

H₂Pro™ EBT25

SPECIALLY DEVELOPED EPDM TO MEET THE UNIQUE CHALLENGES OF HYDROGEN APPLICATIONS



Specially engineered for hydrogen applications, H₂Pro™ EBT25 is a new ethylene propylene diene monomer (EPDM) designed for high pressure environments across a wide range of temperatures.

H₂Pro™ EBT25 is part of the expanding Trelleborg Sealing Solution portfolio of H₂Pro™ materials designed to support customers working with hydrogen applications in the transport, energy and industrial sectors.

A unique proprietary EPDM formulation, H₂Pro™ EBT25 demonstrates outstanding sealing performance in low-temperature and high-pressure conditions containing hydrogen gas. It can be used across the hydrogen value chain for a full range of applications.

H₂Pro™ EBT25 is compounded to minimize permeation in hydrogen applications while exhibiting mechanical properties and sealing performance similar to typical EPDMs. It is proven to withstand rapid gas decompression (RGD) at pressures of up to 700 bar, which can damage or destroy standard materials. and has improved wear and extrusion performance.

H₂Pro™ EBT25 is available for standard parts, such as an O-Ring, and custom molded shapes and is suitable for both static applications.

Facilitating Innovation

Are you working on a new design for a hydrogen application?

H₂Pro™ EBT25 is available for rapid prototyping for simple geometries and Provision of Offers even for low volumes of O-Rings, custom molded parts and multi-component assemblies. If you are working on new innovations in the field of renewable energy, hydraulics and pneumatics, please contact us for support.

www.trelleborg.com/seals/worldwide

Features and benefits

- Designed specifically for H₂ compatibility
- Superior resistance to rapid gas decompression (RGD), tested up to 700 bar
- Low permeability
- Wide operating service temperature from -55 °C to +150 °C/-67 °F to +302 °F
- 85 Shore A hardness
- Excellent extrusion resistance
- Compliant with Regulation (EC) 79/2009, SAE J2600 and ANSI CHMC 2
- Suitable for O-Rings, engineered parts and other static seals and as an energizer for dynamic seals

Applications

- Compressed hydrogen gas (CGH₂) storage and transportation systems
- Low- and high-pressure valves
- Connectors
- Electrolysis equipment

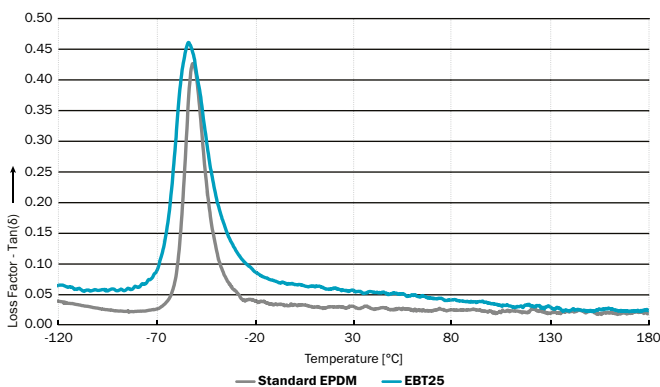
General Properties		
Hardness	86 Shore A	DIN ISO 48-4
Density	1.35 g/cm ³	DIN EN ISO 1183-1
100% Modulus	10.4 MPa/ 1508.4 psi	DIN 53 504
Tensile Strength	14.0 MPa/ 2030.5 psi	DIN 53 504
Elongation at break	132%	DIN 53 504
TR10 (TMA)	-51 °C/-60 °F	TBS 00036

Compression Set according to DIN ISO 815-1 test piece B, Method A		
24h, +150 °C/+302 °F, 25%	8%	DIN ISO 815-1 A
72h, +125 °C/+257 °F, 25%	15%	DIN ISO 815-1 A
168h, +125 °C/+257 °F, 25%	20%	DIN ISO 815-1 A
336h, +125 °C/+257 °F, 25%	29%	DIN ISO 815-1 A
504h, +125 °C/+257 °F, 25%	29%	DIN ISO 815-1 A
1008h, +125 °C/+257 °F, 25%	38%	DIN ISO 815-1 A

General Data	H ₂ PRO™ EBT25
Projected Service Temperatures	-55 °C to +150 °C/ -67 °F to +302 °F

Oxygen Ageing according to ASTM D572	
96h, 2.07 MPa/300 psi, +70 °C/+158 °F	no cracks

Ozone Ageing according to ISO 1431	
120h, +40 °C/+104 °F, 50 ppm, 20% elongation	pass



Hydrogen Resistance 168h based on EC79/SAE J2600/ISO 17268, 70 MPa/10152.6 psi

Temperature	Change in Volume Max. -1/+25%	Change in Weight Max. -10%	Rapid Gas Decompression
-40 °C/-40 °F	5.1%	0.2%	no cracks
+20 °C/+68 °F	1.2%	-0.1%	no cracks
+85 °C/+185 °F	0.9%	0.1%	no cracks
+130 °C/+266 °F	-0.5%	-0.1%	no cracks

Heat Ageing 72h, +150 °C/+302 °F according to DIN 53 508

Change of Hardness	+5 Shore A
100% Modulus	14.0 MPa/2030.5 psi
Tensile Strength	16.8 MPa/2436.6 psi
Change of Tensile Strength	+20%
Elongation at break	118%
Change of Elongation at break	-11%
Change of Weight	-2%

