

# PlasTerra™

**a new era of plastic**

a Sustainable offering from  
Alcoa KAMA



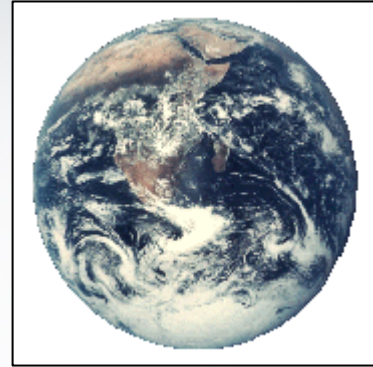
# Etymology



**Plastic**



+



**Terra** - Latin for earth

**PlasTerra**

# Background

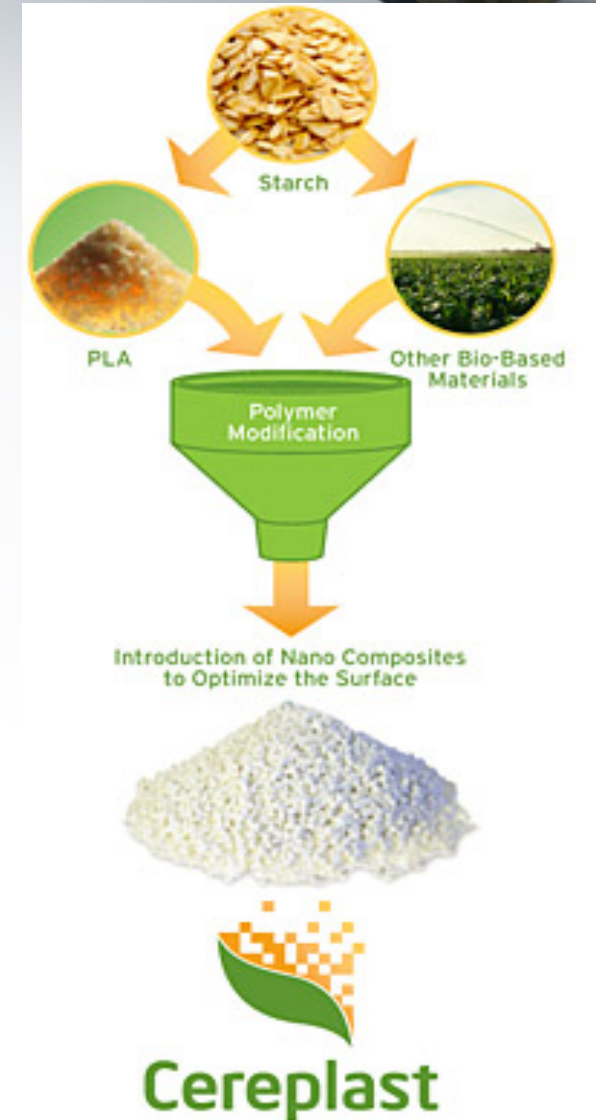


- PlasTerra™ sheet is a biodegradable and compostable plastic made using a blend of various commercially available bioresins
  - Includes Starch, PLA, and other fillers
- Alcoa KAMA has been working with Cereplast to develop this material for the extruded sheet and thermoforming markets

# Who is Cereplast?



- Based in Hawthorne, CA
- Designer and manufacturer of proprietary starch-based renewable resins
- Commercial partnership with KAMA for extruded sheet
- Resins have a patented and proprietary manufacturing process



# Sustainability



PlasTerra™ sheet has three key attributes that make the product ‘sustainable’

1. It is made from primarily **Renewable Resources**
  - Organic raw materials come from corn and other vegetables
  - ASTM D6868
2. It is **Compostable**
  - ASTM D6400 certifies biodegradability in a municipal or industrial composting environment
3. When composted, PlasTerra™ sheet will NOT reduce the value or utility of the finished compost and is not harmful to the environment in any way (as specified by ASTM D6400)

# Compostability - clarification



- Per ASTM D6400, this product can be composted in *industrial compost facilities*
- Such facilities reach temperatures above 135°F and have the specific ratio of chemicals and bioactivity required for complete and safe biodegradation.
- This product is not specifically designed to biodegrade in a landfill or in a backyard compost bin/gardening environment.

