



Indian Petrochem – 2010

Developing flexible packaging solutions to meet changing market expectations

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Managing Director

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Rocky has done a blend of technical and commercial assignments encompassing North American and International locations to support ongoing business and foster long term strategic interests of NOVA. He has good knowledge of all key facets of Polymer business ranging from feedstocks to commercial offerings and supported by a sound understanding of current and evolving technologies and global industry dynamics.

Rocky moved to Nova from DuPont Canada in 1994 as a Senior Process Engineer and worked through various assignments in Business Development, polymers marketing and technology licensing in Canada and USA, before progressing to his current role as a Managing Director of Nova Chemicals, Switzerland.

He has Masters in Chemical Engineering and a Masters in Business Administration from University of Saskatchewan, Canada.

“Developing Flexible Packaging Solutions to Meet Changing Market Expectations”

Rocky Vermani

NOVA Chemicals (International) S.A.

12th International Conference
INDIAN Petrochem - 2010
jointly organized by

Nov 16, 2010

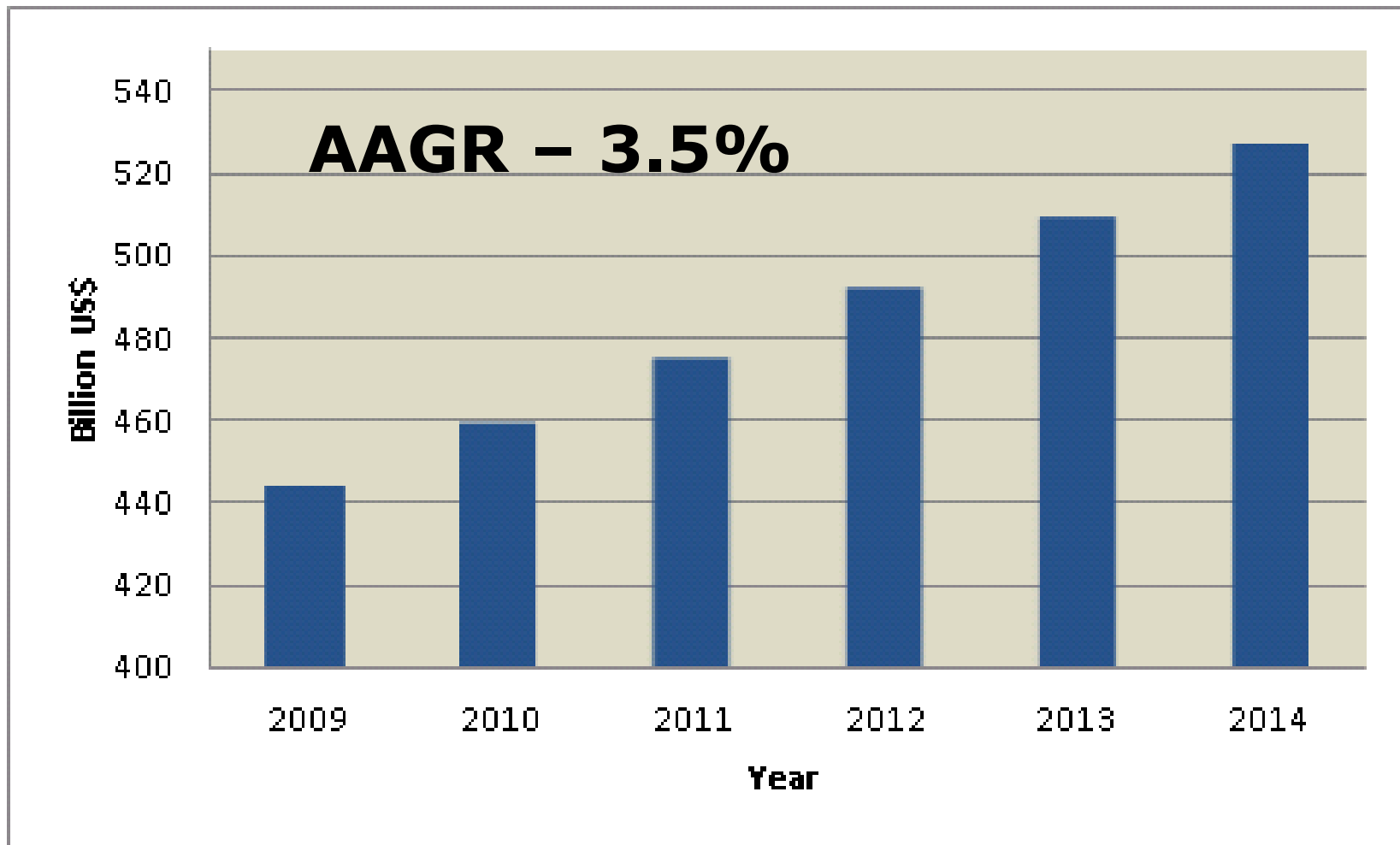


Overview

- NOVA Chemicals is focused on plastics and chemicals that make everyday life safer, healthier and easier
- Our 2500 employees develop and manufacture materials for customers worldwide that produce consumer, industrial and packaging products
- Our innovation and technology create value for our customers, their products and the markets they serve
- NOVA Chemicals is owned by the International Petroleum Investment Company (IPIC) of the Emirate of Abu Dhabi

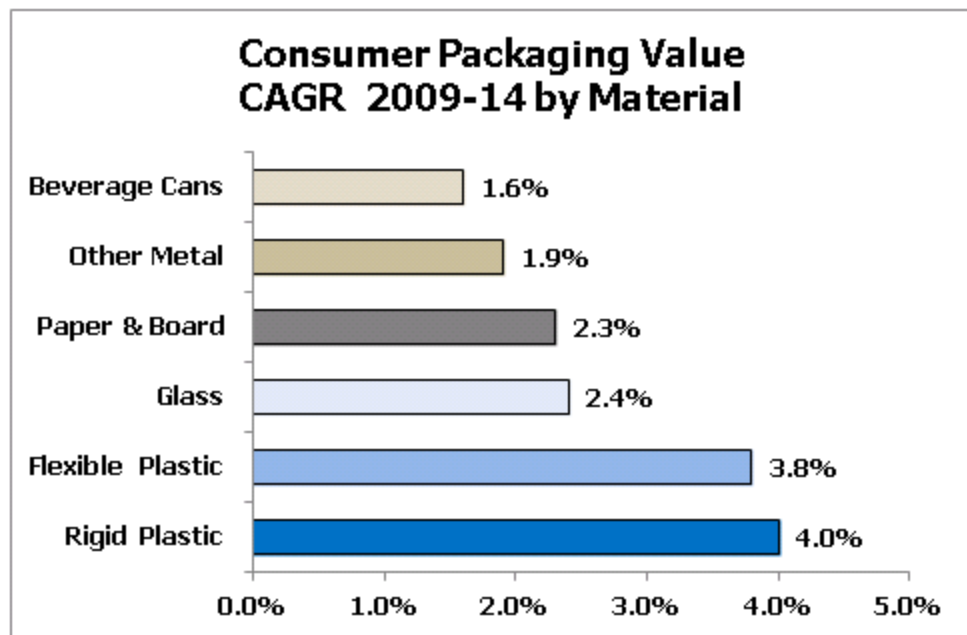


Global Packaging Market

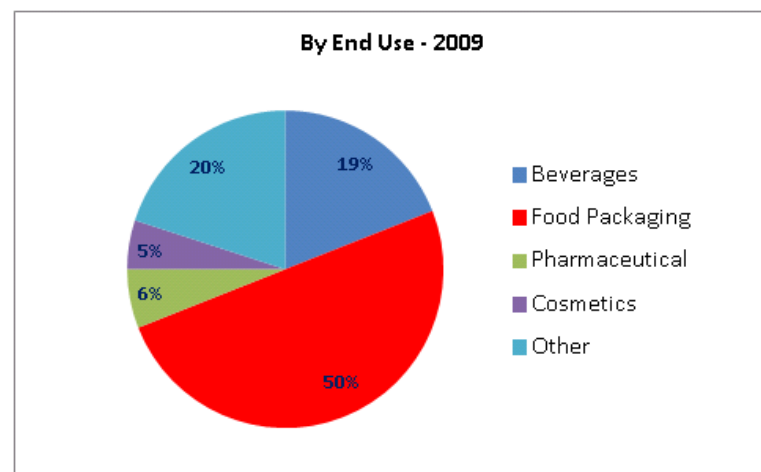
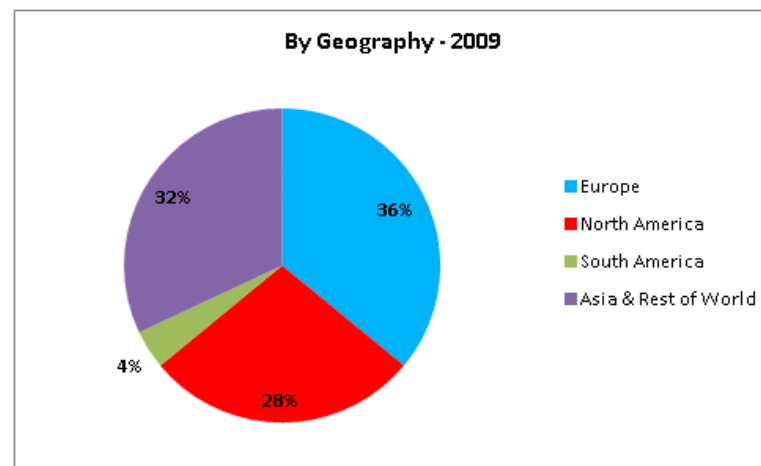


