

## TABOREX TA 1117 HD

**A chemically-crosslinkable HDPE compound for the production of multi-layer pipes for domestic hot and cold water, under floor heating and central heating application. It is designed to achieve best performance in single layer and co-extrusion products.**

### Description

TABOREX TA 1117 HD is a crosslinkable compound made by Silane grafted ethylene polymer. This graft polymer constitutes together with a Masterbatch containing the crosslinking catalyst a "SIOPLAS-SYSTEM". Pipes which are produced with the SILON grade TABOREX TA 1117 HD fulfil the requirements of ASTM F876-04a, CSA 137.5-03, EN ISO 15875, BS 7291 and all related standards.

This system allows the compound to be extruded as a normal thermoplastic polymer, which will attain a high level of crosslinking in the processed form. The final product provides all the superior properties associated with crosslinked polyethylene.

### Physical Properties:

| Properties                | Test method               | Units             | Typical Value |
|---------------------------|---------------------------|-------------------|---------------|
| Density                   | DIN 53479/<br>ASTM D 1505 | g/cm <sup>3</sup> | 0.948         |
| Bulk Density              | DIN 53466                 | g/cm <sup>3</sup> | 0.54          |
| Melt Flow Index , (190/2) | ISO 1133/<br>ASTM D 1238  | g/10 min          | 1.00          |
| Volatile total            | ITN-ZP<br>300CH 3-5-5/d   | %                 | < 0.1         |
| Tensile strength at break | ISO R 527                 | MPa               | 24            |
| Elongation at break       | ISO R 527                 | %                 | 450           |
| Gel Content               | EN 579                    | %                 | 70            |

## Processing of TABOREX TA 1117 HD:

### Extruder:

TABOREX TA 1117 HD can be processed on most modern thermoplastic extruders without problems. Particularly if the available screw is designed for Polyethylene excellent products can be expected.

### Screw Parameters:

L/D: >25  
Compression ratio: 3 - 2,5 : 1

### Temperature Profile:

|        |               |
|--------|---------------|
| Zone 1 | 160°C - 170°C |
| Zone 2 | 170°C - 180°C |
| Zone 3 | 170°C - 190°C |
| Zone 4 | 170°C - 190°C |
| Head   | 200°C - 210°C |
| Die    | 190°C - 220°C |
| Screw* | 70°C - 90 °C  |

\* The thermostatic control of the screw improves processing results.

### Recommendations for optimal extrusion conditions:

- Pre-drying of Catalyst Masterbatch and Colour Masterbatch about 2 hours at 80°C - 90°C, preferably with dried air.
- Material preconditioning to ambient temperature before the package opening is necessary, to avoid moisture condensation on the pellet surface.
- Use screw suitable for PE-HD (3-zone or barrier screw).
- Head and tools should be designated allowing streamlined flow avoiding stagnation of the material.
- In case of line stop longer than 10 - 15 minutes: Before restarting purge with standard HDPE (MFI: 0.3g/10 min.)

**Crosslinking Cure:**

The following methods are recommended:

- By immersion in hot water at 80°C - 95°C
- Exposure to low pressure steam

The period required to obtain the final gel content depends on the wall thickness and the temperature. The exposure times are in the range of 4 - 8 hours.

**Storage:**

TABOREX TA 1117 HD has a shelf life of nine months from the production date printed on the packaging. The packages should be opened only before processing; exposure to direct sun radiation must be avoided. After opening the bags the product must be used within 3 - 4 hours.

**Packaging:**

Graft Polymer:

- moisture resistant multilayer bags containing 25 kg
- boxes of 500 kg containing a moisture resistant multilayer lining sealed under vacuum

Catalyst Masterbatches:

- PE bags containing 25 kg