

# DONIFLEX® GR-A



*Soft sealing material reinforced with tanged steel insert. Excellent thermal and stress resistance combined with very good adaptability to flange irregularities.*

## BASIS

Aramid fibers, graphite, NBR, steel

## COLOR

Black

## SURFACE TREATMENT

Branded, without coating.

A special silver coloured non-stick top and bottom layer as well as other additional surface treatments (silicone, PTFE) are available on request.

## APPLICATION

Doniflex® GR-A is soft sealing material reinforced with tanged steel insert. Excellent thermal and stress resistance combined with very good adaptability to flange irregularities provides best service in high temperature and stress applications. It is recommended for sealing exhaust air supplies, pipes, intake and exhaust manifolds and exhaust gas recirculation systems in engines, as well as other industrial sealing applications that require high strength and thermal integrity i.e. for transmission flanges and high-pressure pumps.

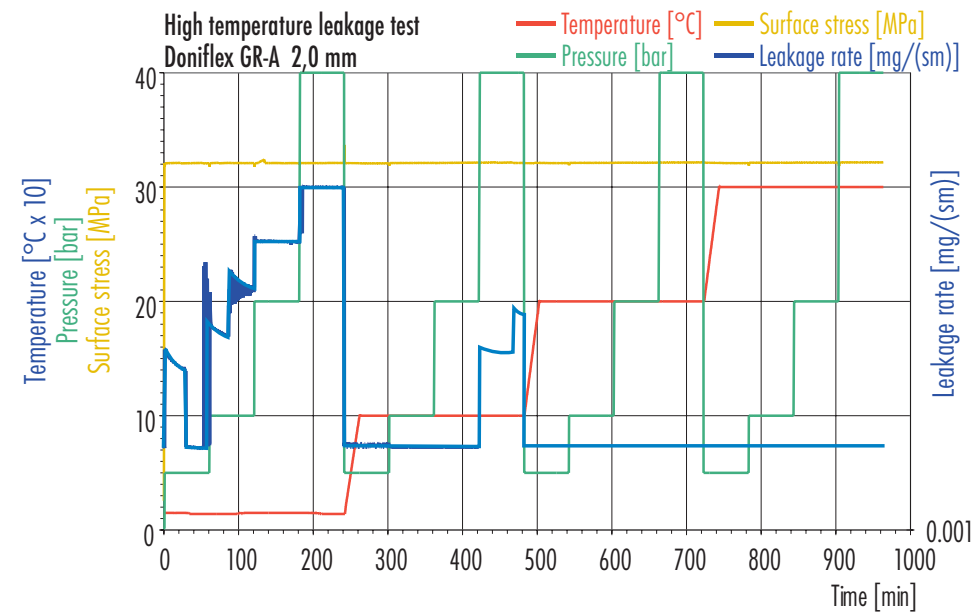
## TECHNICAL DATA

General information for a thickness of 2 mm

|   |             |                   |             |
|---|-------------|-------------------|-------------|
| Density                                 | DIN 28090-2 | g/cm <sup>3</sup> | 1.75 - 1.95 |
| Compressibility                         | ASTM F 36/J | %                 | 15 - 25     |
| Recovery                                | ASTM F36/J  | %                 | min 20      |
| Stress resistance (50MPa, T=300°C, 16h) | DIN 52913   | MPa               | min 38      |
| Stress resistance (50MPa, T=175°C, 16h) | DIN 52913   | MPa               | min 40      |
| Immersion in oil IRM 903, 5h, 150°C     | ASTM F146   |                   |             |
| • thickness increase                    |             | %                 | max 5       |
| • weight increase                       |             | %                 | max 20      |
| Immersion in ASTM fuel B, 5h, 20°C      | ASTM F146   |                   |             |
| • thickness increase                    |             | %                 | max 5       |
| • weight increase                       |             | %                 | max 20      |
| Specific leak rate                      | DIN 3535/6  | mg/(s.m)          | max 1.5     |
| Creep deformation – 50MPa               |             |                   |             |
| • change in thickness at 300°C          |             | %                 | max 10      |
| • change in thickness at 400°C          |             | %                 | max 12      |
| Maximum continuous temperature          |             | °C                | 400         |
| Short-term peak temperature             |             | °C                | 850         |

All information data are based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behavior in gasket joint. The data may not, therefore, be used to support any warranty claims. This edition cancels all previous issues. Subject to change without notice.

