**TECHNICAL DATA SHEET**

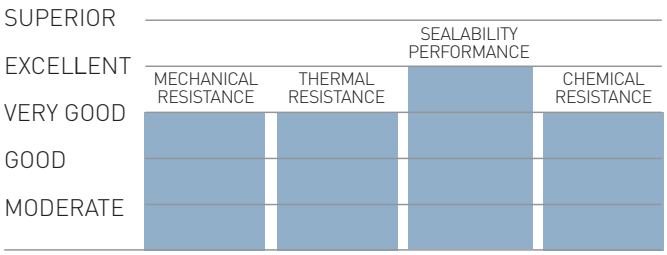
Queensland Gaskets

# DONIT | TESNIT® BA-U

TESNIT® BA-U combines very good thermal, chemical, and mechanical properties that makes TESNIT® BA-U as a general-purpose gasket material. It is well designed for gas and potable water supplies.




## PROPERTIES




## APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- POTABLE WATER SUPPLY
- GAS SUPPLY
- PETROCHEMICAL INDUSTRY
- FOOD INDUSTRY
- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING
- REFRIGERATION AND COOLING
- HEATING SYSTEMS
- COMPRESSORS AND PUMPS
- VALVES

| | |
|---|---|
| Composition | Aramid fibres, inorganic fillers, NBR binder.<br>Optional steel wire mesh or expanded steel insert on request. |
| Colour | Blue |
| Approvals | DIN-DVGW DIN 3535-6, SVGW DIN 3535-6, DVGW VP 401, DVGW KTW, DVGW W270, TA-Luft (VDI 2440), BAM (Oxygen), WRAS, Germanischer Lloyd, ABS, AGA 8140 G (Class III) , EC 1935/2004 |

**Contact us to discuss requirements and place your order** **07 3277 3922**

All information and data quoted has been provided by Donit Tesnit and are based upon years of experience in the production and operation of sealing elements. This data may not be used to support any warranty claims. With its publication this latest edition supersedes all previous issues and is subject to change without further notice.

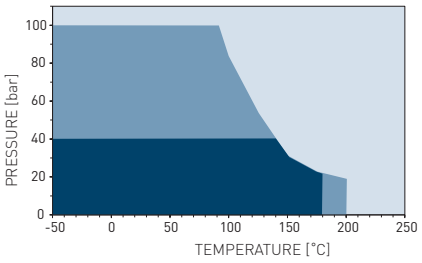
## TECHNICAL DATA

Typical values for a thickness of 2 mm

| | | | |
|---|---|---|---|
| **Density** | DIN 28090-2 | g/cm³ | 1.7 |
| **Compressibility** | ASTM F36J | % | 11 |
| **Recovery** | ASTM F36J | % | 60 |
| **Tensile strengthx** | ASTM F152 | MPa | 10 |
| **Stress resistance** | DIN 52913 | | |
| 16 h, 50 MPa, 175 °C | | MPa | 27 |
| 16 h, 50 MPa, 300 °C | | MPa | 23 |
| **Specific leak rate** | DIN 3535-6 | mg/(s·m) | 0.05 |
| **Thickness increase** | ASTM F146 | | |
| Oil IRM 903, 5 h, 150 °C | | % | 2 |
| ASTM Fuel B, 5 h, 23 °C | | % | 5 |
| **Compression modulus** | DIN 28090-2 | | |
| At room temperature: $\varepsilon_{KSW}$ | | % | 9.5 |
| At elevated temperature: $\varepsilon_{WSW/200\ °C}$ | | % | 16.1 |
| **Percentage creep relaxation** | DIN 28090-2 | | |
| At room temperature: $\varepsilon_{KRW}$ | | % | 4.7 |
| At elevated temperature: $\varepsilon_{WRW/200\ °C}$ | | % | 0.8 |
| **Max. operating conditions** | | | |
| Peak temperature | | °C/°F | 350/662 |
| Continuous temperature | | °C/°F | 250/482 |
| - with steam | | °C/°F | 200/392 |
| Pressure | | bar/psi | 100/1450 |

## P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm




- General suitability - Under common installation practices and chemical compatibility.
- Conditional suitability - Appropriate measures ensure maximum performance for joint design and gasket installation. Technical consultation is recommended.
- Limited suitability - Technical consultation is mandatory.

