

Need fresh ideas to cut your packaging cost?

...Take a look at our new series of **Super-Tough Surlyn®**

The Challenge

Upgrade your packaging to meet today's brands and consumers needs (*) :

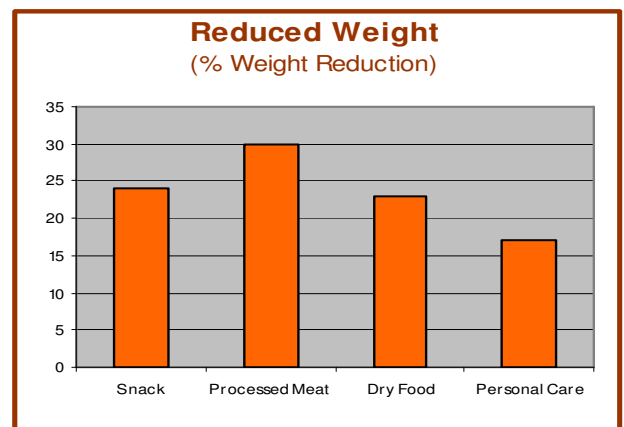
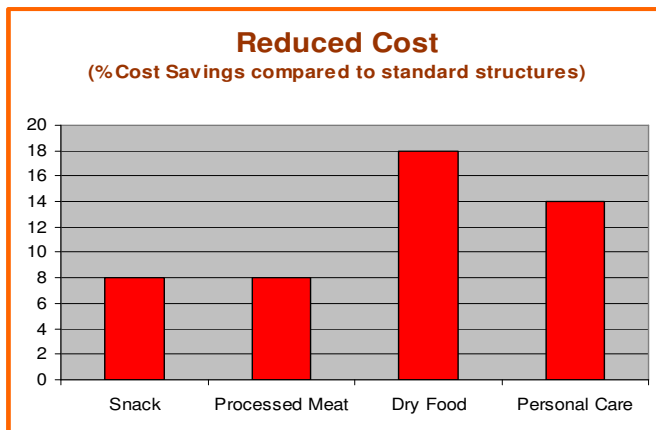
- Freshness
- Taste
- Safety
- Clarity
- Convenience
- Waste reduction

...without adding cost !

(*) DUPONT, THE SCIENCE OF FRESH - Visit us at www.scienceoffresh.com

Our Solution

Re-engineer your packaging structures and deliver up to 18 % cost savings...



....with no trade-offs:

- Maintained stiffness at lower thicknesses
- Maintained or enhanced mechanical properties
- Improved pack integrity

... Thanks to the new
series of
Super-Tough Surlyn®

For a more detailed discussion on how DuPont can help you redesign your packaging structure, please contact your local DuPont representative or visit : www.Packaging.DuPont.com or www.ScienceOfFresh.DuPont.com



