April 19, 2021

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amcor
Creating a new world of packaging

SYNTEGON
PROCESSING & PACKAGING

श्री
SHRINATH

Agenda

- The dual challenge
- Collaborations
- Sustainable PE film solutions
- PE friendly vFFS machines
- Converting and lamination

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Q&A in webinar

- Please ask questions in the **Zoom Q&A**.
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The dual challenge

"Few would disagree that one of the most urgent societal challenges we face today is addressing the risks of climate change. How we meet the world's demand for the energy necessary for economic growth while mitigating the long-term impact on our environment is key to our sustainable future."

Darren Woods, ExxonMobil

Chairman & CEO

2021 Energy & Carbon Summary

Innovation requires collaboration across the value chain

Sustainability focus areas in PE business

Design for recycling

Upgrade recycled streams

Increase recycled content

Design for recycling

Full-polyethylene laminates

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Recyclable in those communities that have programs in place to collect and recycle plastic film

ExxonMobil full PE laminated solutions for sustainable packaging in India

Bag drop performance

Excellent packaging integrity
Reduced product wastage

Optical properties

Good optics
Easier bar code scanning

Optimized FFS line speeds**

Similar or higher FFS line speeds as compared to PET/PE solution

Simplified material selection

*Recyclable

Typical applications:
Non-barrier pillow pouch-based applications such as wheat flour, detergent, salt and other powder based applications

Ideal blown film requirements:
1/3/1 layer ratio with IBC (internal bubble cooling) and gauge control

Conventional lamination & printing:
Adhesive lamination
CI or rotogravure printing

Recommended products for non-MDO full PE laminate solution

Grades	Melt Index (g/10min)	Density (g/cc)
Exceed™ 1327	1.3	0.927
HTA 108	0.7	0.961
Enable™ 4009	0.9	0.94
Exceed™ 2012	2	0.912
Exact 3237	2	0.908
Exceed™ XP 8784	0.8	0.914
Exceed™ 1018	1	0.918
LD150	0.75	0.923

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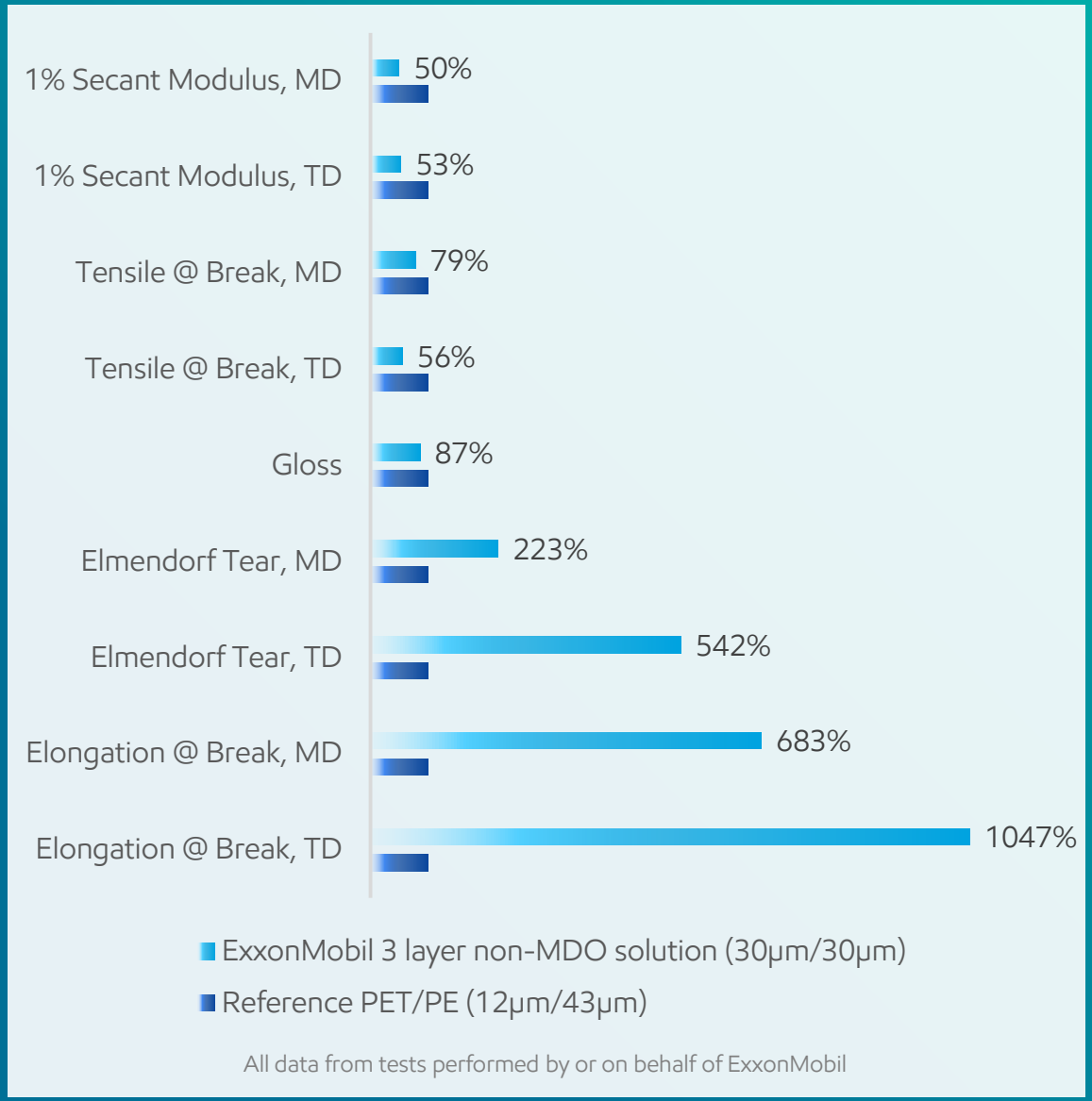
* Recyclable in communities that have programs to collect and recycle plastic film
** Line speeds in machines that have been modified to run PE or poly heat seal (PHS) friendly machines

