



YARN CHEMISTRY IS OUR FIELD

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TOTAL
COMMITTED TO BETTER ENERGY

REFINING & CHEMICALS

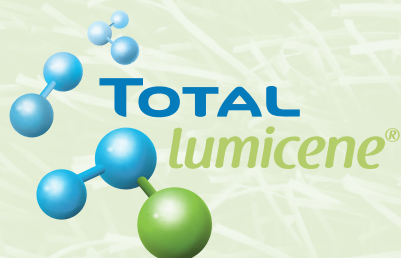
Lumicene® mPE

Total Lumicene® metallocene polyethylene (mPE) offers the synthetic turf yarn the ideal balance of softness and mechanical properties required for technically demanding contact sport pitches.

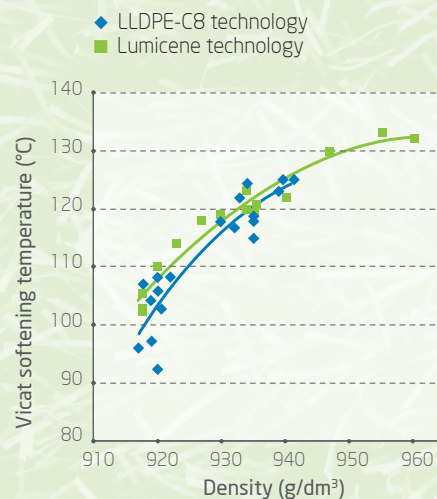
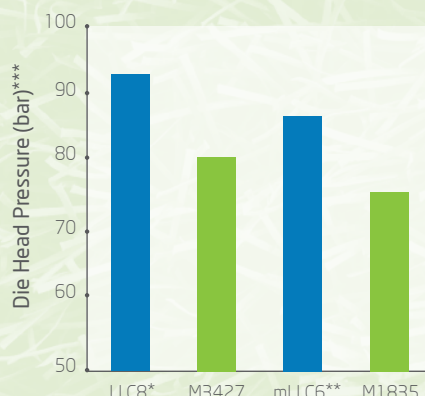
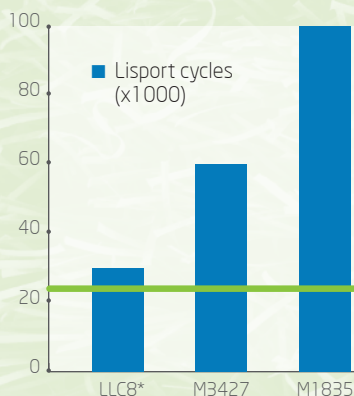
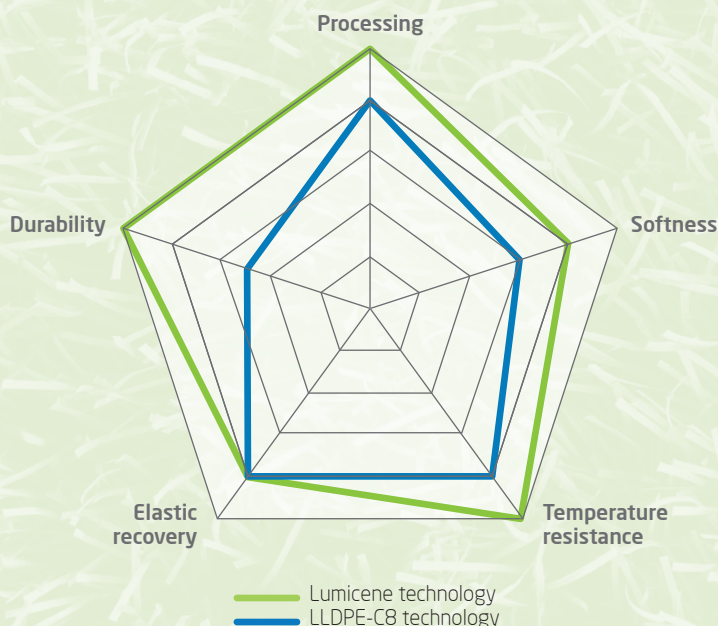
The exceptional mechanical performances of Lumicene® mPE, enabled by the use of hexene (C6) comonomer and Total's proprietary catalyst technology, give the yarn a higher quality and durability level compared to alternative C4, C6 and C8-LLDPE.

KEY BENEFITS

- Improved durability (resistance to fibrillation)
- Superior tuft lock
- Softness
- Exceptional thermal resistance
- Easy processing
- Outstanding consistency
- Low die deposit



The exceptional performances of Lumicene® mPE enable the production at high output of top quality yarns exhibiting superior mechanical durability together with outstanding thermal resistance.

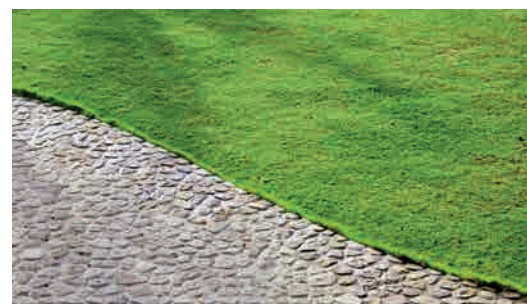


Competitive materials: * LLC8 (MI2 2.7; d 0.935); ** mLLC6 (MI2 3.5; d 0.918); *** On monofilament extrusion line at 100 m/min and 230°C.

Whether your game is football, rugby, hockey or golf, we have the ingredients for the most competitive yarn. As a pioneer in metallocene catalyst and process technology for linear polyethylene, we have built an extensive know-how and product range to let you score.

For soft landscaping yarns with outstanding quality consistency, choose our Lotrene® LLC4, and for non-contact sports, landscaping, and carpet backing applications, we offer a broad range of polypropylene resins.

Whatever your challenge, our complete portfolio and recognized expertise in polymer chemistry will bring you a solution, because



“Yarn Chemistry is our Field”

| PE | MAIN PROPERTIES | | | TYPICAL APPLICATIONS | | | |
|-------------------|------------------------------|--|-------------|----------------------|--------------------|--------------|---------|
| | Density g/cm ³ | Melt flow index (2.16 kg - 190 °C) g/ 10 min | VICAT °C | Contact sport | Non contact sports | Land-scaping | Backing |
| Lumicene® M1820EP | 0.918 | 2.0 | 102 | X | | | |
| Lumicene® M1835 | 0.918 | 3.5 | 99 | X | | | |
| Lumicene® M2310EP | 0.923 | 0.9 | 114 | X | | | |
| Lumicene® M2735 | 0.927 | 3.5 | 118 | X | X | X | |
| Lumicene® M3427 | 0.934 | 3.1 | 120 | X | X | X | |
| Lotrene® Q2018 | 0.918 | 2.0 | 100 | | | X | |

| PP | MAIN PROPERTIES | | | TYPICAL APPLICATIONS | | | |
|--------------------------|--|-------------------------|---|----------------------|--------------------|--------------|---------|
| | Melt flow index (2.16 kg - 230 °C) g/ 10 min | Flexural Modulus MPA | Izod notched (at 23 °C) kJ/m ² | Contact sport | Non contact sports | Land-scaping | Backing |
| Homopolymers | | | | | | | |
| PPH 3060 | 1.8 | 1300 | 6.0 | | X | X | X |
| PPH 4060 | 3.0 | 1350 | 5.0 | | | X | X |
| Impact Copolymers | | | | | | | |
| PPC 3640 | 1.3 | 1300 | 7.0 | | X | | |
| PPC 3660 | 1.3 | 1200 | 7.0 | | X | | |
| PPC 3650 | 2.0 | 1150 | 6.5 | | X | | |

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