The miracles of science™

Processed Meat Deep Forming structure

The Challenge

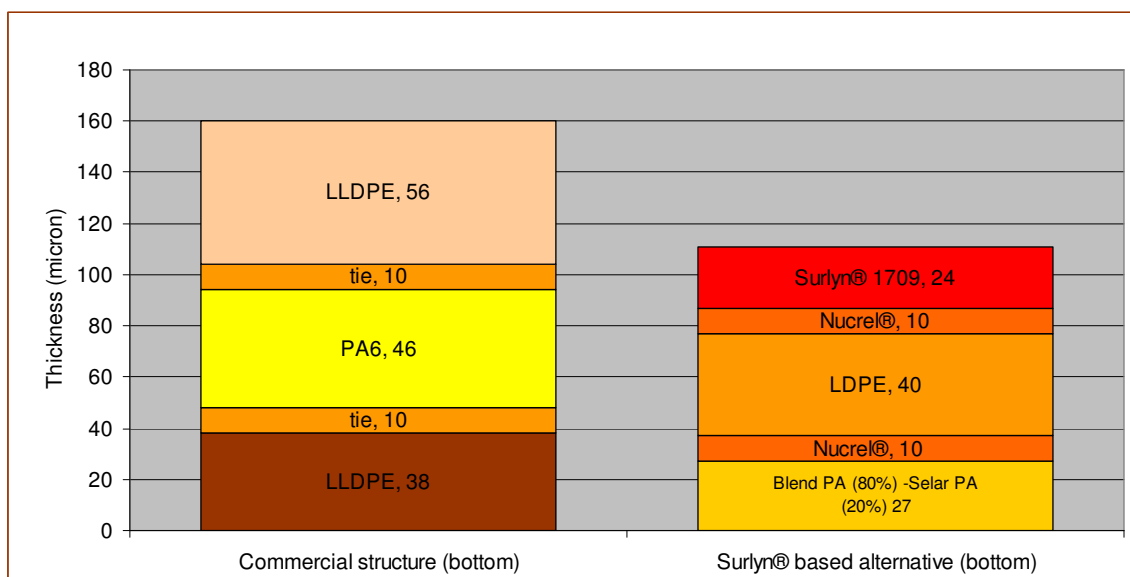
Standard structure: LLDPE /tie/PA6/tie/LLDPE (Bottom web)
38 µm/10 µm/46 µm/10 µm /56 µm

LLDPE /tie/PA6/tie/LLDPE (Top web)
19 µm/5 µm/23 µm/5 µm /28 µm

Surlyn® based alternatives:

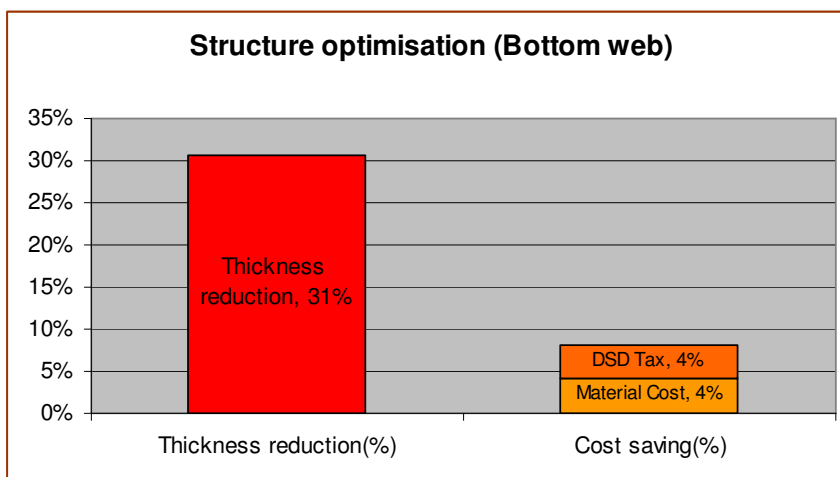
Surlyn® 1709/Nucrel®/LDPE/Nucrel®/
Blend PA 80%-Selar PA 20% (Bottom web)
24 µm/10 µm/40 µm/10 µm /27 µm

Surlyn 1709/Nucrel/LDPE/Nucrel/Blend
PA 80%-Selar PA 20% (Top web)
12 µm/5 µm/20 µm/55 µm /13 µm



Our Solution

DuPont™ alternative structures based on a blend of Selar® PA combined with Nucrel® and Super-Tough Surlyn® 1709 layers provide uncompromised benefits:



- Direct Cost savings: 4%
- Reduced DSD* fee: 4%
- Reduced weight: 30%
- Maintained stiffness
- Outstanding gloss and clarity
- Improved thermoforming