ExxonMobil full PE solution vs market reference PET/PE laminate offers:

- Exceptional tear strength
- Exceptional elongation
- Comparable gloss
- Both CI (central impression) flexo & rotogravure printability



Note : PET/PE is considered as 100%

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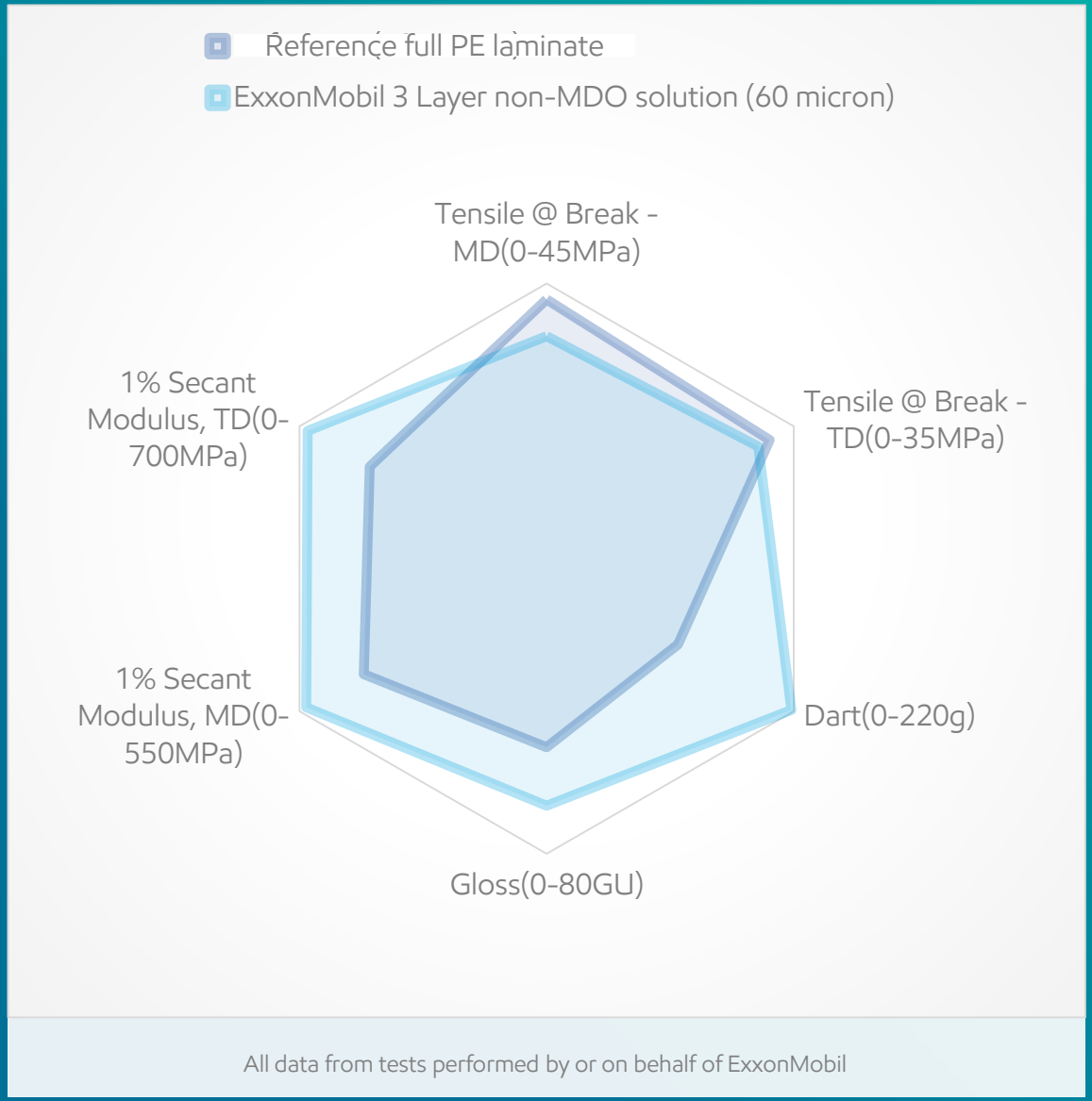
ExxonMobil full PE solution vs reference full PE solution offers:

