

INNOVATIVE SOLING SOLUTIONS

DALTOPED® *Lite* ENERGY TECHNOLOGY

For lightweight, dynamic comfort shoes

DALTOPED® *Lite* ENERGY technology is a brand new polyurethane soling solution from Huntsman. Providing high rebound cushioning, at a density range of 250-450 kg/m³, DALTOPED® *Lite* ENERGY technology is ideal for the production of midsoles for sports footwear and single density soles for athleisure shoes – typically worn during workouts but also as comfortable casual wear.

With major advantages compared to benchmark soling solutions, DALTOPED® *Lite* ENERGY technology is a viable alternative for footwear manufacturers looking to substitute ethyl vinyl acetate (EVA) or upgrade the rebound and elasticity properties achieved by existing polyurethane soling materials.

Like all other DALTOPED® *Lite* polyurethane systems, DALTOPED® *Lite* ENERGY technology is made without the use of tin-based catalysts – enabling footwear manufacturers to reduce customer concerns about the use of potentially harmful ingredients in their shoes and boots.

Benefits

Excellent mechanical properties

- Good dynamic rebound and cushioning
- Lightweight (250-450 kg/m³)
- Potential alternative to EVA and eTPU
- Comfort upgrade for conventional PU soles
- Good compression set / deformation.

Easy to process

- Can be produced on conventional footwear machinery
- Suitable for direct-on as well as casting unit soles
- Multiple color options available.

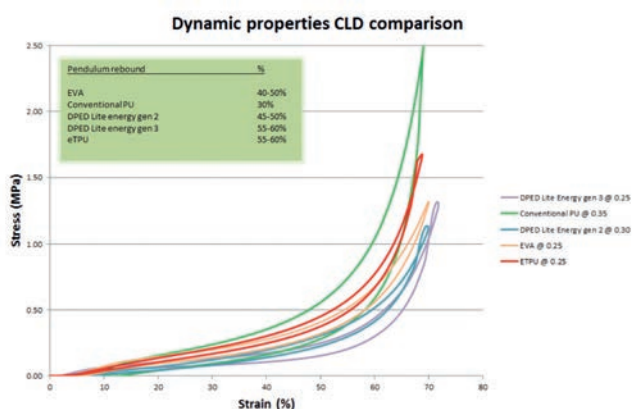
High productivity

- Can help reduce manufacturing costs
- Lower energy consumption
- Reduced costs for molds.
- Faster cycle times
- Compatible with automated processes.



Typical technical properties

	EVA	Conventional PU	DPED <i>Lite</i> Energy gen 2	DPED <i>Lite</i> Energy gen 3	eTPU (Benchmark)
Density (kg/m ³)	250	350	300 - 450	250	250
Hardness (Shore A)	32	47	30 - 45	30	30
Hardness (AskC)	56	70	55 - 67	55	55
Split tear (N/mm)	3.0	2.5	2.5 - 3.5	1.8	
Trouser tear (N/mm)	3.4	4.9	3.5 - 4.9	3.0	
Tensile strength (MPa)	2.7	2.0	2.5 - 3.5	1.6	1.6
Elongation (%)	270	300	340	300	200
Flex life (Bennewart / 100kCycl / mm cut growth)	1-2-0	1-0-1	2-1-1	NA	NA
Abrasion (mg loss)	150 - 200	70	70	NA	NA



Committed to sustainable soling solutions

Adding DALTOPED® *Lite* ENERGY technology to our existing footwear range demonstrates our dedication to creating sustainable innovations for the polyurethane soling materials market – and our ability to deliver solutions in step with industry trends.

Committed to customers

Alongside an extensive range of polyurethane soling materials, our highly skilled, technical footwear team can help optimize customer production processes. At our technical development center – where we've installed the very latest injection molding and casting equipment – we can replicate the manufacturing set up of our customers. This investment in our research and development capabilities, means our footwear products are well suited to the needs of manufacturers and can be processed extremely efficiently. It also enables partnerships with footwear customers who have a specific brief or manufacturing challenge to overcome.

- Dedicated to sustainable innovation
- Supporting customers with tailor-made solutions
- Committed to long-term partnerships
- In-house customer prototyping available
- Specialist technical support on offer
- Helping footwear manufacturers stay one step ahead.

For more information

Huntsman Europe BVBA

Everslaan 45

3078 Everberg

Belgium

Tel: +32 (0) 2 758 9211

polyurethanes_eu@huntsman.com

Huntsman (Germany) GmbH

Land Au 30

94469 Deggendorf

Germany

Tel: +49 9912 7040

Huntsman Polyurethanes

Toixide Europe S.r.l.

Manufacturing & sales

Via Mazzini 58 21020

Ternate (Varese) Italy

Tel: +39 (0) 332 941 111

HUNTSMAN

Enriching lives through innovation

About Huntsman

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated chemicals with 2015 revenues of approximately \$10 billion. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 100 manufacturing and R&D facilities in approximately 30 countries and employ approximately 15,000 associates within our 5 distinct business divisions. For more information about Huntsman, please visit the company's website at www.huntsman.com.

Disclaimer

Huntsman Polyurethanes warrants only that its products meet the specifications agreed with the buyer. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

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