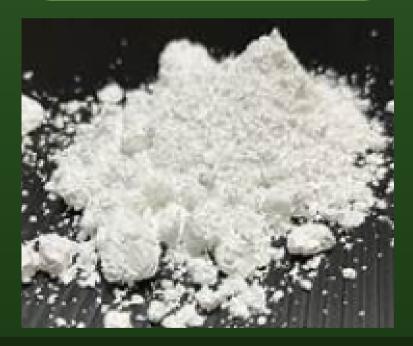
PP + Calcium Carbonate Composit

30% PP Content

70% Inorganic Calcium Carbonate







Low Carbon Emissions -Aligns with national carbon reduction policies

Durable and Recyclable -Supports the circular economy with long-term reuse





Stone-Plastic Boxes Material

PRODUCT	APPEARANCE	
Stone-Plastic Boxes Material	Pellet	25Kg Bag, 1MT/Pallet, 20MT/20'GP





PACKING

t, 18MT/20'GP OR Jumbo Bag,



Stone-Plastic Boxes Advantage

The material is lightweightcan replace traditional paper packaging currently used in the market The material is waterproof and moistureresistant, making it suitable for refrigerated goods and wet environments, ensuring the contents remain intact

It is impactresistant and strong, providing better protection for products during transportation Customizable and reusablereducing waste and promoting circular economy practices The material can be recycled and reusedfurther supporting environmental sustainability

Stone Plastic Boxes vs. Traditional Packaging

Food Industry (Fresh Food Delivery)

Performance Indicator Moisture Permeability Freshness Duration (Strawberries at 20°C) Stacking Load Capacity

Electronics Industry (Electronic Component Packaging)

Performance Indicator	Ordinary Plastic Box	Stone-Plastic Box (Electronics Series)
Electrostatic Dissipation Time	5 - 10 seconds	Within 1 second
Humidity Fluctuation (25°C, 60% - 90% RH, 72h)	±10%	Within ±3%

Traditional Carton	Stone-Plastic Box
20% - 30%	Below 5%
1 - 2 days	3 - 4 days
Deforms at 3 - 4 layers	Supports 8 - 10 layers

Stone-Plastic Boxes vs. Cardboard Boxes

Material & Environmental Impact

Feature	Stone Plastic Box	Cardboard Box
Material	PP + 70% calcium carbonate (inorganic)	100% paper-based material
Plastic Reduction	Uses 30% PP, reducing plastic usage	No plastic, but uses trees
Carbon Emissions	Lower emissions, eco-friendly	Higher emissions, energy-intensive
Recyclability	Long-term reusable, circular economy	Recyclable, but limited reuse

Performance

Feature	Stone Plastic Box	Cardboard Box
Durability	Strong, waterproof, oil-resistant	Weak against moisture, oil
Weight	Heavier than cardboard	Lightweight
Stacking Strength	High, space-efficient	Lower, takes up more space
Cost	Higher initial cost, long-term savings	Lower cost, but short lifespan
Best Use Cases	Frozen food, logistics, long-term use	Dry goods, short-term packaging

Stone-Plastic Boxes Properties

Water and Oil Resistance:

The composite material is resistant to water and oil, making it ideal for various applications

Superior Hardness:

It is more durable and rigid than traditional paper cartons, ensuring better structural integrity

Printability:

The material is easy to print on, offering flexibility for branding and product information



Stone-Plastic Boxes Properties

Ease of Processing:

It can be easily processed, enhancing manufacturing efficiency

Reusability:

The material can be reused multiple times, reducing waste

Higher Load Capacity:

Our product supports up to 40% more weight than regular paper cartons, making it a stronger packaging solution.



