CHICOPEE®

J-Cloth® Biodegradable and Compostable

The Original and Only Biodegradable and Compostable Wipe with Food Contact Certification for Optimal Safety

The Market Evolution

Global Transition to Green Energy

By 2050...

70% to 85%

of electricity will be made by renewable energy

The price of

Renewable Energy

has dropped significantly, now able to compete with traditional fuel markets

In 2017, the spend on

Renewable Power Generation

was 120% higher than the spend on fossil fuel power generation

Partnering with BECC *(Bio Energy Central Cuijk)*

Supplying us with steam from regionally-sourced biomass

The Market Evolution

Saving Ecosystems

Biodiversity is declining dramatically. Species are disappearing 1000 times faster than their natural rate of extinction. *The main reason, the exploding human consumption.*

Global awareness about plastic waste is continuously increasing.

Implications for business:

- Address plastic waste across the entire value chain
- Business will be expected to take a closer look at their impact on biodiversity
- Investing in circular solutions is the most effective pathway to address the waste issues and improve sustainability
- Increasing demand from consumers to offer Green and Eco-friendly solutions

The Market Evolution

Circular Economy

Circular economy aims to redefine growth focusing on society-wide benefits. Decoupling economic activity from consumption of finite resources and designing waste out of the system.

- Transition to renewable energy sources
- Circular model builds economic, natural & social capital

Circular economy is based on 3 principles:

- Design out waste and pollution.
- Keep products and materials in use.
- Regenerate natural systems

In circular economy, economic activity builds and rebuilds overall system health.

