

## Gas purifying systems

### Gas chromatography, environment analysis, pharmaceutical and biotechnical applications

Oxygen, moisture and hydrocarbons are the three main chemical impurities which have to be reduced before the gases are used for analytical purposes. Moisture and oxygen carrier gas limit the life span of the GC chambers, while hydrocarbons cause "ghost peaks" in chromatogram. This leads to poor results and inadequate reproducibility.

### Semiconductor technology

In the semiconductor industry, oxygen and carbon are spurious substances in the construction of the individual layers which impair the electrical characteristics of the components. Both these elements from chemical compounds with virtually all other substances and are therefore contaminate the semiconductor layers.

### Welding technology

The reduction of oxygen and moisture in welding gas lead to narrower more stable WIG arc and a steadier MIG arc which causes less splashing. This in turn produces smoother, narrower seams and better flowing of the filler material on the seam flanks. The fusion penetration is more intensive and there is less tendency to form pores. In addition, cost advantages result from the increased welding speed and reduction is finishing work.

### Excimer-Laser technology

Excimer lasers operate with radiation in the ultra-violet spectrum. Through gas discharges, stimulated inert-gas and halogen compounds (excimers) are formed, which disintegrate into their original elements after transmission of the UV laser beam. Any impurities which inhibit the electrical stimulation or which react chemically with the halogens (fluorine or hydrogen chloride) tend to disrupt the process. These are primarily moisture and hydrocarbons.

| Container:                                 | Oxisorb® -W Aluminium small |  | Oxisorb® -W Glass small |  |
|--|-----------------------------|--|-------------------------|--|
|  |                             |  |                         |  |
| <b>Absorbtion capacity:</b>                |                             |  |                         |  |
| O <sub>2</sub>                             | l                           | 0.1  |                         | 0.1  |
| H <sub>2</sub> O vapour                    | l                           | 0.5  |                         | 0.5  |
| C <sub>2</sub> H <sub>6</sub>              | mg                          | -  |                         | -  |
| C <sub>3</sub> H <sub>8</sub>              | mg                          | -  |                         | -  |
| Higher HC                                  | mg                          | -  |                         | -  |
| Oil traces                                 | g                           | -  |                         | -  |
| H <sub>2</sub> S                           | g                           | -  |                         | -  |
| NO   | g                           | -  |                         | -  |
| SO <sub>2</sub>                            | g                           | -  |                         | -  |
| Hg   | g                           | -  |                         | -  |
| Guaranteed final purity                    |                             | O <sub>2</sub> < 5ppb <sup>3)</sup><br>H <sub>2</sub> O < 30 ppb |                         | O <sub>2</sub> < 5ppb <sup>3)</sup><br>H <sub>2</sub> O < 30 ppb |
| Flow rate max. m <sup>3</sup> /h           |                             | 1  |                         | 1  |
| Pressure max. bar                          |                             | 10 in low-pressure-,   |                         |  |
| Length                                     | mm                          | 125  |                         | 130  |
| Diameter                                   | mm                          | 29   |                         | 30   |
| Filled under Ar                            |                             | -  |                         | -  |
| Order. No.                                 |                             | -  |                         | -  |
| Filled under He <sup>1)</sup>              |                             | 792.   |                         | 792.   |
| Order. No.                                 |                             | 40225  |                         | 52099  |
| Filled under CO <sub>2</sub> <sup>1)</sup> |                             | -  |                         | -  |
| Order. No.                                 |                             | -  |                         | -  |

