

Kynar[®]
polyvinylidene fluoride

CHEMICAL RESISTANCE CHART





Arkema Inc.
2000 Market Street
Philadelphia, PA 19103
Tel.: 215-419-7000
www.Arkema-Inc.com
CHEM CHART-Rev 04/06

www.kynar.com

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Acetaldehyde		NR ^c	NR	NR	NR	NR	NR
Acetamide		NR	NR	NR	NR	75	25
Acetic Acid		125	50	125	50	125	50
Acetic Acid	10% in water	200	95	230	110	220	105
Acetic Acid	50% in water	200	95	200	95	200	95
Acetic Acid	80% in water	125	50	125	50	150	65
Acetic Anhydride		NR	NR	NR	NR	NR	NR
Acetone		NR	NR	NR	NR	NR	NR
Acetone	10% in water	100	40	100	40	125	50
Acetonitrile		NR	NR	100	40	125	50
Acetophenone		NR	NR	NR	NR	NR	NR
Acetyl Bromide		125	50	125	50	125	50
Acetyl Chloride		125	50	125	50	125	50
Acetylacetone		NR	NR	NR	NR	NR	NR
Acetylene		150	65	170	75	250	120
Acrylonitrile		75	25	75	25	75	25
Adipic Acid		150	65	150	65	150	65
Air		260	125	275	135	285	140
Alcoholic Spirits	40% Ethyl Alcohol	200	95	200	95	200	95
Allyl Alcohol		125	50	125	50	125	50
Allyl Chloride		212	100	212	100	212	100
Aluminum Acetate	Aqueous solution or solid	230	110	275	135	285	140
Aluminum Bromide		230	110	275	135	285	140
Aluminum Chloride	Up to 40% in water	230	110	275	135	285	140
Aluminum Fluoride	Aqueous solution or solid	230	110	275	135	275	135
Aluminum Hydroxide		230	110	275	135	275	135
Aluminum Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Aluminum Oxychloride		230	110	275	135	275	135
Aluminum Sulfate	Aqueous solution or solid	230	110	275	135	275	135
Ammonia, gas		NR	NR	NR	NR	NR	NR
Ammonia, Liquid		NR	NR	NR	NR	NR	NR
Ammonium Acetate	Aqueous solution or solid	150	65	150	65	175	80
Ammonium Alum	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Bifluoride	Aqueous solution or solid	150	65	150	65	150	65
Ammonium Bromide	Aqueous solution or solid	230	110	230	110	250	120
Ammonium Carbonate	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Chloride	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Dichromate	Aqueous solution or solid	230	110	275	135	250	120
Ammonium Fluoride	Aqueous solution or solid	170	75	170	75	150	65
Ammonium Hydroxide	Up to "concentrated"	200	95	200	95	220	105
Ammonium Metaphosphate	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Persulfate	Aqueous solution or solid	75	25	75	25	75	25
Ammonium Phosphate	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Sulfate	Aqueous solution or solid	230	110	275	135	275	135
Ammonium Sulfide	Aqueous solution or solid	125	50	125	50	125	50
Ammonium Thiocyanate	Aqueous solution or solid	230	110	275	135	275	135
Amyl Acetate		100	40	100	40	125	50
Amyl Alcohol		230	110	275	135	275	135
Sec-Amyl Alcohol		125	50	125	50	125	50
Amyl Chloride		230	110	275	135	285	140
Aniline		100	40	100	40	100	40
Aniline Hydrochloride	Aqueous solution or solid	75	25	75	25	75	25
Aqua Regia		75	25	75	25	75	25
Arsenic Acid	Aqueous solution	230	110	275	135	275	135
Asphalt		230	110	250	120	250	120
Barium Carbonate		230	110	275	135	285	140
Barium Chloride	Aqueous solution or solid	230	110	275	135	285	140
Barium Hydroxide		230	110	250	120	275	135
Barium Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Barium Sulfate		230	110	275	135	285	140

Maximum usage temperatures for KYNAR® resin with selected chemicals.

Consult your KYNAR products representative if you have any questions or for more recent results.

- a** pure substance unless otherwise indicated.
- b** temperatures in °F have been rounded to °C in 5 degree increments.
- c** NR indicates that KYNAR resin is not recommended for use with the chemical at room temperature or at the temperature indicated.
- d** The temperatures listed are maximum values and do not take into account pressures, vacuums, mixtures, or close tolerances.