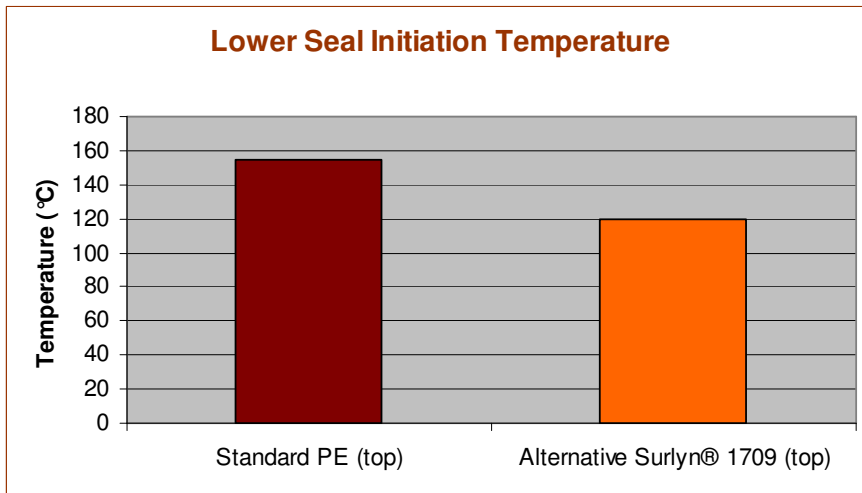
* : Duales System Deutschland



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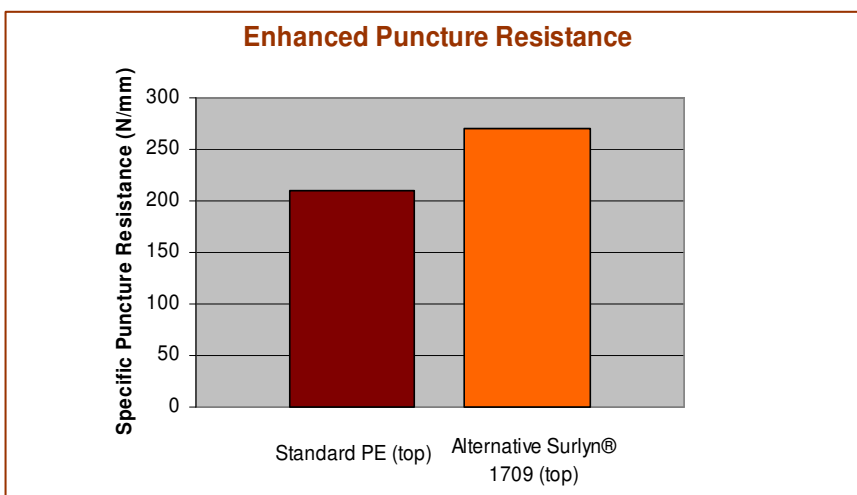
Processed Meat Deep Forming structure

Improved Performance



- Lower Seal Initiation Temperature
- Faster cycle times
- No polymer residue on seal jaws

Test Conditions: Sealing: Heat sealer Sentinel (heating on upper side), Dwell pressure: 0.3 MPa, Dwell time: 1 sec.



- Outstanding toughness
- Better Puncture Resistance with 30% less thickness

Test Conditions: Extensiometer ZWICK 2.5, Pointer: round shape of Ø 2.5mm, Test speed: 0.1 mm/min



