## Chemical resistance of gasket sheets GAMBIT

| Item | Chemical medium | GAMBIT AF-1000 | GAMBIT AF-400 | GAMBIT AF-200G | GAMBIT AF-OIL | GAMBIT AF-300 | GAMBIT AF-U | GAMBIT AF-200 UNIVERSAL | GAMBIT AF-CD | GAMBIT AF-202 | GAMBIT AF-153 | GAMBIT SOFT | GAMBIT AF-CHEMACID | PARO-GAMBIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Acetone | ■ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 2 | Alcohol, ethyl | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 3 | Alcohol, methyl | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 4 | Ammonia | ▲ | ● | ● | ● | ▲ | ● | ● | ■ | ■ | ■ | ■ | ● | ● |
| 5 | Aniline | ■ | ■ | ■ | ■ | ▲ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 6 | Benzene | ▲ | ● | ● | ● | ■ | ● | ● | ■ | ■ | ■ | ■ | ■ | ● |
| 7 | Gasoline | ● | ● | ● | ● | ▲ | ● | ● | ● | ● | ▲ | ▲ | ▲ | ● |
| 8 | Chloride (wet) | ■ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ▲ |
| 9 | Chloride (dry) | ■ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 10 | Chloroform | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 11 | Cyclohexanone | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 12 | Ethane | ■ | ● | ● | ● | ● | ● | ● | ● | ● | ▲ | ▲ | ● | ● |
| 13 | Phenol | ■ | ▲ | ■ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 14 | Freon 11 and 12 | ■ | ● | ● | ● | ▲ | ● | ● | ■ | ▲ | ■ | ■ | ● | ● |
| 15 | Freon 22 | ■ | ▲ | ▲ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 16 | Ethylene glycol | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 17 | Nitric acid 20% | ■ | ▲ | ■ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ● | ▲ |
| 18 | Nitric acid 40% | ■ | ▲ | ■ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 19 | Phosphoric acid | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ● | ▲ |
| 20 | Formic acid | ■ | ● | ● | ● | ● | ● | ● | ■ | ▲ | ■ | ■ | ● | ● |
| 21 | Acetic acid | ■ | ● | ● | ● | ● | ● | ● | ▲ | ▲ | ▲ | ▲ | ● | ● |
| 22 | Sulfuric acid 20% | ■ | ● | ● | ● | ● | ● | ● | ■ | ■ | ■ | ■ | ● | ● |
| 23 | Fuming sulfuric acid | ■ | ▲ | ■ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 24 | Sulfuric acid 65% | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ● | ▲ |
| 25 | Hydrochloric acid 20% | ■ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ● | ▲ |
| 26 | Hydrochloric acid 36% | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ● | ■ |
| 27 | Soap | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 28 | Potassium permanganate | ▲ | ● | ▲ | ● | ▲ | ● | ● | ▲ | ▲ | ▲ | ▲ | ● | ● |
| 29 | Kerosene | ▲ | ● | ● | ● | ● | ● | ● | ● | ▲ | ▲ | ▲ | ▲ | ● |
| 30 | Ethyl acetate | ■ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 31 | Hydraulic oil Phosphate ester type | ▲ | ● | ● | ● | ▲ | ● | ● | ● | ▲ | ▲ | ▲ | ● | ● |
| 32 | Hydraulic oil Phosph. esters | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 33 | Silicone oil | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 34 | Air | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 35 | Trichloroethylene | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ▲ | ■ | ■ | ■ | ■ | ▲ | ▲ |
| 36 | Water | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 37 | Sea water | ■ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 38 | Ammonium hydroxide | ▲ | ● | ● | ● | ● | ● | ● | ▲ | ▲ | ▲ | ▲ | ● | ● |
| 39 | Potassium hydroxide | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ▲ |
| 40 | Sodium hydroxide | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ▲ |
| 41 | Calcium hydroxide | ▲ | ● | ● | ● | ● | ● | ● | ▲ | ● | ▲ | ▲ | ● | ● |

● Suitable for use. ▲ Can be used only after successful trials under working conditions. ■ Not suitable for use.

