

	<b>Material Specification</b>	Document Nr.:
	<b>Tube Laminate WBL-350-T</b>	WBL-350-T
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### 1. Purpose

This document specifies the material structure of transparent WheyLayer barrier laminate.

### 2. Name and code of the material

Name of material: **Whey Barrier Laminate**  
Internal code: **MO330020000**  
Technical name: **WBL 350 µm Transparent**

### 3. Material specification (from outside to inside)

		Thickness	Tolerance	Density
Polyethylene Layer	transparent	150 µm	± 10 %	0,990 g/cm <sup>3</sup>
Adhesive		5 µm	± 10 %	1,124 g/cm <sup>3</sup>
WheyLayer <sup>(R)</sup> Coating	transparent	15 µm	± 20 %	
Polyethylene terephthalate Layer	transparent	23 µm	± 10 %	1,400 g/cm <sup>3</sup>
Adhesive		5 µm	± 10 %	1,124 g/cm <sup>3</sup>
Polyethylene Layer	transparent	150 µm	± 10 %	0,990 g/cm <sup>3</sup>

**Total thickness** 350 µm ± 10 %

### 4. Material properties:

#### Optical properties:

Transparent

#### Surface pre-treatment

Inside and outside of laminate ≤ 36 mN/m  
In accordance to DIN ISO 8296

#### Barrier properties:

OTR ≤ 3 cc/(m<sup>2</sup> d bar) ( 23°C, 50% RH)  
In accordance to DIN ISO 15105-2  
WVTR ≤ 0,3 gr/(m<sup>2</sup> d) ( 23°C, 85% RH)  
In accordance to DIN ISO 15106-3

We guarantee a constantly high quality of our laminate over a period of 6 months after manufacture date, provided that the laminate is stored in normal temperature conditions (> 15° C and < 28° C ), in a place which has a humidity of 40-60% and which is protected against direct sunlight, in clean place free of contamination and in its original transport packaging.

If these storage conditions are not applied by the customer, we cannot accept any liability for a loss in the tube's original quality, resulting processing problems during filling as well as a possibly reduced shelf life of the packed product.

Please consult us for availability of different laminate structures, thickness, barrier properties levels and colours.

	Prepared	Reviewed	Approved
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Date	22.04.2014		
Signature			