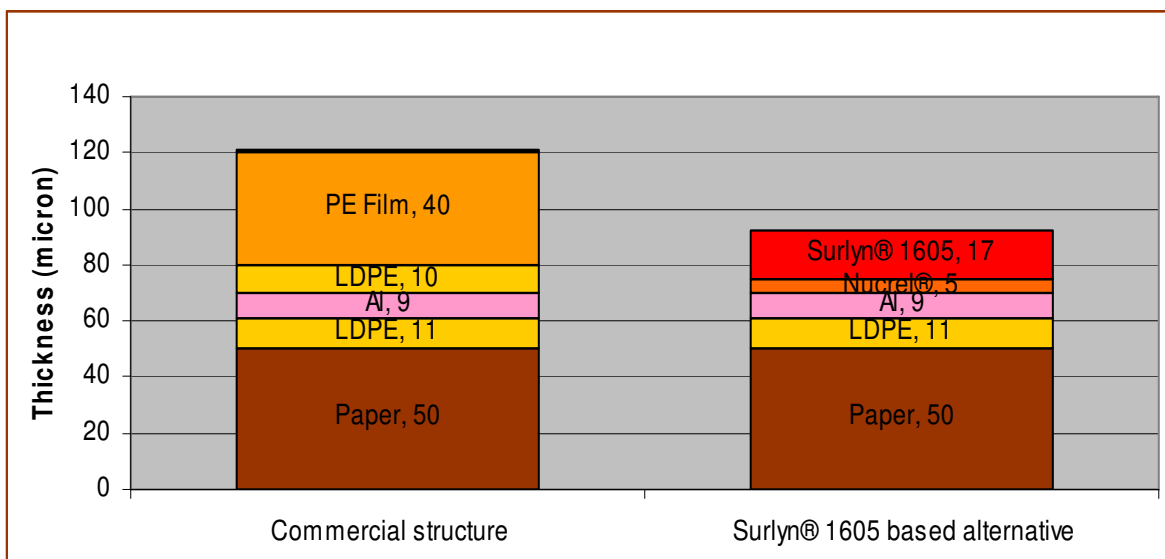
The miracles of science™

Dry Food Paper Based sachets

The Challenge

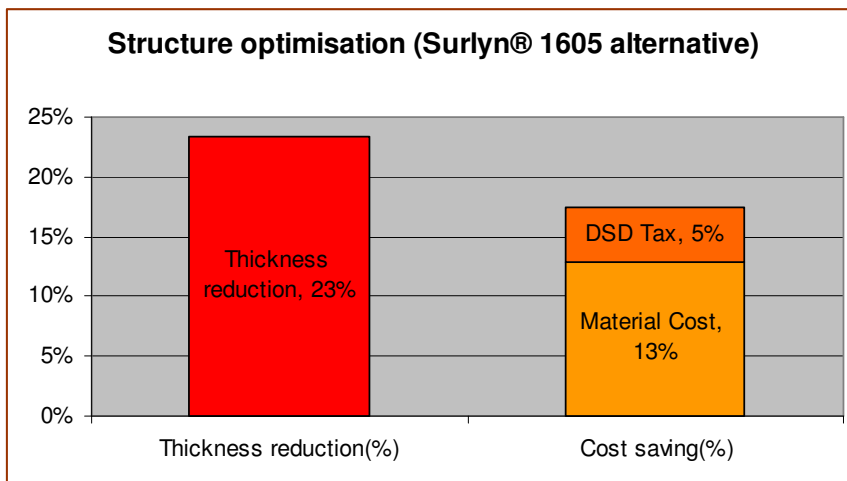
Standard structure: Paper//PE//Al//PE//PE film
50 µm//11 µm/9 µm/10 µm//40 µm

Surlyn® based alternatives: Paper//PE//Al//Nucrel /Surlyn® 1605 or Surlyn® 1709
50 µm/11 µm/9 µm/5 µm /17 µm



Our Solution

Super-Tough Surlyn® based alternative structures bring uncompromised benefits:



- Material savings: up to 13%
- Reduced DSD* fee: 5 %
- Reduced weight: up to 23%
- Maintained stiffness

