

ELECTROLYSIS TEST EQUIPMENT · DACH

Alkaline electrolysis test benches: 8 filters, one housing type

A test-bench builder needed gas coalescers for H_2/O_2 and filters for the KOH electrolyte circuit. We proposed one PTFE-sealed 316L housing for all eight positions and a customer test plan for KOH.


APPLICATION

Single-cell alkaline electrolysis test benches

ELECTROLYTE

KOH, approx. 30 %

FILTERS

4 gas (H_2/O_2) + 4 electrolyte

HOUSING

One type for all 8 positions

CONNECTION

1/2" NPT, 100 bar

SITUATION

A machine builder was setting up two single-cell test benches for alkaline electrolysis. Each bench needed coalescing filters on the hydrogen and oxygen outlets and filters in the potassium-hydroxide electrolyte circuit.

TASK

Select materials that are suitable for KOH contact, keep the number of spare-part types to a minimum and be transparent about what can and cannot be promised in KOH.

ENGINEERING APPROACH

- One housing for all positions**
RF-H-132 in 316L with a solid PTFE gasket for all eight filters. Viton is not suitable in KOH, so the standard seal was replaced.
- Gas side: PTFE element**
RF-TF-25064-003 on the H_2 and O_2 outlets. Units for oxygen service are supplied oxygen-cleaned.
- Electrolyte side: sintered stainless steel**
RF-SS-25064-010 in the KOH circuit, alternatively a 25 μm PTFE element. Sintered elements are depth filters, not fine coalescers, and can be cleaned ultrasonically.
- Glass microfibre only as a comparison**
RF-C-25064-HE can be tested side by side. If it is chosen instead of PTFE, it must be changed every 3 months and is not cleanable.
- Customer test plan**
Log differential pressure and remove and inspect elements and seals after a defined time. We recommend one spare element per filter.

PRODUCTS USED IN THIS CASE



RF-H-132
HOUSING (ALL 8)



RF-TF-25064-003
GAS COALESCER H_2/O_2



RF-SS-25064-010
ELECTROLYTE CIRCUIT



RF-C-25064-HE
TEST COMPARISON

Anonymised application example. Customer name, project data and prices are not disclosed.

RECOMMENDED R+F CONFIGURATION



HOUSING (ALL 8)

RF-H-132

316L, 1/2" NPT, 100 bar, solid PTFE gasket.



GAS COALESCER H₂/O₂

RF-TF-25064-003

PTFE element; O₂ units oxygen-cleaned.



ELECTROLYTE CIRCUIT

RF-SS-25064-010

Sintered stainless steel, ultrasonically cleanable.



TEST COMPARISON

RF-C-25064-HE

Glass microfiber; change every 3 months.

LIMITS & OPEN POINTS

- Long-term resistance in KOH must be tested by the customer; we make no commitment on service life or separation efficiency in KOH.
- PTFE and sintered elements are depth filters and do not reach fine-coalescer grades.

Result: A single spare-part type for the housing, clear element roles per position and a test plan that turns KOH uncertainty into measured data.

HOW WE WORK WITH YOU

1 · Send your data

Gas, flow, pressure, temperature, contamination and connection size.

2 · Get a configuration

Housing and element with R+F article numbers, limits stated openly.

3 · Order and service

Housings supplied with element fitted; replacement elements available individually.

Similar application? Let us size it for you.

Send us your operating data and we return a concrete filter configuration with R+F article numbers.

- Gas / medium and contamination
- Flow (Nm³/h or L/min), pressure, temperature
- Connection size (NPT) and installation position

info@filter-elements.eu

Online inquiry: process-gas-filter.com
Free filtration engineering tool

Read more: Electrolyte circuit filtration (KOH) · KOH removal from hydrogen · Hydrogen electrolysis filtration · Cleanable filter elements