



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

## PROPERTIES

|           |                         |                    |                         |                     |
|-----------|-------------------------|--------------------|-------------------------|---------------------|
| SUPERIOR  | SEALABILITY PERFORMANCE |                    |                         |                     |
| EXCELLENT | MECHANICAL RESISTANCE   | THERMAL RESISTANCE | SEALABILITY PERFORMANCE | CHEMICAL RESISTANCE |
| VERY GOOD |                         |                    |                         |                     |
| GOOD      |                         |                    |                         |                     |
| MODERATE  |                         |                    |                         |                     |

## APROPIRIATE INDUSTRIES & APPLICATIONS

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

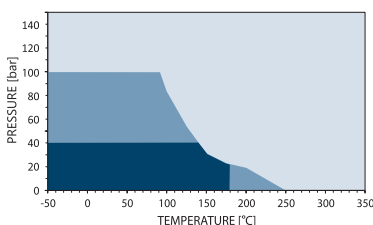
|             |   |                 |                    |
|-------------|---|-----------------|--------------------|
| Composition | Aramid fibers, inorganic fillers, NBR binder.                 |                 |                    |
|             | Optional steel wire mesh or expanded steel insert on request. |                 |                    |
| Color       | Blue  |                 |                    |
| Approvals   | DIN-DVGW DIN 3535-6   | SVGW DIN 3535-6 | DVGW VP 401        |
|             | DVGW W270   | TZW ELL         | TA-Luft (VDI 2440) |
|             | BAM (Oxygen)  | WRAS            | Germanischer Lloyd |
|             | ABS   | AGA AS 4623     | EC 1935/2004       |

## TECHNICAL DATA Typical values for a thickness of 2 mm

|   |             |                   |          |
|---|-------------|-------------------|----------|
| <b>Density</b>  | DIN 28090-2 | g/cm <sup>3</sup> | 1.7      |
| <b>Compressibility</b>                                  | ASTM F36J   | %                 | 11       |
| <b>Recovery</b>   | ASTM F36J   | %                 | 60       |
| <b>Tensile strength</b>                                 | ASTM F152   | MPa               | 10       |
| <b>Stress resistance</b>                                | DIN 52913   |                   |          |
| 16 h, 50 MPa, 175 °C                                    |             | MPa               | 27       |
| 16 h, 50 MPa, 300 °C                                    |             | MPa               | 23       |
| <b>Specific leak rate</b>                               | DIN 3535-6  | mg/(s·m)          | 0.02     |
| <b>Thickness increase</b>                               | ASTM F146   |                   |          |
| Oil IRM 903, 5 h, 150 °C                                |             | %                 | 2        |
| ASTM Fuel B, 5 h, 23 °C                                 |             | %                 | 5        |
| <b>Compression modulus</b>                              | DIN 28090-2 |                   |          |
| At room temperature: $\epsilon_{KSW}$                   |             | %                 | 9.5      |
| At elevated temperature: $\epsilon_{WSW/200\text{ °C}}$ |             | %                 | 16.1     |
| <b>Percentage creep relaxation</b>                      | DIN 28090-2 |                   |          |
| At room temperature: $\epsilon_{KRW}$                   |             | %                 | 4.7      |
| At elevated temperature: $\epsilon_{WRW/200\text{ °C}}$ |             | %                 | 0.8      |
| <b>Max. operating conditions</b>                        |             |                   |          |
| 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



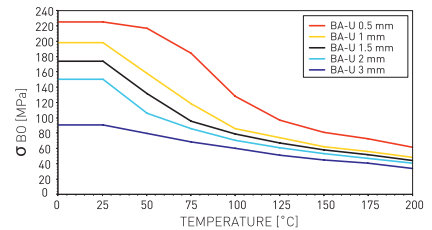
- General suitability - Under common installation practices and chemical compatibility.
- Conditional suitability - Appropriate measures ensure maximum performance for joint design and gasket installation. Technical consultation is recommended.
- Limited suitability - Technical consultation is mandatory.