Queensland Gaskets

| | |
|---|---|
| Surface finish | Surface finish is 4AS. Optional graphite or PTFE finish on request. |
| Dimensions of standard sheets | Sheet size (mm): 1500 x 1500 \| 3000 x 1500 \| 4500 x 1500<br>Thickness (mm): 0.5 \| 1.0 \| 1.5 \| 2.0 \| 3.0<br>Other dimensions and thicknesses are available on request. |
| Tolerances | ± 5 % on length and width<br>On thickness up to 1.0 mm ± 0.1 mm<br>On thickness above 1.0 mm ± 10 % |

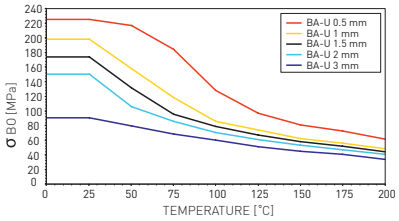
| | |
|---|---|
| Acetamide | + |
| Acetic acid, 10% | + |
| Acetic acid, 100% (Glacial) | - |
| Acetone | ? |
| Acetonitrile | - |
| Acetylene (gas) | + |
| Acid chlorides | - |
| Acrylic acid | ? |
| Acrylonitrile | - |
| Adipic acid | + |
| Air (gas) | + |
| Alcohols | + |
| Aldehydes | ? |
| Alum | + |
| Aluminium acetate | + |
| Aluminium chlorate | ? |
| Aluminium chloride | ? |
| Aluminium sulfate | ? |
| Amines | - |
| Ammonia (gas) | ? |
| Ammonium bicarbonate | + |
| Ammonium chloride | + |
| Ammonium hydroxide | + |
| Amyl acetate | ? |
| Anhydrides | ? |
| Aniline | - |
| Anisole | ? |
| Argon (gas) | + |
| Asphalt | + |
| Barium chloride | + |
| Benzaldehyde | - |
| Benzene | + |
| Benzoic acid | ? |
| Bio-diesel | + |
| Bio-ethanol | + |
| Black liquor | ? |
| Borax | + |
| Boric acid | + |
| Butadiene (gas) | + |
| Butane (gas) | + |
| Butyl alcohol (Butanol) | + |
| Butyric acid | + |
| Calcium chloride | + |
| Calcium hydroxide | + |
| Carbon dioxide (gas) | + |
| Carbon monoxide (gas) | + |
| Cellosolve | ? |
| Chlorine (gas) | - |
| Chlorine (in water) | - |
| Chlorobenzene | ? |
| Chloroform | - |
| Chloroprene | ? |
| Chlorosilanes | - |
| Chromic acid | - |
| Citric acid | ? |
| Copper acetate | + |
| Copper sulfate | + |
| Creosote | ? |
| Cresols (Cresylic acid) | - |
| Cyclohexane | + |
| Cyclohexanol | + |
| Cyclohexanone | ? |
| Decalin | + |
| Dextrin | + |
| Dibenzyl ether | ? |
| Dibutyl phthalate | ? |
| Dimethylacetamide (DMA) | ? |
| Dimethylformamide (DMF) | ? |

| | |
|---|---|
| Dioxane | - |
| Diphyl (Dowtherm A) | + |
| Esters | ? |
| Ethane (gas) | + |
| Ethers | ? |
| Ethyl acetate | ? |
| Ethyl alcohol (Ethanol) | + |
| Ethyl cellulose | ? |
| Ethyl chloride (gas) | - |
| Ethylene (gas) | + |
| Ethylene glycol | + |
| Formaldehyde (Formalin) | ? |
| Formamide | ? |
| Formic acid, 10% | + |
| Formic acid, 85% | ? |
| Formic acid, 100% | - |
| Freon-12 (R-12) | + |
| Freon-134a (R-134a) | + |
| Freon-22 (R-22) | ? |
| Fruit juices | + |
| Fuel oil | + |
| Gasoline | + |
| Gelatin | + |
| Glycerine (Glycerol) | + |
| Glycols | + |
| Helium (gas) | + |
| Heptane | + |
| Hydraulic oil (Glycol based) | + |
| Hydraulic oil (Mineral type) | + |
| Hydraulic oil (Phosphate ester based) | ? |
| Hydrazine | - |
| Hydrocarbons | + |
| Hydrochloric acid, 10% | ? |
| Hydrochloric acid, 37% | - |
| Hydrofluoric acid, 10% | - |
| Hydrofluoric acid, 48% | - |
| Hydrogen (gas) | + |
| Iron sulfate | + |
| Isobutane (gas) | + |
| Isooctane | + |
| Isoprene | + |
| Isopropyl alcohol (Isopropanol) | + |
| Kerosene | + |
| Ketones | ? |
| Lactic acid | ? |
| Lead acetate | + |
| Lead arsenate | + |
| Magnesium sulfate | + |
| Maleic acid | ? |
| Malic acid | ? |
| Methane (gas) | + |
| Methyl alcohol (Methanol) | + |
| Methyl chloride (gas) | ? |
| Methylene dichloride | ? |
| Methyl ethyl ketone (MEK) | ? |
| N-Methyl-pyrrolidone (NMP) | ? |
| Milk | + |
| Mineral oil (ASTM no.1) | + |
| Motor oil | + |
| Naphtha | + |
| Nitric acid, 10% | - |
| Nitric acid, 65% | - |
| Nitrobenzene | - |
| Nitrogen (gas) | + |
| Nitrous gases (NOx) | ? |
| Octane | + |
| Oils (Essential) | + |
| Oils (Vegetable) | + |