The Market Evolution

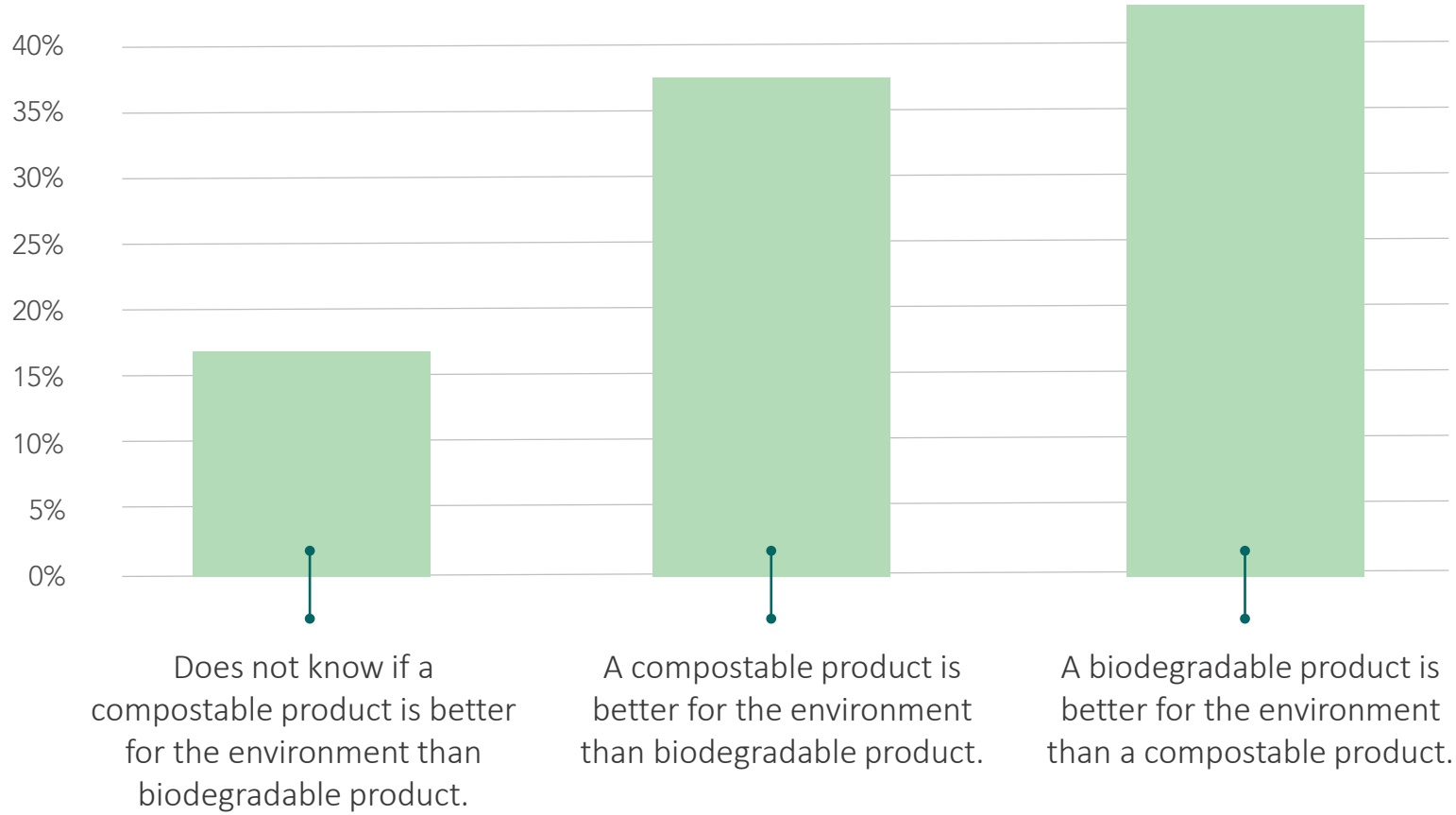
Waste Industry

The waste industry is evolving towards sustainability. Developing new and efficient technologies to guarantee better resources and waste management.

Consumer Voice

Environmental Awareness

Perception of what's better for the environment…



Source: based on external market survey

CHICOPEE®
63% of people are not aware of what is better for the environment
J-Cloth® Biodegradable and Compostable
A brand of Berry

Sustainable Solutions

Berry Global

Chicopee® True Confidence™

At Berry, our Mission of Always Advancing to Protect What's Important drives our commitment to building a more sustainable future.

As a company, we are taking advantage of the benefits of plastics to lightweight products and decrease greenhouse gas emissions while also emphasizing recyclability and the use

Sustainability & Berry Global

IMPACT 2025

PRODUCTS

Minimize Product Impacts

Optimize Design

- Lightweight products
- Design 100% of packaging to be reusable, recyclable or compostable

Sustainable Sourcing

- Increase recycled content
- Encourage the development of renewable materials

PERFORMANCE

Minimize Operational Impacts

Climate Change

- Reduce greenhouse gas emissions 25% by 2025

Continuous Improvement

- Reduce landfill waste 5% per year
- Reduce energy and water consumption 1% per year

Operation Clean Sweep ® (OCS)

- Prevent resin loss through OCS
- Implement OCS at acquisition sites within the first year

PARTNERS

Maximize Positive Impacts by Engaging Partners on Key Issues

End Plastic Waste

- Expand and modernize waste infrastructure to increase recovery and prevent loss of plastic to the environment
- Engage the plastics industry on OCS

Limit

- Increase renewable energy
- Expand the use of plastic in place of alternative materials
- Promote science-based targets

Sustainability & Berry Global

Always Advancing New Products

Recyclability of Products

Converting materials to more widely recyclable substrates

Lightweighting

Reducing product weight and resin requirements in our new and existing products

100% Compostable & Biodegradable Products

Proposing 100% compostable and biodegradable products

Sustainable Materials

Integrating the use of more sustainable materials in our product development process

We’re Always Advancing

At our factory in Cuijk we've partnered with BECC (Bio Energy Central Cuijk) supplying us with steam from regionally sourced biomass

+/- 80%

Reduction in gas consumption – with the use of green electricity

Reduce

The plant’s carbon footprint and improve the local atmosphere

Increase efficiency

By 25% - Save up to 8 million m3 of natural gas per year

CHICOPEE®

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The Market Evolution

Cleaning Cloths

Traditional Tea Towel:

- Only suitable for drying but no cleaning properties
- Not approved to be in direct contact with food
- Often made from cotton. Requires 8000 liters of water to produce 1 kg of cotton

