

# How is Biodegradable made?

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- At wet milling facility, corn starch is separated from other components of the corn kernel and into dextrose.
- The dextrose, or sugar, is fermented, in a process similar to making yogurt, to create lactic acid.
- From lactic acid NatureWorks LLC creates a molecule called lactide.
- Excess water is removed, the lactide is crystallized and used to create the high-performance biopolymer – polyactide (PLA).

# How is it un-made?

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- PLA Products will begin to break down at 150 degrees Fahrenheit and 90% humidity, the ideal composting conditions.
- In approximately 50 days within these conditions, the cups will completely break down.

# Biodegradation

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- Biodegradation is the breakdown of resins solely by living organisms, whereas PLA breaks down via heat, time and humidity. PLA cups have been certified 100% by the Biodegradable Plastics Institute. (BPI)

# Biodegradation Process

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# PLA Features & Benefits

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## ■ **FEATURES**

- 100% compostable in industrial facilities, incinerates cleanly
- 100% corn based
- Crystal clear
- Printable
- Made in the USA
- Made from a totally renewable source

## ■ **BENEFITS**

- Gives you new options in disposal, demonstrates environmental leadership
- No petroleum in the cup, reduces oil dependence
- Stylish, upscale look
- Materials and fabrication are all US Based.

# More features and benefits

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- No transfer or scalping of flavor
- No taste interference

# What are Greenware Cups

- Greenware® is a line of American-made premium cold drink cups and lids manufactured from NatureWorks® biopolymer, a resin currently derived entirely from corn. Greenware products are 100% compostable and feature a rolled rim for drinking comfort and leak-resistant lid application. Custom and stock-design prints are available.



## Update on Environmental Issues – Communities with EPS Bans

Berkeley	San Francisco
Calabasas	Santa Monica
Oakland	Capitola
Emeryville	Malibu

# Bans Better Defined

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- There's no PS Police enforcing the bans. Fines are hefty if caught.
- The bans are becoming more creative on what you can and can't do.
- 9\24\07 NYC Paper claimed group called PASS (Parents against Poly Styrene), to block 4 million school trays to our kids.

# What do we do?

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- Stay informed in your your areas!

# Other “Green” Initiatives

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- Post Consumer Recycled Resins
- All APET (I.e. water bottles) – 20% Post Consumer (P.C.) Content
- Looking at possible P.C. content in CPET (ovenable trays)
- P.C. polystyrene resin introduced in the Southeast for School trays
- Cutlery made from potato starch
- More.....

# continued

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- Biodegradable garbage liners
- Napkins and toilet tissue made from 100% post consumer recycled paper

# Competitive Offerings by the “other guys”

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## **Dart**

To date they have nothing to offer that is biodegradable.

## **Pactiv**

We know they are looking at options, but to date have nothing other than their crushed milk carton line to offer.

## **Cryovac**

There is a rumor that they have a blown PLA blended meat tray and that Wild Oats is using it, but as of yet we have not had any confirmation of this.

# Other Green Options

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- PHB- Grass and Starch
- Palm Fiber
- Pulp
- Bagasse- Sugar Cane
- Looking into a blend of High Heat PLA

# What we have that they don't..

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- Made in the good old USA.
- Cut resistant. Eat any good Pulp lately? Durability of a High impact product.
- BPI (Biodegradable Plastics Institute) Certified...(there are great concerns about pulp and bagasse as to what additives are being used.)