SKYPEL

Product Focus

SKYPEL® TPE-E

Engineered elasticity for high-performance applications



SK chemicals

Omya Performance Polymer Distribution

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A polyester elastomer built for performance and design freedom

SKYPEL® TPE-E is a thermoplastic copolyester elastomer (TPC-ET) from SK chemicals which combines the elasticity of rubber with the strength and thermal resistance of engineering plastics.

Its unique structure, integrating rigid polyester segments with flexible polyether phases, enables a balance of mechanical strength, long-term durability, and elastic recovery tailored to demanding applications.

Through **Omya Performance Polymer Distribution**, including **Distrupol**, customers across Europe can access the SKYPEL® TPE-E portfolio supported by grade recommendations, commercial coverage, local technical expertise and application guidance. Supporting customers from concept through to production helps to ensure application-focused success.

Key benefits

Material performance	Value for customers
High elasticity with strong recovery	Maintains shape and function under repeated stress cycles
Excellent flex-fatigue resistance	Proven durability in dynamic and long-life applications
Broad operating temperature range	Reliable performance from low to elevated temperatures
Chemical and oil resistance	Suitable for industrial, automotive, and cable environments
High mechanical strength (impact and creep)	Structural reliability in demanding conditions
Consistent melt flow behavior	Stable and efficient processing
Ability to reprocess thermoplastic material	Enables recycling and re-use in production

Typical applications

- **Mobility & automotive systems:** Air ducts, CVJ boots, bellows, airbag components and flexible parts – driven by fatigue resistance, temperature stability and strength.
- **Wire, cable & hose:** Cable jacketing, industrial hoses and air brake tubing – combining chemical resistance, flexibility and dielectric performance.
- **Fiber, film & textiles:** Elastic fibers, monofilaments and breathable films – enabled by elastic recovery, processability and permeability control (incl. TX-series).
- **Industrial & technical components:** Belts, gears, rollers and tubing – offering wear resistance and long-term reliability.
- **Consumer & engineered goods:** Seals, grips, wearables and design parts – delivering soft-touch elasticity and durability (incl. LP-series).

Portfolio

SKYPEL® TPE-E grade family	Design focus	Typical use cases
G-Series	Balanced performance	Injection molding, extrusion of industrial parts
P-Series	High flow / fast cycle	High-output molding and fiber production
FX / MX / S-Series	High-performance / specialty	Automotive, cable, high-stress environments
TX-Series	Film & breathable structures	Apparel membranes, technical films
LP-Series	Lower hardness / soft touch	Flexible parts, seals, and soft-touch/synthetic leather-type applications
ECO Grades	Sustainability-focused	Bio-based or environmentally optimized solutions, offering up to ~63% bio-based content (grade dependent)

Performance

SKYPEL® TPE-E performance can be tailored through grade selection to meet specific application requirements and operating conditions.

Property	Performance characteristics
Mechanical	High toughness, strong tensile performance, and excellent flex-fatigue resistance
Wear	Good abrasion resistance for demanding moving-part applications
Elasticity	Excellent flexibility and resilience across a wide range of applications
Thermal	Stable performance at elevated temperatures and excellent flexibility at low temperatures
Chemical	Excellent resistance to chemicals, oils, and solvents
Environmental	Performance depends on grade selection and specific end-use conditions

Typical properties

Property	Test method	Unit	Value range (low to high)
Hardness (A/D)	DIN ISO 7619-1	-	~70A – 82D
Density	DIN EN ISO 1183-1	g/cm^3	~1.10 – ~1.25 (0.040 – 0.045 lb/in^3)
Tensile strength	DIN 53504	MPa	~25 – ~50 (3,600 – 7,250 psi)
Elongation at break	DIN 53504	%	~300 – ~700
Tear strength	DIN ISO 34-1	kN/m	Up to ~110–120 (grade dependent)*
E-modulus (flexural/tensile)	DIN EN ISO 527-2	MPa	~50 – ~700
Temperature range	-	-	-40°C to +150°C (-40°F to 302°F)

Processing capability

SKYPEL® TPE-E is designed for manufacturing flexibility across multiple technologies:

- **Injection molding**
- **Extrusion (profiles, tubing, cable jacketing)**
- **Blow molding and film extrusion**
- **Fiber spinning and nonwoven processing**

The **consistent flow behavior and thermal profile** of SKYPEL® TPE-E support efficient, repeatable production for a range of applications.

Advanced sustainability material solutions



SKYPEL® TPE-E contributes to more sustainable product design.

- Thermoplastic recyclability enables the ability to reprocess scrap or used products
- Long service life reducing material replacement
- Availability of grades compliant with key regulations (e.g. FDA, RoHS, REACH)
- Opportunities for mono-material system design (e.g. polyester-based film + fabric structures) for easier recycling
- Availability of sustainability ECO grades with high bio-content options helps support lower environmental impact

Omya Performance Polymer Distribution – your partner across Europe

Through Omya Performance Polymer Distribution and Distrupol, SKYPEL® TPE-E is supported by:

- **Pan-European commercial and logistics network**
- **Local application development and technical support**
- **Material selection and grade optimization guidance**
- **Processing and scale-up expertise**
- **Deep experience in thermoplastic elastomers**

Let's develop your next application together

SKYPEL® TPE-E enables engineers and designers to achieve **durable, flexible and process-efficient solutions** across a wide range of industries.

Contact Omya Performance Polymer Distribution to discuss your application, material selection or performance requirements.

omya.com

Talk to an expert

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