## High temperature "fire safe" leakage test



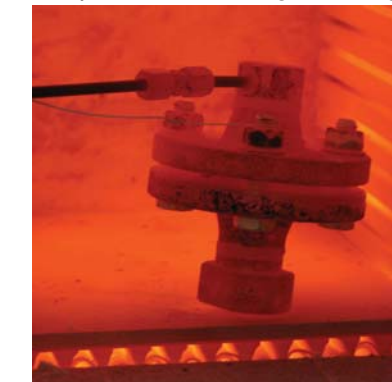
- Testing parameters:
- Gasket material: Doniflex GR-A 1.5 mm
  - Gasket dimensions: Ø35 x Ø70 x 1.5 mm
  - Testing flange: PN16 DN25
  - Surface stress: 30 MPa
  - Internal pressure: 5 bar
  - Temperature: 850°C
  - Medium: Nitrogen

## Sealability during the heating up to 850 °C

Testing flange and gasket Doniflex GR-A before high temperature leakage testing.



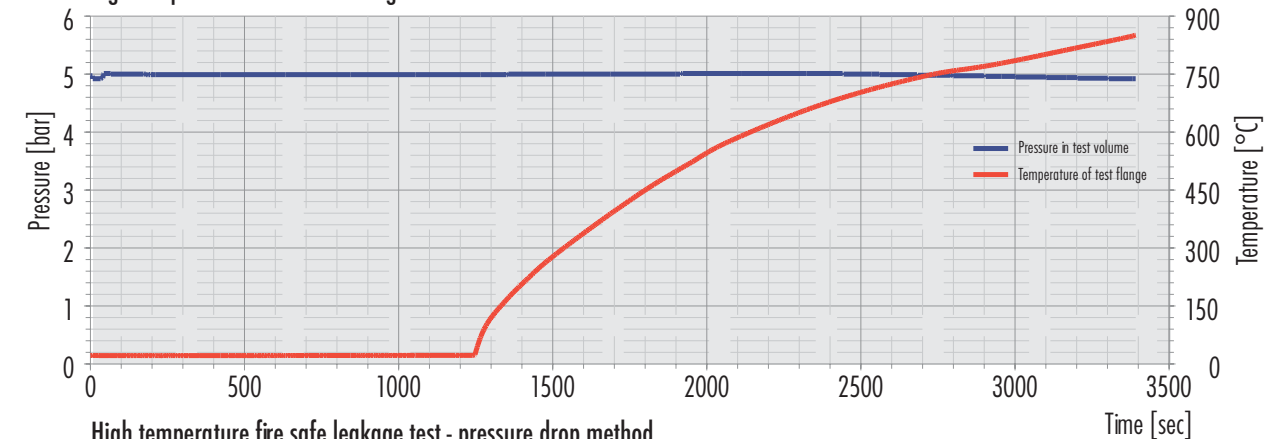
Testing flange with gasket Doniflex GR-EM in heating oven at 850°C during high temperature leakage testing.



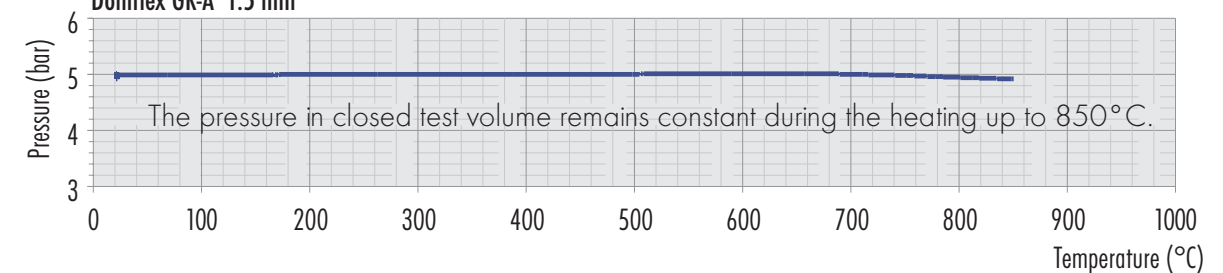
Testing flange and gasket Doniflex GR-A after high temperature leakage testing.