<sup>1)</sup> Delivery in packs of two cartridges

<sup>2)</sup> Manufacture on request

<sup>3)</sup> Not valid for the LP-mounting unit for the install

### Room temperature Adsorbers

| Description       | Areas of application  | Contamination  |
|-------------------|---|--|
| <b>OXISORB®</b>   | Precious gases, nitrogen, hydrogen, carbon monoxide, saturated hydrocarbons, <b>no oxygen</b>   | Oxygen, moisture   |
| <b>Hydrosorb</b>  | Precious gases, nitrogen, hydrogen, carbon monoxide, carbon dioxide, saturated hydrocarbons, halogenated hydrocarbons, compressed air, <b>oxygen</b>    | Moisture (If the gases mentioned above are dry, carbon dioxide is adsorbed)                            |
| <b>ACCOSORB®</b>  | Precious gases, nitrogen, hydrogen, carbon monoxide, carbon dioxide, saturated hydrocarbons, halogenated hydrocarbons, compressed air, <b>no oxygen</b> | Hydrocarbons, oil vapour   |
| <b>SULFOSORB®</b> | Precious gases, nitrogen, hydrogen, carbon monoxide, carbon dioxide, saturated hydrocarbons, compressed air, <b>no oxygen</b>                           | Mercaptan, carbonyl sulphide, carbon disulphide, hydrogen sulphide, sulphur dioxide, nitrogen monoxide |

|                                     |                           |                          |                                      |                           |                    |                          | Regenerable absorbers  |                           |                        |                        |                           |
|-------------------------------------|---------------------------|--------------------------|--------------------------------------|---------------------------|--------------------|--------------------------|------------------------|---------------------------|------------------------|------------------------|---------------------------|
| Hydrosorb Aluminium small           | ACCOSORB®                 | SULFOSORB®               | Oxisorb® Aluminium large             | Hydrosorb Aluminium large | ACCOSORB®          | SULFOSORB®               | R 20 Oxisorb®          | R 20 Hydrosorb            | R 20 EM-KAT            | R 200 Oxisorb®         | R 200 Hydrosorb           |
| -                                   | -                         | -                        | 9                                    | -                         | -                  | -                        | 65                     | -                         | ∞                      | 41                     | -                         |
| 1                                   | -                         | -                        | 45                                   | 100                       | -                  | -                        | -                      | 430                       | -                      | -                      | 270                       |
| -                                   | 1                         | -                        | -                                    | -                         | 55                 | -                        | -                      | -                         | -                      | -                      | -                         |
| -                                   | 180                       | -                        | -                                    | -                         | 9000               | -                        | -                      | -                         | -                      | -                      | -                         |
| -                                   | > 180                     | -                        | -                                    | -                         | 9000               | -                        | -                      | -                         | -                      | -                      | -                         |
| -                                   | 8                         | -                        | -                                    | -                         | 450                | -                        | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | 0.50                     | 0.50                                 | 0.50                      | -                  | 28                       | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | 0.05                     | 0.05                                 | 0.05                      | -                  | 2.8                      | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | 0.50                     | 0.50                                 | 0.50                      | -                  | 28                       | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | -                        | -                                    | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | e.g.                     | O <sub>2</sub> < 5 ppb <sup>3)</sup> | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |
| H <sub>2</sub> O < 20 ppb           | HC < 10 ppb <sup>3)</sup> | H <sub>2</sub> S < 1 ppm | H <sub>2</sub> O < 30 ppb            | H <sub>2</sub> O < 20 ppb | HC < 10 ppb        | H <sub>2</sub> S < 1 ppb | O <sub>2</sub> < 5 ppb | H <sub>2</sub> O < 10 ppb | O <sub>2</sub> < 1 ppm | O <sub>2</sub> < 5 ppb | H <sub>2</sub> O < 10 ppb |
| 1                                   | 1                         | 1                        | 10                                   | 10                        | 10                 | 10                       | 100                    | 100                       | 100                    | 100                    | 100                       |
| 200 in high-pressure mounting units |                           |                          | 10                                   | 10                        | 10                 | 10                       | 20                     | 20                        | 20                     | 200                    | 200                       |
| 125                                 | 120                       | 125                      | 1170                                 | 1170                      | 1170               | 1170                     | 1590                   | 1590                      | 1590                   | 1530                   | 1530                      |
| 29                                  | 29                        | 29                       | 71                                   | 71                        | 71                 | 71                       | 159                    | 159                       | 159                    | 160                    | 160                       |
| -                                   | -                         | -                        | 792.                                 | 792.                      | 792. <sup>2)</sup> | 792. <sup>2)</sup>       | -                      | -                         | -                      | -                      | -                         |
| -                                   | -                         | -                        | 30893                                | 54831                     | 54832              | 54834                    | -                      | -                         | -                      | -                      | -                         |
| 792.                                | 792.                      | 792.                     | -                                    | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |
| 40226                               | 40228                     | 40229                    | -                                    | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |
| 796. <sup>2)</sup>                  | -                         | -                        | -                                    | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |
| 07926                               | -                         | -                        | -                                    | -                         | -                  | -                        | -                      | -                         | -                      | -                      | -                         |

ionin gas supply systems (< 100 ppb)