- Line speed of 65-70 bags/min on PHS machine
- Excellent bag drop performance



All data from tests performed by or on behalf of ExxonMobil

Note : Packaging performance depends on equipment & end-user requirement

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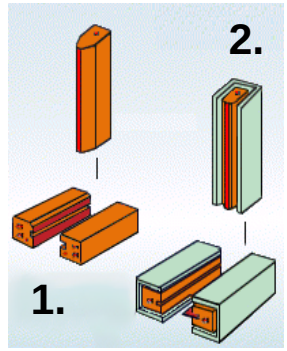
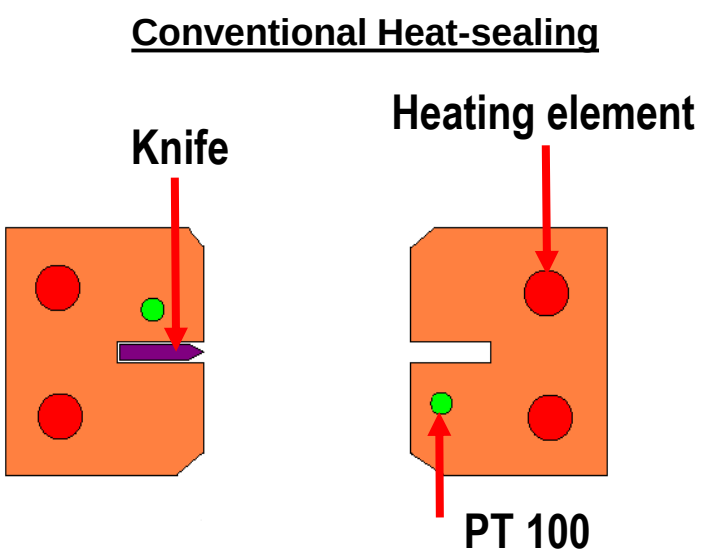
Syntegon Technology India