|                              |  |
|------------------------------|--|
| Surface finish               | Standard: 4AS. Optional: graphite or PTFE on request.  |
| Standard dimension of sheets | 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 sizes and thicknesses available on request. |
| Tolerances                   | On length and width: ± 5 %<br>On thickness up to 1.0 mm: ± 0.1 mm<br>On thickness above 1.0 mm: ± 10 %   |

|                             |   |                                       |   |                                |   |
|-----------------------------|---|---------------------------------------|---|--------------------------------|---|
| Acetamide                   | + | Dioxane                               | - | Oleic acid                     | + |
| Acetic acid, 10%            | + | Diphyd [Dowtherm A]                   | + | Oleum (Sulfuric acid, fuming)  | - |
| Acetic acid, 100% [Glacial] | - | Esters                                | ? | Oxalic acid                    | ? |
| Acetone                     | ? | Ethane (gas)                          | + | Oxygen (gas)                   | + |
| Acetonitrile                | - | Ethers                                | ? | Palmitic acid                  | + |
| Acetylene (gas)             | + | Ethyl acetate                         | ? | Paraffin oil                   | + |
| Acid chlorides              | - | Ethyl alcohol (Ethanol)               | + | Pentane                        | + |
| Acrylic acid                | ? | Ethyl cellulose                       | ? | Perchloroethylene              | - |
| Acrylonitrile               | - | Ethyl chloride (gas)                  | - | Petroleum (Crude oil)          | + |
| Adipic acid                 | + | Ethylene (gas)                        | + | Phenol (Carbolic acid)         | - |
| Air (gas)                   | + | Ethylene glycol                       | + | Phosphoric acid, 40%           | ? |
| Alcohols                    | + | Formaldehyde (Formalin)               | ? | Phosphoric acid, 85%           | - |
| Aldehydes                   | ? | Formamide                             | ? | Phthalic acid                  | + |
| Alum                        | + | Formic acid, 10%                      | + | Potassium acetate              | + |
| Aluminium acetate           | + | Formic acid, 85%                      | ? | Potassium bicarbonate          | + |
| Aluminium chlorate          | ? | Formic acid, 100%                     | - | Potassium carbonate            | + |
| Aluminium chloride          | ? | Freon-12 (R-12)                       | + | Potassium chloride             | + |
| Aluminium sulfate           | ? | Freon-134a [R-134a]                   | + | Potassium cyanide              | + |
| Amines                      | - | Freon-22 (R-22)                       | ? | Potassium dichromate           | ? |
| Ammonia (gas)               | ? | Fruit juices                          | + | Potassium hydroxide            | ? |
| Ammonium bicarbonate        | + | Fuel oil                              | + | Potassium iodide               | + |
| Ammonium chloride           | + | Gasoline                              | + | Potassium nitrate              | + |
| Ammonium hydroxide          | + | Gelatin                               | + | Potassium permanganate         | ? |
| Amyl acetate                | ? | Glycerine (Glycerol)                  | + | Propane (gas)                  | + |
| Anhydrides                  | ? | Glycols                               | + | Propylene (gas)                | + |
| Aniline                     | - | Helium (gas)                          | + | Pyridine                       | - |
| Anisole                     | ? | Heptane                               | + | Salicylic acid                 | ? |
| Argon (gas)                 | + | Hydraulic oil (Glycol based)          | + | Seawater/brine                 | + |
| Asphalt                     | + | Hydraulic oil (Mineral type)          | + | Silicones (oil/grease)         | + |
| Barium chloride             | + | Hydraulic oil (Phosphate ester based) | ? | Soaps                          | + |
| Benzaldehyde                | - | Hydrazine                             | - | Sodium aluminate               | + |
| Benzene                     | + | Hydrocarbons                          | + | Sodium bicarbonate             | + |
| Benzoic acid                | ? | Hydrochloric acid, 10%                | ? | Sodium bisulfite               | + |
| Bio-diesel                  | + | Hydrochloric acid, 37%                | - | Sodium carbonate               | + |
| Bio-ethanol                 | + | Hydrofluoric acid, 10%                | - | Sodium chloride                | + |