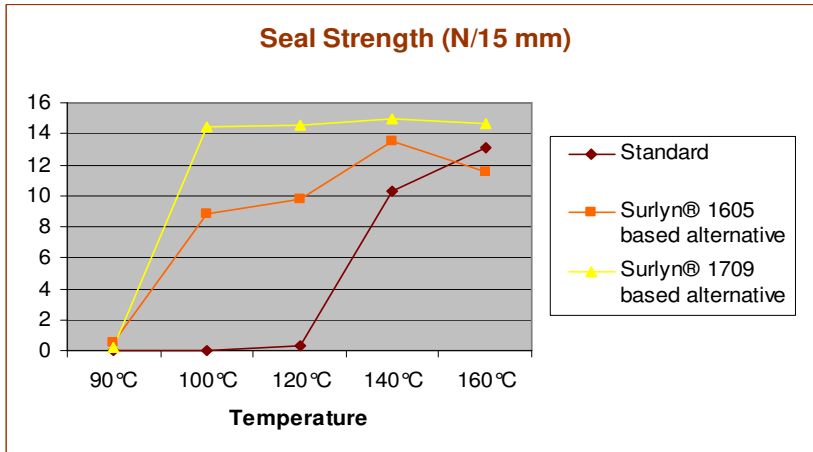
* : Duales System Deutschland



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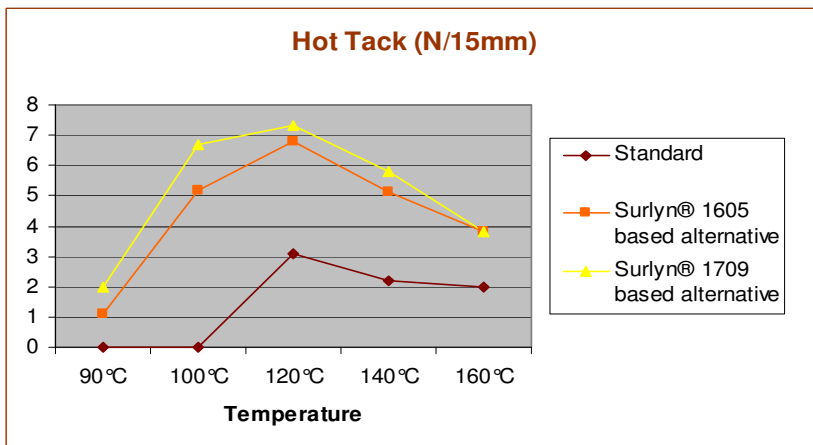
Dry Food Paper Based sachets

Improved Performance



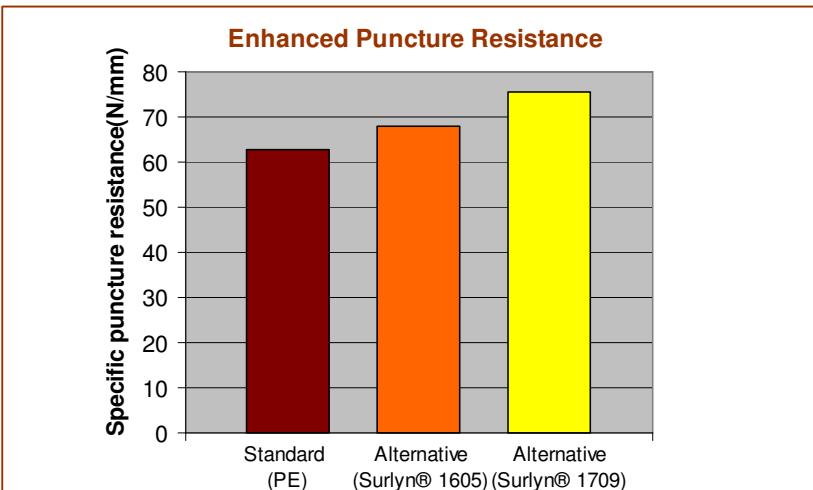
- Lower Seal Initiation Temperature
- Higher Seal Strength

Test Conditions: Sealing: Heat sealer Sentinel (heating on upper side), Dwell pressure: 0.3 MPa, Dwell time: 1 sec.