KYNAR® is a registered trademark of **Arkema Inc.**

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Barium Sulfide		230	110	275	135	275	135
Beer		212	100	230	110	212	100
Beet Sugar Liquors		230	110	230	110	220	105
Benzaldehyde		NR	NR	NR	NR	70	20
Benzene		170	75	170	75	170	75
Benzenesulfonic Acid	Aqueous solution or solid	125	50	125	50	125	50
Benzoic Acid		220	105	230	110	230	110
Benzoyl Chloride		170	75	170	75	170	75
Benzoyl Peroxide		170	75	170	75	170	75
Benzyl Alcohol		230	110	250	120	250	120
Benzyl Chloride		230	110	275	135	285	140
Benzyl Ether		75	25	75	25	100	40
Benzylamine	Aqueous solution or liquid	NR	NR	NR	NR	75	25
Black Liquor		175	80	175	80	175	80
Bleaching Agents		230	110	275	135	275	135
Borax		230	110	275	135	275	135
Boric Acid		230	110	275	135	275	135
Boron Trifluoride		75	25	75	25	75	25
Brine		230	110	275	135	285	140
Brine, acid		230	110	275	135	270	130
Brine, basic		230	110	275	135	270	130
Brine, chlorinated acid		200	95	200	95	200	95
Bromic Acid	Aqueous solution	200	95	200	95	200	95
Bromine dry gas		125	50	125	50	150	65
Bromine, liquid		125	50	150	65	150	65
Bromine, water		200	95	200	95	212	100
Bromobenzene		150	65	150	65	150	65
Bromoform		150	65	150	65	150	65
m-Bromotoluene		150	65	175	80	175	80
Butadiene		230	110	250	120	250	120
Butane		230	110	250	120	250	120
Butanediol	Aqueous solution or liquid	230	110	250	120	275	135
Butyl Acetate		NR	NR	NR	NR	75	25
Butyl Acrylate		100	40	100	40	125	50
Butyl Alcohol	Aqueous solution or liquid	220	105	230	110	230	110
sec-Butyl Alcohol	Aqueous solution or liquid	200	95	200	95	200	95
t-Butyl Alcohol	Aqueous solution or liquid	200	95	200	95	200	95
Butyl Bromide		230	110	275	135	285	140
Butyl Chloride		230	110	275	135	285	140
Butyl Ether		NR	NR	NR	NR	100	40
Butyl Mercaptan		230	110	275	135	285	140
Butyl Stearate		100	40	100	40	100	40
Butylamine	Aqueous solution or liquid	NR	NR	NR	NR	NR	NR
sec-Butylamine	Aqueous solution or liquid	NR	NR	NR	NR	70	20
t-Butylamine	Aqueous solution or solid	NR	NR	NR	NR	70	20
1-Butylene		230	110	275	135	285	140
Butylphenol		230	110	250	120	220	105
Butyraldehyde		125	50	125	50	150	65
Butyric Acid		230	110	230	110	230	110
Calcium Acetate	Aqueous solution or solid	230	110	230	110	285	140
Calcium Bisulfate	Aqueous solution or solid	230	110	275	135	285	140
Calcium Bisulfite	Aqueous solution or solid	200	95	200	95	200	95
Calcium Bromide	Aqueous solution or solid	230	110	230	110	285	140
Calcium Carbonate		230	110	275	135	285	140
Calcium Chlorate	Aqueous solution or solid	230	110	275	135	285	140
Calcium Chloride	Aqueous solution or solid	230	110	230	110	285	140
Calcium Hydroxide		230	110	250	120	275	135
Calcium Hypochlorite	Aqueous solution or solid	200	95	200	95	200	95
Calcium Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Calcium Oxide		230	110	230	110	250	120
Calcium Phosphate		230	110	275	135	285	140

NOTE: Grades of KYNAR[®] resin may vary in temperature rating at different pressures. Please consult **Arkema** for the recommendation of a KYNAR grade for your specific application.

The listed ratings apply to solid KYNAR resin components only. Coatings or laminates bonded to other substrates may have lower temperature ratings due to adhesive or primer capabilities in the system.

KYNAR[®]
Polyvinylidene Fluoride

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Calcium Sulfate		230	110	275	135	285	140
Cane Sugar Liquors		230	110	250	120	285	140
Caprylic Acid		175	80	175	80	175	80
Carbon Dioxide		230	110	250	120	285	140
Carbon Disulfide		75	25	75	25	75	25
Carbon Monoxide		230	110	275	135	285	140
Carbon Tetrachloride		230	110	230	110	275	135
Carbonic Acid		230	110	250	120	275	135
Casein		230	110	230	110	250	120
Castor Oil		230	110	275	135	285	140
Chloral Hydrate		75	25	75	25	75	25
Chlorinated Phenol		150	65	150	65	150	65
Chlorine	5% in CCl ₄	170	75	175	80	200	95
Chlorine, gas		170	75	175	80	200	95
Chlorine, liquid		175	80	175	80	200	95
Chlorine Dioxide		150	65	160	70	150	65
Chlorine Water		230	110	230	110	230	110
Chloroacetic Acid	Aqueous solution or pure	NR	NR	NR	NR	NR	NR
Chloroacetyl Chloride		125	50	125	50	125	50
Chlorobenzene		160	70	170	75	170	75
Chlorobenzene-sulfonic Acid	Aqueous solution or pure	200	95	200	95	200	95
Chlorobenzyl Chloride		125	50	125	50	125	50
Chlorofluorocarbon 11		212	100	212	100	212	100
Chlorofluorocarbon 12		212	100	212	100	212	100
Chlorofluorocarbon 13		212	100	212	100	212	100
Chlorofluorocarbon 14		212	100	212	100	212	100
Chlorofluorocarbon 21		212	100	212	100	212	100
Chlorofluorocarbon 22		212	100	212	100	212	100
Chlorofluorocarbon 113		212	100	212	100	212	100
Chlorofluorocarbon 114		212	100	212	100	212	100
Chloroform		125	50	125	50	125	50
6-Chlorohexanol		170	75	170	75	170	75
Chlorohydrin		125	50	125	50	125	50
Chloropicrin		150	65	150	65	150	65
Chlorosulfonic Acid		75	25	75	25	NR	NR
Chlorotrimethylsilane		125	50	125	50	125	50
Chrome Alum	Aqueous solution or solid	200	95	200	95	200	95
Chromic Acid	Up to 40% in water	175	80	175	80	175	80
Chromic Acid	50% in water	150	65	150	65	125	50
Chromyl Chloride		125	50	125	50	125	50
Cider		212	100	212	100	212	100
Citric Acid	Aqueous solution or solid	230	110	250	120	275	135
Coal Gas		230	110	230	110	230	110
Coconut Oil		230	110	275	135	285	140
Copper Acetate	Aqueous solution or solid	230	110	250	120	250	120
Copper Carbonate, basic		230	110	275	135	285	140
Copper Chloride	Aqueous solution or solid	230	110	275	135	285	140
Copper Cyanide		230	110	250	120	275	135
Copper Fluoride		230	110	250	120	275	135
Copper Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Copper Sulfate	Aqueous solution or solid	230	110	275	135	285	140
Corn Oil		230	110	275	135	285	140
Corn Syrup		230	110	250	120	250	120
Cottonseed Oil		230	110	275	135	285	140
Cresol		150	65	150	65	150	65
Cresylic Acid		150	65	150	65	150	65
Crotonaldehyde		100	40	100	40	125	50
Crude Oil		230	110	275	135	285	140
Cryolite		230	110	250	120	250	120
Cuprous Chloride		230	110	250	120	250	120
Cyclohexane		230	110	250	120	285	140