| | |
|---|---|
| Oleic acid | + |
| Oleum (Sulfuric acid, fuming) | - |
| Oxalic acid | ? |
| Oxygen (gas) | - |
| Palmitic acid | + |
| Paraffin oil | + |
| Pentane | + |
| Perchloroethylene | - |
| Petroleum (Crude oil) | + |
| Phenol (Carbolic acid) | - |
| Phosphoric acid, 40% | ? |
| Phosphoric acid, 85% | - |
| Phthalic acid | + |
| Potassium acetate | + |
| Potassium bicarbonate | + |
| Potassium carbonate | + |
| Potassium chloride | + |
| Potassium cyanide | + |
| Potassium dichromate | ? |
| Potassium hydroxide | ? |
| Potassium iodide | + |
| Potassium nitrate | + |
| Potassium permanganate | ? |
| Propane (gas) | + |
| Propylene (gas) | + |
| Pyridine | - |
| Salicylic acid | ? |
| Seawater/brine | + |
| Silicones (oil/grease) | + |
| Soaps | + |
| Sodium aluminate | + |
| Sodium bicarbonate | + |
| Sodium bisulfite | + |
| Sodium carbonate | + |
| Sodium chloride | + |
| Sodium cyanide | + |
| Sodium hydroxide | ? |
| Sodium hypochlorite (Bleach) | ? |
| Sodium silicate (Water glass) | + |
| Sodium sulfate | + |
| Sodium sulfide | + |
| Starch | + |
| Steam | + |
| Stearic acid | + |
| Styrene | ? |
| Sugars | + |
| Sulfur | ? |
| Sulfur dioxide (gas) | ? |
| Sulfuric acid, 20% | - |
| Sulfuric acid, 98% | - |
| Sulfuryl chloride | - |
| Tar | + |
| Tartaric acid | ? |
| Tetrahydrofuran (THF) | - |
| Titanium tetrachloride | - |
| Toluene | + |
| 2,4-Toluenediisocyanate | ? |
| Transformer oil (Mineral type) | + |
| Trichloroethylene | - |
| Vinegar | + |
| Vinyl chloride (gas) | - |
| Vinylidene chloride | - |
| Water | + |
| White spirits | + |
| Xylenes | + |
| Xylenol | - |
| Zinc sulfate | + |

## $\sigma_{BO}$ DIAGRAM

DIN 28090-1




$\sigma_{BO}$ diagrams represents $\sigma_{BO}$ values for different gasket material thicknesses. These values indicate the maximum in-service compressive pressures which can be applied on the compressed gasket area in-service without destructing damaging the gasket material.

**P-T diagrams** indicate the maximum allowed combination of internal pressure and service temperature which can be applied simultaneously for a given gasket depending on its material type, thickness, size and tightness class. Given the variety of gasket applications and service conditions, these values should only be regarded as guidance for the proper gasket assembly. In general, thinner gaskets exhibit better P-T properties.

## CHEMICAL RESISTANCE CHART

The recommendations made here are intended to be a guideline for the selection of the suitable gasket quality. Because the function and durability of the products depend upon a number of factors, the data may not be used to support any warranty claims.

+ Recommended
? Recommendation depends on operating conditions
- Not recommended

DONIT

**DONIT TESNIT®, d.o.o.**

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Contact us to discuss requirements and place your order 07 3277 3922