

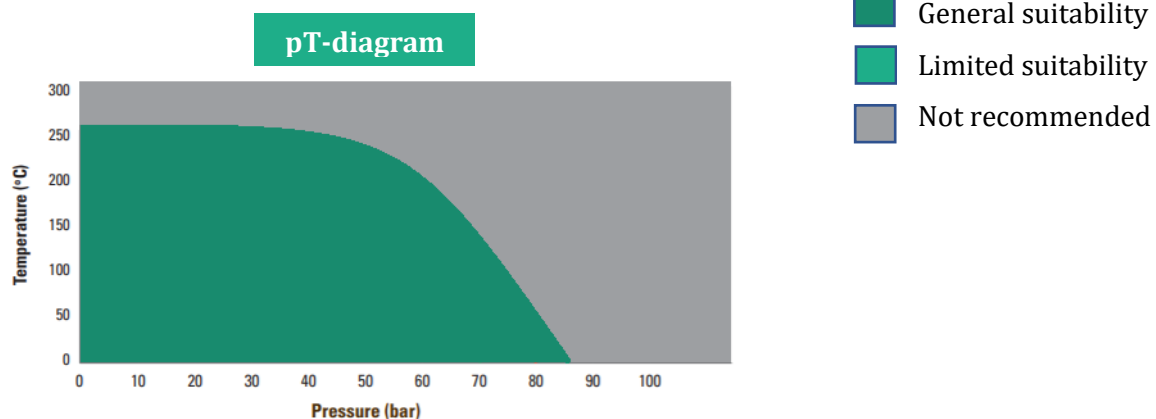
MATERIAL DATASHEET

V. 03/2021

SIGMA® 511

Material Information	
Manufacturer	Flexitallic
Composition	PTFE, silica filler
Applications	Chemical industry
Approvals	WRAS, TA-Luft, BAM (Oxygen), USP Plastic Class VI
Colour	Pink
Thickness (mm)	0,75-3,2
Sheet dimensions (mm)	1 500 x 1 500; 2 000 x 2 000

Technical Data (1,5 mm thickness)		
Density, (g/cm ³)	Compressibility, ASTM F36A (%)	Recovery, ASTM F36A (%)
2,2	7	44
Tensile strength, ASTM F152 (MPa)	Stress resistance, DIN 52913 (MPa)	Specific leak rate, DIN 3535-6 (ml/min)
16	30 (50 MPa, 175 °C, 16 h)	< 0,1
Thickness increase, ASTM F146 (%)	Compression modulus, DIN 28090-2 (%)	Creep relaxation, ASTM F38B (%)
not defined	not defined	35
Peak temperature (°C/°F)	Continuous temperature (°C/°F)	Maximum pressure (bar/psi)
260/500	not defined	85/1 232



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Recommended Media			
Abietic acid	Diazomethane	Helium	Phosphine
Acetaldehyde	Dibenzofuran	Heptachlor	Phosphorus
Acetamide	Dibenzyl ether	Heptane	Phosphorus pentachloride
Acetic acid 10 %	Dibromo chloropropane	Hexachlorobenzene	Picric acid
Acetic acid 100 %	Dibromoethane	Hexachlorobutadiene	Pinene
Acetic anhydride	Dibutyl phthalate	Hexachlorocyclopentadiene	Piperidine
Acetone	Dibutyl sebacate	Hexachloroethane	Polyacrylonitrile
Acetonitrile	Dichlorobenzene	Hexadecane	Polychlorinated biphenyls
Acetylaminofluorene	Dichlorobenzidene	Hexamethylene diisocyanate	Potassium acetate
Acetylene	Dichloroethane	Hexamethylphosphoramide	Potassium bicarbonate
Acid chlorides	Dichloroethyl ether	Hexane	Potassium bichromate
Acrolein	Dichloroethylene	Hexone	Potassium carbonate
Acrylamide	Dichloromethane	Hydraulic oil (glycol)	Potassium chromate
Acrylic acid	Dichloropropane	Hydraulic oil (mineral)	Potassium cyanide
Acrylic anhydride	Dichloropropene	Hydraulic oil (phosphate ester)	Potassium dichromate
Acrylonitrile	Dichlorvos	Hydrazine	Potassium nitrate
Adipic acid	Diesel	Hydrobromic acid	Potassium permanganate
Air	Diethanolamine	Hydrocarbons	Potassium sulfate
Allyl acetate	Diethyl carbonate	Hydrochloric acid 10 %	Probenaldehyde
Allyl chloride	Diethyl sulfate	Hydrochloric acid 37 %	Propane
Allyl methacrylate	Diethylaniline	Hydrocyanic acid	Propane sultone
Alum	Dimethoxyazobenzene	Hydrogen	Propiolactone
Aluminium chloride	Dimethoxybenzidene	Hydrogen bromide	Propyl nitrate
Aluminium fluoride	Dimethyl aniline	Hydrogen peroxide 10 %	Propylene
Aluminium hydroxide	Dimethyl carbamoyl chloride	Hydrogen peroxide 90 %	Propylene dichloride
Aluminium nitrate	Dimethyl ether	Hydrogen sulfide	Propylene oxide
Aluminium sulfate	Dimethyl hydrazine	Hydroquinone	Propylenimine
Aminodiphenyl	Dimethyl phthalate	Iodomethane	Pthalic acid
Ammonia	Dimethyl sulfate	Iron chloride	Pthalic anhydride
Ammonium chloride	Dimethylamine	Iron phosphate	Pyridine
Ammonium hydroxide	Dimethylamino ethyl acrylate	Iron sulfate	Quinoline
Ammonium nitrate	Dimethylaminoazobenzene	Isobutane	Quinone
Ammonium phosphate	Dimethylbenzidine	Isooctane	Seawater / brine
Ammonium sulfate	Dimethylformamide (DMF)	Isophorone	Sewage
Amyl acetate	Dinitro-o-cresol	Isopropanol	Silver nitrate
Amyl alcohol	Dinitrophenol	Isopropyl acetate	Skydrols
Anhydrides	Dinitrotoluene	Kerosene	Soaps
Aniline	Dioxane	Lacquer solvents	Sodium bicarbonate