## High temperature fire safe leakage test



## High temperature fire safe leakage test - pressure drop method Doniflex GR-A 1.5 mm



**MEDIA RESISTANCE**

Media resistance chart serves only as a guideline for the selection of material for particular application. Due to the variety of assembly and operating conditions, the data may not be used to support any warranty claims.

|                            |                            |                           |                           |
|----------------------------|----------------------------|---------------------------|---------------------------|
| ACETALDEHYDE               | liquid solutions           | MALEIC ANHYDRIDE          | liquid solutions          |
| AIR                        | gas                        | MARLOTERM                 | oil, mineral oil products |
| ALLYL CHLORIDE             | liquid solutions           | MERCURY                   | miscellaneous             |
| ALUM                       | liquid solutions           | MERCURY SALTS             | liquid solutions          |
| ALUMINIUM CHLORIDE         | liquid solutions           | MINERAL OIL               | oil, mineral oil products |
| ALUMINIUM SULPHATE         | liquid solutions           | MINERAL OIL               | oil, mineral oil products |
| AMMONIUM PHOSPHATE         | liquid solutions           | MOTOR OIL                 | oil, mineral oil products |
| ANILIN-HYDROCHLORIDE       | liquid solutions           |                           |                           |
| ASPHALT                    | oil, mineral oil products  | NICKEL SALTS              | liquid solutions          |
| ASTM OIL NO.1 FUEL         | oil, mineral oil products  | NITROGEN                  | gas                       |
| ASTM OIL NO.2 FUEL         | oil, mineral oil products  |                           |                           |
| ASTM OIL NO.3C FUEL        | oil, mineral oil products  | OIL ACID                  | oil, mineral oil products |
| ASTM FUEL A                | oil, mineral oil products  |                           |                           |
| ASTM FUEL B                | oil, mineral oil products  | PARAFFIN                  | oil, mineral oil products |
| ASTM FUEL C                | oil, mineral oil products  | PETROLEUM                 | oil, mineral oil products |
| ASTM FUEL D                | oil, mineral oil products  | PHOTOGRAPHIC EMULSIONS    | liquid solutions          |
| AZ 20 (32+125)             | oil, mineral oil products  | PHTHALIC ANHYDRIDE        | liquid solutions          |
|                            |                            | POLYETHYLENE GLYCOL       | oil, mineral oil products |
| BEER                       | liquid solutions           | POTASH                    | liquid solutions          |
| BENZINE                    | oil, mineral oil products. | POTASSIUM ALUM            | liquid solutions          |
| BITUMEN                    | oil, mineral oil products  | POTASSIUM BROMATE         | liquid solutions          |
| BORAX                      | liquid solutions           | POTASSIUM BROMIDE         | liquid solutions          |
| BRAKE FLUID (GLYCOL BASIS) | oil, mineral oil products  | POTASSIUM CARBONATE       | liquid solutions          |
| BUTADIENE                  | oil, mineral oil products  | POTASSIUM PHOSPHATE       | liquid solutions          |
| BUTENE (BUTYLENE)          | oil, mineral oil products  | POTASSIUM SALT            | liquid solutions          |
|                            |                            | POTASSIUM SULPHATE        | liquid solutions          |
| CALCIUM CHLORIDE           | liquid solutions           | PROPYLENE OXIDE           | gas                       |
| CALCIUM NITRATE            | liquid solutions           |                           |                           |
| CARBON DIOXIDE             | gas                        | SACCHAROSE                | liquid solutions          |
| CHLORINE GAS DRY           | gas                        | SALT                      | liquid solutions          |
| CHROME ALUM                | liquid solutions           | SANTOTHERM 66             | oil, mineral oil products |
| COCONUT OIL                | oil, mineral oil products  | SEA WATER                 | liquid solutions          |
| CONDENSATE WATER           | water, steam               | SILICONE GRAESE           | oil, mineral oil products |
| COPPER SALT                | liquid solutions           | SILVER SALT               | liquid solutions          |
|                            |                            | SOAP SOLUTION             | liquid solutions          |
| DEMINERALIZED WATER        | water, steam               | SODA                      | liquid solutions          |
| DEXTRINE                   | liquid solutions           | SODIUM BROMIDE            | liquid solutions          |
| DIESEL FUEL                | oil, mineral oil products  | SODIUM CARBONATE          | liquid solutions          |
