

**(A) Excellent = Recommended**

**(C) Fair (limited life)**

**(B) Good = Recommended**

**(X) Not Recommended**

| Chemical   | Concentration (%) | Temp. |     | PVC | CPVC | PP | PVDF | TEFLON | VITON | EPDM | NITRILE | Chemical  | Concentration (%) | Temp. |     | PVC | CPVC | PP | PVDF | TEFLON | VITON | EPDM | NITRILE |   |   |   |   |
|--|-------------------|-------|-----|-----|------|----|------|--------|-------|------|---------|---|-------------------|-------|-----|-----|------|----|------|--------|-------|------|---------|---|---|---|---|
|  |                   | °C    | °F  |     |      |    |      |        |       |      |         |   |                   | °C    | °F  |     |      |    |      |        |       |      |         |   |   |   |   |
| Methylene Chloride<br>CH <sub>2</sub> Cl <sub>2</sub>                                    | **                | 20    | 68  | X   | X    | X  | B    | A      | C     | X    | X       | Nickel Dichloride<br>NiCl <sub>2</sub>                        | Satu              | 20    | 68  | A   | A    | A  | A    | A      | A     | A    | A       | A |   |   |   |
|  |                   | 40    | 104 |     |      |    | B    | A      |       |      |         |   |                   | 40    | 104 | A   | A    | A  | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 60    | 140 |     |      |    | X    | A      |       |      |         |   |                   | 60    | 140 | A   | A    | A  | A    | A      | A     | A    | A       | A | A | A |   |
|  |                   | 80    | 176 |     |      |    |      |        |       |      |         |   |                   | 80    | 176 |     | A    | A  | A    | A      | A     | A    | A       | A | A | A | A |
|  |                   | 100   | 212 |     |      |    |      |        |       |      |         |   |                   | 100   | 212 |     |      |    |      | A      | A     | A    |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      | A      | A     |      |         |   |   |   |   |
| Methylene Iodine<br>CH <sub>2</sub> I <sub>2</sub>                                       |                   | 20    | 68  |     |      |    | A    | A      | A     |      |         | Nickel Nitrate<br>Ni(NO <sub>3</sub> ) <sub>2</sub>           | Satu              | 20    | 68  | A   |      |    | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 40    | 104 |     |      |    | A    | A      |       |      |         |   |                   | 40    | 104 | A   |      |    | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 60    | 140 |     |      |    | A    | A      |       |      |         |   |                   | 60    | 140 | A   |      |    | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 80    | 176 |     |      |    |      |        | A     |      |         |   |                   | 80    | 176 |     |      |    | A    | A      | A     | A    | A       | A | B |   |   |
|  |                   | 100   | 212 |     |      |    |      |        | A     |      |         |   |                   | 100   | 212 |     |      |    |      |        | A     | A    | A       |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        | A     |      |         |   |                   | 120   | 248 |     |      |    |      |        | A     | A    | A       |   |   |   |   |
| Monochloroacetic acid<br>ClCH <sub>2</sub> COOH  | 50                | 20    | 68  | A   | A    | B  | A    | A      | B     | C    | X       | Nickel Sulfate<br>NiSO <sub>4</sub>                           | Satu              | 20    | 68  | A   | A    | A  | A    | A      | A     | A    | A       | A |   |   |   |
|  |                   | 40    | 104 | B   | B    | B  | A    | A      | X     |      |         |   |                   | 40    | 104 | A   | A    | A  | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 60    | 140 | B   | B    | X  | A    | A      |       |      |         |   |                   | 60    | 140 | A   | A    | A  | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 80    | 176 |     |      |    | A    | A      |       |      |         |   |                   | 80    | 176 |     | B    | B  | A    | A      | A     | A    | A       | A | A |   |   |
|  |                   | 100   | 212 |     |      |    |      |        | A     |      |         |   |                   | 100   | 212 |     |      |    |      |        | A     | A    | B       |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      |        | A     | A    |         |   |   |   |   |
| Monochlorobenzene<br>C <sub>6</sub> H <sub>5</sub> Cl                                    |                   | 20    | 68  | X   | X    | B  | A    | A      | B     | X    | X       | Nicotine<br>C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>    |                   | 20    | 68  | A   |      |    | A    | A      |       |      |         |   |   |   |   |
|  |                   | 40    | 104 |     |      | C  | A    | A      |       |      |         |   |                   | 40    | 104 | A   |      |    | A    | B      | A     |      |         |   |   |   |   |