Maximum usage temperatures for KYNAR® resin with selected chemicals.

Consult your KYNAR products representative if you have any questions or for more recent results.

- a** pure substance unless otherwise indicated.
- b** temperatures in °F have been rounded to °C in 5 degree increments.
- c** NR indicates that KYNAR resin is not recommended for use with the chemical at room temperature or at the temperature indicated.
- d** The temperatures listed are maximum values and do not take into account pressures, vacuums, mixtures, or close tolerances.

KYNAR® is a registered trademark of **Arkema Inc.**

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Cyclohexanol		150	65	150	65	150	65
Cyclohexanone		75	25	75	25	75	25
Cyclohexyl Acetate		200	95	200	95	200	95
Decane		230	110	275	135	250	120
Dextrin	Aqueous solution or solid	230	110	250	120	250	120
Diacetone Alcohol		NR	NR	NR	NR	75	25
p-Dibromobenzene		200	95	200	95	200	95
1,2,-Dibromopropane		200	95	200	95	200	95
Dibutyl Phthalate		NR	NR	NR	NR	NR	NR
Dibutyl Sebacate		NR	NR	NR	NR	NR	NR
Dibutylamine	Aqueous solution or liquid	NR	NR	NR	NR	70	20
Dichloroacetic Acid	Aqueous solution or liquid	125	50	125	50	125	50
o-Dichlorobenzene		150	65	150	65	150	65
Dichlorodimethylsilane		125	50	125	50	125	50
Dichloroethylene		220	105	230	110	230	110
2,2-Dichloropropionic Acid		125	50	125	50	125	50
aa-Dichlorotoluene		150	65	150	65	150	65
Diesel Fuels		230	110	275	135	285	140
Diethanolamine	Aqueous solution or liquid	NR	NR	NR	NR	NR	NR
Diethylamine	Aqueous solution or liquid	NR	NR	NR	NR	75	25
Diethyl Malonate		NR	NR	NR	NR	NR	NR
Diethylenetriamine	Aqueous solution or liquid	100	40	100	40	125	50
Diglycolic Acid		75	25	75	25	75	25
Diisobutyl Ketone		75	25	75	25	125	50
Diisobutylene		230	110	275	135	285	140
Diisopropyl Ketone		NR	NR	NR	NR	70	20
Dimethyl Acetamide		NR	NR	NR	NR	NR	NR
Dimethyl Formamide		NR	NR	NR	NR	NR	NR
Dimethyl Phthalate		NR	NR	NR	NR	75	25
Dimethyl Sulfate		75	25	75	25	75	25
Dimethyl Sulfoxide		NR	NR	NR	NR	NR	NR
Dimethylamine	Aqueous solution or gas	NR	NR	NR	NR	75	25
Dimethylaniline		75	25	75	25	75	25
2,6,-Dimethyl-4-heptanol		200	95	200	95	200	95
2,5-Dimethyl-1,5-hexadiene		230	110	250	120	250	120
Diocetyl Phthalate		75	25	75	25	75	25
1,4,-Dioxane		NR	NR	NR	NR	NR	NR
Dioxolane		NR	NR	NR	NR	NR	NR
Dipropylene Glycol Methyl Ether		NR	NR	NR	NR	75	25
Disodium Phosphate	Aqueous solution or solid	200	95	200	95	200	95
Divinyl Benzene		125	50	125	50	125	50
Epichlorohydrin		NR	NR	NR	NR	NR	NR
Epsom Salts	Aqueous solution or solid	200	95	250	120	250	120
Ethanethiol		75	25	75	25	75	25
Ethanolamine	Aqueous solution or liquid	NR	NR	NR	NR	NR	NR
2-Ethoxyethyl Acetate	Aqueous solution or liquid	200	95	200	95	200	95
Ethyl Acetate		NR	NR	NR	NR	NR	NR
Ethyl Acetoacetate		75	25	75	25	75	25
Ethyl Acrylate		75	25	75	25	75	25
Ethyl Alcohol	Aqueous solution or liquid	212	100	230	110	285	140
Ethyl Chloride		230	110	250	120	285	140
Ethyl Chloroacetate		75	25	75	25	75	25
Ethyl Chloroformate		125	50	125	50	125	50
Ethyl Cyanoacetate		75	25	75	25	75	25
Ethyl Ether		100	40	100	40	125	50
Ethyl Formate		75	25	75	25	75	25
Ethylbenzene		125	50	125	50	125	50
Ethylene Chlorohydrin	Aqueous solution or liquid	75	25	75	25	75	25
Ethylene Dichloride		230	110	250	120	275	135
Ethylene Glycol	Aqueous solution or liquid	230	110	275	135	285	140
Ethylene Oxide		200	95	200	95	200	95

