Mini Spray Dryer B-290 acid resistant
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- efficient and safe spray drying of acid containing substances

The acid resistant Mini Spray Dryer B-290 version is made to spray dry acid solutions in open mode configuration. It comprises a highly effective perfluoroalkoxy polymer coating (PFA) on the metallic parts of the spray dryer which are in contact with the product and drying gas. The coating prevents corrosion and results a good quality similar to polytetrafluoroethylene (PTFE).

Areas of application
- Materials science and chemical industries working with acids
- Spray drying of corrosive salt solutions
- Solidifying of metals for catalyst applications in ceramics industry
- Processing of hydrocarbons
- Development of new materials for electronic applications

**NOTE:** The internal surface of the aspirator (gas circulator) is PTFE coated. The exhaust gas has to be lead away by a ventilation system.
**Order information**

### Instruments

- **Mini Spray Dryer B-290 acid resistant**, 230 V, 50-60 Hz 11056420
- **Mini Spray Dryer B-290 acid resistant**, 200 V, 50-60 Hz 11056421

### Optional accessories

- Nozzle set 1.4 mm titanium complete (includes nozzle cap 2.2 mm, nozzle tip 1.4 mm) 11056415
- Nozzle set 2.0 mm titanium complete (includes nozzle cap 2.8 mm, nozzle tip 2.0 mm and needle 2.0 mm) 11056416

### Spare parts

- **Needle 0.7 mm titanium** 11056315
- **Needle 1.4 mm titanium** 11056417
- **Needle 2.0 mm titanium** 11056422
- **Nozzle tip 0.7 mm titanium** 11056317
- **Nozzle tip 1.4 mm titanium** 11056419
- **Nozzle tip 2.0 mm titanium** 11056424
- **Nozzle cap 1.5 mm titanium** 11057509
- **Nozzle cap 2.2 mm titanium** 11057510
- **Nozzle cap 2.8 mm titanium** 11057511

- **Spray cylinder holder PFA coated** 11056324
- **Knurled screw PFA coated** 11056325

- **Outlet filter acid resistant complete** 11056333
- **Inlet drying gas filter** 011235
- **Spray cylinder with vertical outlet** 044697
- **Safety lamella curtain** 044783
- **Feed switch valve** 044725
- **Remote control unit** 044702

- **Metal cover PFA coated** 11056327

- **Sensor support adapter** 11056318
- **Clamp ring ID 8 mm** 11056316
- **O-ring of fluoroelastomer 7x1.5 mm** 004223
- **Temperature sensor acid resistant** 11056329

- **Filter body PFA coated** 11056335
- **Connecting piece for filter PFA coated** 11056334
- **Flange screw coupling PFA coated** 11056326
Perfluoralkoxy (PFA) polymer coating with excellent properties

Perfluoralkoxy (PFA) polymer is a fluorised hydrocarbon with high molecular, partially crystalline structure. It is recommended in chemical process technology under extreme conditions as a long-lasting, chemically inert coating with very good non-adhesive properties.

The mechanical and chemical properties are similar to PTFE.

The major properties are:
- chemically resistant
- excellent non-adhesive properties
- high temperature resistance

Common acids used in spray drying

<table>
<thead>
<tr>
<th>Name</th>
<th>Formula</th>
<th>Boiling point</th>
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</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>C₂H₄O₂</td>
<td>118°C</td>
</tr>
<tr>
<td>Citric acid</td>
<td>C₆H₈O₈</td>
<td>175°C (decomposition)</td>
</tr>
<tr>
<td>Formic acid</td>
<td>CH₂O₂</td>
<td>101°C</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>HNO₃</td>
<td>83°C</td>
</tr>
</tbody>
</table>

Cleaning instructions

1. Clean the nozzle and glass parts immediately after each spray drying run. Wear protective equipment.
2. Wash the parts with a mild detergent solution.
3. Rinse the parts with hot water and let them dry.
4. Examine the nozzle parts under a microscope to verify cleanliness.
5. Check the integrity of the o-rings. Replace if necessary.

NOTE: Do not spray hydrochloric acid (HCl) because it will corrode the stainless steel parts of the nozzle.