Technical Datasheet: High-performance plastic type CP

General notes

- **PEEK** polyetheretherketone reinforced with carbon fibre
- very hard, rigid, high tensile and flexural strength, very high wear resistance
- high heat capability (260-300°C), good dimension stability, low thermal linear expansion coefficient
- excellent resistance to chemicals and aggressive agents, excellent resistance to thermal ageing.
- ESD-safe material
- typical applications include handling of components in cleaning/chemical/assembly processes also at high temperature (soldering).

Mechanical properties		
Flexural modulus +23°C:	21400 MPa	ISO 178 ASTM D 790
Flexural strength +23°C	350 MPa	ISO 178 ASTM D 790
Tensile modulus +23°C	24000 MPa	ISO 527 ASTM D 638
Tensile strength +23°C:	190 MPa	ISO 527 ASTM D 638
Izod - Impact strength (notched) +23°C:	65 J/m	ISO 180/4A ASTM D 256

Thermal properties		
Temp. of defl. under load (1.80 MPa):	300 °C	ISO 75 ASTM D648
Continuous Use Temperature	260°C	20'000 h
Short Time Temperature	300°C	

Electrical properties		
Surface resistivity:	10^6 -10^7 Ohm	
Decay time:	< 0.2 sec	1000-10 V

Other properties		
Density	1.39 g/ccm	ISO 1183
Water absorption in water 23°C (24h)	0.01%	ISO 62

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Chemical Resistance Guide of CP

Acids

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Acetic Acid, 10% Conc.	A	A	-
Acetic Acid, Conc.	A	A	A
Acetic Acid, Glacial	A	A	-
Acrylic Acid	A	A	-
Aqua Regia	C	C	C
Benzene Sulphonic Acid	C	-	-
Benzoic Acid	A	A	-
Boric Acid	A	A	-
Carbolic Acid	A	-	-
Carbonic Acid	A	A	-
Chloracetic Acid	A	A	-
Chlorosulfonic Acid	C	C	C
Chromic Acid, 40% Conc.	A	-	-
Chromic Acid, Conc.	C	C	C
Citric Acid	A	A	-
Formic Acid	B	B	-
Hydrobromic Acid (100%)	C	C	C
Hydrochloric Acid, 10% Conc.	A	A	-
Hydrochloric Acid, Conc.	A	B	-
Hydrocyanic Acid	A	A	-
Hydrofluoric Acid (40%)	C	C	-
Hydrofluoric Acid (70%)	C	C	-
Lactic Acid	A	A	-
Maleic Acid	A	A	-
Nitric Acid, 10% Conc.	A	A	-
Nitric Acid, 30% Conc.	B	-	-
Nitric Acid, 50% Conc.	C	C	C
Nitric Acid, Conc.	C	C	C
Nitrous Acid, 10%	A	-	-
Oleic Acid	A	-	-
Oleum	C	C	C
Oxalic Acid	A	A	-
Perchloric Acid	A	A	-
Phosphoric Acid, 10% Conc.	A	A	A
Phosphoric Acid, 50% Conc.	A	A	A
Phosphoric Acid, 80% Conc.	A	A	-
Phthalic Acid	A	A	-
Picric Acid	A	A	-
Silicic Acid	A	A	-
Sulphuric Acid, <40% Conc.	B	B	B
Sulphuric Acid, >40% Conc.	C	C	C
Sulphurous Acid	A	A	-
Tannic Acid, 10% Conc.	A	A	-
Tartaric Acid	A	A	-

Bases

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Ammonia, 880	A	-	-
Ammonia, Anhydrous	A	A	A
Ammonia, Aqueous	A	A	A
Ammonium Hydroxide, 10% Conc.	A	-	-
Ammonium Hydroxide, Conc.	A	-	-
Calcium Hydroxide	A	-	-
Hydrazine	A	A	-
Magnesium Hydroxide	A	-	-
Potassium Hydroxide, 10% Conc.	A	-	-
Potassium Hydroxide, 70% Conc.	A	-	-
Sodium Hydroxide, 10% Conc.	A	A	A
Sodium Hydroxide, 50% Conc.	A	A	A
Sodium Hydroxide, Conc.			

