Braskem

# Data Sheet

Review 03 (Jul/15)

## Linear Low Density Polyethylene LL5405S

### Description:

LL5405S is a Linear Low Density Polyethylene (LLDPE) developed for blown film extrusion. Films obtained with this product show a good processing performance balanced with good mechanical properties as well as processability. Very low gel amount.

### Additive:

Antiblocking – High
Slip - High

### Applications:

LLDPE and HDPE blends, films with low tickness for general use, bags for waste, special bags for water and protection of clothes.

### Process:

Blown film extrusion.

### Control Properties:

| | ASTM Method | Units | Value |
|---|---|---|---|
| Melt Flow Rate (190/2.160) | D 1238 | g/10 min | 1.0 |
| Density | D 792 | g/cm³ | 0.919 |

### Typical Properties:

Blown Film Properties[a]

| | ASTM Method | Units | Values |
|---|---|---|---|
| Tensile Strength at Break (MD/TD) | D 882 | MPa | 35/25 |
| Elongation at Break (MD/TD) | D 882 | % | 1000/1200 |
| Flexural Modulus – 1% Secant (MD/TD) | D 882 | MPa | 160/180 |
| Dart Drop Impact | D 1709 | g/F50 | 120 |
| Elmendorf Tear Strength (MD/TD) | D 1922 | gF | 90/900 |
| Haze | D 1003 | % | 18 |
| Gloss – Angle 45° | D 2457 | - | 55 |
| Gloss – Angle 60° | D 2457 | - | 80 |
| COF internal 72h | D 1894 | - | 0,10 |
| Blocking Load | D 3354 | gf/100cm² | 8 |

(a) 40 µm thickness film, processed in a 40 mm screw diameter extruder with blow up ratio of 2, 2:1 (MD = Machine Direction; TD = Transversal Direction)

### Recommended Processing Conditions:

**Blown Film Extrusion**

-Temperature Profile:..... from 180 to 210°C
-Blow up Ratio:..... from 2 to 3:1
-Die Gap:..... from 1.8 to 2.5 mm
-Screen Package:..... 40/40 - 100% pure
40/60/40 - Blend
-Mass Temperature:..... 190ºC (max 210ºC)

## Final Remarks:

1. This resin meets the requirements for olefin polymers as defined in 21 CFR, section 177.1520 issued by FDA – Food and Drug Administration in force on the date of publication of this specification. The additives present are covered in appropriate regulation by FDA.
2. These information reflect typical values obtained in our laboratories, but should not be considered as absolute or as warranted values. Only the properties and values mentioned on the Certificate of Quality are considered as guarantee of the product.
3. In some applications, Braskem has developed tailor-made resins to reach specific requirements.
4. In case of doubt regarding utilization, or for other applications, please contact our Application Engineering.
5. For information about safety, handling, individual protection, first aids and waste disposal, please see MSDS. CAS Registry number: 25087-34-7
6. The mentioned values in this report can be changed at any moment without Braskem previous communication.
7. Braskem does not recommend this grade for packages, parts or any kind of product manufacture that will be used for storage or contact with solution that will have internal contact with human body.
8. Braskem polyolefin products do not have additives with metals or other substances on purpose of oxi-degradation. These additives and the decomposition and disintegration of polyolefins caused by oxi-degradation phenomenon can cause environmental pollution, decrease the package performance and increase migration of package constituent to food, compromising resin approval regarding the requirements of Anvisa Resolution 105/99. The use of these additives with Braskem polyolefin products implies immediate loss of performance guarantee described in this data sheet.
9. The content of this Data Sheet replaces previous revisions published for this product.
10. This resin does not contain the substance Bisphenol A (BPA, CAS # No. 80-05-7) in its composition.