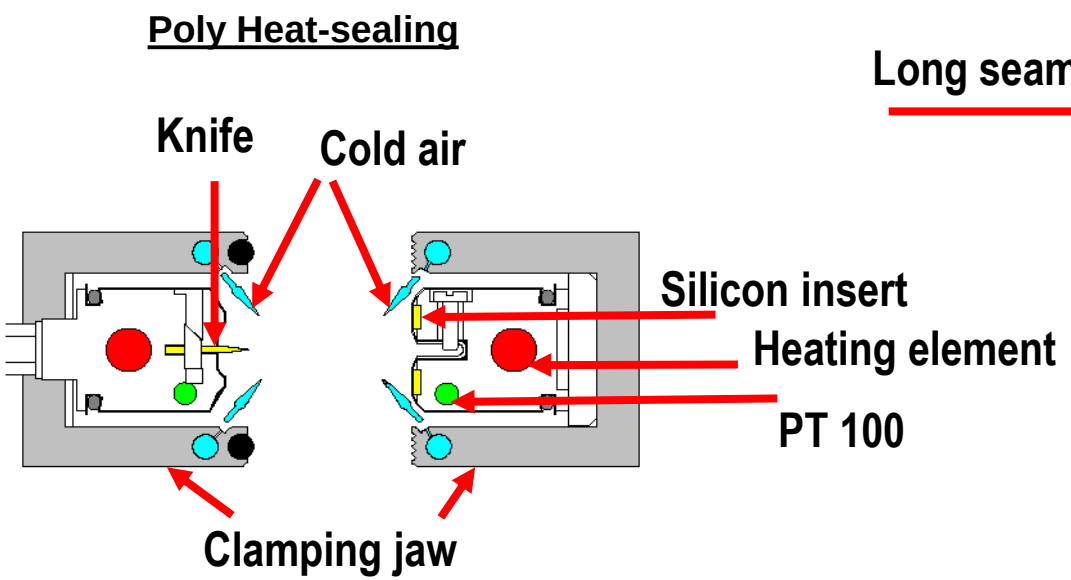
Conventional sealing vs poly heat seal (PHS) machines

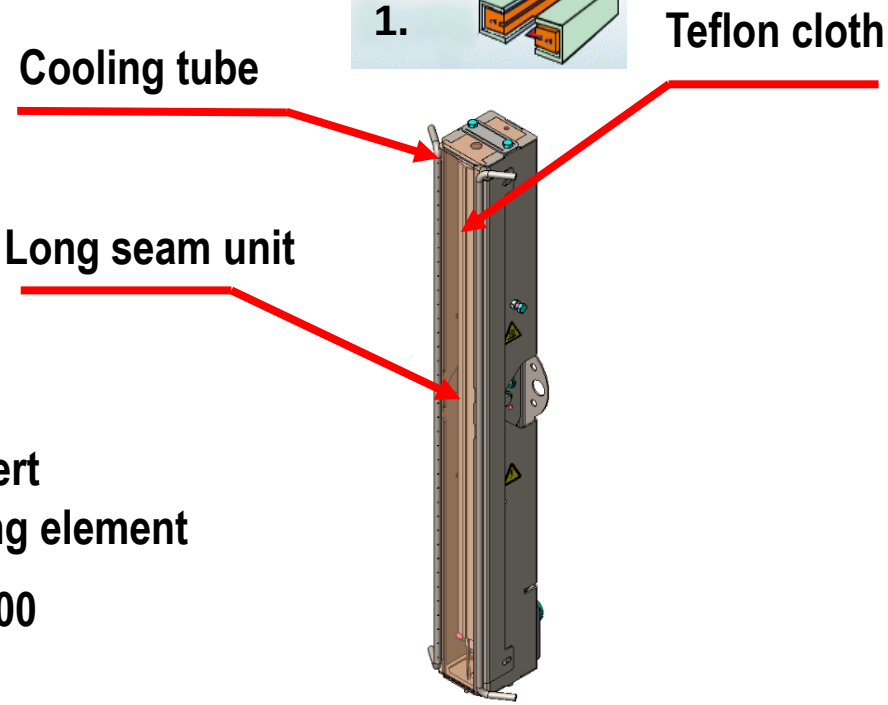
Two systems for making a bag:

1. Heat-sealing – used for multilayer laminates
2. Poly heat seal – used for mono or multilayer PE films









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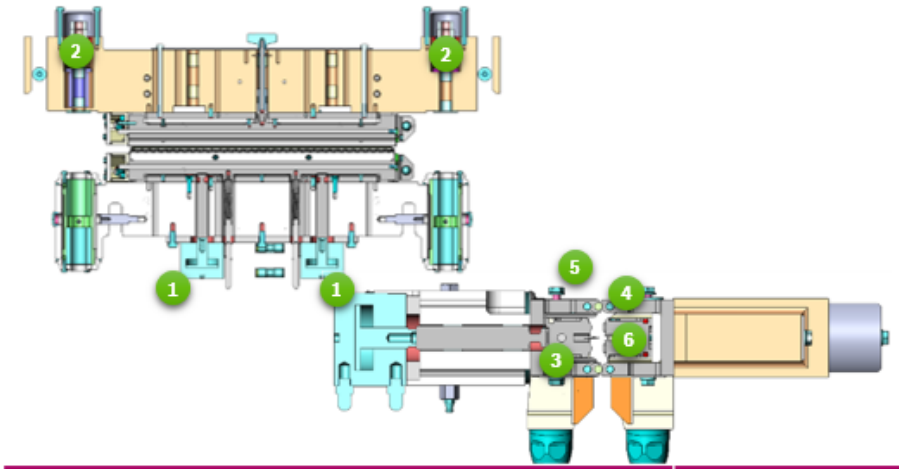
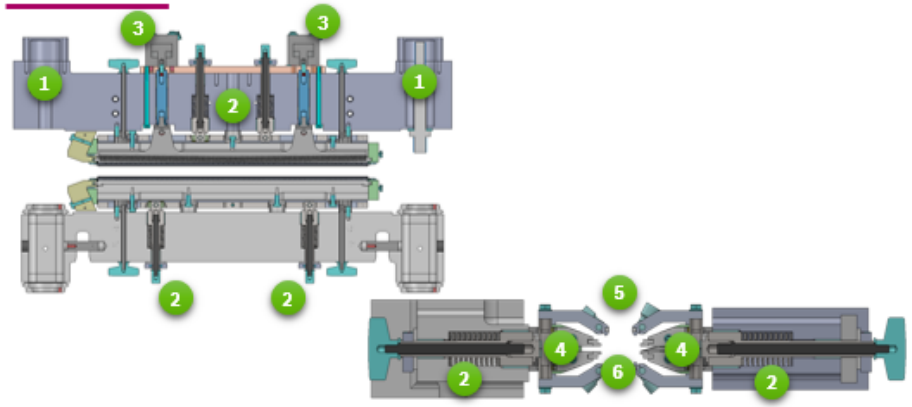
Comparison PHS 2.0 and PHS 1.0

PHS 1.0



PHS 2.0



Characteristics	PHS1.0	PHS2.0
(1) Seal force generation	Pneumatics	Servo driven and spring loaded
(2) Clamping force generation	Servo driven and spring loaded	Spring loaded
(3) Cutting	Fixed knife	Active driven knife
(4) Non stick solution	PTFE tape around sealing jaws	PTFE Coating on exchangeable seal strip
(5) Clamped film length	48 mm	31,2 mm
(6) Film length needed for sealing	18,5 mm	9 mm

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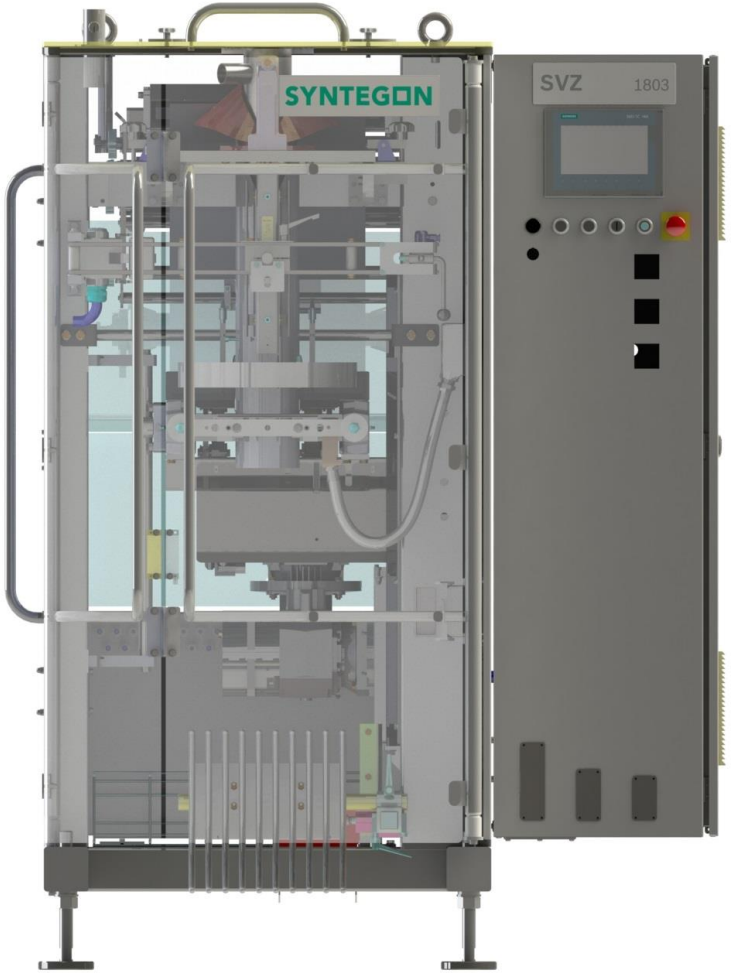
SVZ 1803 AR – High speed servo driven jaw draw-off bagger