- Improved Hot Tack and faster line speed
- Wider sealing temperature range

Test Conditions: Hot Tack Tester, Dwell pressure: 0.3 MPa, Dwell time: 0.5 s, Delay time: 0.2 s, Cross head speed :150 mm/s



- Enhanced Puncture Resistance at lower thickness

Test Conditions: Extensiometer ZWICK 2.5, Pointer: round shape of Ø 2.5mm, Test speed: 0.1 mm/min



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Personal Care

Liquid soap sachet

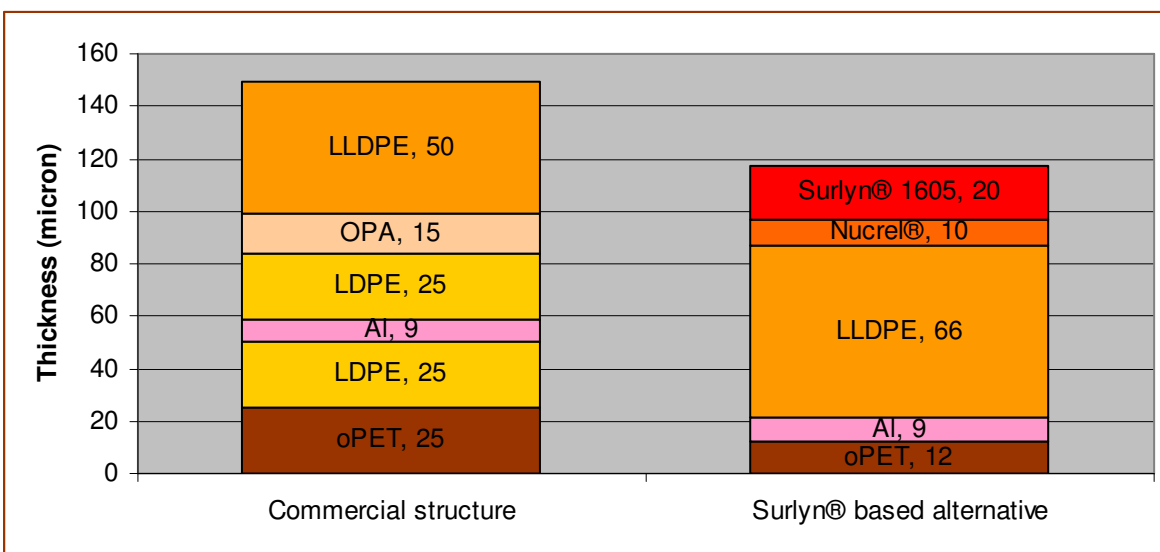
The Challenge

Typical 4-ply structure:

oPET//PE//Al// PE//OPA//LLDPE
 25 µm//25 µm//9 µm//25 µm //15 µm//50 µm

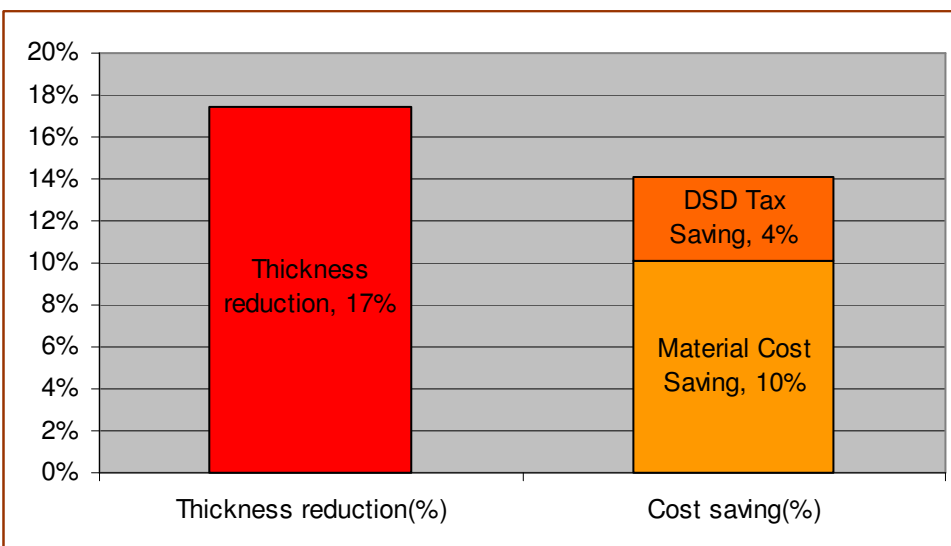
Triplex Surlyn® based alternative:

