

Sealing Compound EJ820 (EPDM) for Water Applications

with Global Approvals



Parker Prädifa has developed the EPDM compound EJ820 as a robust sealing material with particular suitability for drinking water applications. Due to its low compression set combined with enhanced resistance against autoxidation, the material guarantees long life and reliable sealing performance, for instance in valves and fittings, and in pipe systems.

In addition to drinking water, hot water and hot steam of up to 180 °C, the material is first choice in many organic and inorganic acids, detergents, sodium and caustic

potash solutions, in polar solvents, in silicone oils and greases, and in hydraulic fluids based on phosphoric acid ester (HFD-R).

From the conventional O-ring (in imperial and metric dimensions with diameters of up to several meters) through to membranes and engineered moldings according to customer drawings the EJ820 compound can also be processed in rubber-metal combinations.

Reliable Long-Term Reliability

Thanks to outstanding mechanical properties and excellent permanent elasticity, i.e. low compression set, in combination with enhanced resilience against autoxidation seals produced from this material – whether as pipe seals, radial shaft seals in pumps or for sealing sensors in operations that process drinking water – deliver the required reliability and long service life. Domestic water pipes, for instance, are expected to last for a minimum of 30 years after installation.

Compound Properties

- Good chemical resistance in hot water and steam up to 180 °C
- Cold resistance down to -50 °C
- Outstanding resistance in drinking water

- Certified toxicological harmless
- Perfectly suited for many polar solvents (alcohols, esters, organic and inorganic acids)
- Ozone-, age- and weather-resistant
- Long service life and high abrasion resistance
- Extensive international approvals and conformities

Recommended Applications

- Heating valves and pumps
- Drinking water and service water systems
- Pressure and temperature measuring technology
- Solar thermal systems
- Beverage industry, e.g. in CIP/SIP cleaning processes
- Aqueous pharmaceutical processes, e.g. in steam pressure sterilization
- Chemical industry

Media Compatibility

- Drinking and service water, hot water and hot steam
- Glycol-based brake fluids up to 150 °C
- Silicone oils and greases

Consumer Protection is of Paramount Importance

Sealing materials for applications in drinking water and service water systems are subject to diverse approval requirements worldwide. They serve to ensure that the seals and materials from which they are produced are toxicologically harmless and practically contain no extractables across the entire process chain: from the extraction of water via its treatment and transportation through to extraction by the final consumer. The EPDM compound developed by Parker Prädifa meets the requirements of a wide range of national and international market-specific approvals and conformities and therefore allows for global use of the sealing systems.

Approvals and Conformities

Regulation	Valid in	Application
UBA Elastomer Guideline for Cold and Hot Water	DE	Temporary regulation (up until March 21, 2021) stipulating hygienic requirements for materials and contact with drinking water
WRAS	GB	Plastics in contact with drinking water
W270	DE	Drinking water applications
EN 681	EU	Sealing elements in water supply applications
KIWA	NL	Rubber seals for drinking water and waste water pipe joints
Bfr XXI Cat. 4	DE	Rubber commodities in contact with food and animal feed
FDA 21 CFR 177.2600 (except milk and edible oil)	US	Market monitoring of food, cosmetics, pharmaceuticals and medical products
DIN-DVGW type examination certificate	DE	Drinking water
NSF 61	US	Drinking water
(EC) No. 1272/2008 (CLP)	EU	Drinking water
CLP	FR	Food
(EC) No. 1097/2006 (REACH)	EU	General restriction of chemical ingredients
2011/65/EU (RoHS)	EU	Restriction of specific hazardous substances

Physical Properties

Property	Standard	Dimension	EJ820
Elastomer base			EPDM
Color			black
Hardness	DIN 53505	Shore A	70 ±5
Modulus (100 %)	DIN 53504	N/mm ²	4.7
Tensile strength	DIN 53504	N/mm ²	13.5
Ultimate elongation	DIN 53504	%	230
Compression set 70 hrs/150 °C	ISO 815/7.5.1	%	12
Operating temperature		°C	-50 / +150°C (180 °C in hot water)

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 users from the necessity of conducting their own tests.