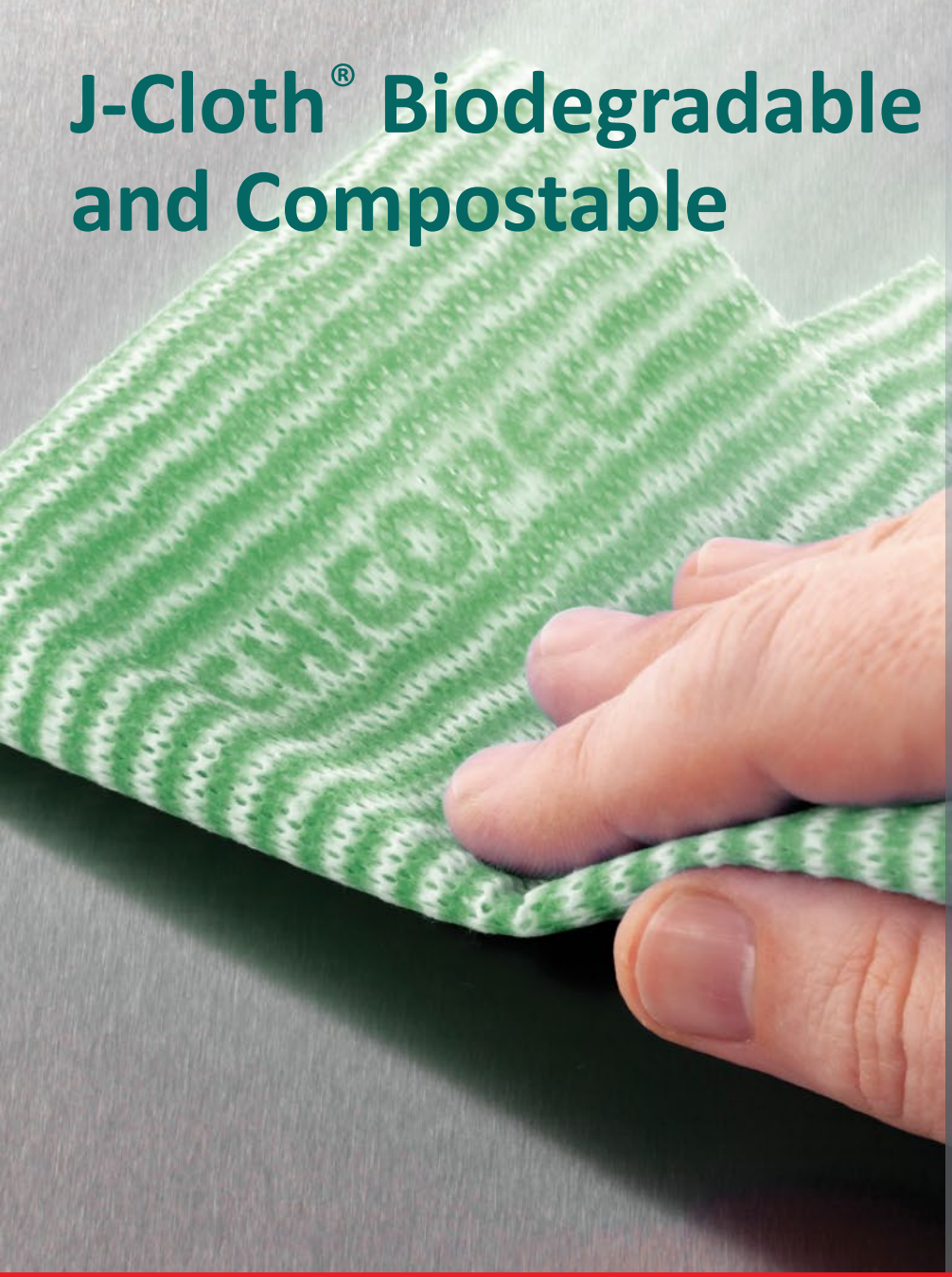
Nonwoven Wipes:

- Very versatile and suitable for a wide range of cleaning applications
- Food Contact Clearance (FCC) approved, ideal for Food service
- Traditional wipes are often made from synthetic fibers like polyester and polypropylene that can't be renewed

J-Cloth® Plus Biodegradable:

- Food Contact Clearance (FCC) approved, ideal for Food service
- The J-Cloth® Biodegradable and compostable is made from 100% Viscose fibers that are PEFC certified
- The wipe and packaging is certified Biodegradable and Compostable according to DIN EN 13432:2000-12 test standard

J-Cloth® Biodegradable and Compostable



compostable
7P0314

Food Safe!
Food Contact Cleared

- Wipe made from Viscose fibers from PEFC certified sources
- Tested and certified Biodegradable and Compostable according to DIN EN 13432:2000-12. Tested at an external laboratory and granted with the seedling logo by DIN-Certco
- Food Contact Clearance according to rules and regulations of EC no.1935/2004 (tested by ISEGA)

J-Cloth® Biodegradable and Compostable

Product Information

Chicopee® True Confidence™

J-Cloth Biodegradable and Compostable has been certified as biodegradable and compostable.