Source: [Rexam-Pira Market Report](#)

Global Packaging Market Highlights



Source: [Rexam-Pira Market Report](#)



Why Flexible Packaging ?

- **Flexible packaging advantages**
 - ▶ **Cost benefits**
 - ▶ **Light weight, shatter resistance**
 - ▶ **Ease of opening and dispensing**
 - ▶ **Package design flexibility**
 - ▶ **Shelf visibility and consumer appeal**
- **Flexible Packaging – A powerful Sustainability option**
 - ▶ **Less material for packaging food**
 - ▶ **Longer shelf life = Increased Productivity**

Trends in Emerging Markets

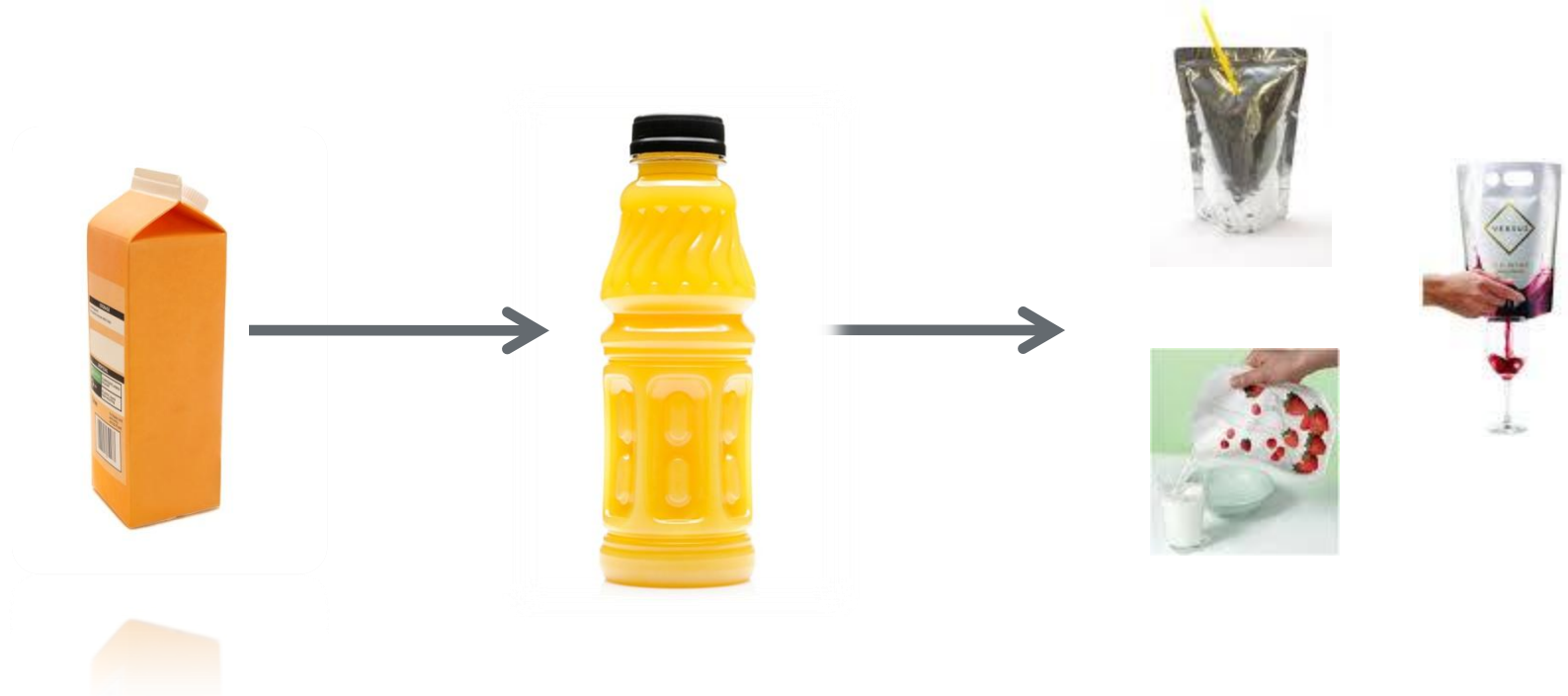
Bulk Food to Individual Packaged Goods



Increased Shelf Life, Increased Purity, Increased Consumer Convenience

Trends in Emerging Markets

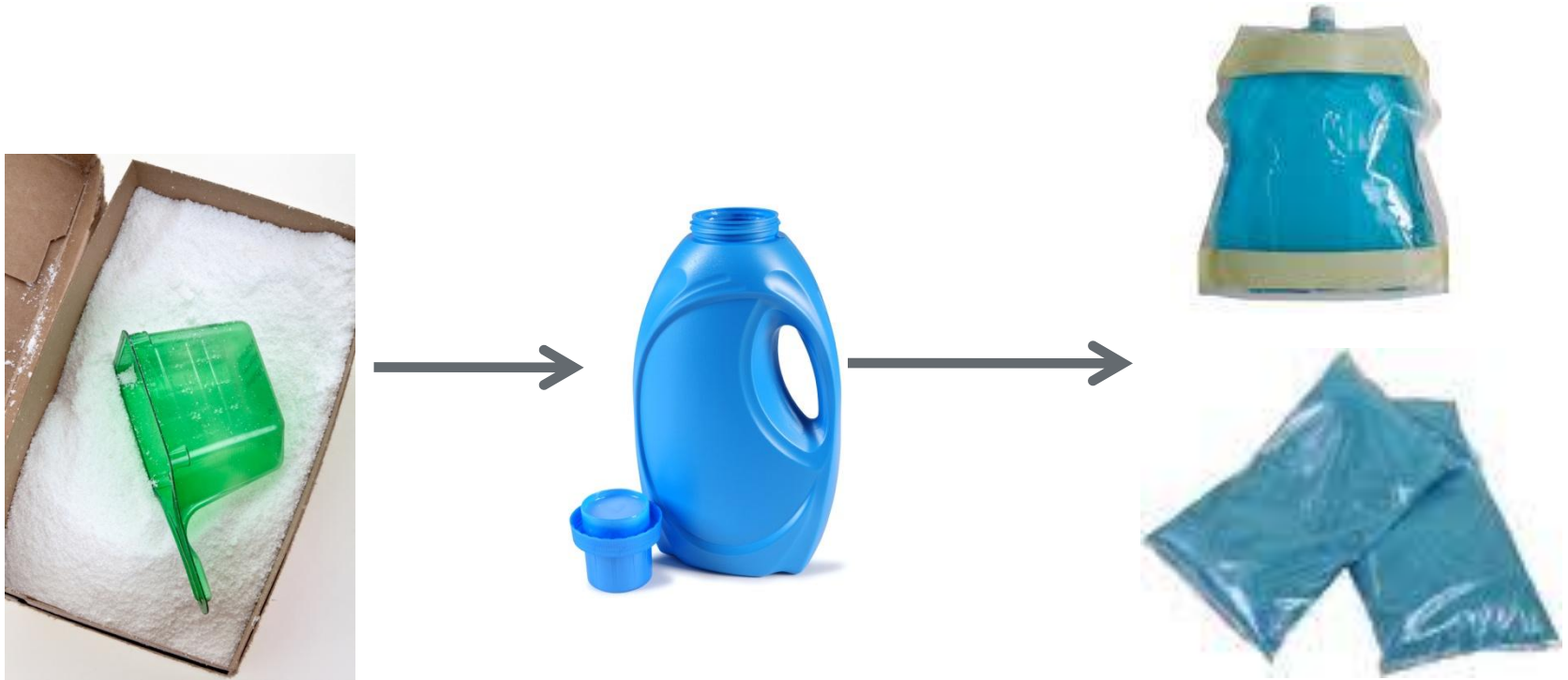
Traditional Materials to Rigid Plastic to Food Pouches