Inorganic Reagents

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Aluminum Chloride	A	A	-
Aluminum Sulphate	A	A	-
Alum, Saturated	A	A	-
Ammonium Chloride (10% Conc.)	A	A	-
Ammonium Nitrate	A	A	-
Antimony Trichloride	A	A	-
Barium Salts (Chloride, Sulfide)	A	-	-
Bleach	A	A	-
Brine	A	A	-
Bromine	C	C	C
Bromine (Dry)	C	C	C
Bromine (Wet)	C	C	C
Bromine Water, Saturated	A	A	-
Calcium Bisulphide	A	A	-
Calcium Carbonate	A	-	-
Calcium Chloride	A	A	-
Calcium Hypochlorite	A	A	-
Calcium Nitrate	A	-	-
Calcium Sulphate	A	A	-
Carbon Dioxide (Dry)	A	-	-
Carbon Monoxide (Gas)	A	A	A
Chlorine (Gas-Dry)	A	A	C
Chlorine (Gas-Wet)	C	C	-
Chlorine (Liquid)	C	C	C
Chlorine (Wet)	C	C	C
Copper Acetate	A	A	-
Copper Carbonate	A	A	-
Copper Chloride	A	A	-
Copper Cyanide	A	A	-
Copper Fluoride	A	A	-
Copper Nitrate	A	A	-
Copper Sulphate	A	A	-

Cupric Fluoride	A	A	-
Cupric Sulphate	A	A	-
Cuprous Chloride	A	A	-
Ethylene Nitrate	A	-	-
Ferric Chloride	B	B	-
Ferric Nitrate	A	-	-
Ferric Oxide	A	A	-
Ferric Sulphate	A	-	-
Ferrous Chloride	A	-	-
Ferrous Nitrate	A	-	-
Ferrous Sulphate	A	-	-
Fluorine	C	C	C
Hydrogen Peroxide	A	-	-
Hydrogen Sulphide (Gas)	A	A	A
Iodine	B	-	-
Lead Acetate	A	A	-
Lime	A	A	-
Magnesium Chloride	A	A	-
Magnesium Sulphate	A	A	-
Mercuric Chloride	A	A	-
Mercurous Chloride	A	-	-
Mercury	A	A	-
Nickel Acetate	A	A	-
Nickel Chloride	A	A	-
Nickel Nitrate	A	A	-
Nickel Salts	A	-	-
Nickel Sulphate	A	A	-
Nitrogen	A	-	-
Nitrous Oxide	A	-	-
Oxygen	A	-	-
Ozone	A	B	-
Phosphorous Chlorides	A	A	-
Phosphorous Pentoxide	A	A	-
Potassium Aluminium Sulphate	A	A	-
Potassium Bicarbonate	A	-	-
Potassium Bromide	A	A	-
Potassium Carbonate	A	-	-
Potassium Chlorate	A	A	-
Potassium Chloride	A	A	-
Potassium Dichromate	A	-	-
Potassium Ferricyanide	A	-	-
Potassium Ferrocyanide	A	-	-
Potassium Hydroxide	A	A	-
Potassium Nitrate	A	A	-
Potassium Permanganate	A	-	-
Potassium Sulphate	A	A	-
Potassium Sulphide	A	-	-
Silicone Fluids	A	A	-
Silver Nitrate	A	A	-
Sodium Acetate	A	-	-
Sodium Bicarbonate	A	-	-
Sodium Carbonate	A	A	-
Sodium Chlorate	A	A	-

Sodium Chloride	A	A	-
Sodium Hypochlorite	A	A	-
Sodium Nitrate	A	A	-
Sodium Nitrite	A	-	-
Sodium Peroxide	A	A	-
Sodium Salts	A	-	-
Sodium Silicate	A	A	-
Sodium Sulphate	A	A	-
Sodium Sulphide	A	A	-
Sodium Sulphite	A	A	-
Sodium (Hot)	C	C	C
Stannic Chloride	A	A	-
Stannous Chloride	A	A	-
Steam	A	A	A
Sulphur	A	A	-
Sulphur Chloride	A	A	-
Sulphur Dichloride	A	A	-
Sulphur Dioxide	A	A	A
Sulphur Hexafluoride (Gas)	A	-	-
Sulphur Trioxide	A	A	-
Tar	A	-	-
Tetraethyl Lead	A	-	-
Water, Distilled	A	A	-
Water	A	A	A
Water, Sea/Salt	A	A	-
Zinc Chloride	A	A	-
Zinc Sulphate	A	A	-

Alcohols

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Benzyl Alcohol	A	-	-
Butanol	A	-	-
Cyclohexanol	A	-	-
Ethanol	A	A	-
Ethylene Glycol	A	A	B
Ethylene Glycol, 50% Conc.	A	A	A
Glycerol	A	-	-
Glycols	A	A	-
Isopropanol	A	-	-
Methanol	A	A	-
Propanol	A	-	-