The product is made from viscose fibres, viscose is a natural biodegradable fibre with similar characteristics to cotton. The wipe is externally certified biodegradable and compostable according to DIN EN 13432:2000-12

compostable
7P0314

J-Cloth® Biodegradable and Compostable

Product Information

Colours:

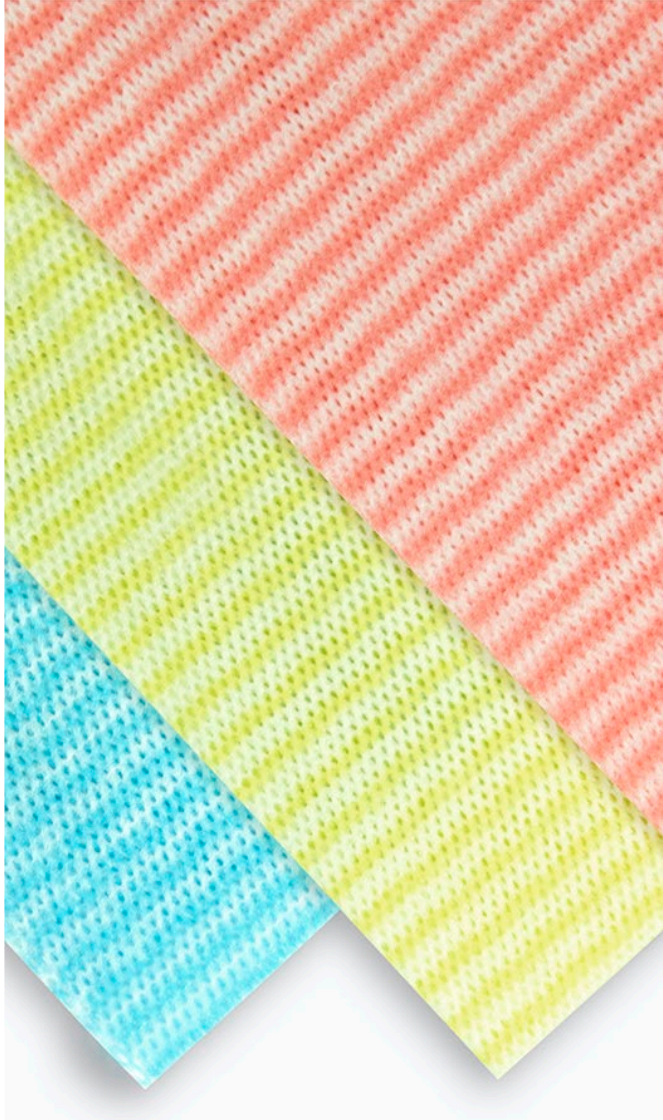
Green	Kitchen and food preparation areas.
Blue	Restaurant areas e.g. tables, trays etc.
Yellow	Disinfection of kitchen appliances; e.g. knives etc.
Red	Washrooms and toilets.

* Advisory supports HACCP guidelines, not mandatory.

Wipe Size:
43 x 32 cm

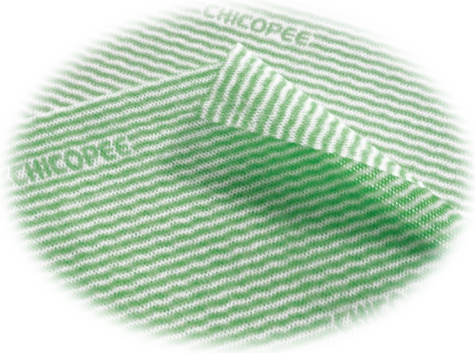
Format:
1/4 folded

Put-up:
10 x 50 wipes



Product Information

J-Cloth® Biodegradable and Compostable - Wipe



Product Features:

