

POWERING THE FUTURE



HYDROGEN-READY O-RING

HYDROGEN SPECIALISTS

Compatibility certified!

The suitability of the compounds with hydrogen is crucial to prevent sealing failures, such as leaks or deterioration and to ensure long-term performances in critical applications.

The hydrogen compatibility testing of non-metallic materials is conducted by an external laboratory, TUV SÜD, in accordance with SAE J2600.

TEST SAMPLE	HYDROGEN EXPOSURE	TIME	PASS CRITERION
Z534 - EPDM 70 black perox	RT. 20°C / - 40°C P. 150 bars	168 h	According to SAE J2600
Z667 - FKM 90 black PLT ED	RT. 20°C / - 40°C P. 250 bars	168 h	According to SAE J2600
Z079 - FKM 75 black	RT. 20°C / - 40°C P. 150 bars	168 h	According to SAE J2600
Z228 - FKM 70 blue	RT. 20°C / - 40°C P. 150 bars	168 h	According to SAE J2600

TEST RESULT

Our rigorous testing ensures that after exposure, the o-ring samples retain their original characteristics. The samples show no signs of:

- explosive decompression damage;
- swell beyond 25%;
- shrink more than 1%;
- loss over 10% of their weight.

All tested compounds have proven to be fully compatible with hydrogen applications.

Passed the tests!

Hydrogen presents significant challenges for non-metallic materials due to the o-ring's permeability, allowing small molecules to penetrate compounds easily and complicate the sealing process.

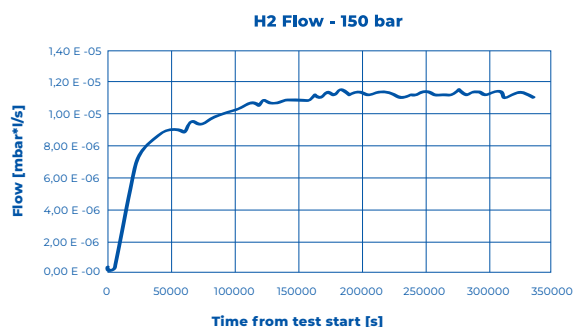
The test, conducted by an external laboratory, TUV SÜD, assessed the hydrogen gas transmission rate using 85 mm diameter samples under the following conditions:

- T: 20 ± 5°C
- P: 150 bars
- P: 250 bar (Z667 - FKM 90 black PLT ED only)
- 100% gaseous hydrogen in a chamber connected to a mass spectrometer in vacuum mode to measure the transmission rate

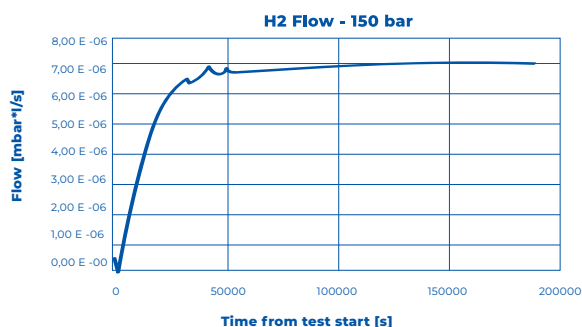
INSPECTION REPORT

Steady-state H₂ transmission rate of our compatible compounds.

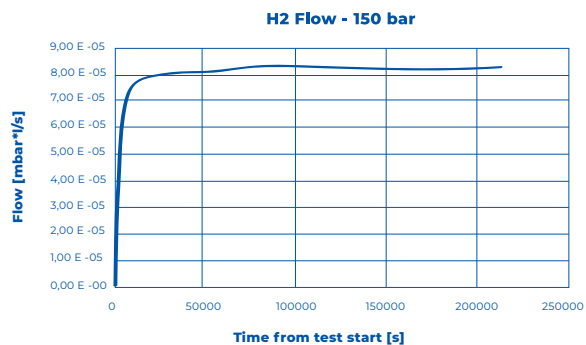
Z079 - FKM 75 black



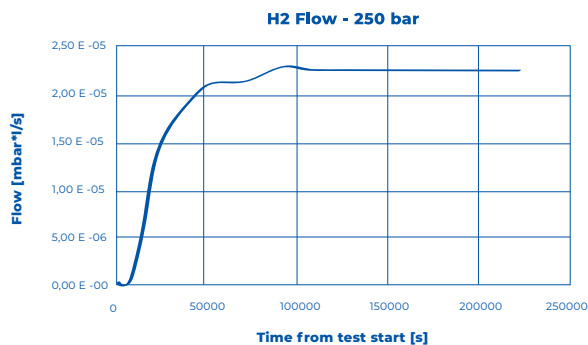
Z228 - FKM 70 blue



Z534 - EPDM 70 black perox



Z667 - FKM 90 black PLT ED



DO YOU NEED MORE INFORMATION?

CONTACTS:

✉ sales@oringone.com

✉ lab@oringone.com

oringone.com