| DIPHYL ( HEAT CARRIER OIL) | oil, mineral oil products  | SODIUM CHLORIDE           | liquid solutions          |
|                            |                            | SODIUM DISULPHITE         | liquid solutions          |
| ETHYLCELLULOSE             | liquid solutions           | SODIUM DITHIONITE         | liquid solutions          |
|                            |                            | SODIUM FLUORIDE           | liquid solutions          |
| FRUIT JUICE                | liquid solutions           | SODIUM HYDROGEN-CARBONATE | liquid solutions          |
| FLUE GAS                   | gas                        | SODIUM HYDROGEN-SULPHATE  | liquid solutions          |
| FURNACE GAS                | gas                        | SODIUM HYDROGEN-SULPHITE  | liquid solutions          |
|                            |                            | SODIUM IODIDE             | liquid solutions          |
| GEAR OIL                   | oil, mineral oil products  | SODIUM PERBORATE          | liquid solutions          |
| GELATIN                    | liquid solutions           | SODIUM PHOSPHATE          | liquid solutions          |
| GENERATOR GAS              | gas                        | SODIUM SILICATE           | liquid solutions          |
| GLAUBER SALT               | liquid solutions           | SODIUM SULPHATE           | liquid solutions          |
| GLUCOSE                    | liquid solutions           | SODIUM SULPHITE           | liquid solutions          |
| GLYCOL                     | liquid solutions           | SODIUM THIOSUPHATE        | liquid solutions          |
| GLUE                       | liquid solutions           | SPINDLE OIL               | oil, mineral oil products |
|                            |                            | SPIRITS                   | oil, mineral oil products |
| HEAT CARRIER OIL           | oil, mineral oil products  | STARCH SOLUTION           | liquid solutions          |
| HEPTANE (-n)               | oil, mineral oil products  | STEAM                     | water, steam              |
| HEXANE (-n)                | oil, mineral oil products  | SULPHUR DIOXIDE           | gas                       |
| HOT WATER                  | water, steam               | SYLTERM 800               | oil, mineral oil products |
| HYDRAULIC OIL              | oil, mineral oil products  | SYNTREL 350               | oil, mineral oil products |
| HYDROSULPHITE              | liquid solutions           |                           |                           |
|                            |                            | TANNIC ACID               | liquid solutions          |
| INERT GAS                  | gas                        | TAR                       | oil, mineral oil products |
| ISOCTANE                   | oil, mineral oil products  | TEST BENZINE              | oil, mineral oil products |
| ISOPROPYL ACETATE          | liquid solutions food      | TETRAETHYL LEAD           | oil, mineral oil products |
|                            |                            | TRANSFORMER OIL           | oil, mineral oil products |
| KEROSINE FUEL              | oil, mineral oil products  | TRI SODIUM PHOSPHATE      | liquid solutions          |
|                            |                            | TURBINE OIL               | oil, mineral oil products |
| LANOLINE (WOOL GREASE)     | liquid solutions           |                           |                           |
| LATEX                      | liquid solutions           | VASELINE                  | oil, mineral oil products |
| LAUGHING GAS               | gas                        | VEGETABLE FAT             | oil, mineral oil products |
| LIGHTING GAS               | oil, mineral oil products  | VEGETABLE OILS            | oil, mineral oil products |
| LINK UP MEDIUMS            | liquid solutions           | VINYL CHLORIDE            | gas                       |
| LINSEED OIL                | liquid solutions           |                           |                           |
| LITHIUM BROMIDE            | liquid solutions           | WASCHING AGENT            | liquid solutions          |
| LUBRICATING OIL            | oil, mineral oil products  | WASTE GAS                 | gas                       |
|                            |                            | WASTE WATER               | liquid solutions          |
| MACHINE OIL                | oil, mineral oil products  |                           |                           |
| MAGNESIUM SALT             | liquid solutions           | ZINC SALTS                | liquid solutions          |

In order to spread the most comprehensive knowledge of our products, our highly skilled group of experts organized in technical-service department can assist you by solving your sealing problem. If you need our help, contact us.

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**DONIT TESNIT**

**DONIFLEX®**  
Engineered  
Graphite  
Sealing  
Materials