All information in this catalogue is based on years of experience in manufacture and use of the discussed products. Since sealing performance in the joint is subject to multiple factors such as mounting method, system parameters, and sealed medium, technical parameters specified herein are of informative nature only and cannot be used as grounds for any claims; any special uses of products are subject to consulting with the manufacturer.

# GASKET SHEETS


TECHNICAL SPECIFICATION

## Gasket sheet Gambit PARO-GAMBIT

### Material

Gasket sheet **PARO-GAMBIT** is based on carbon fibres, mineral fibres, and fillers bound with NBR rubber-based binder.

Designation according to DIN 28091-2: **FA-CM1-O**

### General properties and applications

High performance sheet, recommended mostly for installations working with steam.

### Maximum working conditions

| | | |
|---|---|---|
| **Peak temperature** | **°C** | 450 |
| **Temperature under continuous operation** | **°C** | 350 |
| **Temperature under continuous operation with steam** | **°C** | 350 |
| **Pressure** | **MPa** | 10 |

### Dimensions

| | | | |
|---|---|---|---|
| **Standard thicknesses of sheets /thicknesses above 4.0 mm are produced by gluing/** | **mm** | 0,5; 0,8<br>1,0; 1,5; 2,0; 2,5<br>3,0, 4,0; 5,0; 6,0 | ± 0,1<br>± 10%<br>± 10% |
| **Standard dimensions of sheets /custom dimensions available within the total range of 1500x3000 mm/** | **mm** | 1500x1500 | ± 10,0 |

Non-standard thicknesses, graphiting of sheet surfaces, and reinforcement with metallic mesh available upon request.


# GASKET SHEETS

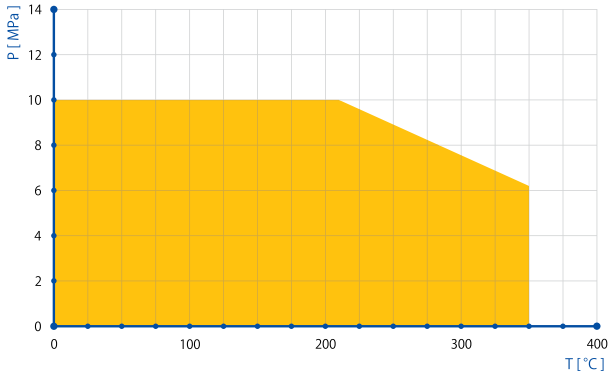
## Physical and chemical properties

| | | | | |
|---|---|---|---|---|
| **Density** | ± 5% | **g/cm³** | 1,9 | DIN 28090-2 |
| **Transverse tensile strength** | min. | **MPa** | 10 | DIN 52910 |
| **Compressibility** | typical value | **%** | 11 | ASTM F36 |
| **Elastic recovery** | min. | **%** | 55 | ASTM F36 |
| **Residual stresses 50 MPa/16 h/300 °C/** | min. | **MPa** | 32 | DIN 52913 |
| **Residual stresses 50 MPa/16 h/175 °C/** | min. | **MPa** | 35 | DIN 52913 |
| INCREASE IN THICKNESS | | | | |
| **Oil IRM 903 150 °C/5 h** | max. | **%** | 12 | ASTM F146 |
| **Colour** | | **ginger** | | |

(Values as detailed in table refer to 2.0 mm thick gasket sheets)

## Calculation coefficients

| **Coefficients DT – UC – 90/WO-0/19** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **$\sigma_m$** | | | **$\sigma_r$** | | | **b** | | | |
| 1 mm | 2 mm | 3 mm | 1 mm | 2 mm | 3 mm | 20 °C | 200 °C | 300 °C | 400 °C |
| 30 MPa | 15 MPa | 10 MPa | 6,4 $p_0$ | 5 $p_0$ | 4,1 $p_0$ | 1,0 | 1,7 | 2,5 | 3,6 |




It is not recommended that maximum temperature and pressure are applied simultaneously. Pressure to temperature correlation for sheet thickness 2.0 mm is shown in the diagram.

- There is no requirement for trials.