

Rubber technology Data

PLATE HEAT EXCHANGER AND RUBBER GASKET

Plate heat exchangers are widely used in various industries due to their high heat transfer efficiency, compact design, and versatility. There is a high demand for them in industries where energy savings are required, in space-constrained industrial settings, and in industries that require frequent maintenance.

The size and quantity of heat exchange plates and the selection of gasket rubber material must be appropriately chosen based on the operating conditions and fluid characteristics of the environment where heat exchange processes are required. Such technical knowledge and expertise have an impact on achieving the optimal efficiency of the product and a low defect rate.

In particular, the rubber gaskets used in plate heat exchangers are crucial components that influence the product's quality. They maintain the spacing between the heat exchange plates and provide a seal, ensuring complete separation between the two fluids inside the heat exchanger. Their role is to prevent the mixing of particles, impurities, or chemicals between the two fluids, keeping each fluid clean and effectively transferring heat during the heat exchange process

INDUSTRIES UTILIZING PLATE HEAT EXCHANGERS

1. HVAC (Heating, Ventilation, and Air Conditioning)
 - Plate heat exchangers are used in ventilation systems to recover heat, improving energy efficiency and enabling heat transfer between supply and exhaust air streams.
 - Applications: Heating and cooling of buildings, heat recovery systems, etc.
2. Food and Beverage Industry



- Utilized for the sterilization/cooling of dairy products, cooling/heating/fermentation/heat treatment of beer, and cooling/heating/sterilization processes in the beverage and food industry.
- Particularly suitable for products containing particles, such as juices and dairy products.

3. Chemical Industry

- Used in heating and cooling processes involving various chemical substances (organic and inorganic) and corrosive fluids.
- Applications: Petroleum refining, oils, pharmaceuticals, soda, paints, fertilizers, etc.

4. Power Industry

- Used for steam condensation, lubricant cooling, and heat recovery in power plants.
- Cooling of turbines and transformers, heat transfer in nuclear reactors, ensuring safe operation through circulation and removal.

5. Manufacturing Industry

- Plate heat exchangers are used in metal processing for the cooling of hydraulic fluids, lubricants, and cutting oils.

6. Refrigeration Systems

- They serve as evaporators and condensers in refrigeration systems and are used in coolers and oil coolers.

7. Other Applications

- Pharmaceutical industry, pulp and paper industry, shipping, aquaculture facilities, cultivation facilities, horticulture, tire manufacturing, and more.

These applications demonstrate the versatility and wide range of industries in which plate heat exchangers find use.

Raw rubber material handled at Viser

NBR, HNBR, IIR, CR, FKM, EPDM, VMQ

The selection of materials for rubber gaskets used in plate heat exchangers is crucial. The material is determined considering factors such as the environment, pressure, temperature, contact with chemicals, etc. Well-chosen rubber gaskets enable plate heat exchangers to operate efficiently and safely in demanding environments, including high-temperature, high-pressure, and corrosive substance conditions, as well as in food processing environments.

*(Note) Chemical Resistance of Raw Rubber

**Our NBR and EPDM materials have been determined to be safe for use in food processing environments, meeting FDA (177-2600) standards.

(NOTE) CHEMICAL RESISTANCE OF RAW RUBBER

Chemical	Test Conditions		NBR	CR	IIR	EPDM	SI	FKM
	Temp(°C)	C(%)						
H ₂ O	100	-	B	B	B	B	B	B
HCOOH	50	10	C	C	B	B	B	B
	RT	100	D	D	D	D	B	D
HCl	RT	20	B	B	A	A	B	A
	RT	37	C	C	B	B	D	A
H ₂ SO ₄	50	30	B	B	B	B	B	A
	RT	96	D	D	C	C	D	A
	50	96	D	D	/	/	D	B
HNO ₃	RT	10	D	C	B	B	D	A
	50	10	D	D	C	C	D	A
	RT	61	D	D	D	D	D	B
HF	RT	56	D	B	B	B	D	B
H ₃ PO ₄	RT	86	B	B	B	B	B	B
NaCl	70	30	B	B	B	B	B	B
Na ₂ CO ₃	RT	30	B	D	B	B	D	B
	90	10	B	D	B	B	D	D
NH ₃	RT	5	B	B	B	B	C	B
NaHCO ₃	70	10	B	B	B	B	B	C
H ₂ O ₂	50	1	C	C	B	B	A	A
NaClO ₂	RT	5	C	B	A	B	A	A
	50	5	D	C	B	B	A	A
	90	5	D	D	B	B	A	A

A - Recommended, B - Minor to moderate effect, C - Proceed with caution, D - Unsatisfactory