oPET//Al//LLDPE/Nucrel / Surlyn® 1605
 12 µm//9 µm//66 µm/10 µm/ 20 µm



Our Solution

Super-Tough Surlyn® based alternative structures bring uncompromised benefits:



- Material Cost savings: 10%
- DSD* Tax saving: 4%
- Reduced weight: 17%
- Lower manufacturing cost (triplex)

* : Duales System Deutschland

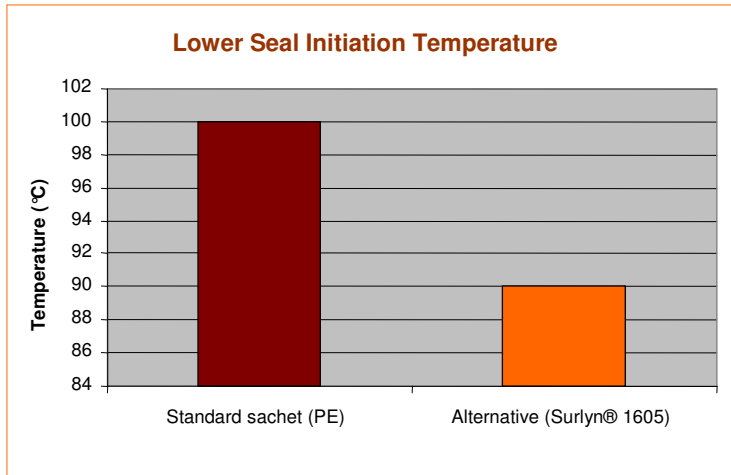


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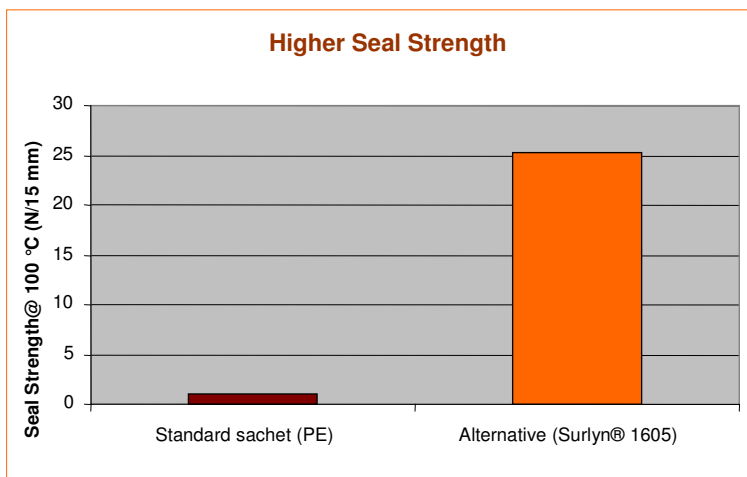
Personal Care

Liquid soap sachet

Improved Performance



- Lower Seal Initiation Temperature
- Faster cycle times



- Higher Seal Strength

Test Conditions: Sealing: Heat sealer Kopp (heating on both sides), Dwell pressure: 1MPa, Dwell time: 0.3 sec.

Packaging Trials

Structure	Cycles /min	Temperature (°C)	Burst force (N)
Alternative (Surlyn® 1605)	70	160	26000

- Outstanding Burst Force for high packaging production speed (Application target: >10000 N)
- Clean profile with no polymer residue on seal jaws

Test Conditions: - Pouch Dimensions: 60 X 65 mm
- Filling/Sealing Tests, LA160



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