# Certified Claims



- **BPI seal of compostability**
  - Biodegradable Products Institute ([www.bpiworld.org](http://www.bpiworld.org))
  - ASTM 6400 BPI compliant
- **FDA Compliance**
  - KELLER & HECKMAN compliance opinion
- **Biobased Content:**
  - ASTM 6868-o4a +90% (Radio-Carbon process)

# Product Characteristics

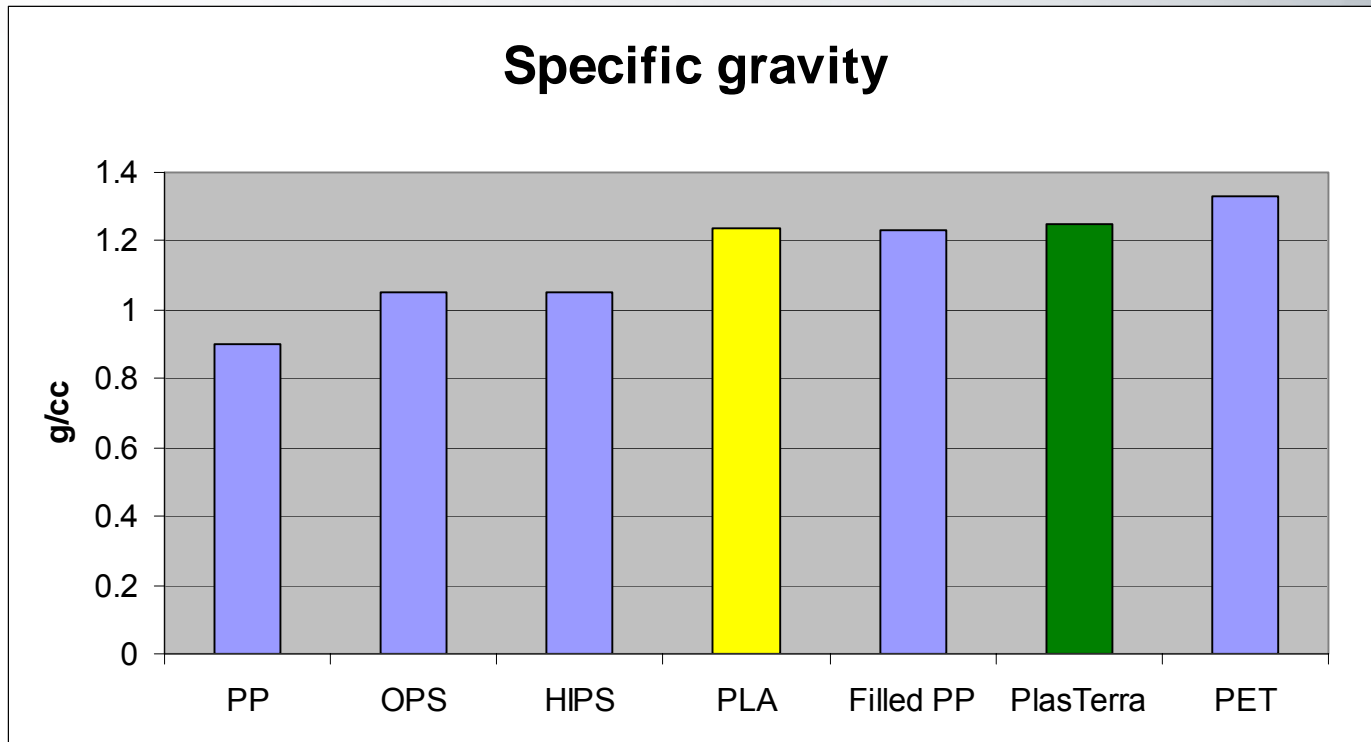


- PlasTerra™ sheet is a **Stiff, Opaque** material that **thermoforms very easily** and **surpasses** the thermal limitations of other bioresins in the marketplace.

