



# TWINTEX<sup>®</sup> TP PP

## Long Glass Fiber concentrate / PP Pellets

### PRODUCT DESCRIPTION

TWINTEX<sup>®</sup> Long Glass Fiber Concentrate / PP pellets (TP PP) are obtained by pultrusion process of TWINTEX<sup>®</sup> R PP rovings. TWINTEX<sup>®</sup> pellets are coated with a plastic blend that can contain specific additives package to fulfill applications requirements. Coating also protects pellets during transportation and conveying.

### MATERIAL COMPONENTS

Glass Fibre	<ul style="list-style-type: none"> <li>High Performance Reinforcement glass PP compatible sizing, 75% by weight</li> </ul>
Thermoplastic resin	<ul style="list-style-type: none"> <li>PP Homopolymer MFI &lt; 55</li> </ul>
Additive package	<ul style="list-style-type: none"> <li>Coupling agent, heat &amp; UV stabilizers, carbon black</li> </ul>



### PRODUCT REFERENCE

PRODUCTS AVAILABLE				LENGTH
TP 200	Black	Non-coupled	no LTHA*	13mm or 25mm
TP 301	Black	Coupled	LTHA 1000h-150°C	
TP 303	Black	Coupled	LTHA 500h-150°C	

\*LTHA: Long Term Heat Ageing

Example: TWINTEX<sup>®</sup> TP PP 75 TP301 13 (HPR)  
 TP: TWINTEX<sup>®</sup> Pellets  
 PP: Thermoplastic resin  
 75: Glass content by weight (%)  
 TP301: Additive Formulation  
 13: Length (mm)  
 HPR: High Performance Reinforcement glass

### PRODUCT APPLICATION

TWINTEX<sup>®</sup> TP PP is mainly used to produce injected TP parts requiring structural performances like impact, or mechanical performances in temperature exposition.

### PROCESSING RECOMMENDATIONS

TWINTEX<sup>®</sup> must be blended with PP according to the following formula:  
 TWINTEX<sup>®</sup> content in % = (required glass content in the part / 75) x 100  
 PP content in % = 100 – TWINTEX<sup>®</sup> content.

The use of a gravimetric blender is absolutely essential to achieve good metering accuracy and part properties. The objective of using long fiber pellets is to improve the mechanical properties of molded parts, tooling and molding conditions should preserve the residual fiber length as much as possible.

It is recommended to use a gentle screw design without mixing element on the screw nozzle. Plastification process, screw speed, and back pressure should be kept as low as possible. Design of non return valve, nozzle, and sprue gate should be streamlined with a large cross section allowing a good flow.

TWINTEX<sup>®</sup> TP PP and dilution PP should be melted as fast as possible in the feeding section in order to avoid fiber damage during plastification.

### EQUIPMENT AND PARAMETERS

DRYING	MAX 2 HOURS AT 80°C
Dosing unit	Gravimetric–fixed above the injection unit hopper
Screw diameter	> 40 mm
Compression ratio	# 2
L / D	18-22
Flight depth	> 4,5 mm
Screw speed	40-60 RPM
Barrel temperature	230-270°C
Injection speed	40-60 mm/s
Mold temperature	30-70°C
Back pressure	As low as possible
Non return valve	Smooth with large cross section
Injection nozzle	Ø > 5 mm, temperature controlled
Sprue gate	Ø > 8 mm – Use of streamlined hot runners

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### MECHANICAL PERFORMANCES

Glass Content of injected bars	ISO 3451-1	20%wt	30%wt	40%wt
Density	ISO 1183A	1.04	1.12	1.24
Flexural [MPa] Strength [23°C]	ISO 178	120	145	165
Tensile [MPa] Strength [23°C] Modulus [23°C]	ISO 527 part 1/2	80 4500	90 6000	105 8400
Impact [kJ/m <sup>2</sup> ] Un-notched Charpy Notched Izod	ISO 179 eU ISO 180 1A	38 13	43 15	45 18
HDT [°C] HDT A [1.80 MPa] HDT B [8.00 MPa]	ISO 175	155 114	157 138	160 143

Given data correspond to the best of our knowledge, but should not be used for design purposes, because actual values depend on chosen formulations and processing conditions.

Injected Bars: Data are based on test performed on injected bars with random glass fiber orientation, average residual glass fiber length in the specimen being close to 2.5mm.

TWINTEX<sup>®</sup> pellets 13mm long were used in combination with natural homopolymer polypropylene MFI 50.

### STORAGE

TWINTEX<sup>®</sup> TP PP must be stored in its original packaging, away from humidity and at a moderate temperature. The best conditions are at a temperature between 15 and 35°C (60°F and 95°F) and at a 35 to 65% relative humidity level.

If the product is stored at a low temperature (below 15°C/60°F), it is advisable to condition it in the workshop, for at least 24 hours before use, to avoid condensation.

### PACKAGING

- Big Bag 1100kg for TWINTEX<sup>®</sup> TP PP 75 13 (HPR)
- Big Bag 900 kg for TWINTEX<sup>®</sup> TP PP 75 25 (HPR)

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