- Wipe is made from Viscose fibres from PEFC certified sources
- Only wipe on the market that is tested and certified Biodegradable and Compostable
- **FCC certified**, therefore the wipe may stand in direct contact with dry, moist and fatty foodstuffs
- Colour coded to suppport HACCP guidelines

Food Safe
Food Contact Cleared

Certificate for the wipe

compostable
7P0314

PEFC Certified

This product is from sustainably managed forests and controlled sources

PEFC™
PEFC/30-31-736

www.pefc.co.uk

Product Information

J-Cloth® Biodegradable and Compostable - Packaging

Product Features:

- The **shipper carton** is made from FSC certified materials
- The **polybag** is Biodegradable and Compostable in both industrial and home composting facilities according to DIN EN 13432:2000-12

Certificate for the bag

compostable
7P0342

FSC
www.fsc.org

MIX
Board from responsible sources
FSC® C051176

Product Information

How to use J-Cloth® Biodegradable and Compostable

Product Features:

- Can be used in combination with **chemicals and solvents.** The wipe is compatible with a wide range of cleaning chemicals
- Ideal for **short term usage**
- While the material is compostable and biodegradable it's not intended to be thrown away. Always **dispose of the material** in the appropriate waste bin to avoid littering and contribute to a sustainable and circular economy
- We advise to use chemicals that have the European Eco-label. Make sure to rinse the wipe before disposing.

Certificates & Sustainability

J-Cloth® Biodegradable and Compostable

Compostable and Biodegradable

- The product and it's packaging is certified industrially compostable according to the European standard EN 13432
- Products carrying the seedling logo don't effect compost quality
- Products can be put into "GFT" bins (Netherlands) or Grune Tonne (Germany)

FCC certified

- Food Contact Clearance according to rules and regulations of EC no.1935/2004 (tested by ISEGA)

Compostable
7P0342

Compostable
7P0314

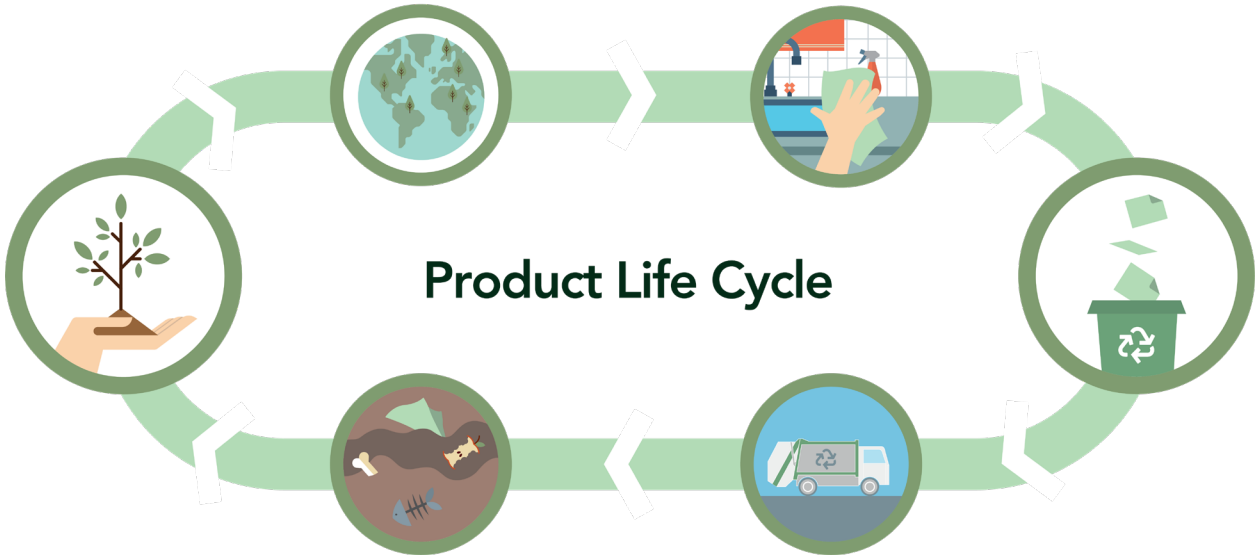
Product USPs

Features & Benefits

Product Features	Advantages	Benefit
Compostable & Biodegradable	Better for the environment at time of disposal. Can be used in a closed composting loop	Environmentally aware waste management. Has the potential to save landfill
Food Contact Clearance	No contamination in case of direct or indirect contact with food	Safe to be used in Foodservice establishments
Open Weave Structure	Better dirt pick-up due to open holes. More efficient to rinse	More hygienic cleaning. Wipe remains fresh longer
Compatible with Cleaning Agents	No reduced efficiency of wipe	No restrictions to cleaning agents used
Color Coding	Supporting HACCP regulations	Prevention of cross contamination