IN GENERAL KYNAR® RESIN
IS CHEMICALLY RESISTANT TO:

Most acids
Salts
Weak Bases
Halogens
Halogenated solvents
Alcohols
Fluids or gas streams in
excess of 212° F (100° C)
Nuclear and UV radiation
Oxidants

In general Kynar® Flex resin has
improved chemical resistance to
strong acids and strong bases.

KYNAR®
Polyvinylidene Fluoride

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Ethylenediamine	Aqueous solution or liquid	125	50	150	65	220	105
2-Ethyl-1-hexanol		230	110	250	120	250	120
Fatty Acids		230	110	275	135	285	140
Fatty Acids, Sulfonates		175	80	175	80	175	80
Ferric Chloride	Aqueous solution or solid	230	110	275	135	285	140
Ferric Hydroxide		230	110	230	110	250	120
Ferric Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Ferric Sulfate		230	110	275	135	285	140
Ferric Sulfide		230	110	250	120	250	120
Ferrous Chloride	Aqueous solution or solid	230	110	275	135	285	140
Ferrous Hydroxide		230	110	250	120	250	120
Ferrous Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Ferrous Sulfate		230	110	275	135	285	140
Fluorine		75	25	75	25	75	25
Fluoroboric Acid	Aqueous solution	230	110	250	120	275	135
Fluorosilic Acid		230	110	250	120	275	135
Formaldehyde	37% in water	125	50	125	50	125	50
Formic Acid	Aqueous solution or liquid	230	110	250	120	250	120
Fructose	Aqueous solution or solid	230	110	275	135	285	140
Fruit Juices, Pulp		230	110	230	110	230	110
Fuel Oil		230	110	275	135	285	140
Fumaric Acid		150	65	150	65	170	75
Furan		NR	NR	NR	NR	NR	NR
Furfural		75	25	75	25	75	25
Furfuryl Alcohol	Aqueous solution or liquid	100	40	100	40	100	40
Gallic Acid		75	25	75	25	75	25
Gas, manufactured		230	110	275	135	285	140
Gas, natural		230	110	275	135	285	140
Gasoline, leaded		230	110	275	135	285	140
Gasoline, sour		230	110	275	135	285	140
Gasoline, unleaded		230	110	275	135	285	140
Gelatin		230	110	250	120	250	120
Gin		212	100	212	100	212	100
Glucose	Aqueous solution or solid	230	100	275	135	285	140
Glue		230	110	250	120	250	120
Glutamic Acid		200	95	200	95	200	95
Glycerin	Aqueous solution or liquid	230	110	275	135	285	140
Glycine	Aqueous solution or solid	75	25	75	25	75	25
Glycolic Acid		75	25	75	25	75	25
Heptane		230	110	275	135	285	140
Hexachloro-1,3-butadiene		125	50	125	50	125	50
Hexamethylenediamine		NR	NR	NR	NR	NR	NR
Hexamethylphosphotriamide		NR	NR	NR	NR	NR	NR
Hexane		230	110	275	135	285	140
Hexyl Alcohol		175	80	175	80	175	80
Hydrazine	Aqueous solution or liquid	200	95	200	95	200	95
Hydrazine Dihydrochloride	Aqueous solution or solid	75	25	75	25	75	25
Hydrazine Hydrate	Aqueous solution or liquid	125	50	125	50	125	50
Hydriodic Acid	Aqueous solution	230	110	275	135	275	135
Hydrobromic Acid	Up to 50% in water	230	110	275	135	275	135
Hydrochloric Acid	Up to "concentrated"	230	110	275	135	285	140
Hydrocyanic Acid	Aqueous solution	230	110	275	135	275	135
Hydrofluoric Acid	Up to 40% in water	230	110	250	120	250	120
Hydrofluoric Acid	41-100% in water	200	95	200	95	200	95
Hydrogen		230	110	250	120	285	140
Hydrogen Chloride		230	110	275	135	285	140
Hydrogen Cyanide		230	110	275	135	275	135
Hydrogen Fluoride		200	95	200	95	200	95
Hydrogen Peroxide	Up to 30% in water	200	95	200	95	160	70
Hydrogen Peroxide	90% in water	70	20	70	20	70	20
Hydrogen Sulfide		230	110	275	135	275	135

Maximum usage temperatures for KYNAR® resin with selected chemicals.

Consult your KYNAR products representative if you have any questions or for more recent results.

- a** pure substance unless otherwise indicated.
- b** temperatures in °F have been rounded to °C in 5 degree increments.
- c** NR indicates that KYNAR resin is not recommended for use with the chemical at room temperature or at the temperature indicated.
- d** The temperatures listed are maximum values and do not take into account pressures, vacuums, mixtures, or close tolerances.

