

Sherpack Final Workshop



**Sustainable and innovative fiber
solutions for tomorrow**

Raphaël Bardet | Ahlstrom-Munksjö

How will fiber-based solutions support the move to more sustainable flexible packaging ?

SHERPACK

RAPHAËL BARDET, HEAD OF BUSINESS PARCHMENT, AHLSTROM-MUNKSJÖ



A global leader in fiber-based solutions

Fibers are at the core of what we do and the common denominator for our products and solutions

8,000 employees

More than **7,000** customers in over **100** countries

Global network of sales offices and **45** plants and converting sites in **14** countries

Net sales of about EUR **3** billion

Headquartered in **Helsinki, Finland**



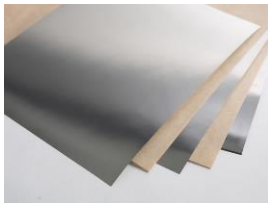
Figures are illustrative and include the acquisitions of North America Specialty Solutions and the plant in Caieiras, Brazil.



Ahlstrom-Munksjö R&D Capabilities

- Ahlstrom-Munksjö has extensive research and development capabilities in each business area all around the world. Product development is carried out at the different plants and/or in cooperation with the Group's Research Center.
- 2 sites in France (Pont-Evêque & Apprieu) with 68 employees dedicated to new products development, technical assistance to businesses, customers, plants and new technology platform investigations.
- These 2 sites have complementary expertise and equipment.
 - Expertise in paper and nonwoven technologies, surface treatment and converting techniques, polymers processing, synthetic fibers...
 - State of the art equipment covers
 - Pilot refiner, pilot paper machine, industrial coaters, polymer processing line
 - Application laboratories i.e. Water, Life sciences, Food, Décor
 - High-tech analytical equipment
 - General testing including barrier properties





Our materials are part of products in your everyday life

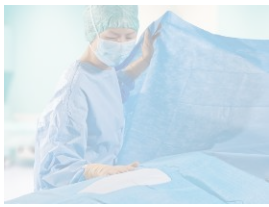
We offer custom made specialized fiber based materials

Natural fibers represent 94% of our total fiber use

Our value proposition is based on innovation, quality and service

Our offering contributes to a more sustainable everyday life





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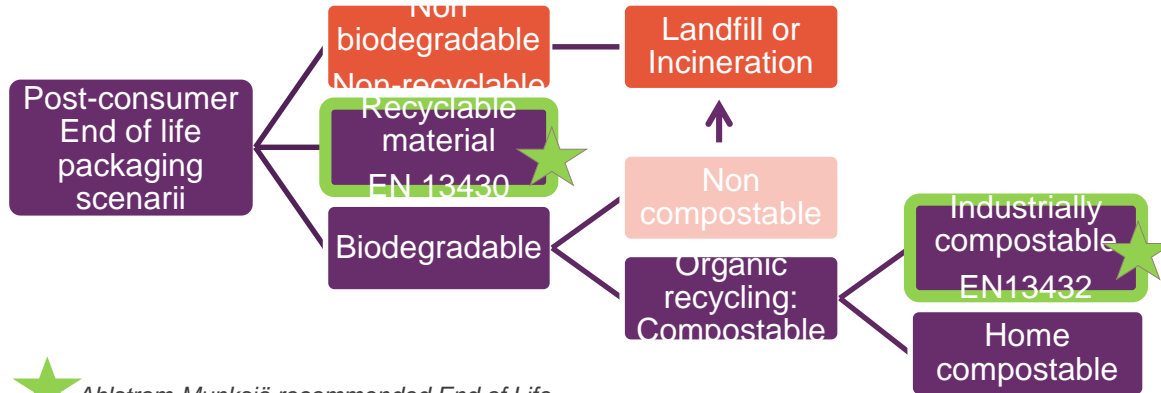


Our innovation roadmap to create sustainable flexible packaging

	<ul style="list-style-type: none">• virgin natural fibers sustainably-sourced from responsibly managed forests (FSC®, SFI®, PEFC™)
	<ul style="list-style-type: none">• Provide one or more of these functions<ul style="list-style-type: none">• Gas barrier• Moisture barrier• Grease resistance• Mineral oil barrier• Heat sealability• Abrasion resistance• Heat resistance
	<ul style="list-style-type: none">• Direct food contact compliance (BFR & FDA)• BRC Food Safety Certification
	<ul style="list-style-type: none">• End of Life optimization<ul style="list-style-type: none">• Acceptability into recycling and/or composting streams
	<ul style="list-style-type: none">• Strong focus on lightweight solutions



Packaging waste management and End-of-life scenario(s)



★ Ahlstrom-Munksjö recommended End of Life



- The most “sustainable” choice for the end-of-life of a packaging mostly depends on its end-use..