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Anisidine	Diphenylhydrazine	Lacquers	Sodium bisulfate
Aqua Regia	Diphyl	Lactid acid	Sodium bisulfite
Argon	Dowanol DB	Lindane	Sodium carbonate
Aroclors	Dowanol EB	Lithium bromide	Sodium chlorate
Asphalt	Dowanol PM	Lubricating oils (mineral)	Sodium chloride
Barium chloride	Dowfax 2A1	Lubricating oils (refined)	Sodium cyanide
Barium hydroxide	Dowfax 2AO	Lubricating oils (sour)	Sodium hydroxide
Barium sulfide	Dowfrost	Magnesium chloride	Sodium hypochlorite (bleach)
Baygon	Dowfrost HD	Magnesium hydroxide	Sodium metaborate peroxide
Beer	Dowtherm 4000	Magnesium sulfate	Sodium nitrate
Benzaldehyde	Dowtherm A	Maleic acid	Sodium perborate
Benzene	Dowtherm E	Maleic anhydride	Sodium peroxide
Benzene sulphonic acid	Dowtherm G	Mercuric chloride	Sodium sulfate
Benzidine	Dowtherm HT	Mercury	Sodium sulfide
Benzoic acid	Dowtherm J	Methane	Sodium thiosulfate
Benzonitrile	Dowtherm Q	Methanol	Stannic chloride
Benzoquinones	Dowtherm SR-1	Methoxychlor	Starch
Benzotrichloride	Epichlorohydrin	Methacrylic acid	Steam
Benzoyl chloride	Epoxybutane	Methyl bromide	Stearic acid
Benzyl alcohol	Ethane	Methyl chloride	Stearyl methacrylate
Benzyl chloride	Ethanol	Methyl chloroform	Styrene
Bio-diesel	Ethers	Methyl ethyl ketone (MEK)	Styrene oxide
Bio-ethanol	Ethyl acetate	Methyl hydrazine	Sugars
Biphenyl	Ethyl acrylate	Methyl iodide	Sulfur
Bitumen	Ethyl carbamate	Methyl isobutyl ketone (MIBK)	Sulfur chloride
Black liquor	Ethyl cellulose	Methyl isocyanate	Sulfur dioxide
Blast furnace gas	Ethyl chloride	Methyl methacrylate	Sulfur trioxide
Borax	Ethyl ether	Methyl tert. butyl ether (MTBE)	Sulfuric acid 20 %
Boric acid	Ethyl hexacrylate	Methylaziridine	Sulfuric acid 98 %
Bromine	Ethyl hexanoate	Methylene chloride	Sulfurous acid
Bromoform	Ethyl hexanol	Methylene dianiline	Syltherm 800
Bromomethane	Ethylbenzene	Methylene diphenyldiisocyanate	Syltherm XLT
Butadiene	Ethylene	Methylene methacrylate	Tannic acid
Butane	Ethylene bromide	Methyl-pyrrolidone (NMP)	Tar
Butanone	Ethylene diamine	Milk	Tartaric acid
Butyl acetate	Ethylene dibromide	Mineral oil	TCDB dioxin
Butyl alcohol	Ethylene dichloride	Mobiltherm 600	Tertiary butyl amine
Butyl amine	Ethylene ether	Mobiltherm 603	Tetrabromoethane
Butyl methacrylate	Ethylene glycol	Mobiltherm 605	Tetrachloroethane