|  |                   | 60    | 140 |     |      |    | A    | A      |       |      |         |   |                   | 60    | 140 | A   |      |    |      |        | A     |      |         |   |   |   |   |
|  |                   | 80    | 176 |     |      |    | B    | A      |       |      |         |   |                   | 80    | 176 |     |      |    |      |        | A     |      |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    | B    | A      |       |      |         |   |                   | 100   | 212 |     |      |    |      |        |       | A    |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      |        |       | A    |         |   |   |   |   |
| Monoethanolamine<br>(Ethanalamine)<br>H <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OH |                   | 20    | 68  | X   | X    |    | X    | A      |       | A    | A       | Nicotinic Acid<br>C <sub>3</sub> H <sub>4</sub> NCOOH         |                   | 20    | 68  | A   |      |    | A    | A      |       |      | A       |   |   |   |   |
|  |                   | 40    | 104 |     |      |    |      | A      |       |      |         |   |                   | 40    | 104 | A   |      |    | A    | A      | A     |      |         |   |   |   |   |
|  |                   | 60    | 140 |     |      |    |      |        |       |      |         |   |                   | 60    | 140 | A   |      |    | A    | A      | A     |      |         |   |   |   |   |
|  |                   | 80    | 176 |     |      |    |      |        |       |      |         |   |                   | 80    | 176 |     |      |    | A    | A      | A     |      |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      |        |       |      |         |   |                   | 100   | 212 |     |      |    |      |        | A     | A    |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      |        | A     | A    |         |   |   |   |   |
| Monomethylaniline<br>C <sub>6</sub> H <sub>5</sub> NHCH <sub>3</sub>                     |                   | 20    | 68  |     |      |    | A    | A      | A     | X    | X       | Nitric Acid<br>HNO <sub>3</sub>                               | 10                | 20    | 68  | A   | A    | A  | A    | A      | A     | A    | A       | A |   |   |   |
|  |                   | 40    | 104 |     |      |    | B    | A      |       |      |         |   |                   | 40    | 104 | A   | A    | A  | A    | A      | A     | A    | A       | A |   |   |   |
|  |                   | 60    | 140 |     |      |    | X    | A      |       |      |         |   |                   | 60    | 140 | A   | A    | A  | A    | A      | A     | A    | B       |   |   |   |   |
|  |                   | 80    | 176 |     |      |    |      | A      |       |      |         |   |                   | 80    | 176 |     | B    | B  | A    | A      | A     | X    |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      |        |       |      |         |   |                   | 100   | 212 |     |      |    |      | A      | A     | A    |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      | A      | A     |      |         |   |   |   |   |
| Morpholine<br>O(CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH                        | Pure              | 20    | 68  | X   | X    | A  | A    | A      | A     | C    | X       | Nitric Acid<br>HNO <sub>3</sub>                               | *                 | 20    | 68  | A   | A    | A  | A    | A      | A     | A    | B       | A |   |   |   |
|  |                   | 40    | 104 |     |      |    | A    | A      | A     |      |         |   |                   | 40    | 104 | A   | B    | A  | A    | A      | A     | A    | B       | A |   |   |   |
|  |                   | 60    | 140 |     |      |    | A    | C      | A     |      |         |   |                   | 60    | 140 | B   | C    | B  | A    | A      | A     | B    | X       | A |   |   |   |
|  |                   | 80    | 176 |     |      |    |      |        | A     |      |         |   |                   | 80    | 176 |     | X    | B  | A    | A      | C     |      | A       |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      |        |       |      |         |   |                   | 100   | 212 |     |      |    |      | A      | A     | C    |         | B |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |                   | 120   | 248 |     |      |    |      | B      | A     |      |         |   |   |   |   |
| Naphtha  |                   | 20    | 68  | A   |      | A  | A    | A      | A     | X    | B       | Nitric Acid<br>HNO <sub>3</sub>                               | *                 | 20    | 68  | A   | A    | A  | A    | A      | A     | A    | X       | A |   |   |   |
|  |                   | 40    | 104 |     |      |    | B    | A      | A     |      |         |   |                   | 40    | 104 | B   | B    | B  | A    | A      | A     | B    |         |   |   |   |   |