KYNAR® is a registered trademark of **Arkema Inc.**

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Hydrogen Sulfide	Aqueous solution	230	110	230	110	220	105
Hydroquinone		230	110	250	120	250	120
Hypochlorous Acid	Aqueous solution	70	20	70	20	70	20
Iodine	10% in Non-Aqueous solvent	150	65	150	65	150	65
Iodine, gas		150	65	150	65	150	65
Iodoform		200	95	200	95	200	95
Isoamyl Ether		125	50	150	65	250	120
Isobutyl Alcohol		230	110	250	120	250	120
Isooctane		230	110	250	120	250	120
Isophorone		125	50	125	50	175	80
Isopropyl Alcohol	Aqueous solution or liquid	140	60	140	60	140	60
Isopropyl Chloride		100	40	100	40	100	40
Isopropyl Ether		125	50	125	50	125	50
Isopropylbenzene		100	40	100	40	100	40
Jet Fuel (JP4, JP5)		200	95	200	95	200	95
Kerosene		230	110	275	135	285	140
Lactic Acid	Aqueous solution or pure	125	50	125	50	125	50
Lanolin		230	110	250	120	250	120
Lard Oil		230	110	275	135	285	140
Lauric Acid		230	110	230	110	220	105
Lauroyl Chloride		230	110	250	120	250	120
Lauryl Mercaptan		200	95	200	95	200	95
Lauryl Sulfate		230	110	250	120	250	120
Lead Acetate	Aqueous solution or solid	230	110	230	110	275	135
Lead Chloride		230	110	250	120	250	120
Lead Nitrate	Aqueous solution or solid	230	110	250	120	250	120
Lead Sulfate		230	110	250	120	250	120
Lemon Oil		230	110	250	120	250	120
Linoleic Acid		230	110	250	120	250	120
Linseed Oil		230	110	275	135	285	140
Lithium Bromide	Aqueous solution or solid	220	105	230	110	230	110
Lithium Chloride	Aqueous solution or solid	230	110	250	120	250	120
Lubricating Oil		230	110	275	135	285	140
Magnesium Carbonate		230	110	275	135	285	140
Magnesium Chloride	Aqueous solution or solid	230	110	275	135	285	140
Magnesium Citrate		230	110	250	120	250	120
Magnesium Hydroxide		230	110	275	135	275	135
Magnesium Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Magnesium Sulfate	Aqueous solution or solid	230	110	275	135	275	135
Maleic Acid	Aqueous solution or solid	230	110	250	120	275	135
Maleic Anhydride		NR	NR	NR	NR	75	25
Malic Acid	Aqueous solution or solid	230	110	250	120	250	120
Manganese Sulfate	Aqueous solution or solid	230	110	250	120	250	120
Mercuric Chloride		230	110	250	120	250	120
Mercuric Cyanide		230	110	250	120	250	120
Mercuric Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Mercury		230	110	275	135	285	140
Methacrylic Acid		125	50	125	50	125	50
Methane		230	110	275	135	285	140
Methanesulfonic Acid	Aqueous solution or liquid	200	95	200	95	200	95
Methyl Acetate		100	40	100	40	100	40
Methyl Acrylate		75	25	75	25	100	40
Methyl Alcohol	Aqueous solution or liquid	230	110	275	135	285	140
Methyl Bromide		230	110	275	135	285	140
Methyl Chloride		230	110	275	135	285	140
Methyl Chloroacetate		NR	NR	NR	NR	75	25
Methyl Chloromethyl Ether		NR	NR	NR	NR	75	25
Methyl Ethyl Ketone		NR	NR	NR	NR	NR	NR
Methyl Isobutyl Ketone		NR	NR	NR	NR	NR	NR
Methyl Methacrylate		100	40	100	40	125	50
Methyl Salicylate		150	65	150	65	150	65

KYNAR® RESIN IS AVAILABLE
IN THE FOLLOWING
COMPONENTS:

- Cathodic protection cable
- Coatings
- Film
- Filter housings and components
- Foam block
- Membranes
- Molded parts
- Monofilament
- Nozzles
- Plastic-lined steel
- Pumps
- Rod
- Sheet
- Solid piping and fittings
- Tank linings
- Tower packing
- Tube (flexible and rigid)
- Valves
- Woven fabric

