

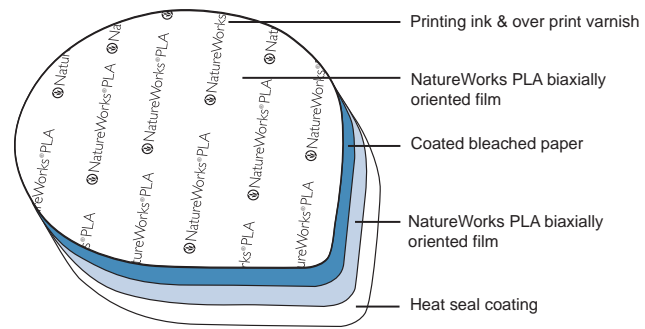
# Top It Off With NatureWorks® PLA

## Dairy and Delicatessen Container Lidding Solutions

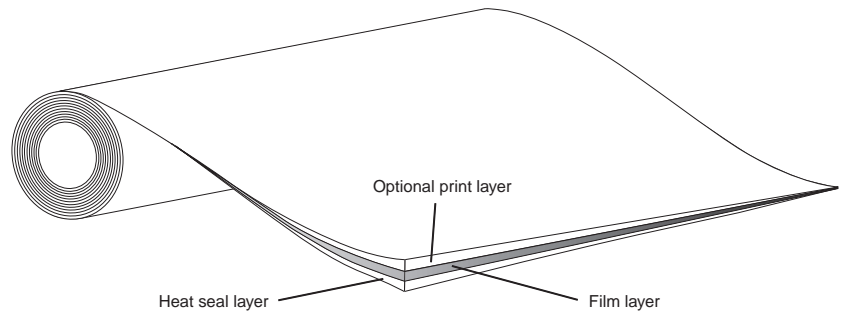
Container lidding made from NatureWorks® PLA is an annually renewable based alternative to traditional petroleum-based plastics. Offering brand owners and retailers a high quality container that comes with an environmental appeal, and point-of-sale marketing advantage, NatureWorks PLA is a natural based package for natural food products.

Numerous companies around the world have successfully incorporated NatureWorks PLA into their dairy and delicatessen food packaging. Typical lidding applications include yogurt cups, sandwich containers and fresh food trays for fruit, pasta, cheese and other delicatessen products. Dairy and delicatessen packaging made with NatureWorks PLA, and sealed with lidding made from NatureWorks PLA, is a 100% compostable package when disposed in industrial facilities, according to ISO, CEN, ASTM, BPI, GreenPLA and DIN draft regulations (visit [www.natureworkslc.com](http://www.natureworkslc.com) for regional specifications). It also offers the potential for recycling back to monomer for polymer production.

### Compostable Dairy Lidding Solution

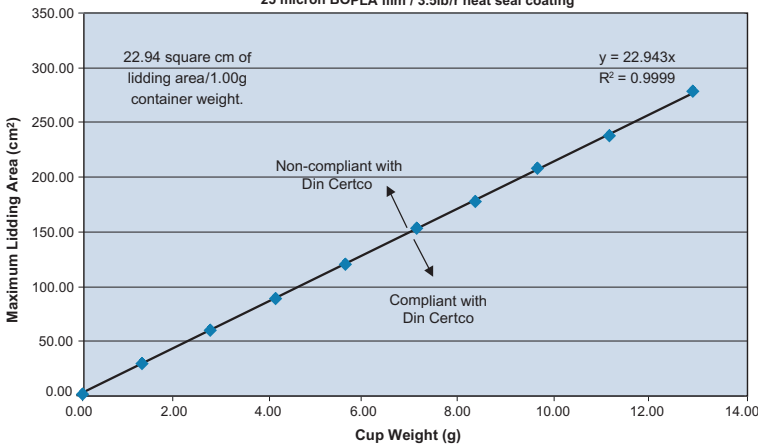


### Compostable Delicatessen Lidding Solution



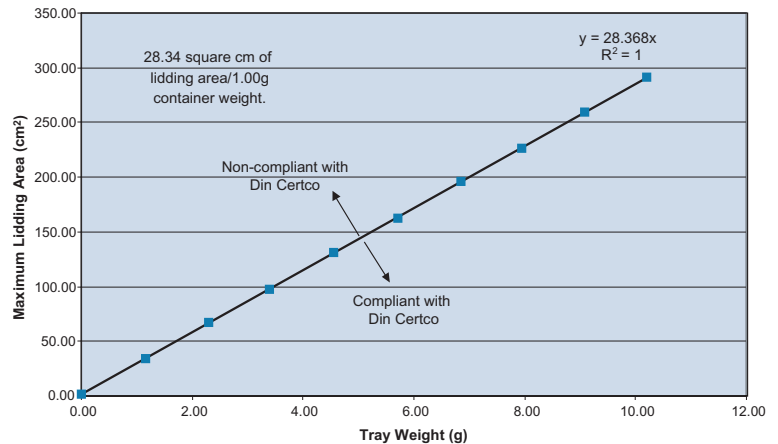
#### Maximum Lidding Area to Cup Weight for Compostable Dairy Lids

Lidding Composition - 20 micron PLA film / 2.0lb/r adhesive / 40# C2S paper / 2.0lb/r adhesive / 25 micron BOPLA film / 3.5lb/r heat seal coating



#### Maximum Lidding Area to Container Weight for Peelable Deli Lidding

Lidding Composition - 40 micron PLA film / 2.5lb/r heat seal coating



## Performance Characteristics

Properties important for lidding applications are flavor and aroma barrier, heat sealability, printability and processing ease. If barrier to moisture and oxygen are needed, then the use of a metalized NatureWorks® PLA film will offer barrier in the lidding structure.