|  |                   | 60    | 140 |     |      |    | C    | A      | A     |      |         |   |                   | 60    | 140 | B   | C    | C  | A    | A      | A     | C    |         |   |   |   |   |
|  |                   | 80    | 176 |     |      |    |      | A      | A     |      |         |   |                   | 80    | 176 |     | X    | X  | A    | A      | X     |      | C       |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      | A      | A     |      |         |   |                   | 100   | 212 |     |      |    |      | C      | A     |      | X       |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      | A      | A     |      |         |   |                   | 120   | 248 |     |      |    |      |        | A     |      |         |   |   |   |   |
| Naphthalene<br>C <sub>10</sub> H <sub>8</sub>  |                   | 20    | 68  | X   |      | B  | A    | A      | A     | X    | X       | Nitric Acid<br>HNO <sub>3</sub>                               | *                 | 20    | 68  | A   | B    | C  | A    | A      | A     | C    | X       | A |   |   |   |
|  |                   | 40    | 104 |     |      |    | A    | A      | A     |      |         |   |                   | 40    | 104 | B   | C    | X  | A    | A      | A     | X    |         |   |   |   |   |
|  |                   | 60    | 140 |     |      |    |      | A      | A     | A    |         |   |                   |       | 60  | 140 | C    | X  |      | B      | A     |      |         |   |   |   |   |
|  |                   | 80    | 176 |     |      |    |      | A      | A     | A    |         |   |                   |       | 80  | 176 |      |    |      | C      | A     |      |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      | A      | A     |      |         |   |                   | 100   | 212 |     |      |    |      | X      | A     |      |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      | A      | A     |      |         |   |                   | 120   | 248 |     |      |    |      |        |       |      |         |   |   |   |   |
| Natural Gas  |                   | 20    | 68  | A   |      |    | A    | A      | A     | A    | A       | Nitric Acid<br>HNO <sub>3</sub>                               | *                 | 20    | 68  | X   | X    | X  | A    | A      | X     | X    | X       |   |   |   |   |
|  |                   | 40    | 104 | A   |      |    | A    | A      |       |      |         |   |                   | 40    | 104 |     |      |    | B    | B      |       |      |         |   |   |   |   |
|  |                   | 60    | 140 | B   |      |    | A    | A      |       |      |         |   |                   | 60    | 140 |     |      |    | X    | B      |       |      |         |   |   |   |   |
|  |                   | 80    | 176 |     |      |    |      | A      | A     |      |         |   |                   | 80    | 176 |     |      |    |      | C      |       |      |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      |        | A     |      |         |   |                   | 100   | 212 |     |      |    |      |        | C     |      |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        |       | A    |         |   |                   |       | 120 | 248 |      |    |      |        |       |      |         |   |   |   |   |
| Nickel Acetate<br>(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub> Ni                     | Satu              | 20    | 68  | A   | A    | A  | A    | A      | C     | A    | A       | Nitrobenzene<br>C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub> |                   | 20    | 68  | X   | X    | A  | B    | A      | B     | B    |         |   |   |   |   |
|  |                   | 40    | 104 | A   | A    | A  | A    | A      |       |      |         |   |                   | 40    | 104 |     |      | B  | C    | A      |       |      |         |   |   |   |   |
|  |                   | 60    | 140 | A   | A    | A  | A    | A      |       |      |         |   |                   | 60    | 140 |     |      | C  | X    | A      |       |      |         |   |   |   |   |
|  |                   | 80    | 176 |     |      | A  | A    | A      |       |      |         |   |                   | 80    | 176 |     |      |    |      |        | A     |      |         |   |   |   |   |
|  |                   | 100   | 212 |     |      |    |      | A      | A     |      |         |   |                   | 100   | 212 |     |      |    |      |        |       | A    |         |   |   |   |   |
|  |                   | 120   | 248 |     |      |    |      |        | A     | A    |         |   |                   |       | 120 | 248 |      |    |      |        |       |      | A       |   |   |   |   |

\*\*Methylene Chloride: PP & Viton recommended at 1 gm/litre concentration. \*When DV Series Diaphragm Valves are used on nitric acid, the PVDF Gas Barrier is always recommended if a Teflon diaphragm.