Chemical Resistance of ENSINGER Engineering Plastics

CHEMICAL AGENTS

Trade Name	Raw Material Group	Acetamide 50%	Acetic Acid conc.	Acetic Acid 10%	Acetic Acid 5%	Acetone	Ammonia 10%	Benzene	Bitumen	Boric Acid 10%	Butylacetate	Butylene Glycol	Calcium Chloride 10%	Carbon Disulphide	Carbon Tetrachloride	Chlorobenzene	Chloroform	Citric Acid 10%	Clophen A 60 50%	Copper Sulphate	Cyclohexane	Cyclohexanol	Cyclohexanone	Decahydronaphthalene	Diesel Oil	Dimethylformamide	Dioctylphthalate	Dioxane
TECAST™	Cast Nylon 6	+	–	–	(+)	+	+	+	(+)	–	+	+	–	+	+	+	–	(+)	+	+	+	+	+	+	+	+	+	+
TECAMID™ 6/6	Nylon 6/6	+	–	–	(+)	+	+	+	(+)	–	+	+	–	+	+	+	–	(+)	+	+	+	+	+	+	+	+	+	+
TECAPET™ PET	PET (Polyethylene Terephthalate)		(+)	+	+	+	–	+			+		+	+	+	–	–	+	+						+			+
TECAFORM™	Acetal Copolymer		–	(+)	+	+	(+)	(+)	+	+			+	+	+	+	+	+		+	+	+			+	+	+	+
DELRIN®	Acetal Homopolymer		–	–	+	+	–	+	+	+			+	+	+	+	+	–		+	+	+			+	+	+	+
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)		–	(+)	+	–	+	–				–			–	–	–				–	–	–		–		–	
NORYL®	PPO (Polyphenylene Oxide)		+	+	+	–	+	–							–		–	+		+	+	+		–	+		+	(+)
TECANAT™	Polycarbonate		–	+	+	–	–	–	–	+	–	+	+	–	–	–	–	+		+	–	(+)	–	+	(+)	–	(+)	–
TECASON™ S	Polysulfone		+	+	+	–	(+)	–			(+)		+		(+)		–	+			+				+		+	
TECAFINE™ PP	Polypropylene		+	+	+	+	+	(+)		+	(+)	+	+	(+)	–	+	(+)	+			+	+	+		(+)	+	+	(+)
ULTEM®	Polyetherimide			+	+	+	–								+		–	+			+				+			
TECAPEEK™	Polyetheretherketone		+	+	+	+	+	+		+		+		+	+	+					+				+	+		
TECATRON™	PPS (Polyphenylene Sulfide)		+	+	+	+	+	+		+	+		+	+	+		+	+		+	+	+	+		+		+	+
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	+	+	+	+	–	+	+		+	+	+	+	+	+	+	+	+		+	+	+	+		+	–		(+)

Trade Name	Raw Material Group	Edible Oil, Edible Fat	Ethanol 96%	Ether	Ethyl Acetate	Ethylene Chloride	Formaldehyde 30%	Formamide	Formic Acid 10%	Frigen, Freon	Fruit Juices	Fuel Oil	Gasoline	Glycerine	Glycol	Glysantin 40%	Heptane/Hexane	Hydrochloric Acid 36%	Hydrochloric Acid 2%	Hydrofluoric Acid	Hydrogen Peroxide 30%	Hydrogen Peroxide 0.5%	Hydrogen Sulphide	Ink	Isooctane	Isopropanol	Lactic Acid 90%	Lactic Acid 10%
TECAST™	Cast Nylon 6	+	+	+	+	+	+	+	–	+	+	+	+	+	+	+	+	–	–	–	–	–	–	+	+	+	–	(+)
TECAMID™ 6/6	Nylon 6/6	+	+	+	+	+	+	+	–	+	+	+	+	+	+	+	+	–	–	–	–	–	–	+	+	+	–	(+)
TECAPET™ PET	PET (Polyethylene Terephthalate)	+	+	+	+	–			+	+	+	+	+	+	+	+	+	–	+	(+)	+	+		+		(+)		
TECAFORM™	Acetal Copolymer	+	+	+	–	+	+		–		+	+	+	+	+	+	+	–	–	–	–	–	(+)		+	+	–	(+)
DELRIN®	Acetal Homopolymer	+	+	+	+	+	+		–		+	+	+	+	+	+	+	–	–	–	–	–	–		+	+	–	(+)
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)	–	–		–	–					(+)	–	–	+	–		+	+	+					–		–		
NORYL®	PPO (Polyphenylene Oxide)	+	+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+
TECANAT™	Polycarbonate	+	(+)	–	–	–			+	–	+	+	(+) to –	(+)	+	+	+	+	+	(+)	+	+	+	+		(+)	+	+
TECASON™ S	Polysulfone		+	+	–					+			+	+	+	+	+	(+)	+	(+)	(+)	+			+	(+)		
TECAFINE™ PP	Polypropylene		+		+	(+)	+	+	+	–	+	(+)		+	+		+	+	+	+	+	+	+		+	+	+	+
ULTEM®	Polyetherimide		+	+	(+)				+	+	+	+	+		+		+	+	+							+		
TECAPEEK™	Polyetheretherketone	+	+		+				(+)	+	+	+	+	+	+		+	+	+	–	+	+	+	+	+	+	+	+
TECATRON™	PPS (Polyphenylene Sulfide)	+	+	+	+	+	+		+	+	+	+	+	+	+		+	+	+	+	–	+	+			+	+	+
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	+	+	+	(+)	+	+		+	(+)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Trade Name	Raw Material Group	Linseed Oil	Methanol	Methyl Ethyl Ketone	Methylene Chloride	Milk	Motor Oil/Engine Oil	Nitric Acid 2%	Nitrobenzene	Oxalic Acid 10%	Ozone	Paraffin Oil	Perchlorethylene	Petroleum White Spirit	Phenol, Aqueous	Phosphoric Acid 10%	Potassium Hydroxide Solution 50%	Potassium Hydroxide Solution 10%	Potassium Dichromate 10%	Potassium Permanganate 1%	Propanol	Pyridene	P3-Solution, Aqueous	Salicylic Acid	Silicone Oil	Soap Solution	Soda Solution 10%	Sodium Bisulphite
TECAST™	Cast Nylon 6	+	+	+	(+)	+	+	–	(+)	(+)	–	+	+	+	–	–	(+)	+	(+)	–	+	+	+	+	+	+	+	+
TECAMID™ 6/6	Nylon 6/6	+	+	+	(+)	+	+	–	(+)	(+)	–	+	+	+	–	–	(+)	+	(+)	–	+	+	+	+	+	+	+	+
TECAPET™ PET	PET (Polyethylene Terephthalate)	+	+	+	–		+	+				+	(+)	+	(+)	+	–	(+)	+	+	(+)				+	+	+	+
TECAFORM™	Acetal Copolymer	+	+	+	(+)	+	+	–	+	(+)	(+)	+	+	+	–	–	+	+	+	+	+	+			+	+		–
DELRIN®	Acetal Homopolymer	+	+	+	+	+	+	–	(+)	(+)	–	+	+	+	–	–	–	–	(+)	+	+	+			+	+		–
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)		–	–	–	–		+					–	–	–						–				–	+		
NORYL®	PPO (Polyphenylene Oxide)	+	+	–		+	+	+		+		+		+		+	+	+	+	+	+				+	+		
TECANAT™	Polycarbonate	+	–	–	–	+		+	–	+	+	+	(+)	–	–	+	–	–	+	+	+	–	–		+	+	+	+
TECASON™ S	Polysulfone		+	–	–		+	+		+			–			+										+		
TECAFINE™ PP	Polypropylene	+	+	+	(+)	+		(+)	+	+	(+)	+	(+)		+	+	+	+		+	+	(+)			+	+	+	+
ULTEM®	Polyetherimide		+	(+)	–		+	+					+	+	(+)	+		+			+							
TECAPEEK™	Polyetheretherketone	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+		+				+	+	+	
TECATRON™	PPS (Polyphenylene Sulfide)	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+				+	+		
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	+	+	–	+	+	+	+	+	+	+	+	+	+	+	+	–	(+)	+	+	+	+		+	+	+	+	+