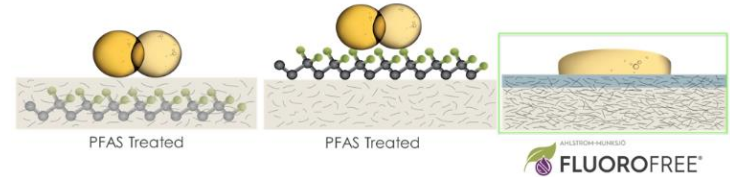




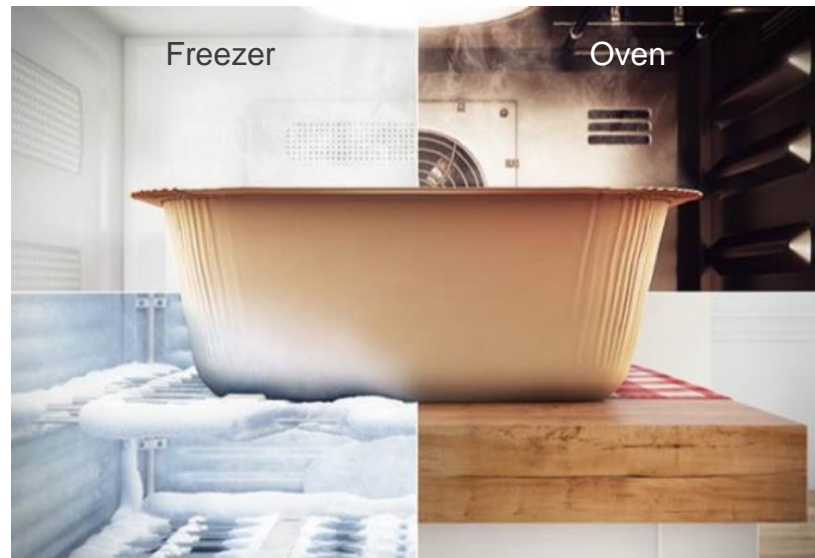
AHLSTROM-MUNKSJÖ

FLUOROFREE®

- FluoroFree® is a renewable, compostable and recyclable greaseproof paper that contains no PFAS
 - We phased out PFAS by designing a specific bio-based coating and process optimization
- Applications range from bags, basket liners to microwave popcorn bags etc.
- Benefits
 - Up to KIT test 8 level equivalent
 - Superior printability
 - Food certified up to 220 °C (Eg. BfR, FDA)
 - Recyclable (EN13430)
 - Suitable for home and industrial compostability (EN13432)



- NatureMold™ is suitable for thermoforming or folding food trays and containers for frozen and chilled ready meals, pizza, bake-and-serve trays and foodservice applications
- This is the sustainable alternative to replace plastic or aluminum component for molds and trays
- Benefits
 - Superior baking performance
 - Food certified up to 220 °C (Eg. BfR, FDA)
 - No loose fiber that could transfer to food
 - Can go from a freezer to an oven
 - Customizable with colors and ink free patterning
 - Recyclable (EN13430)
 - Home and industrial compostability certified (EN13432)



CRISTAL™ TRANSPARENT PACKAGING

- Cristal™ is a transparent paper with various levels of transparency as an alternative to (bio)plastic films
- Cristal™ can be used to create window-bags or window-containers for food to create an all-paper packaging solution; or as a solution for paper straw overwrap
- **Benefits**
 - 100% fiber based
 - Excellent transparency level
 - Clean: fiber and dust free
 - Paper look: unique touch and feel
 - Recyclable (EN13430)
 - Home and industrial compostability certified (EN13432)



