COMPARISON OF CHEMICAL RESISTANCE OF SIX PLASTICS RESINS

Percent Tensile Strength Retained (24 Hours @ 200°F)

GE Plastics Quick Reference Chemical Compatibility Guide

	CHEMICAL	ZYTEL 101 NYLON 6-6	LEXAN 14 POLYCARBONATE	UDEL POLYSULTONE	NORYL PHENYLENE OXIDE BASED RESIN	PPS FORTRON (RYTON) POLYPHENYLENE SULFIDE	GENAL 4300 PHENOLIC
ACIDS	10% Acetic	30	37	100	100	100	-
	10% Chromic	67	100	100	100	100	-
	10% HCL	0	100	100	100	100	-
	10% HNO_3	0	100	100	100	96	-
	30% H_2SO4	0	100	100	100	100	13
	37% HCL	0	0	100	100	100	83
	85% H_3PO_4	0	100	100	100	100	73
	88% Formic	0	38	79	99	75	4
	Acetic Anhydride	74	0	0	55	100	-
	Benzene Sulfonic	0	20	35	100	100	-
	Glacial Acetic	0	67	91	78	98	98
	Lactic	22	100	100	100	100	-
BASES	15% NaOH	69	98	100	100	100	-
	28% NH_4OH	85	0	100	100	100	99
	30% NaOH	89	7	100	100	100	63
INORGANICS - 10% AQUEOUS SOLUTION	H_2O	66	100	100	100	100	-
	$(NH_4)_2SO_4$	62	100	100	100	100	-
	$Al_2(SO_4)_3$	33	100	100	100	100	-
	$AlCl_3$	19	100	100	100	100	100
	$BaCl_2$	86	100	100	100	100	-
	Br_2	8	48	92	87	64	100
	$Ca(NO_3)_2$	29	100	100	100	100	-
	$CaCl_2$	82	100	100	100	100	-
	H_2O	66	100	100	100	100	-
	$(NH_4)_{2v}SO_4$	62	100	100	100	100	-
	$Al_2(SO_4)_3$	33	100	100	100	100	-
	$AlCl_3$	19	100	100	100	100	100
	$BaCl_2$	86	100	100	100	100	-
	Br_2	8	48	92	87	64	100
	$Ca(NO_3)_2$	29	100	100	100	100	-
	$CaCl_2$	82	100	100	100	100	-

COMPARISON OF CHEMICAL RESISTANCE OF SIX PLASTICS RESINS (CONT.)

	CHEMICAL	ZYTEL 101 NYLON 6-6	LEXAN 14 POLYCARBONATE	UDEL POLYSULTONE	NORYL PHENYLENE OXIDE BASED RESIN	PPS FORTRON (RYTON) POLYPHENYLENE SULFIDE	GENAL 4300 PHENOLIC
ALCOHOLS	2-Aminoethanol	93	0	100	100	100	-
	Amyl alcohol	87	48	100	62	100	-
	Butyl alcohol	87	94	100	84	100	100
	Cyclohexanol	84	74	95	27	100	96
	Ethylene glycol	96	100	100	100	100	-
AMINES	n-Butylamine	91	0	0	0	49	100
	Anilino	85	0	0	0	96	100
	Dimethylaniline	100	0	0	0	100	-
	Ethylenediamine	78	0	0	51	65	-
	Morphline	93	0	0	0	80	-
	Pyridine	74	0	0	0	93	-
ALDEHYDES, KETONES	37% Formaldehyde	77	100	100	100	100	-
	Acetophenone	87	0	0	0	100	-
	Benzaldehyde	98	0	0	0	84	100
	Cyclohexanone	87	0	0	0	99	-
	Furfural	81	0	0	0	100	100
	Methyl elthyl ketone (MEK)	87	0	0	0	100	100
CHLORINATED ORGANICS	2-Chloroethanol	12	0	0	53	100	-
	5% aq. Chlorofenol	41	42	0	57	100	-
	Acetyl chloride	0	0	0	0	100	-
	Benzyl chloride	80	0	0	0	100	-
	Carbon tetrachloride	76	0	17	0	100	-
	Chlorobenzene	73	0	0	0	100	100
	Chloroform	57	0	0	0	87	100
	Epychlorohydrin	84	0	0	0	74	-
	Ethylene chloride	65	0	0	0	72	-
ESTERS	Amyl acetate	88	46	0	0	100	-
	Butyl acetate	95	0	32	0	100	-
	Butyl Phthalate	90	46	63	19	100	100
	Ethyl acetate	89	0	0	0	100	100

