

# PRESS RELEASE



## KED-Seals Announces New Suite of Elastomers for Demanding Hydrogen Gas Environments

6 September 2023

KED-Seals, a Material Technology Company supplying high performance Seals and Electrical Connectors, is excited to introduce “Hydrogen H2 Ultimate”; a new suite of advanced elastomers engineered to excel in demanding hydrogen gas environments.

Hydrogen gas is playing an increasingly vital role in various industries, from clean energy solutions to aerospace, and industrial processes. These cutting-edge elastomers are designed to provide enhanced performance, reliability, and safety in applications such as hydrogen storage, transportation, and fuel cells.

### Key features of KED-Seal’s new suite of elastomers include:

- **Enhanced compatibility:** These elastomers have been specifically formulated to withstand the extreme conditions found in hydrogen gas sealing applications.
- **Rapid Gas Decompression (RGD) Resistance:** KED-Seals has utilised previous experience to produce elastomers that perform outstandingly in high pressure environments.
- **Excellent Temperature Range:** With the capability to seal at temperatures from -60°C to 200°C, this allows a wider range of critical hydrogen applications to be considered.

KED-Seals is located in Frankfurt, Germany, Aberdeenshire, Scotland and Diamondhead, USA. The company specializes in the design and supply of high performance Seals, Elastomeric and Thermoplastic product solutions across all industries, including Oil & Gas. Capabilities include Machining and Moulding of both Elastomers and high performance Engineered Plastics, Elastomer-to-Metal Bonding, Composite Materials, Low Friction Coatings, Electrical Feedthrough Connectors, Boot Kits, and complementary products.

KED-Seals is structured to be a nimble and responsive organisation, working closely with customers to better understand their requirements. Quality is *the* focus for KED-Seals, from exceptional Customer Service, through to developing new, cutting-edge designs and delivering products on time to meet the customers’ critical testing and production schedules.

Attachment:           Data sheet HYDROGEN H2 ULTIMATE SEALS, HNBR H14096-LT  
                                  Data sheet HYDROGEN H2 ULTIMATE SEALS, HNBR H14093-UL

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**KED-Seals Ltd**  
Unit 9, Netherpton Business Centre  
Kemnay, Aberdeenshire  
AB51 5LX, Scotland  
  
Tel: +44 7961 078750  
igravill@ked-seals.com

**KED-Seals LLC**  
14648 Diamondhead S  
Montgomery  
TX77356 USA  
  
Tel: +1 713 540 8611  
nspence@ked-seals.com

**KED-Seals GmbH**  
Daimlerstrasse 6a  
61449 Steinbach  
Germany  
  
Tel: +49 6171 9198580  
hdittmann@ked-seals.de

## HYDROGEN H<sub>2</sub> ULTIMATE SEALS

### HNBR H14096-LT

*Compounded for Ultimate Sealing Performance in Hydrogen Gas*

HNBR 90 Shore A, Rapid Gas Decompression (RGD) Resistance, Low Temperature to -35°C

**NORSOK M-710 Approved**  
**NACE TM0187 Approved**

**NACE TM0297 Approved**  
**API 6A Approved**

Werkstoffbezeichnung / Designation: **HNBR, RGD, LT**  
LT Material Nummer / Material Number: **14096**  
Werkstoffbasis / Base Material: **NBR**  
Temperaturbereich / Temperature Range: **-35°C to +160°C**  
Farbe / Colour: **Schwarz / Black**

Physikalische Eigenschaften Physical Properties		Norm Standard	Ergebnis Result
Härte / Hardness	Shore A	ASTM D 2240	90 +/-5
Spezifisches Gewicht / Density	g/cm <sup>3</sup>	ASTM D 297	1,28
Zugfestigkeit / Tensile Strength	N/mm <sup>2</sup>	ASTM D 1414	23.8
Modul bei 100% Dehnung / Modulus	N/mm <sup>2</sup>	ASTM D 412	16.9
Bruchdehnung / Elongation to Break	%	ASTM D 1414	145
Druckverformungsrest / Compression Set 24 h / 150°C, Methode B	%	ASTM D 395	11
Tieftemperaturverhalten / Low Temperature Properties TR 10	°C	ASTM D 1329	- 18°

Die angegebenen Werte der typischen Eigenschaften sind in Versuchen unter laborüblichen Bedingungen ermittelte Durchschnittswerte. Diese korrelieren nicht zwangsweise mit Resultaten, die am Fertigteil ermittelt werden. Unsere Angaben befreien den Anwender nicht, Eignungsversuche durchzuführen. Fertigungsverfahren und enthaltene Rohstoffe werden dem Fortschritt der Technik bzw. den gesetzlichen toxikologischen Bestimmungen angepaßt.

The test results are mean values and represent typical material properties. They are gained under usual laboratory conditions and do not necessarily correspond to results measured on finished goods. The compound information does not release the user from the necessity to conduct his own testing's. Production methods and ingredients are subject to change with regard to technical progress and toxicological regulations.

**KED-Seals Ltd**  
Unit 9, Netherton Business Centre  
Kemnay, Aberdeenshire  
AB51 5LX, Scotland  
Tel: +44 7961 078750  
igravill@ked-seals.com

**KED-Seals LLC**  
14648 Diamondhead S  
Montgomery  
TX77356 USA  
Tel: +1 713 540 8611  
nspence@ked-seals.com

**KED-Seals GmbH**  
Daimlerstrasse 6a  
61449 Steinbach  
Germany  
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hdittmann@ked-seals.de

## HYDROGEN H<sub>2</sub> ULTIMATE SEALS

### HNBR H14093-ULT

*Compounded for Ultimate Sealing Performance in Hydrogen Gas*

HNBR 90 Shore A, Rapid Gas Decompression (RGD) Resistance, Ultra-Low Temperature to -55°C

**NORSOK M-710 Approved**  
**NACE TM0187 Approved**

**NACE TM0297 Approved**  
**API 6A Approved**

Werkstoffbezeichnung / Designation: **HNBR, RGD,**  
LT Material Nummer / Material Number: **14093**  
Werkstoffbasis / Base Material: **NBR**  
Temperaturbereich / Temperature Range: **-55°C to +160°C**  
Farbe / Colour: **Schwarz / Black**

Physikalische Eigenschaften Physical Properties		Norm Standard	Ergebnis Result
Härte / Hardness	Shore A	ASTM D 2240	90 +/-5
Spezifisches Gewicht / Density	g/cm <sup>3</sup>	ASTM D 297	1,27
Zugfestigkeit / Tensile Strength	N/mm <sup>2</sup>	ASTM D 1414	18.5
Modul bei 100% Dehnung / Modulus	N/mm <sup>2</sup>	ASTM D 412	12.2
Bruchdehnung / Elongation to Break	%	ASTM D 1414	110
Druckverformungsrest / Compression Set 24 h / 150°C, Methode B	%	ASTM D 395	15
Tieftemperaturverhalten / Low Temperature Properties TR 10	°C	ASTM D 1329	- 38°

Die angegebenen Werte der typischen Eigenschaften sind in Versuchen unter laborüblichen Bedingungen ermittelte Durchschnittswerte. Diese korrelieren nicht zwangsweise mit Resultaten, die am Fertigteil ermittelt werden. Unsere Angaben befreien den Anwender nicht, Eignungsversuche durchzuführen. Fertigungsverfahren und enthaltene Rohstoffe werden dem Fortschritt der Technik bzw. den gesetzlichen toxikologischen Bestimmungen angepaßt.

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