KYNAR®
Polyvinylidene Fluoride

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Methylamine		NR	NR	NR	NR	NR	NR
Methylchloroform		125	50	125	50	125	50
Methylene Bromide		175	80	175	80	175	80
Methylene Chloride		75	25	100	40	125	50
Methylene Iodine		200	95	200	95	200	95
Methylsulfuric Acid	Aqueous solution or liquid	125	50	125	50	125	50
Methyltrichlorosilane		150	65	150	65	150	65
Milk		230	110	250	120	250	120
Mineral Oil		230	110	275	135	285	140
Molasses		175	80	175	80	175	80
Morpholine	Aqueous solution or liquid	75	25	75	25	75	25
Motor Oil		230	110	275	135	275	135
Naphtha		230	110	275	135	275	135
Naphthalene		200	95	200	95	200	95
Nickel Acetate	Aqueous solution or solid	230	110	230	110	250	120
Nickel Chloride	Aqueous solution or solid	230	110	250	120	250	120
Nickel Nitrate	Aqueous solution or solid	230	110	275	135	285	140
Nickel Sulfate	Aqueous solution or solid	230	110	275	135	285	140
Nicotine		70	20	70	20	70	20
Nicotinic Acid		230	110	250	120	250	120
Nitric Acid	Up to 10% in water	175	80	175	80	175	80
Nitric Acid	11-70% in water	150	65	150	65	125	50
Nitric Acid, fuming		NR	NR	NR	NR	NR	NR
Nitrobenzene		75	25	75	25	75	25
Nitroethane		70	20	70	20	70	20
Nitrogen		230	110	275	135	285	140
Nitrogen Dioxide		170	75	170	75	170	75
Nitroglycerin		125	50	125	50	125	50
Nitromethane		125	50	125	50	125	50
Nitrotoluene		175	80	175	80	175	80
Nitrous Oxide		NR	NR	NR	NR	NR	NR
Octane		230	110	275	135	285	140
Octene		230	110	275	135	285	140
Oleic Acid		230	110	250	120	250	120
Oleum		NR	NR	NR	NR	NR	NR
Olive Oil		230	110	250	120	250	120
Oxalic Acid		125	50	125	50	125	50
Oxygen		230	110	275	135	285	140
Ozone		230	110	230	110	230	110
Palm Oil		200	95	200	95	200	95
Palmitic Acid		230	110	250	120	250	120
Paraffin		230	110	250	120	250	120
Paraffin Oil		230	110	250	120	250	120
Peanut Oil		230	110	250	120	250	120
Perchloric Acid	10% in water	200	95	200	95	200	95
Perchloric Acid	70% in water	125	50	125	50	125	50
Perchloroethylene		230	110	250	120	275	135
Perchloromethyl Mercaptan		125	50	125	50	125	50
Petrolatum		230	110	275	135	285	140
Petroleum		230	110	275	135	275	135
Phenol	5% in water	175	80	175	80	175	80
Phenol		125	50	125	50	125	50
1-Phenol-2-sulfonic Acid		125	50	125	50	125	50
Phenyl Ether		125	50	125	50	125	50
Phenylhydrazine		125	50	125	50	125	50
Phenylhydrazine Hydrochloride	Aqueous solution or solid	125	50	125	50	125	50
o-Phenylphenol		175	80	175	80	175	80
Phosgene		175	80	175	80	230	110
Phosphoric Acid	Less than 85% in water	230	110	275	135	275	135
Phosphoric Acid	85% in water	230	110	230	110	220	105
Phosphorus, red		75	25	75	25	75	25

Maximum usage temperatures for KYNAR® resin with selected chemicals.

Consult your KYNAR products representative if you have any questions or for more recent results.

- a** pure substance unless otherwise indicated.
- b** temperatures in °F have been rounded to °C in 5 degree increments.
- c** NR indicates that KYNAR resin is not recommended for use with the chemical at room temperature or at the temperature indicated.
- d** The temperatures listed are maximum values and do not take into account pressures, vacuums, mixtures, or close tolerances.

KYNAR® is a registered trademark of **Arkema Inc.**

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Phosphorus, Oxychloride		NR	NR	NR	NR	NR	NR
Phosphorus, Pentachloride		200	95	200	95	200	95
Phosphorus, Pentoxide		200	95	200	95	200	95
Phosphorus, Trichloride		200	95	200	95	200	95
Phthalic Acid		200	95	200	95	200	95
Picric Acid		75	25	75	25	75	25
Plating Solutions: Brass		220	105	220	105	220	105
Cadmium		220	105	220	105	220	105
Chrome		220	105	220	105	220	105
Copper		220	105	220	105	220	105
Iron		220	105	220	105	220	105
Lead		220	105	220	105	220	105
Nickel		220	105	220	105	220	105
Rodium		220	105	220	105	220	105
Silver		220	105	220	105	220	105
Speculum		220	105	220	105	220	105
Tin		220	105	220	105	220	105
Zinc		220	105	220	105	220	105
Polyethylene Glycol		200	95	200	95	200	95
Polyvinyl Acetate		230	110	230	110	275	135
Polyvinyl Alcohol		230	110	275	135	275	135
Potassium		NR	NR	NR	NR	NR	NR
Potassium Acetate	Aqueous solution or solid	230	110	230	110	285	140
Potassium Alum	Aqueous solution or liquid	230	110	275	135	285	140
Potassium Aluminum Chloride		230	110	275	135	285	140
Potassium Bicarbonate	Aqueous solution or solid	200	95	200	95	200	95
Potassium Bisulfate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Borate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Bromate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Bromide	Aqueous solution or solid	230	110	275	135	285	140
Potassium Carbonate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Chlorate		200	95	200	95	200	95
Potassium Chloride	Aqueous solution or solid	230	110	275	135	285	140
Potassium Chromate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Cyanide	Aqueous solution or solid	230	110	275	135	285	140
Potassium Dichromate		230	110	275	135	285	140
Potassium Ferricyanide	Aqueous solution or solid	230	110	275	135	285	140
Potassium Ferrocyanide	Aqueous solution or solid	230	110	275	135	285	140
Potassium Fluoride	Aqueous solution or solid	230	110	275	135	285	140
Potassium Hydroxide	5 to 10% in water	NR	NR	NR	NR	NR	NR
Potassium Hydroxide	Greater than 50% in water	NR	NR	NR	NR	NR	NR
Potassium Hypochlorite	Aqueous solution	200	95	200	95	200	95
Potassium Iodide	Aqueous solution or solid	230	110	250	120	285	140
Potassium Nitrate	Aqueous solution or solid	230	110	250	120	285	140
Potassium Perborate		230	110	275	135	285	140
Potassium Perchlorate		200	95	200	95	200	95
Potassium Permanganate	Aqueous solution or solid	230	110	250	120	250	120
Potassium Persulfate		125	50	125	50	125	50
Potassium Sulfate	Aqueous solution or solid	230	110	275	135	285	140
Potassium Sulfide		230	110	275	135	285	140
Propane		230	110	275	135	285	140
Propyl Acetate		75	25	75	25	100	40
Propyl Alcohol	Aqueous solution or liquid	150	65	150	65	150	65
Propylamine		NR	NR	NR	NR	NR	NR
Propylene Dibromide		200	95	200	95	200	95
Propylene Dichloride		200	95	200	95	200	95
Propylene Glycol	Aqueous solution or liquid	150	65	150	65	150	65
Propylene Oxide		NR	NR	NR	NR	NR	NR
Pyridine		NR	NR	NR	NR	NR	NR
Pyrogallol	Aqueous solution or solid	125	50	125	50	125	50
Salicylaldehyde		125	50	125	50	125	50

