

**Kynar**<sup>®</sup>  
polyvinylidene fluoride

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**CHEMICAL RESISTANCE CHART**





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CHEM CHART-Rev 04/06

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| Chemical Substance     | Concentration <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>Temperature |     |
|------------------------|----------------------------|---|-----|---|-----|---|-----|
|                        |                            | °F  | °C  | °F  | °C  | °F  | °C  |
| Acetaldehyde           |                            | NR <sup>c</sup>                                     | 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 <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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<sup>®</sup> 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<sup>®</sup>**  
Polyvinylidene Fluoride

| Chemical Substance          | Concentration <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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 <sub>4</sub>     | 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 |

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| Chemical Substance              | Concentration <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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 <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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 <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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 <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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.

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- 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.

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| Chemical Substance          | Concentration <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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 <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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.

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| Chemical Substance            | Concentration <sup>a</sup> | FLEX 2800<br>Maximum <sup>b, d</sup><br>Temperature |     | FLEX 2850<br>Maximum <sup>b, d</sup><br>Temperature |     | HOMOPOLYMER<br>Maximum <sup>b, d</sup><br>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