Product Sheet

New DuPont™ Hytrel® Foam Meets Demand for Innovative, Sustainable Consumer Applications

Polymer foams are extremely lightweight and versatile, highly durable, and mildew resistant. These are a few of the reasons why they are found in numerous consumer applications. The demand for high-quality consumer products for growing and aging populations has led to innovation and development in this material segment.

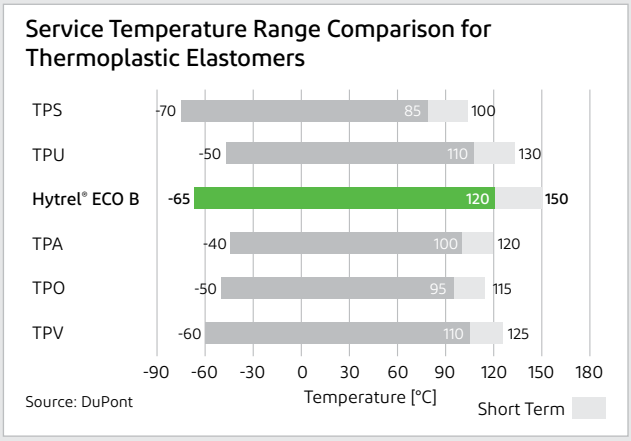
Polymer foams are primarily manufactured using various foaming processes such as bead, extrusion, injection molding, and batch methods. Some traditional materials and processes have limitations, though. For example, cross-linked foam material is non-biodegradable, requires a high amount of energy to produce, and emits VOCs.

To meet the rising demand for more innovative foam materials, DuPont recently applied the proven supercritical fluid (SCF) process to Hytrel® TPC-ET to create a new, more sustainable foam. Applying SCF to Hytrel® creates a closed-cell foam that offers lower environmental impact, expanded performance, and greater design freedom.

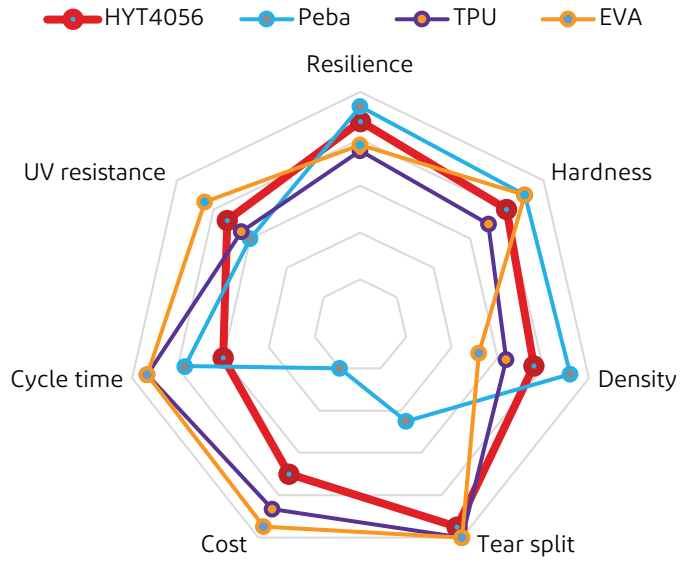
Unlike foamed materials that rely on chemical foaming agents, new Hytrel® foam is produced using CO_2 and N_2 gases, which are part of the time-tested and proven SCF process. This offers these benefits:

- No residues from chemical foaming agents in the final products
- No VOCs are emitted, so GWP (Global Warming Potential) is reduced
- No odors or allergens present
- Skin-contact compatible foam material

Featuring reduced weight, low thermal conductivity, high strength to weight ratio, and noise reduction, Hytrel® foams are widely used in sporting goods, and offer excellent possibilities for consumer goods, automotive, and furniture applications. DuPont brings this high-performance polymer together with the proven and innovative supercritical foaming process for higher efficiency, greater yield rates, and recyclability.



Hytrel® Properties After Foaming Comprehensive Comparison



Source: DuPont

High efficiency, shortened foaming process
Reduces adhesives with total Hytrel® integrated design solution

Performance

- High resilience (material contributed 15% increase, under the same hardness, density, foaming process)
- Lower density without hardness compromise (0.10-0.16)

Sustainability

- Green process without chemical foaming agent
- 100% Recyclable
- No VOC concern

Midsole Results Using Hytrel® Foam

Test Item	Unit	EVA	TPEE
Hardness	ASKER C	40-45	40-45
Specific Gravity	g/cm3	0.19-0.20	0.14-0.18
Tensile Strength	kg/cm2	22	45
Elongation	%	156	300
Split Tear	N/mm	2.29	2.0
Resilience	%	60	70-75
Compression Set	%	40	25

Source: Data from customer trials

Insole Performance Using Hytrel® Foam

Test Item	Unit	
Density	g/cm3	0.1-0.12
Hardness	Shore C	25-30
Tensile Strength	MPa	2.8
Elongation at Break	%	280
Method A Tear (Trouser)	N/cm	35
Compression Set	%	25
Ball Resilience	%	75-80

Source: Data from customer trials

Why Choose Hytrel® Foam?

DuPont™ Hytrel® foam combines the flexibility of rubber with the strength and processability of thermoplastics. for better resilience, heat resistance, chemical resistance, and foamed properties. It is compatible with with multiple processing options, including bead, sheet, and injection foaming methods.

Other advantages include:

- High resilience at low density
- Wide hardness range
- Broad service temperature range
- Outstanding durability
- Reworkable, recyclable
- Biomass-based grade for lower Global Warming Potential (GWP) available, drop-in replacement

Discover more

For more information about Hytrel® TPC-ET foam solutions for sporting goods, footwear, furniture, and automotive applications, contact your DuPont representative.

---

dupont.com

Form No. 001-20824-HMC0522