### Disposable cartridges

| Description | Areas of application         | Contamination |
|-------------|------------------------------|---------------|
| EXCISORB®-F | Fluorine containing mixtures | Fluorine      |

## Low-pressure (LP) holder systems for small cartridges

| LP holder for mounting in pipings   | LP wall holder   | LP combination VARIOSORB vertically  | LP combination VARIOSORB horizontally  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
|---|--|--|--|----------|-----------------------|----------|------------------------|-----------|------------------------|-----------|----------------------------|------------|---|--------------------|--------------|-----------------------|----------|-----------------------|----------|------------------------|-----------|------------------------|-----------|--|------------|--|--|
| Upper section and lower section and pipe connection nut made black plastics (HOSTAFORM®); a set of spare O rings is included in the supply scope. Connections are offered separately.   | Lower section stainless steel, upper section and pipe connection nut made of black plastics (HOSTAFORM®). A wall bracket (incl. screws and plugs) for wall mounting is as well as a set of spare O rings are included in the supply scope. Connections are offered separately. | Connecting adapter and union nut made of black plastics (HOSTAFORM®). The connecting unit allows combinations with LP wall holder as well as operating one upon the other of two or more small cartridges for removal of different impurities out of the gas stream. | Quick coupling. Spiral and clamping-ring connection made of stainless steel. The connecting unit allows combinations with LP wall holder as well as operating one after another of two or more small cartridges for removal of different impurities out of the gas stream. |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
|   |    |   |    |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| <b>Ordering No.</b><br>795 10733  | <b>Ordering No.</b><br>794 24364   | <b>Ordering No.</b><br>794 24363   | <b>Ordering No.</b><br>770 33042   |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| <table border="1"> <thead> <tr> <th>Type of connection</th> <th>Ordering No.</th> </tr> </thead> <tbody> <tr> <td>ES 3 mm<sup>2)</sup></td> <td>0291 281</td> </tr> <tr> <td>ES 6 mm<sup>2)</sup></td> <td>0291 280</td> </tr> <tr> <td>ES 1/4''<sup>2)</sup></td> <td>770 31374</td> </tr> <tr> <td>ES 1/8''<sup>2)</sup></td> <td>795 10829</td> </tr> <tr> <td>ES quick-release couplings</td> <td>on request</td> </tr> </tbody> </table> | Type of connection   | Ordering No.   | ES 3 mm <sup>2)</sup>  | 0291 281 | ES 6 mm <sup>2)</sup> | 0291 280 | ES 1/4'' <sup>2)</sup> | 770 31374 | ES 1/8'' <sup>2)</sup> | 795 10829 | ES quick-release couplings | on request | <table border="1"> <thead> <tr> <th>Type of connection</th> <th>Ordering No.</th> </tr> </thead> <tbody> <tr> <td>ES 3 mm<sup>2)</sup></td> <td>0291 281</td> </tr> <tr> <td>ES 6 mm<sup>2)</sup></td> <td>0291 280</td> </tr> <tr> <td>ES 1/4''<sup>2)</sup></td> <td>770 31374</td> </tr> <tr> <td>ES 1/8''<sup>2)</sup></td> <td>795 10829</td> </tr> <tr> <td>ES quick-release couplings stainless steel</td> <td>on request</td> </tr> </tbody> </table> | Type of connection | Ordering No. | ES 3 mm <sup>2)</sup> | 0291 281 | ES 6 mm <sup>2)</sup> | 0291 280 | ES 1/4'' <sup>2)</sup> | 770 31374 | ES 1/8'' <sup>2)</sup> | 795 10829 | ES quick-release couplings stainless steel | on request |  |  |
| Type of connection  | Ordering No.   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 3 mm <sup>2)</sup>   | 0291 281   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 6 mm <sup>2)</sup>   | 0291 280   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 1/4'' <sup>2)</sup>  | 770 31374  |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 1/8'' <sup>2)</sup>  | 795 10829  |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES quick-release couplings  | on request   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| Type of connection  | Ordering No.   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 3 mm <sup>2)</sup>   | 0291 281   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 6 mm <sup>2)</sup>   | 0291 280   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 1/4'' <sup>2)</sup>  | 770 31374  |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES 1/8'' <sup>2)</sup>  | 795 10829  |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| ES quick-release couplings stainless steel  | on request   |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |
| <sup>2)</sup> Clamp ring connection stainless steel   | <sup>2)</sup> Clamp ring connection  |  |  |          |                       |          |                        |           |                        |           |                            |            |   |                    |              |                       |          |                       |          |                        |           |                        |           |  |            |  |  |

