

# RECYCLABLE HIGH BARRIER FILM

High barrier properties and sustainability through EVOH replacement with G-Polymer.



This high barrier film is an approach to conquer the challenges of future sustainability. Today, most barrier films are incinerated after use. The recycling of multilayer barrier film is not possible due to the incompatibility of different materials such as PA, EVOH, tie and PE resins. By using the G-Polymer instead of EVOH and through innovative recipe development it is now possible to separate the polyethylene based material (tie and PE) in a water basin from the PA.

Different densities of polyolefin and polyamide makes a recovery of pure materials possible – leading to recyclable materials, which then can be used once more for film production.

## Our partners

 NIPPON GOHSEI Europe

A Group Company of  MITSUBISHI CHEMICAL



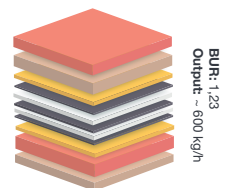
## Your advantages

- ✓ Easily separable and recyclable multi-layer film
- ✓ Replacement of EVOH with G-Polymer for sustainability
- ✓ Improved barrier properties

## Recipe

### Recyclable High Barrier Film

Resins	Layer thickness	Functions
LDPE	Sabic LDPE 9 µm	Printability
mLLDPE	Sabic mLLDPE 10 µm	Mechanical strength
Tie	Admer 4 µm	Bonding
BVOH	G-Polymer 1,5 µm	Oxygen barrier and water solubility
PA 6/66	UBE NYLON or BASF Ultramid 4 µm	Oxygen barrier and film strength
BVOH	G-Polymer 2 µm	Oxygen barrier and water solubility
PA 6/66	UBE NYLON or BASF Ultramid 4 µm	Oxygen barrier and film strength
BVOH	G-Polymer 1,5 µm	Oxygen barrier and water solubility
Tie	Admer 4 µm	Bonding
LDPE	Sabic LDPE 12 µm	Mechanical strength
mLLDPE	Sabic mLLDPE 8 µm	Sealing properties



Learn more about  
**RECYCLABLE HIGH BARRIER FILM on VAREX™:**  
[www.wh.group/K2019](http://www.wh.group/K2019)

Find more information about **VAREX™**  
on the back of the page.



# VAREX<sup>™</sup>

The benchmark in blown film extrusion



Perfect melt homogeneity and excellent melt distribution are key for the extrusion of G-Polymer. The result is constant layer thickness in the film. The flatness of the film can be greatly influenced by the long and driven collapsing unit in the haul-off unit.

- Innovative die head and extruder design for perfect melt distributions
- The designable mandrels of the MAXICONE die head concept are a perfect fit for your application
- Our extra long and driven collapsing unit is necessary for an optimal flatness of the film
- Our G3-module (Gravimetric Throughput Control unit) guarantees constant weight per m<sup>2</sup> of film thanks to automated processing
- ARCTIS cooling ring in combination with W&H internal bubble cooling for high output and perfect film tolerances
- Our PROCONTROL TS is the highly intuitive single point of operation system that integrates all the line operations and enables smart machine learning

## Your advantages

- ✓ Perfect melt homogeneity
- ✓ Excellent melt distribution in the die
- ✓ Full integration of all W&H machine components for unique control and automation system

## Technical Data

Line widths	1300 – 3600 mm
Number of film layers	1, 3, 5, 7, 9, 11
Extruder screw diameters	50, 60, 70, 90, 105, 120, 135 mm
Die diameters	160 – 900 mm
Raw Materials	Biomaterials, recycling materials, ...
Winders	FILMATIC <sup>™</sup> S (surface/center/gap winder) FILMATIC <sup>™</sup> T (turret winder) FILMATIC <sup>™</sup> N (surface/center/gap winder)
Special equipment	Side gussets, Water bath, Annealing units, MDO, ...