Trade Name	Raw Material Group	Sodium Carbonate 10%	Sodium Chloride 10%	Sodium Hydroxide Solution 50%	Sodium Hydroxide Solution 5%	Sodium Nitrate 10%	Sodium Thiosulphate	Styrene	Sulphuric Acid 98%	Sulphuric Acid 2%	Tar	Tartaric Acid	Tetrahydrofuran	Tetrahydronaphthalene	Tincture of Iodine (alc.)	Toluene	Triethanolamine	Trichloroethylene	Trilon B 10%	Urea Aqueos	Vaseline	Water, Cold	Water, Hot	Wax, Molten	Wine, Brandy	Xylene	Zinc Chloride 10%
TECAST™	Cast Nylon 6	+	+	–	–	+	+	+	–	(+)	+	+	+	+	–	+	+	+	+	+	+	+	(+)	+	+	+	(+)
TECAMID™ 6/6	Nylon 6/6	+	+	–	–	+	+	+	–	(+)	+	+	+	+	–	+	+	+	+	+	+	+	(+)	+	+	+	(+)
TECAPET™ PET	PET (Polyethylene Terephthalate)	+	+	–	(+)	+	+		–	+			(+)	+		+		(+)			+	+	+	+		+	
TECAFORM™	Acetal Copolymer	+	+	+	+	+	+		–	–		(+)	+	+		+	+	+		+	+	+	+	+	+	+	+
DELRIN®	Acetal Homopolymer	+	+	–	–	+	+		–	–		(+)	+	+		+	(+)	+		+	+	+	+	+	+	+	
TECARAN™ ABS	ABS (Acrylonitrile-Butadiene-Styrene)		+	+	+			–		+						–					+	+		–		–	
NORYL®	PPO (Polyphenylene Oxide)	+	+	+	+			–	+	+		+			+			–		+		+	+	+	+	–	+
TECANAT™	Polycarbonate	+	+	–	–			–	–	+		+	–	–	(+)	–	–	–		+	+	+	(+)	+	+	–	+
TECASON™ S	Polysulfone		+		+				–	+						–		–				+	(+)			–	
TECAFINE™ PP	Polypropylene	+	+	+	+	+	+		–	+		+	–	–		(+)	+	(+)		+	+	+			+	–	+
ULTEM®	Polyetherimide				+					+						(+)		–				+	+			(+)	+
TECAPEEK™	Polyetheretherketone	+	+	+	+			+	–	+	+			(+)	+			+			+	+	+	+	+	+	+
TECATRON™	PPS (Polyphenylene Sulfide)		+	+	+	+	+	+		(+)	+	+	+	+		+	+	+		+	+	+	+		+	+	+
TECAFLON™ PVDF	PVDF (Polyvinylidene Fluoride)	+	+	–	–	+	+		+	+		+	(+)			+	+	+		+	+	+	+	+	+	+	+

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Ultem®, Noryl® – Sabic Innovative Plastics

The above results are the summary of several tests. The better resistance of the high-crystalline semi-finished products in comparison to injection molded thin parts which have been cooled rapidly and the smaller swelling of the EP-plastics are the result of Ensinger's special manufacturing process.

+ = good
(+) = fair
– = poor

Test-Temperature 20°C

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