## High-pressure holder systems for small cartridges

### HP Housing PN 200

Housing of stainless steel for mounting piping; a bracket for wall mounting is also supplied. For a system pressure up to 200 bar the HP holder PN 200 is required. If a final purity < 1 ppb is to be obtained, the HP holder (also for system pressures < 10 bar) must be used. Connections are offered separately.



| Anschlusstyp           | Ordering No. |
|------------------------|--------------|
| ES 3 mm <sup>2)</sup>  | 0291 281     |
| ES 6 mm <sup>2)</sup>  | 0291 280     |
| ES 1/4'' <sup>2)</sup> | 770 31374    |
| ES 1/8'' <sup>2)</sup> | 795 10829    |
| ES VCR-Verschraubung   | auf Anfrage  |

<sup>2)</sup> Klemmringverschraubung

**Ordering No.**  
792 43386

## Low-pressure (LP) holder systems for large cartridges

### Single holder

2 brackets for wall mounting including screws and plugs; the inlet and outlet valves is closed with a NPT 1/4" blind plug. After removal of the blind plug the pipe screw connections with NPT 1/4" external thread can be screwed in. Connections are offered separately.



**Ordering No.**  
796 04537

**Type of connection**

| Type of connection    | Ordering No. |
|-----------------------|--------------|
| ES 6 mm <sup>2)</sup> | 0291 280     |
| ES 8 mm <sup>2)</sup> | 0049 033     |
| ES 1/4" <sup>2)</sup> | 770 31374    |
| ES 1/8" <sup>2)</sup> | 795 10829    |
| ES VCR-connection     | on request   |

<sup>2)</sup> Clamp ring connection stainless steel

### Wall holder with flushing unit

Complete wall holder with flushing unit for flushing connection piping after exchange of a cartridge; consisting of safety-, shut-off-, and flushing valves, fittings are pre-assembled on the aluminium console; with bracket for wall mounting; materials: copper, brass chromium-plated. Screw connection is pre-assembled with ES 8 mm pipe strut.

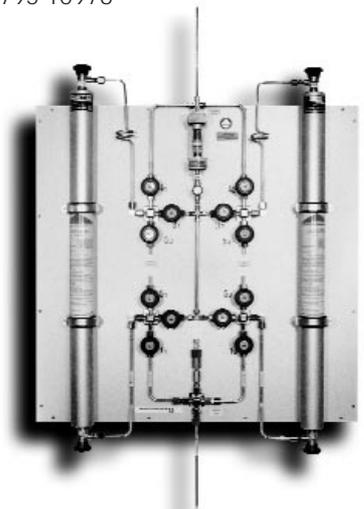


**Ordering No.**  
796 04822

### Double flushing holder with optical load indication

Double flushing holder for flushing connection pipes after cartridges exchange with optical load indication; consisting of two large aluminium cartridges combined with OXISORB® small cartridges of glass as load indication, safety-, shut-off-, and flushing valves; cartridges and fittings pre-assembled on aluminium console; with brackets for wall mounting; materials: copper, brass chromium-plated. Screw connection is pre-assembled with ES 8 mm clamping-ring connection.

**Ordering No.**  
795 10976



## Large cartridge: OXISORB®

### Large cartridge OXISORB® R 20



### Large cartridge OXISORB® R 20 Extrapur



Process:  
Chemisorption: oxygen and moisture are **chemically bound** on the adsorbant material and therefore permanently removed from the stream of gas. The adsorption process is dependent on the ambient temperature and pressure.