

# High Density Polyethylene



## HF14522

EVALENE® HF14522 is a medium molecular weight High Density Polyethylene grade for blown films made on short-barrel extrusion lines.

**EVALENE® HF14522** is suitable for strong and stiff ultra thin films with good barrier properties against moisture and oxygen. **EVALENE® HF14522** is particularly well suited for short barrel extrusion lines. **EVALENE® HF14522** delivers downgauging potential that can reduce use of material and maximize throughput, bringing significant advantages to the converter. **EVALENE® HF14522** is a good core layer material for coextruded films.

### FEATURES

- High stiffness
- Good puncture resistance
- Good moisture barrier properties
- Meets FDA Philippines food-contact requirements
- Halal certified

### TYPICAL APPLICATIONS

- Produce bags on a roll
- Supermarket produce bags
- Wet market bags
- Sando bags
- Laundry bags
- Carrier bags
- Trash bags
- Sack liners
- Flexible packaging

## Product Properties

Property	Test Condition	Test Method	Metric Value	Unit
Flow Index <sup>1</sup>	190°C/21.6 kg	ASTM D1238	14	g/10 min
Melt Index	190°C/2.16 kg	ASTM D1238	0.12	g/10 min
Density	23°C	ASTM D1505	0.952	g/cm <sup>3</sup>
Tensile Strength at Yield*	500 mm/min	ASTM D882	30 / 25	MPa
Elongation at Yield*	500 mm/min	ASTM D882	12 / 6	%
Tensile Strength at Break*	500 mm/min	ASTM D882	32 / 18	MPa
Elongation at Break*	500 mm/min	ASTM D882	195 / 304	%
Tensile Modulus*	1% Secant, 25 mm/min	ASTM D882	744 / 931	MPa
Elmendorf Tear Strength*		ASTM D1922	20 / 395	g
Dart Drop Impact Strength*		ASTM D1709	183	g

<sup>1</sup>Product is controlled by Flow Index. Melt Index is estimated for customer use.

\*Properties tested on 25μ films as extruded on 60 mm die, 3.2:1 BUR, at 13 - 15 m/min take-up speed.

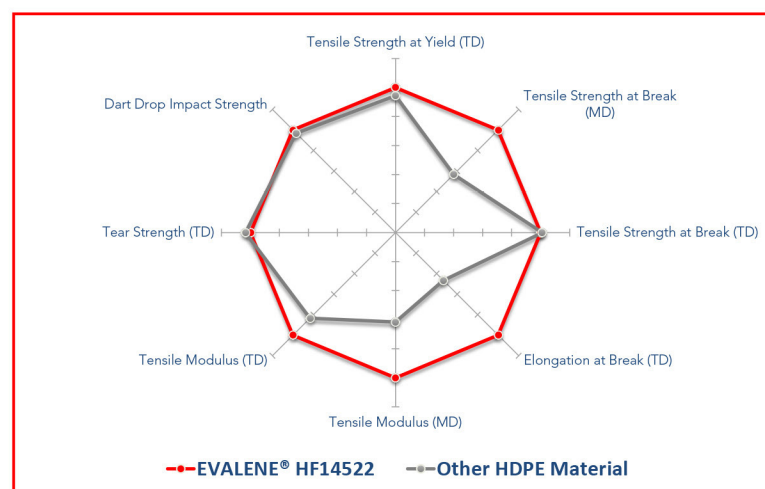
Tensile and tear properties are in machine and transverse directions (MD / TD).

### Typical Processing Conditions

Extrusion Temperatures	180 - 230°C
Blow Up Ratio	3 - 5
Die Gap	0.8 - 1.3 mm

**EVALENE<sup>®</sup> HF14522** has at least 17% higher tensile modulus than the other HDPE material. This means that a film made with **EVALENE<sup>®</sup> HF14522** feels stiffer, a distinct advantage for the producer of thin films because the end-user generally prefers film which feels stiff when handled. Additionally, **EVALENE<sup>®</sup> HF14522**'s superior tensile strength at break in the machine direction, 43% higher than the other HDPE material, is an obvious benefit. **EVALENE<sup>®</sup> HF14522**'s clear edge in tensile strength, coupled with comparable dart drop impact strength and tear strength as the other HDPE material, gives it a good stiffness-toughness balance which makes this **EVALENE<sup>®</sup>** grade ideal for film applications as thin as 5 microns (0.0002") - a genuine downgauging benefit.

Figure 1. Mechanical property performance of **EVALENE<sup>®</sup> HF14522** vs. other HDPE material



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