

## Material Selection

| AGENT                             | Aluminum | Brass | Bronze | Hastelloy,<br>C-276 | Malleable Iron<br>Carbon Steel | Monel | Stainless<br>Steel, 304 | Stainless<br>Steel, 316 | Nylon | Polypropylene | Seal Material |
|-----------------------------------|----------|-------|--------|---------------------|--------------------------------|-------|-------------------------|-------------------------|-------|---------------|---------------|
| Nickel                            |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Nickel Chloride                   | X        | X     | X      | -                   | X                              | 2     | -                       | -                       | X     | A             | TEVNB         |
| Nickel Sulfate                    | X        | X     | -      | 2                   | -                              | -     | 2                       | 2                       | X     | A             | TEVNB         |
| Nitric                            |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Nitric Acid (100%)                | 1        | X     | X      | 2                   | X                              | X     | 2                       | -                       | X     | X             | TV            |
| Nitric Acid (50%)                 | X        | X     | X      | 1                   | X                              | X     | 2                       | -                       | X     | X             | TV            |
| Nitric Acid (30%)                 | X        | X     | X      | 1                   | X                              | X     | 1                       | -                       | X     | X             | TV            |
| Nitrobenzene                      | 1        | 2     | 2      | -                   | 2                              | 2     | 2                       | 2                       | A     | A             | T             |
| Oils                              |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Castor Oil                        | 2        | 2     | 2      | 1                   | 2                              | 1     | 2                       | 2                       | A     | A             | TEVNB         |
| Coconut Oil                       | 2        | -     | 2      | -                   | 3                              | 2     | 2                       | 2                       | A     | A             | TVB           |
| Corn Oil                          | 2        | 2     | 2      | -                   | 2                              | 2     | -                       | 2                       | A     | A             | TVNB          |
| Cotton Seed Oil                   | 2        | 2     | 2      | -                   | 2                              | 1     | 2                       | 2                       | A     | A             | TVNB          |
| Fuel Oil                          | 2        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | A     | X             | TVNB          |
| Linseed Oil                       | 2        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | A     | A             | TVNB          |
| Mineral Oil                       | 2        | 1     | -      | -                   | 2                              | 1     | 1                       | 2                       | A     | A             | TVNB          |
| Silicon Oil                       | 2        | 1     | 2      | -                   | 2                              | -     | 2                       | 2                       | A     | A             | TEVB          |
| Vegetable Oil                     | 2        | 2     | 2      | 1                   | 2                              | 1     | 1                       | 1                       | A     | X             | TVNB          |
| Oleic Acid                        | 2        | 3     | 2      | 2                   | 2                              | 1     | -                       | 1                       | A     | X             | TB            |
| Oleum                             | 2        | X     | X      | -                   | 2                              | X     | 2                       | 2                       | X     | X             | TV            |
| Oxalic Acid (Sat.)                | 2        | -     | 2      | 2                   | X                              | 2     | X                       | X                       | X     | A             | TEV           |
| Oxygen                            | 2        | 2     | 2      | -                   | 2                              | 2     | 2                       | 2                       | X     | X             | TEVNB         |
| Palmitic Acid (Sat.)              | 2        | 3     | 2      | -                   | 3                              | 2     | 2                       | 2                       | X     | A             | TVB           |
| Paraffin                          | 2        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | A     | A             | TVNB          |
| Perchloroethylene                 | 2        | 2     | 2      | 2                   | 2                              | 1     | -                       | -                       | X     | X             | TV            |
| Petrolatum                        | 2        | -     | 2      | -                   | 3                              | 2     | 2                       | 2                       | A     | -             | TVNB          |
| Phenol (Carbolic Acid)            | 1        | 1     | X      | 1                   | 2                              | 1     | -                       | 1                       | X     | X             | TV            |
| Phosphoric Acid                   |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Phosphoric Acid (25-50%)          | X        | X     | 2      | 1                   | X                              | X     | -                       | -                       | X     | A             | TEVN          |
| Phosphoric Acid (50-85%)          | X        | X     | X      | 1                   | X                              | 3     | -                       | -                       | X     | A             | TEV           |
| Photographic Solutions            | -        | -     | -      | -                   | X                              | 1     | 1                       | 1                       | X     | X             | TVNB          |
| Phthalic Anhydride                | -        | 2     | 2      | 1                   | 2                              | 1     | 1                       | 1                       | X     | X             | TEV           |
| Picric Acid                       | 1        | X     | X      | 2                   | X                              | X     | 2                       | 2                       | X     | -             | TEVNB         |