Increasingly Sophisticated Packaging – Increasing Demands on Resins

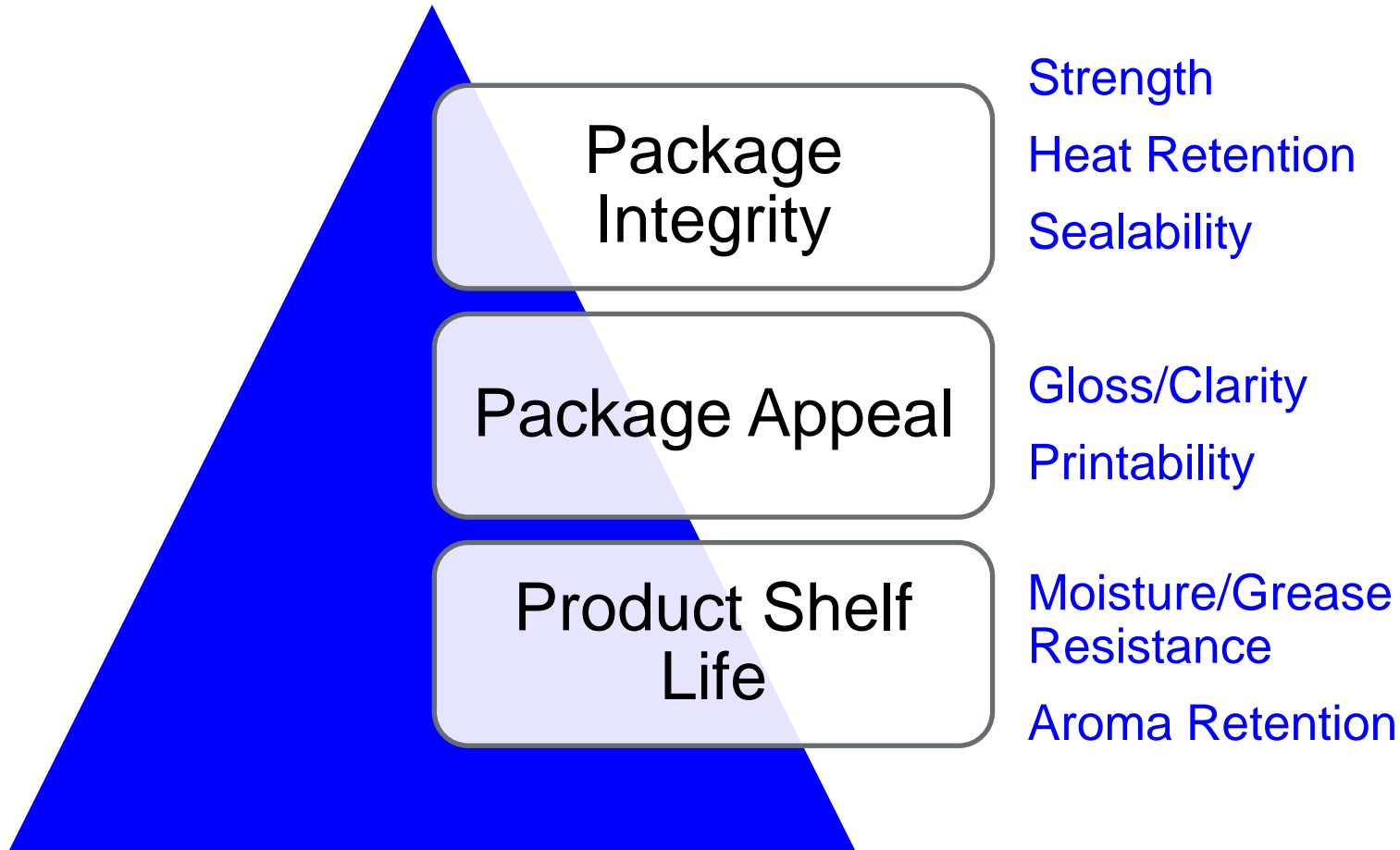
Trends in Emerging Markets

Traditional Materials to Rigid Plastic to Pouches in Non-Food Packaging



Sophisticated Packaging for Consumer Convenience – Increasing Demands on Resins

Flexible Packaging – Technical Attributes



Flexible Packaging – Consumer Deliverables



Convenience



Preservation



Sustainability



Brand Awareness

Convenience



Time is Money \$\$

- ▶ Finding ways to package “ready-to-eat foods”
 - Save time and money without compromising food quality.