COMPARISON OF CHEMICAL RESISTANCE OF SIX PLASTICS RESINS (CONT)

	CHEMICAL	ZYTEL 101 NYLON 6-6	LEXAN 14 POLYCARBONATE	UDEL POLYSULTONE	NORYL PHENYLENE OXIDE BASED RESIN	PPS FORTRON (RYTON) POLYPHENYLENE SULFIDE	GENAL 4300 PHENOLIC
ETHERS	Butyl ether	100	61	100	0	100	-
	Cellosolve	81	78	0	47	89	-
	p-dioxane	96	0	0	0	88	100
	Tetrahydrofuran	87	0	0	0	76	92
HYDROCARBONS	Cyclohexane	90	75	99	0	100	-
	Diesel fuel	87	100	100	36	100	-
	Dowtherm	89	0	0	0	100	-
	Gasoline	80	99	100	0	100	-
	Heptane	84	100	100	36	91	98
	Mineral oil	90	100	100	100	100	-
	Motor oil	88	100	100	100	100	-
	Stoddard solvent	86	100	100	0	100	-
	Toluene	76	0	0	0	98	-
	Wesson oil	100	99	100	100	100	-
	Xylene	91	0	0	0	100	100
NITRILES	Acetronitrile	93	25	0	69	96	100
	Benzonitrile	88	0	0	0	100	-
NITRO COMPOUNDS	Nitrobenzene	100	0	0	0	100	100
	Nitro methane	57	0	0	66	71	100
PHENOLS	m-Cresol	0	0	0	0	100	-
	Phenol	0	0	0	0	100	100
MISC	Dimethyl Sulfoxide	84	0	0	93	100	-
	Cresyldiphenyl phosphate	88	62	55	19	100	-
	N, N-dimethyl-formamide	95	0	0	-	100	94
	Sulfolane	87	0	0	100	97	100
	Triphenyl–phosphite	84	16	77	0	100	-

NOTICE

The results shown herein are typical results that have been obtained in laboratory tests using bars molded from typical lots of resin. These results are for natural colors only. The addition of additives may alter some results.

In addition, design, processing methods and equipment, environment and other variables may affect actual part performance.

Inasmuch as General Electric Company has no control over those variables or the use to which others may put the material, it does not guarantee that the same results as those described herein will be obtained.

Therefore, while these results should assist you in electing compatible materials, they are not a substitute for careful testing of prototype parts in typical operating environments before beginning commercial production.

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ELASTOMERIC TECHNICAL DATA RELEASE

	CODE	TYPE (1)	TEMP LIMITS (˚F)	PROPERTIES
Silicone	A	SI	-120 to 500	General Purpose, Low Temperature
Buna N	J(4)	NBR	-40 to 250	General Purpose, Oil Resistant, Used in Stock Diaphragms
Ethylene, Propylene	N	EPDM	-40 to 300	Steam, Ozone, Acid & Alkali Resistant
Butyl	T	NR	-40 to 250	Weather, Ozone, Acid & Alkali Resistant, Low Permeability
Viton	V	FPM	0 to 550	Oil, Fuel, Chemical Resistant
Hypalon	Y	CSM	-30 to 300	Weather, Acid & Alkali Resistant

Notes:

CSM	=	Hypalon	NR	=	Butyl (Natural Rubber)
EPDM	=	Ethylene propylene	NBR	=	Nitrile (Buna N)
FPM	=	Fluorocarbon (Viton)	SI	=	Silicone

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