Composting Process

Composting is a combined process of disintegration and biodegradation in such a way that it leaves the perfect compost quality. The perfect compost quality is proven when plants are growing on the compost produced from the Chicopee wipes. The quality of the materials going into the process is highly important.



Industrial Composting is the controlled biological decomposition of organic waste under managed conditions that are predominantly aerobic (in the presence of oxygen) and that allow the development of thermophilic conditions as a result of biologically produced heat.

Explaining the Process

Disintegration & Biodegration

Disintegration

Disintegration is a mechanical degradation of a product. Wipes are mechanically broken down by weathering processes, micro organism and other processes in small pieces. From wipe to small pieces of material.

Biodegradation

Biodegradation is a chemical degradation of a product. Wipes are chemically broken down by bacteria into gasses. From carbon to carbon Dioxide (CO2).

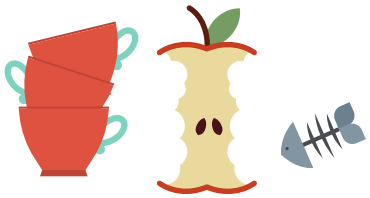
Disintegration and **Biodegradation** have to occur together, for a product to decompose completely. Water, light and oxygen are required to put the disintegration and biodegradation process in motion. Together with the right temperature (+/- 60 degrees Celsius), the best conditions for the bacteria are obtained.

Composting test standard EN12432

From Organic Waste to Compost

Factory Composting Process

Test period in EN13432 standard



12 Weeks

Disintegration

Mechanical degradation:

From wipe to 2mm particles

24 Weeks

Biodegration

Chemical degradation:
From carbon (wipe) to carbon dioxide

Test period in EN12432 standard

In fact, Biodegradation continues after compost leaves factory gates

EN - 13432

Testing

	MATERIAL CHARACTERISTICS	BIODEGRADABILITY	DISINTEGRATION	COMPOST QUALITY
What	Heavy metal contents CEN norm 13432 ASTM D 6400-04 BNQ Draft Protocol P 9011-911-5	Controlled composting biodegradation test at 58° C *(representative for industrial composting)*	Pilot-scale composting test for the quantitative determination of the disintegration under Industrial composting conditions	**Two plant toxicity tests;** 1. Summer barley plant 2. Cress plant
Duration		Maximum 6 month	12 weeks	3-4 weeks
Pass level		90% (absolute or relative to reference material)	≥ 90% of original dry weight of test material shall pass through a >2mm fraction sieve	≥ 90% of the germination rate and plant biomass of blank compost sample

Biodegradable & Compostable

The Difference Between Biodegradation & Composting

Composting is an accelerated biodegradation process due to optimized circumstances…

Naturally-occurring
Biodegradation

Human-driven
Composting

Biodegradation is the naturally-occurring breakdown of materials and microorganisms, like bacteria or fungi. **Composting** is a human-driven process in which biodegradation occurs under a specific set of circumstances. Essentially, composting is an accelerated biodegradation process due to optimized circumstances.

Certificates & Sustainability

PEFC and FSC

The end goals of both bodies are the same. Both provide schemes to protect forests and ensure end users get the responsibly sourced timber they requested.

The aim of PEFC and FSC are the same, the only difference is the approach both bodies use for the certification. The certifications add value to packaging, showing that the products are from sustainable sources and more importantly not from illegal timber.

Pan-European Forest Council

Programme for Endorsement of Forest Certification

- All entities along the supply chain must possess a PEFC Chain of Custody certificate
- Essential certification for companies to implement and demonstrate ethical business practices

FSC

Forest Stewardship Council

- FSC is a global forest certification system established for forests and forest products; to promote responsible management of the world's forests
- The FSC Chain of Custody system allows the tracking of FSC certified material from the forest to the consumer

Thank You

You are welcome to visit us at:

chicopee.com

CHICOPEE®