| Plating Solutions                 |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Brass Plating Solution            | -        | -     | -      | 1                   | -                              | -     | -                       | 2                       | X     | A             | TEVNB         |
| Cadmium Plating Solution          | -        | -     | -      | 1                   | -                              | -     | -                       | 2                       | X     | A             | TEVNB         |
| Chrome 40% Plating Solution       | X        | 2     | 2      | 1                   | X                              | X     | 2                       | 2                       | X     | A             | TEVN          |
| Copper (Cyanide) Plating Solution | -        | -     | -      | 1                   | -                              | -     | -                       | -                       | X     | A             | TEVNB         |
| Gold Plating Solution             | -        | -     | -      | 1                   | -                              | -     | -                       | 1                       | X     | A             | TEVNB         |
| Iron Plating Solution             | -        | -     | -      | -                   | -                              | -     | -                       | -                       | X     | A             | TEVB          |
| Lead Plating Solution             | -        | -     | -      | -                   | -                              | -     | 1                       | 1                       | X     | A             | TEVNB         |
| Nickel Plating Solution           | -        | -     | -      | 1                   | -                              | -     | 1                       | 1                       | X     | A             | TEVNB         |
| Silver Plating Solution           | -        | -     | -      | 1                   | -                              | -     | 1                       | 1                       | X     | A             | TEVNB         |
| Tin Plating Solution              | -        | -     | -      | 1                   | -                              | -     | -                       | 3                       | X     | A             | TEVNB         |
| Zinc Plating Solution             | -        | -     | -      | 1                   | -                              | -     | -                       | -                       | X     | A             | TEVNB         |
| Potassium                         |          |       |        |                     |                                |       |                         |                         |       |               |               |
| Potassium Acetate                 | X        | X     | X      | -                   | 2                              | -     | -                       | -                       | A     | A             | TEVB          |
| Potassium Bicarbonate (30%)       | X        | 2     | -      | 2                   | 2                              | 2     | 1                       | 1                       | A     | A             | TEVNB         |
| Potassium Carbonate (50%)         | X        | 2     | X      | 2                   | 2                              | 2     | 1                       | 1                       | A     | A             | TEVNB         |
| Potassium Chlorate (30%)          | 2        | X     | X      | -                   | 2                              | 2     | 2                       | 1                       | X     | A             | TEVNB         |
| Potassium Chloride (30%)          | X        | X     | 2      | -                   | 2                              | 1     | -                       | -                       | A     | A             | TEVNB         |
| Potassium Chromate (30%)          | 2        | 2     | 2      | 2                   | -                              | 2     | 2                       | 2                       | X     | A             | TEVB          |
| Potassium Cyanide Solution (30%)  | X        | X     | X      | 2                   | 2                              | 2     | 2                       | 2                       | X     | A             | TEVNB         |
| Potassium Dichromate (30%)        | 1        | 2     | 2      | 2                   | 2                              | 2     | 1                       | 1                       | X     | A             | TEVB          |
| Potassium Hydroxide (90%)         | X        | X     | X      | 2                   | -                              | 2     | X                       | -                       | X     | A             | TENB          |
| Potassium Nitrate (80%)           | 1        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | X     | A             | TEVNB         |
| Potassium Permanganate (20%)      | 2        | 2     | 2      | 1                   | 2                              | 2     | 2                       | 2                       | X     | A             | TEVN          |
| Potassium Sulfate (10%)           | 1        | 2     | 2      | 1                   | 2                              | 1     | 1                       | 1                       | A     | A             | TEVNB         |
| Propane                           | 1        | 1     | 1      | 2                   | 2                              | 1     | 2                       | 2                       | X     | X             | TVB           |
| Propylene Glycol                  | 2        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | A     | A             | TVNB          |
| Propylene Oxide (90%)             | -        | -     | -      | -                   | -                              | -     | 1                       | 1                       | X     | X             | TE            |
| Pyridine                          | 2        | 2     | 2      | -                   | 2                              | 2     | 2                       | 2                       | A     | X             | T             |
| Pyrogalllic Acid                  | 2        | 2     | 2      | 2                   | 2                              | 2     | 2                       | 2                       | X     | X             | TVNB          |
| Silver Nitrate                    | X        | X     | X      | -                   | X                              | X     | 2                       | 1                       | X     | A             | TEVNB         |
| Soap Solutions                    | 2        | 2     | 2      | 1                   | 2                              | 2     | 2                       | 2                       | A     | A             | TEVNB         |

Ratings given are based at 70°F (21°C).