**Flavor & Aroma Barrier** – In tests, films made with NatureWorks PLA exhibited no detectable permeation of flavor and aroma compounds, either into or out of a food product, even at temperatures up to 47°C.

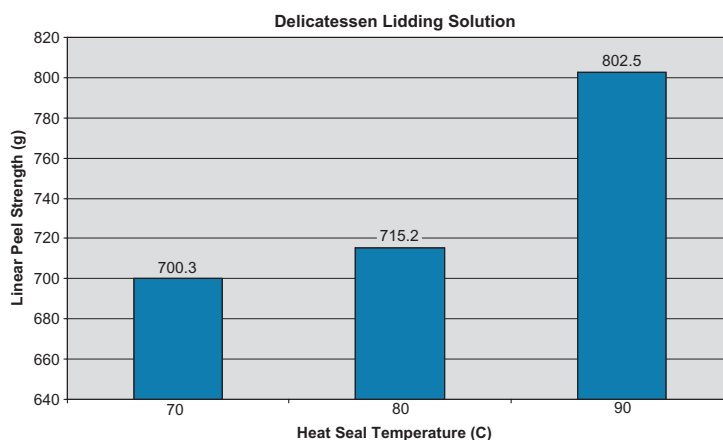
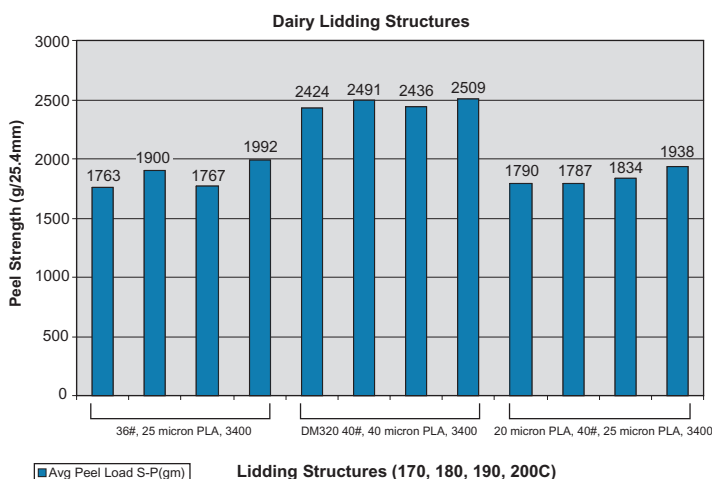
These films also exhibited strong resistance to most oils and fats used in food products.

**Heat Seal** – Lidding made from NatureWorks PLA can have a low temperature heat seal layer, which is illustrated in the charts below. Initiation temperatures for heat sealing are as low as 80°C, with heat seal strengths of greater than 1.5 lb/in.

**Printability** – The natural surface energy of NatureWorks PLA is 38 dynes/cm<sup>2</sup>, which is

acceptable for many ink formulations and gives the polymer printability. Moreover, it readily accepts both corona and flame treatments, raising the surface energy greater than 50 dynes/cm<sup>2</sup> and providing a variety of options for printing ink formulations.

**Processing** – Lidding made from NatureWorks PLA film handles well during processing because it lies flat and feeds well through pick and place machinery.



## Resources

### Lidding Manufacturers of NatureWorks PLA

**Clear Lam Packaging, Inc.** • 1950 Pratt Boulevard • Elk Grove Village, IL, USA 60007-5993 • Phone: (847) 439-8570

**Acorn Packaging** • 2333 Milrace Court • Mississauga, Ontario, Canada L5N 1W2 • Phone: (905) 826-6000

**Label Makers Inc.** • 8911 102nd Street • Pleasant Prairie, WI, USA 53158 • Phone: (262) 947-3300

### Component Suppliers for Lidding Made from NatureWorks PLA

**Stora Enso North America (paper)** • Stevens Point Mill

707 Arlington Place, P.O. Box 227 • Stevens Point, WI, USA 54481-0227 • Phone: (715) 345-8692

**H.B. Fuller (adhesive/heat seal coating)** • 3530 North Lexington Ave. • St. Paul, MN, USA 55126 • Phone: (651) 236-3173

**UPACO (adhesive/heat seal coating)** • 304 N. Main St. • Jefferson, WI, USA 53549 • Phone: (920) 674-4593



For more information about NatureWorks PLA, please visit us on the Web at [www.natureworksilc.com](http://www.natureworksilc.com).

For information about becoming a converter of lidding made from NatureWorks PLA, please call 877-423-7659 in North America; 31-(0)35-699-1344 in Europe; 81-33-285-0824 in Japan.