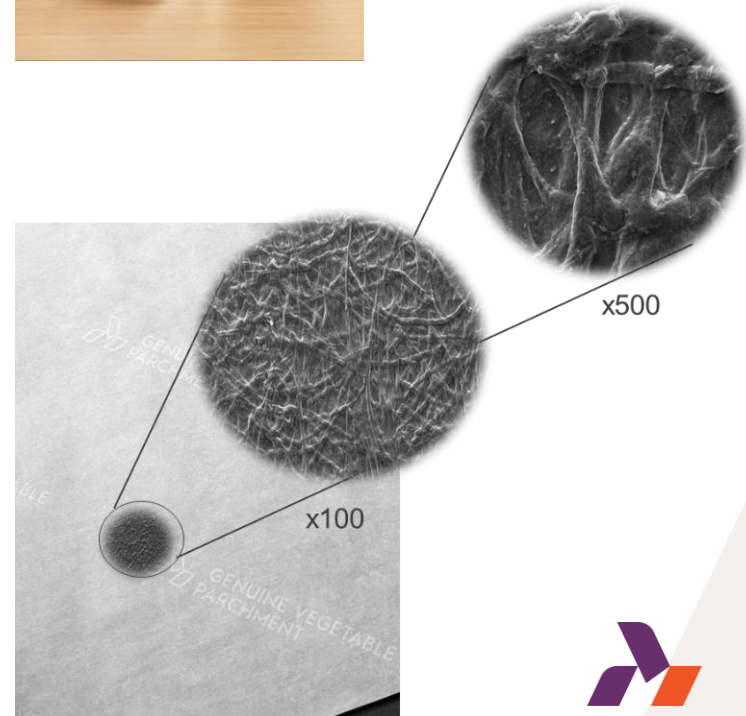


- In 2019, we launched CelluStraw™: an uncoated paper composed of selected cellulosic fibers which combines good wet strength and exceptional mechanical resistance.
- CelluStraw™ is an eco friendly solution for single-use straight or U-shaped straws used for cold drinks
- Benefits
 - Complying with food contact regulations (Eg. BfR, FDA)
 - Designed for high speed U-shaped paper straw machine
 - Retains its shape once converted
 - Can withstands in liquids for the required period of time
 - Recyclable (EN13430)
 - Home and industrial compostability certified (EN13432)





- Introducing groundbreaking PureBarrier™; an oxygen and gas barrier material made out of 100% cellulose fibers
- PureBarrier™ is the ultimate bio-based material to replace plastic or aluminum film in barrier packaging such as paperboard can and lid
- Benefits
 - Monomaterial
 - Oxygen and gas barrier properties
 - Does not contain any loose fiber or chemicals
 - Barrier to mineral oil (MOSH/MOAH)
 - Heatsealability possible with biopolymer
 - Industrial compostability (EN13432)



How we will get the barrier properties?

Short term packaging solution

- Introduce paper as part of the finished packaging solution (complex material)
- Increase Biosourced raw materials & decrease oil-based plastic usage, target recyclability,
 - *Existing/old grades to be barrier coated with existing barrier technologies (extrusion, coating, lamination, etc...)*
- *Example (i.e. Gerbier PVDC or coated paper extruded with biobased PE)*

Medium term packaging solution

- Offer Recyclable barrier papers (MVTR)
- Product Development project(s) to offer a partial barrier solution to be completed by converter (cold-seal, etc...)