Aldehydes and Ketones

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Acetaldehyde	A	A	-
Acetone	A	A	-
Benzaldehyde	A	-	-
Cyclohexanone	A	-	-
Formaldehyde	A	A	-
Formalin	A	-	-
Methylethyl Ketone (MEK)	A	B	C
N-Methyl-2-Pyrrolidone (NMP)	A	-	-

Esters

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Aliphatic Esters	A	A	-
Amyl Acetate	A	A	-
Butyl Acetate	A	-	-
Dibutyl Phthalate	A	-	-
Dimethyl Phthalate	A	-	-
Dioctyl Phthalate	A	-	-
Ethyl Acetate	A	-	-
Oils (Di-Ester and Phosphate Ester Based)	A	A	-

Ethers

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Diethylether	A	A	-
Dioxane	A	-	-
Ethylene Oxide (Et0)	A	-	-
Tetrahydrofuran (THF)	A	-	-

Organo-Nitrogen Compounds

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Acetonitrile	A	-	-
Aniline	A	B	-
Dimethyl Formamide (DMF)	A	-	-
Diethylamine	A	-	-
Nitrobenzene	A	-	-
Pyridine	A	A	-

Halogenated Organics

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
1,2 Dichloroethane	A	-	-
Carbon Tetrachloride	A	A	
Chlorobenzene	A	A	-
Chloroform	A	A	-
Dibromoethane	A	-	-

Dichlorobenzene	A	-	-
Freon* 113 (Arklone®) Trichlorotrifluoroethane	A	-	-
Freon 114, 1, 1 Dichloro 1,2,2,2 Tetrafluoroethane	A	-	-
Freon 12, Dichloridifluoromethane	A	-	-
Freon 22, Chlorodifluoromethane	A	A	-
Freon 134a	A	-	-
Freon 502	A	A	-
Genklene®* (1,1,1 Trichloroethane)	A	-	-
Methylene Chloride	A	-	-
Perchloroethylene	A	A	-
Trichloroethylene	A	A	-

Hydrocarbons

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Acetylene	A	A	-
Aromatic Solvents	A	A	-
Aviation Hydraulic Fluid	A	-	-
Benzene	A	A	-
Brake Fluid (Mineral)	A	A	A
Brake Fluid (Polyglycol)	A	A	A
Butane	A	-	-
Crude Oil	A	-	-
Cyclohexane	A	A	-
Diesel Oil	A	-	-
Dowtherm* G	B	-	-
Dowtherm* HT	B	-	-
Dowtherm* LF	B	-	-
Ethane	A	-	-
Fuel Oil	A	-	-
Gas (Manufactured)	A	-	-
Gas (Natural)	A	-	-
Gasoline	A	-	-
Heptane	A	-	-
Hexane	A	-	-
Hydraulic Fluid	A	-	-
Iso-Octane	A	-	-
Kerosene	A	-	-
Lubricating Oil	A	-	-
Methane (Gas)	A	A	A
Motor Oil	A	A	A
Naphtha	A	A	-
Naphthalene	A	A	-
Oils (Petroleum)	A	A	-
Oils (Vegetable)	A	A	-
Pentane	A	-	-
Petroleum Ether	A	A	-
Propane	A	-	-
Skydrol* Hydraulic Fluid	A	-	-
Styrene (Liquid)	A	-	-
Toluene	A	-	-
Transformer Oil	A	A	-
Vaseline*	A	-	-

Xylene	A	-	-

Miscellaneous Reagents

CHEMICAL	23°C (73°F)	100°C (212°F)	200°C (392°F)
Adhesives (not cyanoacrylates)	A	-	-
Apple Juice	A	-	-
Aviation Spirit	A	-	-
Beer	A	A	-
Cooking Oil	A	-	-
Creosote	A	-	-
Detergent Solutions (non-phenolic)	A	A	-
Edible Fats and Oils	A	-	-
Fatty Acids	A	A	-
Fruit Juice	A	A	-
Gelatin	A	A	-
Ketchup	A	-	-
Linseed Oil	A	-	-
Milk	A	A	-
Mineral Oil	A	-	-
Molasses	A	A	-
Olive Oil	A	A	-
Peanut Oil	A	A	-
Paraffin	A	A	-
Sewage	A	A	-
Soap Solution	A	-	-
Starch	A	A	-
Tallow	A	A	-
Turpentine	A	-	-
Urea	A	A	-
Varnish	A	-	-
Vinegar	A	A	-
Wax	A	-	-
White Spirit	A	-	-
Wines and Spirits	A	-	-
Yeast	A	A	-