- Machine over all foot print
- Complete film guide on single frame
- Servo cross seal system
- Vertical movement by using linear guide
- Robust MS painted single piece welded frame
- IP 54 protection electrical cabinet
- Pneumatic components with enclosure
- Easy format change over



SVZ 1803 is an economical high output machine for standard bags styles for

Salt :

Crystal salt ,free flow salt

Industry that packs

Powder:

Spice powder

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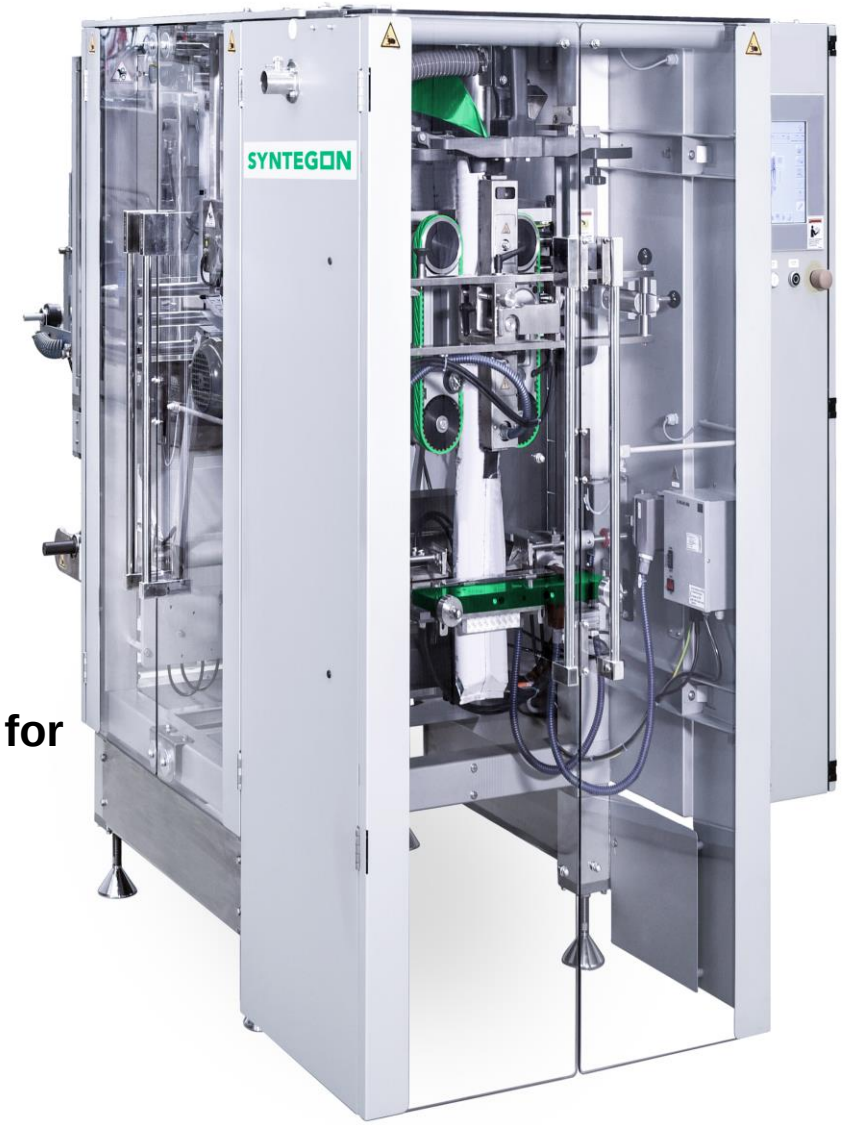
SVI 2600 - Intermittent Vertical Bagger

- Stainless steel configuration
- Stainless steel top plate with drip tray and bottom frame to prevent corrosion
- Sturdy construction
- Open design enables easy access for cleaning
- Dust and splash proof control cabinet