KYNAR® RESIN IS AVAILABLE
IN THE FOLLOWING COLORS:

Natural
Black
Red
Pigments are also available

THE FOLLOWING
PROPERTIES MAKE KYNAR
A VERSATILE ENGINEERING
RESIN:

Mechanical strength
Chemical resistance
Resistance to weathering
High abrasion resistance
Low permeation values
Pure in "natural" form
FDA compliance
Flame and smoke approvals
NSF listing
3A listing
CRC Kosher approval
Ease of processing

KYNAR®
Polyvinylidene Fluoride

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Salicylic Acid		200	95	200	95	200	95
Selenic Acid	Aqueous solution or pure	150	65	150	65	150	65
Silicon Tetrachloride		125	50	125	50	125	50
Silicone Oil		230	110	250	120	250	120
Silver Cyanide		230	110	275	135	285	140
Silver Nitrate	Aqueous solution or solid	230	110	275	135	285	140
Silver Sulfate		230	110	250	120	250	120
Sodium		NR	NR	NR	NR	NR	NR
Sodium Acetate	Aqueous solution or solid	230	110	230	110	285	140
Sodium Amalgam		NR	NR	NR	NR	NR	NR
Sodium Benzoate	Aqueous solution or solid	230	110	275	135	285	140
Sodium Bicarbonate	Aqueous solution or solid	230	110	275	135	285	140
Sodium Bisulfate	Aqueous solution or solid	230	110	275	135	285	140
Sodium Bisulfite	Aqueous solution or solid	230	110	275	135	285	140
Sodium Bromate	Aqueous solution or solid	200	95	200	95	200	95
Sodium Bromide	Aqueous solution or solid	230	110	275	135	285	140
Sodium Carbonate	Aqueous solution or solid	230	110	275	135	285	140
Sodium Chlorate	Aqueous solution or solid	230	110	250	120	250	120
Sodium Chlorite	Aqueous solution or solid	230	110	250	120	250	120
Sodium Chromate	Aqueous solution or solid	200	95	200	95	200	95
Sodium Cyanide	Aqueous solution or solid	230	110	275	135	275	135
Sodium Dichromate	Aqueous solution or solid	200	95	200	95	200	95
Sodium Dithionite	Aqueous solution or solid	100	40	100	40	100	40
Sodium Ferricyanide	Aqueous solution or solid	230	110	275	135	275	135
Sodium Ferrocyanide	Aqueous solution or solid	230	110	275	135	275	135
Sodium Fluoride	Aqueous solution or solid	230	110	275	135	285	140
Sodium Fluosilicate		200	95	200	95	200	95
Sodium Hydrogen Phosphate	Aqueous solution or solid	230	110	250	120	250	120
Sodium Hydroxide	Up to 10% in water *	100	40	75	25	100	40
Sodium Hydroxide	Greater than 50% in water	NR	NR	NR	NR	NR	NR
Sodium Hypochlorite	Up to 5% in water	230	110	230	110	275	135
Sodium Hypochlorite	6-15% in water	200	95	200	95	200	95
Sodium Iodide	Aqueous solution or solid	230	110	275	135	285	140
Sodium Nitrate	Aqueous solution or solid	230	110	275	135	275	135
Sodium Nitrite	Aqueous solution or solid	230	110	275	135	275	135
Sodium Palmitate		230	110	250	120	250	120
Sodium Perchlorate	Aqueous solution or solid	230	110	250	120	250	120
Sodium Peroxide		200	95	200	95	200	95
Sodium Phosphate	Aqueous solution or solid	230	110	275	135	285	140
Sodium Thiocyanate	Aqueous solution or solid	230	110	250	120	250	120
Sodium Thiosulfate	Aqueous solution or solid	230	110	275	135	275	135
Sour Crude Oil		230	110	275	135	285	140
Soybean Oil		230	110	250	120	250	120
Stannic Chloride	Aqueous solution or solid	230	110	275	135	285	140
Stannous Chloride	Aqueous solution or solid	230	110	275	135	285	140
Starch		200	95	200	95	200	95
Stearic Acid		230	110	250	120	285	140
Stilbene		175	80	175	80	175	80
Styrene		180	85	180	85	175	80
Succinic Acid		150	65	150	65	150	65
Sugar Syrup		230	110	275	135	285	140
Sulfur		230	110	250	120	250	120
Sulfur Chloride		75	25	75	25	75	25
Sulfur Dichloride		75	25	75	25	75	25
Sulfur Dioxide		175	80	175	80	175	80
Sulfur Trioxide		NR	NR	NR	NR	NR	NR
Sulfuric Acid	Up to 60% in water	230	110	250	120	250	120
Sulfuric Acid	60-93% in water	200	95	200	95	200	95
Sulfuric Acid	98% in water	150	65	150	65	125	50
Sulfuric Acid, fuming		140	60	125	50	75	25
Sulfuryl Chloride		NR	NR	NR	NR	NR	NR

Maximum usage temperatures for KYNAR® resin with selected chemicals.