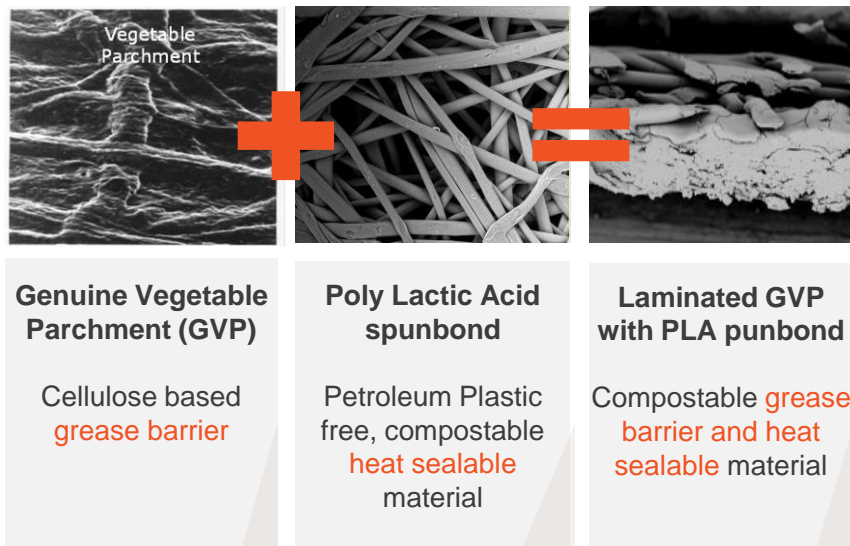
Long term packaging solution

- Offer Recyclable & Compostable barrier papers (all barriers)
- New technologies Development projects
 - *Others?*



Helping Customers make the switch from fossil to renewable materials and targeting compostability

Capitalizing on AM unique platforms
to develop biodegradable barrier packaging



Current solution

- Barrier to
 - Grease ●
 - Oxygen ●
 - Aromas ●
 - Moisture vapor ●
- Heat-sealability ●
- Converting ability ●
- Compostability ●

To identify short term AM solutions matching specific Customers needs: less demanding applications or partial contribution to the final packaging solution



Helping Customers make the switch from fossil to renewable materials and targeting recyclability/compostability



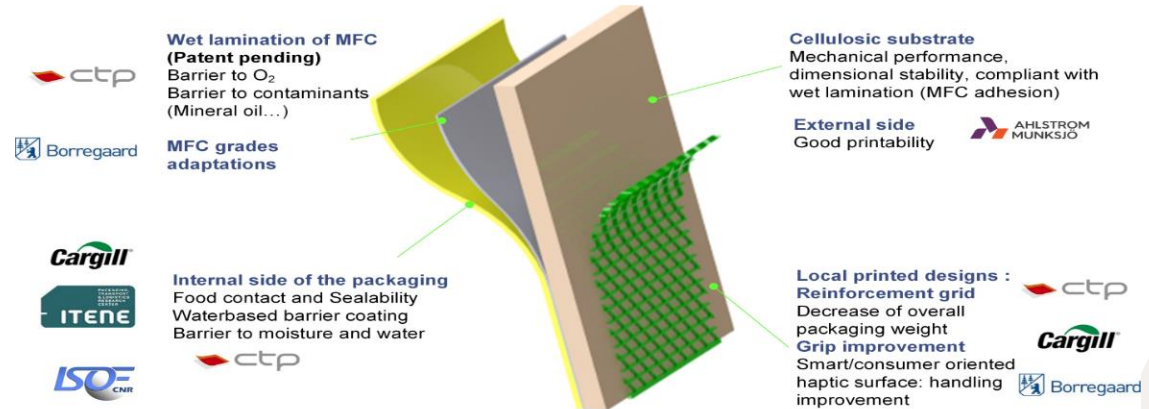
SHERPACK - Project overview

To develop a renewable, biodegradable and recyclable/compostable flexible paper-based packaging material, in order to replace materials such as plastics or aluminum foil.



3 Innovative Technology platforms

- ✓ Wet lamination of Cellulose Fibrils
- ✓ Polymer waterborne emulsion
- ✓ Polysaccharides grid printing



- Duration for proof of concept : 42 months → up to end of November 2020
- 6 partners: CTP, ITENE, ISO (research labs), CARGILL, BORREGAARD (industries).
- Development / tests performed at lab scale

Examples of how Ahlstrom-Munksjö supports the move to more sustainable flexible packaging

AHLSTROM-MUNKSJÖ
CELLUSTRAW™
PAPER STRAWS SOLUTIONS



Sustainable Straw Papers

AHLSTROM-MUNKSJÖ
NATUREMOLD™
MOLDING MATERIALS



Compostable Tray Material

AHLSTROM-MUNKSJÖ
CRISTAL™
TRANSPARENT PACKAGING



Transparent Flexible Packaging Papers

AHLSTROM-MUNKSJÖ
FLUOROFREE®



PFAS-Free Grease-resistant Papers

AHLSTROM-MUNKSJÖ
PUREBARRIER™
OXYGEN BARRIER MATERIALS



Oxygen Barrier Papers

AHLSTROM-MUNKSJÖ

FROM PLASTIC TO

PURPOSE

SUSTAINABLE SOLUTIONS

... this is just the beginning of the journey



