TESNIT® SPECTRUM

TESNIT® SPECTRUM-листовой прокладочный материал высокого качества, изготовленный по улучшенной технологии. «Сбалансированное сочетание» углеродных и графитовых волокон с использованием минимального количества связующего вещества обеспечивает отличные механические и химические свойства.

|  |  |
| --- | --- |
| Структура | углеродные и графитовые волокна, резина и неорганические наполнители |
| Цвет | Темно-бордовый |
| Соответствие  | TA-Luft (VDI 2440), DVGW VP401 (Fire Safe Test), DVGW 3535-6 |

**ТЕХНИЧЕСКИЕ ДАННЫЕ** (актуальны для толщины 2 мм)

|  |  |  |  |
| --- | --- | --- | --- |
| **Плотность**  | DIN 28090-2 | грсь3 | 1.4 |
| **Сжимаемость** | ASTM F36J | % | 25 |
| **Восстанавливаемость** | ASTM F36J | % | > 25 |
| **Прочность при растяжении** | ASTM F152 | MПa | > 5 |
| **Устойчивость к нагрузкам**  | DIN 52913 |  |  |
| 16 h, 50 MPa, 175 °C |  | MПa | > 40 |
| 16 h, 50 MPa, 300 °C |  | MПa | > 45 |
| **Скорость протечки** | DIN 3535-6 | Мгр./(с.м) | < 1,0 |
| **Увеличение толщины** | ASTM F146 |  |  |
| Oil IRM 903, 5 h, 150 °C |  | % | 7 |
| ASTM Fuel B, 5 h, 23 °C |  | % | 5 |
| **Жесткость при сжатии** | DIN 28090-2 |  |  |
| Комнатная температура: εKSW |  | % | 20 |
| При повышенной температуре: εWSW/200 °C |  | % | 7 |
| **Коэффициент ползучести** | DIN 28090-2 |  |  |
| Комнатная температура: εKRW |  | % | 4 |
| При повышенной температуре: εWRW/200 °C |  | % | 0,7 |
| **Макс. рабочие условия** |  |  |  |
| Пиковая температура |  | °C/°F | 450/842 |
| Постоянная температура |  | °C/°F | 400/752 |
| - пар |  | °C/°F | 300/572 |
| Давление |  | бар/пси | 100/1450 |
| Обработка поверхности | 4AS. По запросу возможно покрытие графитом или PTFE. |
| Размеры стандартных листов | Размеры (мм): 1500 x 1500 |Толщина (мм): 0.5 | 0.8 | 1.0 | 1.5| 2.0 | 3.0По запросу досутпны другие размеры и толщины. |
| Толерантность | ± 5 % для длины и шириныДля толщины до 1.0 мм ± 0.1 мм Для толщины больше 1.0 мм ± 10 % |

**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.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Acetamide | **+** |  | Dioxane | **?** |  | Oleic acid | **+** |
| Acetic acid, 10% | **+** | Diphyl (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 | **+** |
| Cellosolve | **?** | 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) | **+** |  |

**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

All information and data quoted 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.

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