| Black liquor                | ? | Hydrofluoric acid, 48%                | - | Sodium cyanide                 | + |
| Borax                       | + | Hydrogen (gas)                        | + | Sodium hydroxide               | ? |
| Boric acid                  | + | Iron sulfate                          | + | Sodium hypochlorite (Bleach)   | ? |
| Butadiene (gas)             | + | Isobutane (gas)                       | + | Sodium silicate (Water glass)  | + |
| Butane (gas)                | + | Isooctane                             | + | Sodium sulfate                 | + |
| Butyl alcohol (Butanol)     | + | Isoprene                              | + | Sodium sulfide                 | + |
| Butyric acid                | + | Isopropyl alcohol (Isopropanol)       | + | Starch                         | + |
| Calcium chloride            | + | Kerosene                              | + | Steam                          | + |
| Calcium hydroxide           | + | Ketones                               | ? | Stearic acid                   | + |
| Carbon dioxide (gas)        | + | Lactic acid                           | ? | Styrene                        | ? |
| Carbon monoxide (gas)       | + | Lead acetate                          | + | Sugars                         | + |
| Cellulosolve                | ? | Lead arsenate                         | + | Sulfur                         | ? |
| Chlorine (gas)              | - | Magnesium sulfate                     | + | Sulfur dioxide (gas)           | ? |
| Chlorine (in water)         | - | Maleic acid                           | ? | Sulfuric acid, 20%             | - |
| Chlorobenzene               | ? | Malic acid                            | ? | Sulfuric acid, 98%             | - |
| Chloroform                  | - | Methane (gas)                         | + | Sulfuryl chloride              | - |
| Chloroprene                 | ? | Methyl alcohol (Methanol)             | + | Tar                            | + |
| Chlorosilanes               | - | Methyl chloride (gas)                 | ? | Tartaric acid                  | ? |
| Chromic acid                | - | Methylene dichloride                  | ? | Tetrahydrofuran (THF)          | - |
| Citric acid                 | ? | Methyl ethyl ketone (MEK)             | ? | Titanium tetrachloride         | - |
| Copper acetate              | + | N-Methyl-pyrrolidone [NMP]            | ? | Toluene                        | + |
| Copper sulfate              | + | Milk                                  | + | 2,4-Toluenediisocyanate        | ? |
| Creosote                    | ? | Mineral oil (ASTM no.1)               | + | Transformer oil (Mineral type) | + |
| Cresols [Cresylic acid]     | - | Motor oil                             | + | Trichloroethylene              | - |
| Cyclohexane                 | + | Naphtha                               | + | Vinegar                        | + |
| Cyclohexanol                | + | Nitric acid, 10%                      | ? | Vinyl chloride (gas)           | - |
| Cyclohexanone               | ? | Nitric acid, 65%                      | ? | Vinylidene chloride            | - |
| Decalin                     | + | Nitrobenzene                          | ? | Water                          | + |
| Dextrin                     | + | Nitrogen (gas)                        | + | White spirits                  | + |
| Dibenzyl ether              | ? | Nitrous gases (NOx)                   | ? | Xylenes                        | + |
| Dibutyl phthalate           | ? | Octane                                | + | Xylenol                        | - |
| Dimethylacetamide [DMA]     | ? | Oils (Essential)                      | + | Zinc sulfate                   | + |
| Dimethylformamide [DMF]     | ? | Oils (Vegetable)                      | + |                                |   |

## σ<sub>BO</sub> DIAGRAM

DIN 28090-1



σ<sub>BO</sub> diagrams represent σ<sub>BO</sub> values for different gasket material thicknesses. These values indicate the maximum in-service compressive pressures which can be applied on the gasket area involved without destructing or damaging the gasket material.

**P-T diagrams** indicate the maximum permissible combination of internal pressure and service temperature which can be simultaneously applied for a given gasket according to its material type, thickness, size and tightness class. Given the wide 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 as a guideline for the selection of a suitable gasket type. As the function and durability of products are dependent upon a number of factors, the data may not be used to support any warranty claims.

- + Recommended
- ? Recommendation depends on operating conditions
- Not recommended



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