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# Chemical Compatibility Chart: Metals

This Chart is intended as a general guide for various materials and chemicals. It shows some of the materials used in Terra's products and chemicals likely to be used with them. Testing is strongly recommended for extreme conditions of use, such as prolonged exposure or immersion, high temperatures and high concentrations. The acids, caustics and salts in this chart are assumed to be in solution materials may react differently to the pure substances (glacial acetic acid, for example).

**Hazards** (Only the primary ones are shown. For example, chlorine is not shown as an asphyxiant because its toxicity will kill you first).

- **A** = Asphyxiant (gases and vapors only)
- **C** = Corrosive
- **F** = Flammable
- **O** = Oxidizer
- **T** = Toxic

**Material Reaction**

- ❍ = No noticeable effect.
- ◗ = Minor effect or slight change in appearance or properties.Test before repeated exposure.
- ✶ = No noticeable effect at low concentration and room temperature. Moderate to severe effect at high concentration and/or high temperature.Test before using.
- ● = Severe effect or degradation,exposure not recommended.

| | | METALS | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | –HAZARDS– | Aluminum | Brass | Bronze | Copper | 304 Stainless Steel | 316 Stainless Steel |
| ACIDS | Acetic | C | ◗ | ● | ◗ | ◗ | ● | ✶ |
| | Aqua Regia | C | ● | ● | ● | ● | ● | ● |
| | Chromic | C | ● | ● | ● | ● | ◗ | ◗ |
| | Hydrochloric | C | ● | ● | ● | ● | ● | ● |
| | Hydrofluoric | C | ● | | ◗ | ◗ | ◗ | ◗ |
| | Nitric | C | ● | ● | ❍ | ● | ❍ | ❍ |
| | Phosphoric | C | ◗ | ● | ◗ | ● | ● | ● |
| | Sulfuric | C | ● | | ◗ | ● | ● | ● |
| CAUSTICS | Ammonium Hydroxide | C | ◗ | ● | ● | ● | ❍ | ❍ |
| | Potassium Hydroxide | C | ● | ● | ● | ◗ | ◗ | ❍ |
| | Sodium Hydroxide | C | ● | ● | ◗ | ● | ◗ | ◗ |
| GASES | Air | O | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Ammonia | C,F,T | ❍ | ● | ● | ● | ❍ | ❍ |
| | Argon | A | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Carbon Dioxide | A | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Carbon Monoxide | F,T | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Chlorine | C,T | ● | ● | ● | ● | ❍ | ❍ |
| | Flourine | C,O,T | ✶ | ✶ | ◗ | ✶ | ❍ | ❍ |
| | Helium | A | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Hydrogen | A,F | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Hydrogen Sulfide | C,F,T | ❍ | ❍ | | | ❍ | ❍ |
| | Methane | A,F | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Nitrogen | A | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Nitrous Oxide | O | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Ozone | O | ◗ | | ◗ | ❍ | ◗ | ❍ |
| | Propane | A,F | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| OXI-DANTS | Hydrogen Peroxide | O | ❍ | ● | ◗ | ● | ◗ | ❍ |
| | Sodium Hypochlorite | O | ● | ● | ◗ | | ✶ | ✶ |
| SALTS | Ammonium Nitrate | | ◗ | ● | ● | ● | ❍ | ❍ |
| | Ammonium Persulfate | | ● | ● | ● | ● | ● | ◗ |
| | Sodium Carbonate | | ● | ◗ | ❍ | ❍ | ❍ | ❍ |
| SOLVENTS | Acetone | F | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Carbon Tetrachloride | T | ● | ❍ | ❍ | | ◗ | ◗ |
| | DI Water | | ❍ | ❍ | | ◗ | ❍ | ❍ |
| | Ethyl Alcohol | F | ◗ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Ethylene Glycol | | ❍ | ◗ | ❍ | ❍ | ◗ | ◗ |
| | Glycerine | | ❍ | ◗ | ❍ | ❍ | ❍ | ❍ |
| | Isopropyl Alcohol | F | ◗ | | ❍ | ◗ | ◗ | ◗ |
| | Kerosene | F | ❍ | ❍ | ❍ | ◗ | ❍ | ❍ |
| | Methyl Alcohol | F,T | ❍ | ❍ | ❍ | ◗ | ❍ | ❍ |
| | Methyl Ethyl Ketone | F | ◗ | ❍ | ❍ | ❍ | ❍ | ◗ |
| | Toluene | F | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| | Trichloroethane | A | ● | | ❍ | | ◗ | ◗ |