SVI 2600 is an economical high output machine for standard bags styles for

Grains

Powders

Food Industry that packs

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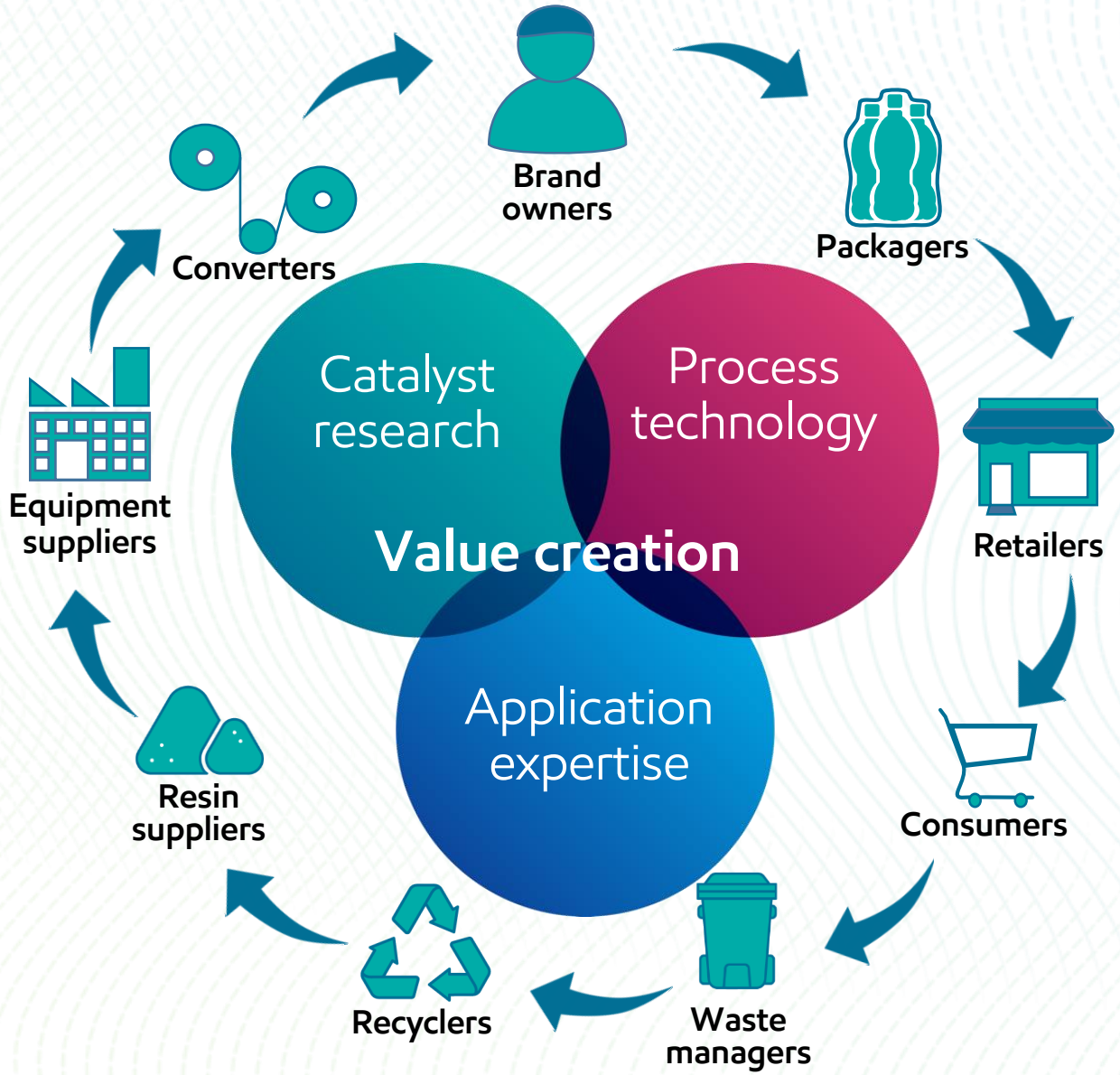
Collaborating with the value chain

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Thank you

for attending

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Test item	Test method
Tensile at break	Test method based on ASTM D-882
Elongation at break	Test method based on ASTM D-882
1% Secant Modulus	Test method based on ASTM D-882
Elmendorf Tear	Test method based on ASTM D-1922
Dart Impact	Test method based on ASTM D-1709
Puncture Resistance	Test method based on ASTM D-4833 and ExxonMobil method
Needle puncture	Test method based on CEN 14471 (probe diameter = 0.8 mm)
Gloss	Test method based on ASTM D-2457