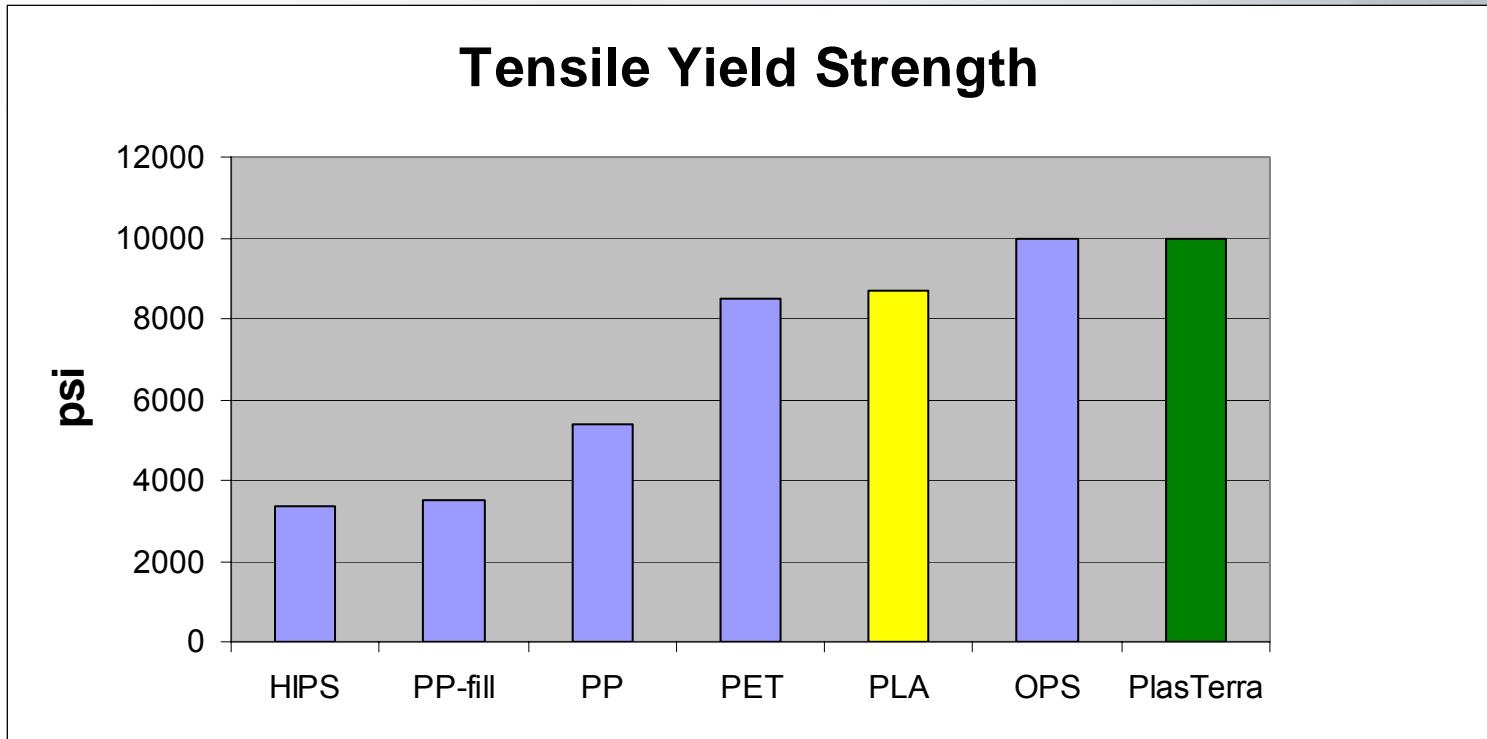
	<b>PlasTerra</b>	<b>PLA</b>	<b>HIPS</b>	<b>PP</b>
Thermal Stability	Good	Poor	Better	Best
Stiffness	Best	Best	Average	Average
Impact Strength	Average	Poor	Best	Best
Density	1.25	1.24	1.06	0.90