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Butyric acid	Ethylene oxide	Mobiltherm Light	Tetrachloroethylene
Calcium bisulfite	Ethylene thiourea	Monoethylene glycol	Tetrahydrofuran (THF)
Calcium chloride	Ethyleneimine	Monomethylamine	Therminol 44
Calcium cyanamide	Ethylhexyl acrylate	Motor oil	Therminol 55
Calcium hydroxide	Ethylidine chloride	MultiTherm 100	Therminol 59
Calcium hypochlorite	Formaldehyde	MultiTherm 503	Therminol 60
Calcium nitrate	Formic acid 10 %	MultiTherm IG-2	Therminol 66
Calflo AF	Formic acid 100 %	MultiTherm PG-1	Therminol 75
Calflo FG	Formic acid 85 %	Muriatic acid	Therminol D12
Calflo HTF	Freon 81 (HP-81)	Naphtha	Therminol LT
Calflo LT	Freon-10 (R-10)	Naphthalene	Therminol VP-1
Caprolactam	Freon-11 (R-11)	Naphthols	Therminol XP
Captan	Freon-112 (R-112)	Natural gas	Thionyl chloride
Carbaryl	Freon-113 (R-113)	Nickel chloride	Titanium sulfate
Carbon dioxide	Freon-114 (R-114)	Nickel sulfate	Titanium tetrachloride
Carbon disulfide	Freon-114B2 (R-114B2)	Nitric acid 10 %	Toluene
Carbon monoxide	Freon-115 (R-115)	Nitric acid 65 %	Toluene diisocyanate
Carbon tetrachloride	Freon-12 (R-12)	Nitrobenzene	Toluene sulfonic acid
Carbonic acid	Freon-123 (R-123)	Nitrobiphenyl	Toluenediamine
Carbonyl sulfide	Freon-1234 (R-1234YF)	Nitrobutanol	Toluidine
Castor oil	Freon-124 (R-124)	Nitrogen	Toxaphine
Catechol	Freon-125 (R-125)	Nitrogen tetroxide	Transformer oil (mineral)
Cetane	Freon-13 (R-13)	Nitromethane	Trichloroacetic acid
China wood oil	Freon-134a (R-134a)	Nitromethyl propanol	Trichlorobenzene
Chloramben	Freon-13B1 (R-13B1)	Nitrophenol	Trichloroethane
Chlordane	Freon-141B (R-141B)	Nitropropane	Trichloroethylene
Chlorinated hydrocarbons	Freon-142B (R-142B)	Nitrosodimethylamine	Trichlorophenol
Chlorinated solvents	Freon-143A (R-143A)	Nitrosomethyl urea	Tricresylphosphate
Chlorine	Freon-152A (R-152A)	Nitrosomorpholine	Triethanolamine
Chlorine dioxide	Freon-21 (R-21)	Octadecyl alcohol	Triethylamine
Chlorine solution	Freon-218 (R-218)	Octane	Trifluralin
Chloroacetic acid	Freon-22 (R-22)	Oils (essential)	Trimethylpentane
Chloroacetophenone	Freon-23 (R-23)	Oils (vegetable)	Turpentine
Chlorobenzene	Freon-290 (R-290)	Oils, fuels	UCON heat transfer fluid 500
Chlorobenzilate	Freon-31 (R-31)	Oleic acid	UCON process fluid WS
Chloroethane	Freon-316 (C-316)	Oleum	Urea
Chloroethylene	Freon-318 (C-318)	Orthodichlorobenzene	Varnish
Chloroform	Freon-32 (R-32)	Oxalic acid	Vinegar
Chloromethyl methyl ether	Freon-500 (R-500)	Oxygen	Vinyl acetate
Chloroprene	Freon-502 (R-502)	Ozone	Vinyl bromide
Chlorosulfonic acid	Freon-503 (R-503)	Palmitic acid	Vinyl chloride

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Chromic acid	Freon-507 (R-507)	Paraffin oil	Vinyl methacrylate
Chromic anhydride	Freon-62 (HP-62)	Paratherm HE	Vinylidene chloride
Chromium trioxide	Freon-717 (R-717)	Paratherm HF	Water
Citric acid	Freon-744 (R-744)	Parathion	Whiskey
Coke oven gas	Freon-80 (HP-80)	Paraxylene	White spirits
Copper chloride	Fuel oil	Pentachloronitrobenzene	Wine
Copper sulfate	Furfural	Pentachlorophenol	Xceltherm 550
Creosote	Gasoline	Pentane	Xceltherm 600
Cresols	Gelatin	Perchloric acid	Xceltherm MK1
Crotonic acid	Glucose	Perchloroethylene	Xceltherm XT
Cumene	Glue, protein base	Petroleum	Xylenes
Cyclohexane	Glycerine	Phenol	Zinc chloride
Cyclohexanol	Glycols	Phenylenediamine	Zinc sulfate
Cyclohexanone	Glyoxillic acid	Phosgene	
Detergent solutions	Grease (petroleum)	Phosphate esters	