Simplification

- ▶ Simplifying consumers on-the go-lifestyle
 - Premium quality, pre-prepared meals.
- ▶ Retort, re-sealable pouches
 - Easy opening and dispensing for ready-meal market.

Preservation



Product preservation

- ▶ Package and store food without compromising flavor and/or taste.

Freshness - a holistic approach

- ▶ Tailored breathability, good sealing and anti-fog properties
- ▶ Higher heat resistance
- ▶ Controlled barrier properties to keep products fresh longer
- ▶ Protection against moisture and contamination.

Sustainability



Doing more with less

- ▶ Using less material with same or improved integrity

Sustainability (Alternative packaging replacement)

- ▶ Replacement of Paper/Board, Glass, Metal
- ▶ Like material replacement of non-recyclable multi material flexible structures

Reduce-Reuse-Recycle

- ▶ Conservation of raw materials at source
- ▶ Reduction of waste sent to landfills
- ▶ Single material solution for packaging needs



NOVA Chemicals' Technology

Delivering Valued Performance

Advanced SCLAIRTECH™ Technology

ENABLES

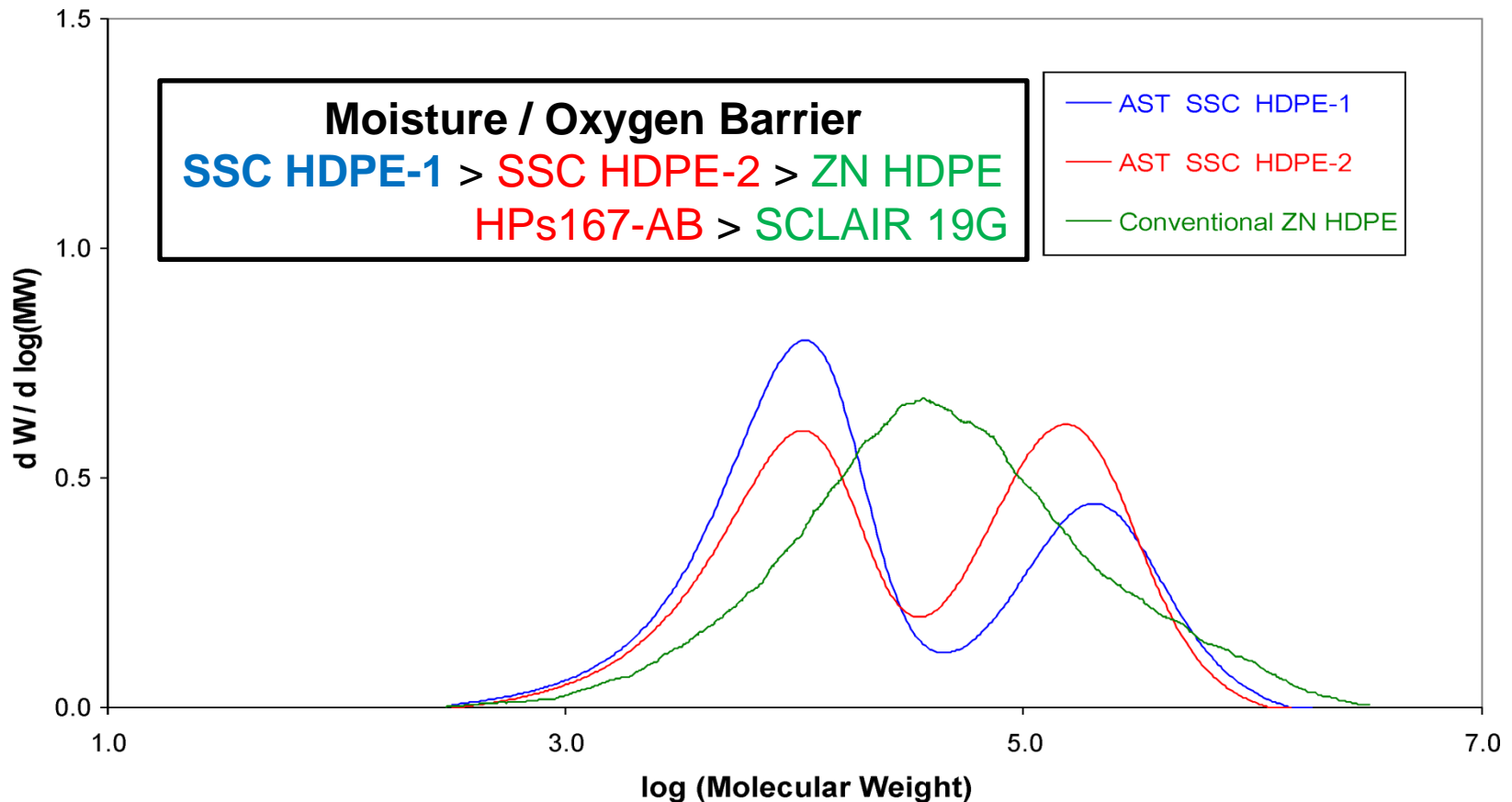
Polyethylene Product Versatility

DELIVERS

Products That Create Value

Multiple Reactors and a Single Site Catalyst – Fully Bimodal Structures

- Dual reactor technology, with independent feeds to each reactor enables the design of a profoundly bimodal product





Preservation

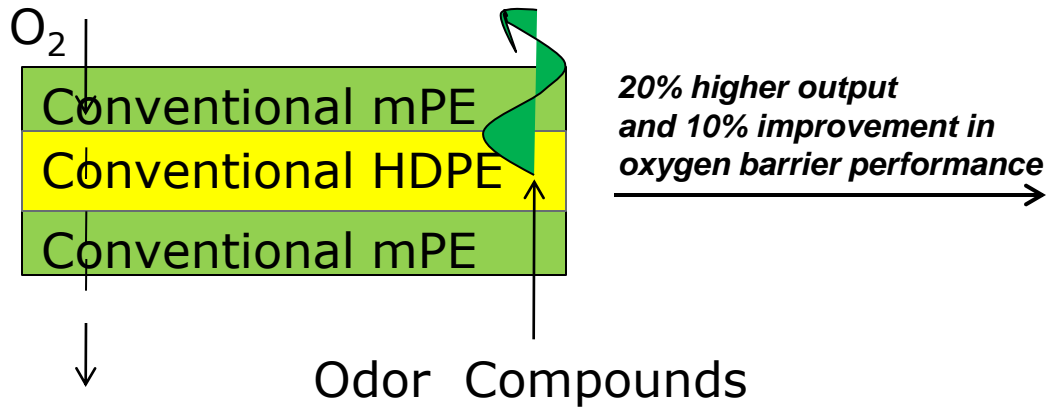


Convenience

SURPASS HPs167-AB resin Gas Flushed Refrigerated Poultry Bags



Standard Product



NOVA Solution