Consult your KYNAR products representative if you have any questions or for more recent results.

- a** pure substance unless otherwise indicated.
- b** temperatures in °F have been rounded to °C in 5 degree increments.
- c** NR indicates that KYNAR resin is not recommended for use with the chemical at room temperature or at the temperature indicated.
- d** The temperatures listed are maximum values and do not take into account pressures, vacuums, mixtures, or close tolerances.

KYNAR® is a registered trademark of **Arkema Inc.**

Chemical Substance	Concentration ^a	FLEX 2800 Maximum ^{b, d} Temperature		FLEX 2850 Maximum ^{b, d} Temperature		HOMOPOLYMER Maximum ^{b, d} Temperature	
		°F	°C	°F	°C	°F	°C
Sulfuryl Fluoride		75	25	75	25	75	25
Tall Oil		230	110	275	135	285	140
Tallow		230	110	275	135	285	140
Tannic Acid		230	110	230	110	230	110
Tar		230	110	250	120	250	120
Tartaric Acid	Aqueous solution or solid	230	110	250	120	250	120
1,1,2,2,-Tetrabromoethane		230	110	250	120	250	120
1,1,2,2,-Tetrachloroethane		230	110	250	120	250	120
2,3,4,6-Tetrachlorophenol		150	65	150	65	150	65
Tetraethyllead		230	110	275	135	285	140
Tetrahydrofuran	Aqueous solution or liquid	NR	NR	NR	NR	NR	NR
Tetramethylammonium Hydroxide	Up to 10% in water	200	95	150	65	150	65
Tetramethylurea		NR	NR	NR	NR	NR	NR
Thioglycol		75	25	75	25	75	25
Thioglycolic Acid		175	80	175	80	175	80
Thionyl Chloride		NR	NR	NR	NR	NR	NR
Thiophosphoryl Chloride		NR	NR	NR	NR	NR	NR
Thread Cutting Oils		200	95	200	95	200	95
Titanium Tetrachloride		150	65	150	65	150	65
Toluene		175	80	175	80	175	80
Toluenesulfonyl Chloride		125	50	125	50	125	50
Tomato Juice		230	110	230	110	230	110
Tributyl Phosphate		75	25	75	25	75	25
Trichloroacetic Acid	Up to 10% in water	200	95	200	95	200	95
Trichloroacetic Acid	50% in water to pure	125	50	125	50	125	50
1,2,4-Trichlorobenzene		200	95	200	95	200	95
1,1,2-Trichloroethane		150	65	150	65	150	65
Trichloroethylene		230	110	250	120	285	140
2,4,5-Trichlorophenol		150	65	150	65	150	65
Tricresyl Phosphate		NR	NR	NR	NR	NR	NR
Triethanolamine	Aqueous solution or liquid	125	50	125	50	125	50
Triethyl Phosphate		NR	NR	NR	NR	NR	NR
Triethylamine		100	40	100	40	125	50
Trifluoroacetic Acid	50% in water	200	95	200	95	200	95
Trifluoroacetic Acid		125	50	125	50	125	50
Trimethylamine	Aqueous solution or gas	125	50	125	50	150	65
Turpentine		230	110	275	135	285	140
Urea	Aqueous solution or solid	230	110	250	120	250	120
Varnish		230	110	250	120	250	120
Varsol		230	110	250	120	250	120
Vegetable Oil		230	110	275	135	285	140
Vinegar		230	110	230	110	230	110
Vinyl Acetate		230	110	230	110	250	120
Vinyl Chloride		200	95	200	95	200	95
Vinylidene Chloride		200	95	200	95	200	95
Water		230	110	275	135	285	140
Water, salt		230	110	275	135	285	140
Water, sewage		230	110	250	120	250	120
Whiskey		230	110	230	110	230	110
Wine		230	110	230	110	230	110
Xylene		200	95	200	95	200	95
Zinc Acetate	Aqueous solution	230	110	250	120	250	120
Zinc Bromide	Aqueous solution or solid	230	110	250	120	250	120
Zinc Chloride	Aqueous solution or solid	230	110	250	120	250	120
Zinc Nitrate	Aqueous solution or solid	230	110	250	120	285	140
Zinc Sulfate	Aqueous solution or solid	230	110	250	120	285	140

KYNAR® RESIN CAN BE:

Extruded
Welded
Machined
Thermoformed
Injection molded
Solubilized
Alloyed with acrylics
Rotomolded
Powder-coated
Foamed

* There are over 20 grades of KYNAR resins available including flexible copolymers. Contact Arkema's Fluoropolymers for more information.

The ratings given on the previous pages are a guide and do not constitute a warranty of any kind, expressed or implied, with respect to the performance of KYNAR® polyvinylidene fluoride in any specific application.

KYNAR®
Polyvinylidene Fluoride