- Top quality performance, including rigidity
- Higher thermo-resistance
- Greater strength than PLA
- Not brittle

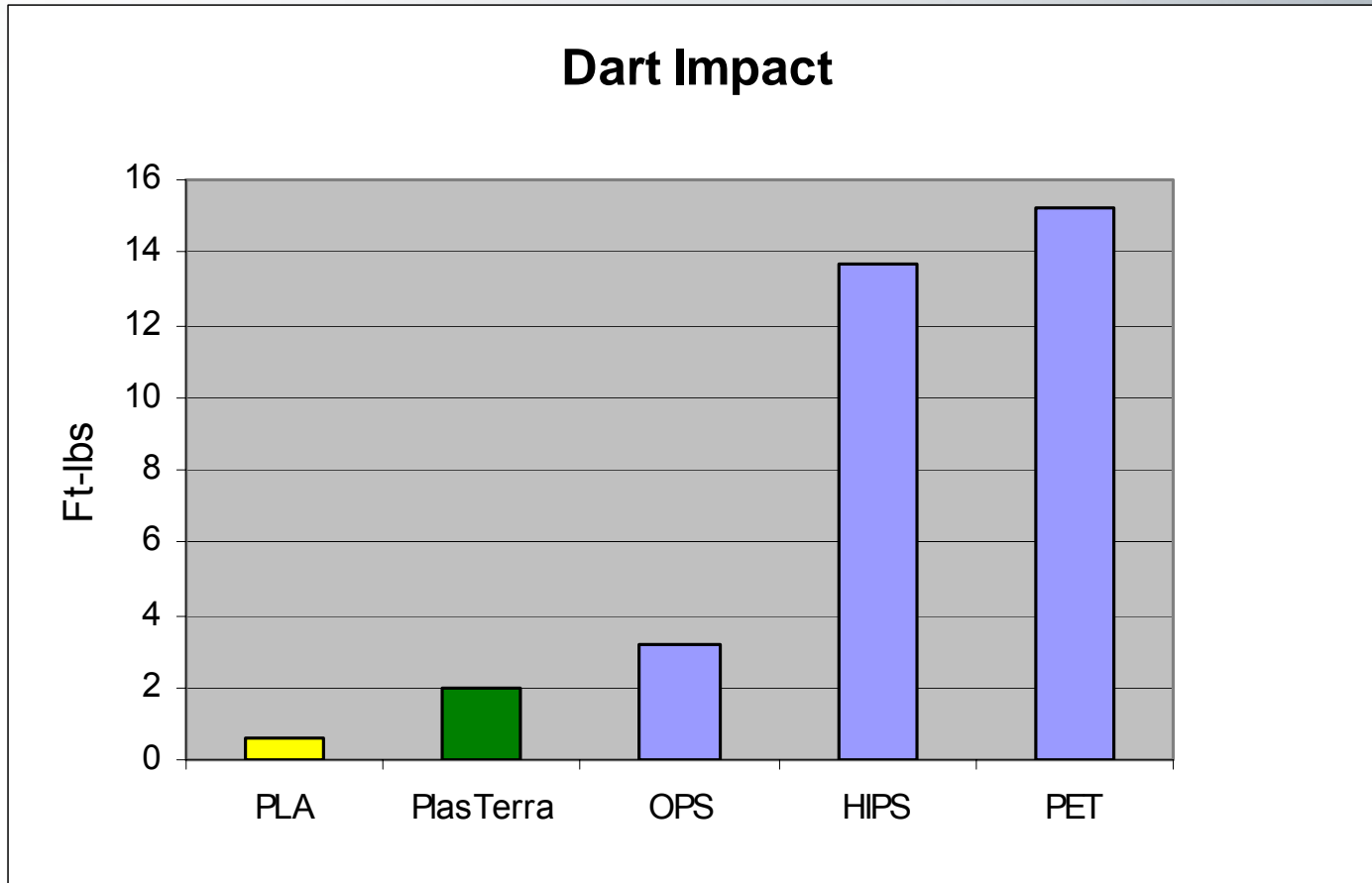
# Specific Gravity



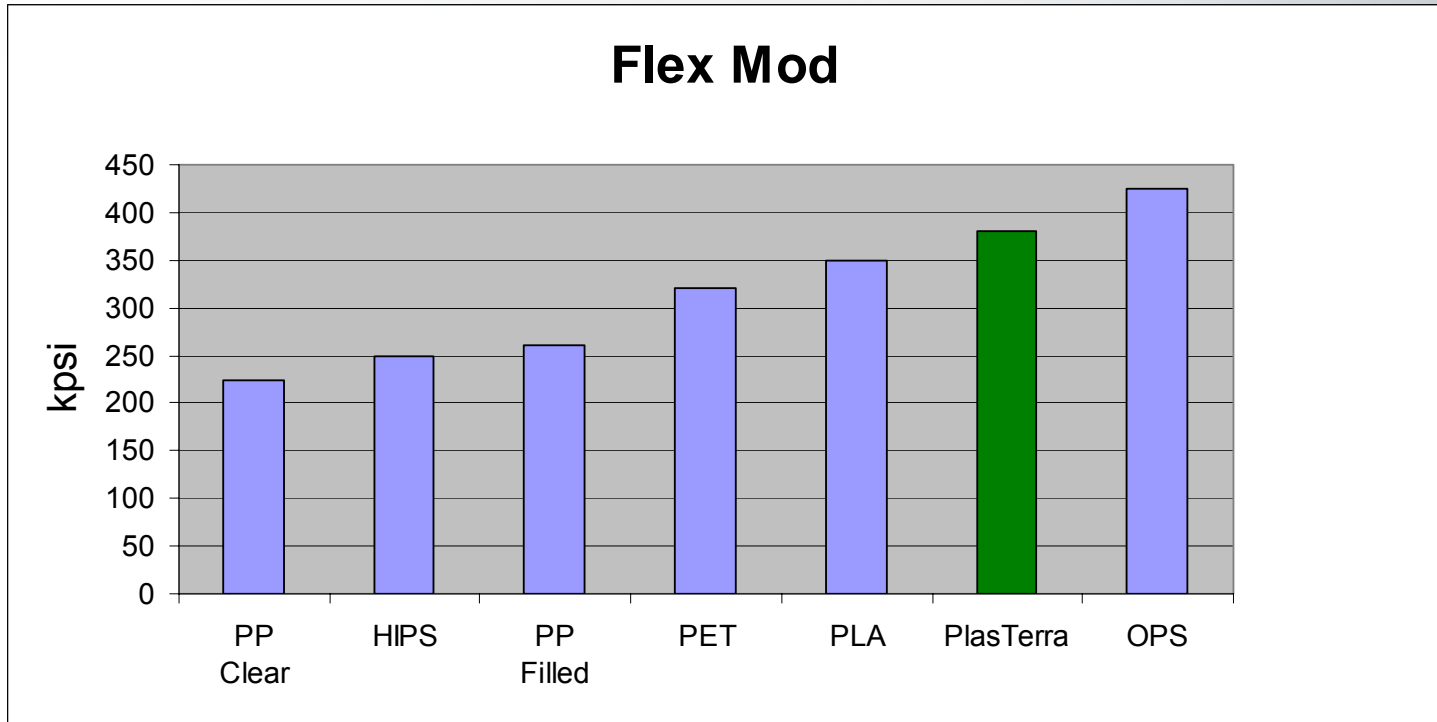
# Tensile Strength



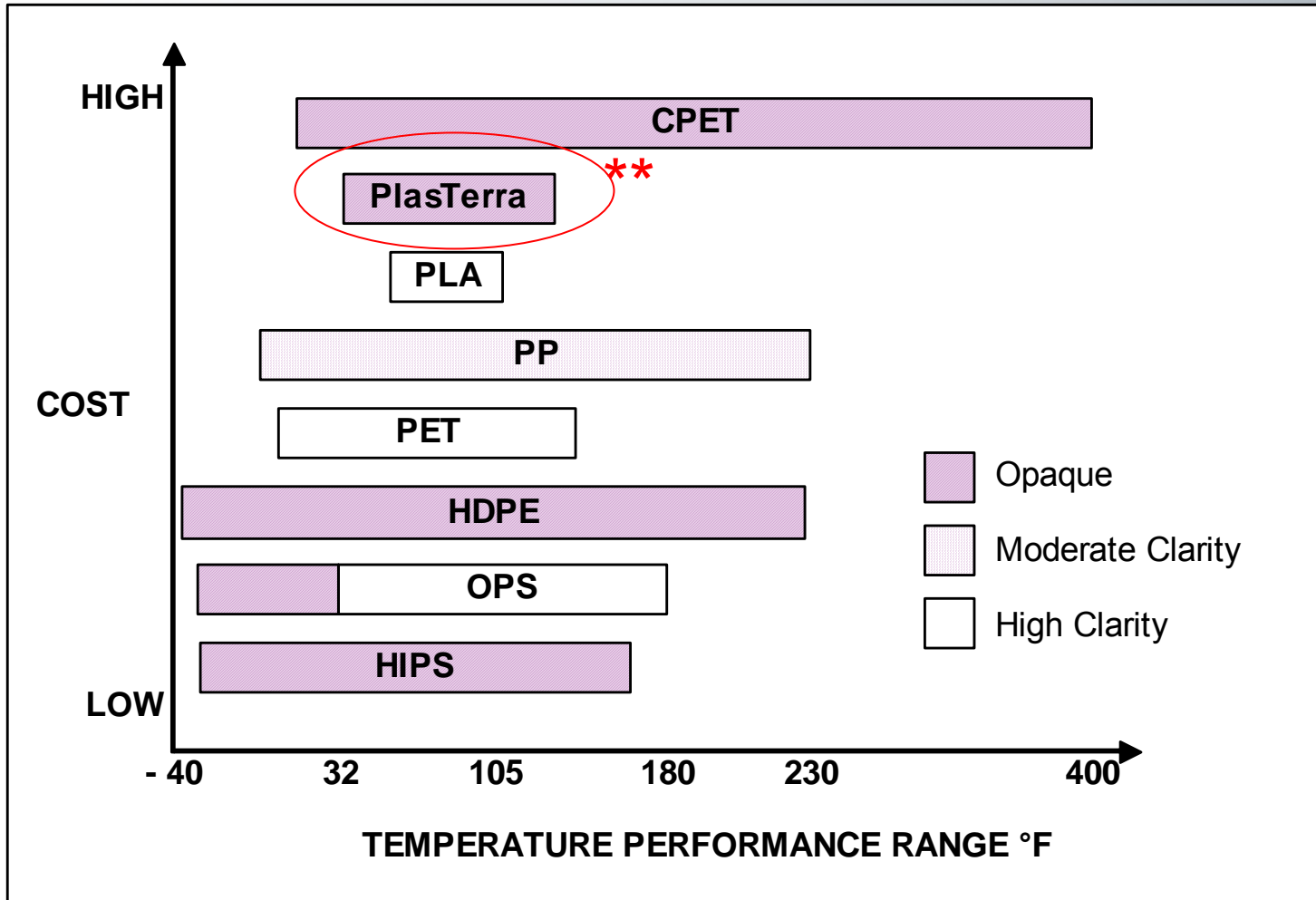
# Impact Strength



# Flexural Modulus



# Temperature Performance



# Limitations to Temp Performance\*\*



Green dots are actual values. Un-filled dots are estimated.

- Performance limitation is directly affected by part thickness and part structure
- Best possible service temperature is around 150°F
- Parts thinner than around 15mil do not have significant advantage over PLA and other bioresins

# Summary



- PlasTerra™ sheet is a new bio-resin product extruded by Alcoa KAMA
- It is 100% Compostable and made from renewable resources
- It has:
  - High stiffness
  - Moderate impact strength
  - Better yield than PET
  - Better thermal performance than PLA
  - Key downside: poor clarity

# Thank you