SURPASS FPs016-C
SURPASS HPs167-AB
SURPASS FPs016-C

The new product offers:

- Shelf-Life Improvement (retains product freshness)
- Convenience (ease of use) – *opportunity in the Indian market*



Sustainability



Preservation

SURPASS HPs167-AB resin Cereal Liners



Standard Product

7 Layer Structure
Standard HDPE

*10% gauge reduction and
yields improved moisture
barrier performance*



NOVA Solution

7 Layer Structure
With HPs167-AB

The new product offers:

- Sustainability (material savings)
- Shelf-Life Improvement (retains product freshness)

Emerging Technologies

Shelf-Life Retention means longer and fresher tasting food, safer and easier to open and use

Nanotechnology

- ▶ Incorporating nano particles into packaging films to improve barrier and mechanical properties

Intelligent Packaging

- ▶ Embedded antioxidant and odour scavenging
- ▶ Pathogen sensing antibodies for warning signs of food spoilage

Tamper Proofing

- ▶ Mechanical or sensor based technologies for protection against bioterrorism and product tampering

Summary

- Package designs have to improve continuously to meet changing market and sustainability needs.
- Emerging markets and changing lifestyles implies new opportunities for convenient packaging.
- Balanced approach of local practices of supply and consumption, new materials, cultural needs and economic delivery would help create winning solutions.



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Or visit our website: www.novachemicals.com

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