

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)

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Material Reaction

○ = No noticeable effect.

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		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	○	○	○	○	○	○
OXIDANTS	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	●		○		▶	▶	

Chemical Compatibility Chart: Plastics

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		PLASTICS															
		Acrylic (plexiglass)	ABS	CPVC	Noryl	Nylon	Polycarbonate	Polyethylene	Polyethylene (TPX)	Polypropylene	Polystyrene	PPS (Ryton)	PVC, Static Dissipative	PVC	Styrene Acrylonitrile (SAN)	PVDF (Kynar)	Teflon, PTFE
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			○	○	○	◐	○		◐		○	*	○	*		
OXIDANTS	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				●	◐	●	○		◐		●	○	○			

Chemical Compatibility Chart: Rubber & Synthetics

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		RUBBER & SYNTHETICS (ELASTOMERS)									
		Buna N	EPDM	Hypalon	Natural Rubber	Neoprene	Nitrile	PVA (Polyvinyl Alcohol)	Tygon	Silicone	Viton
ACIDS	Acetic	▶	○	*	*	*	▶	●	●	▶	*
	Aqua Regia	●	▶	▶	●	*	*	●	●	●	*
	Chromic	●	▶	▶	●	●	▶	●	▶	▶	*
	Hydrochloric	▶	*	*	○	*	▶	●	●	●	*
	Hydrofluoric	●	●	▶	*	●	○	●	●	●	*
	Nitric	●	*	*	●	●	*	●	●	●	*
	Phosphoric	●	▶	▶	▶	*	*	●	●	●	*
Sulfuric	*	*	*	*	*	●	●	●	●	*	
CAUSTICS	Ammonium Hydroxide	○	○	○	*	*	○	●	○	○	●
	Potassium Hydroxide	▶	○	○	○	○	○	●	▶	▶	▶
	Sodium Hydroxide	*	▶	○	○	*	○	●	▶	○	*
GASES	Air	○	○	○	○	○	○	○	○	○	○
	Ammonia	▶	○	●	●	○	○		○	▶	●
	Argon	○	○	○	○	○	○	○	○	○	○
	Carbon Dioxide	*	*	*	*	*	*			*	*
	Carbon Monoxide	○	○	▶	●	*	*			○	*
	Chlorine	▶	○	●	●	●			▶	●	*
	Flourine	●	○		▶	●				●	*
	Helium	○	○	○	○	*	○	○	○	○	○
	Hydrogen	○		○	*	*			○	▶	*
	Hydrogen Sulfide	●	▶	▶	▶	●			●	▶	*
	Methane	○	●	▶	●	*				●	*
	Nitrogen	○	○	○	○	*	○		○	○	*
	Nitrous Oxide	○				●					*
	Ozone	●	○	○	●	▶				○	*
Propane	○	●		●	*				●	*	
OXIDANTS	Hydrogen Peroxide	●	*	●	▶	●	○	●	▶	*	*
	Sodium Hypochlorite	▶	▶	*	▶	*		●	▶	▶	*
SALTS	Ammonium Nitrate	○	○	○	▶	▶	○	●	○	▶	*
	Ammonium Persulfate	○	▶	○	○	*	○	●	○	●	*
	Sodium Carbonate	○	○	○	○	*		●	▶	○	*
SOLVENTS	Acetone	●	○	▶	▶	*	*	●	●	▶	●
	Carbon Tetrachloride	▶	▶	●	●	*	*	○		●	*
	DI Water	○	○	○	○	○	○	○	○	○	○
	Ethyl Alcohol	▶	○	○	○	*	○	●	▶	▶	*
	Ethylene Glycol	○	○	○	○	*	○	▶	▶	○	*
	Glycerine	○	○	○	○	*	○	▶	○	○	*
	Isopropyl Alcohol	▶	○	○	○	*	○	●	○	○	*
	Kerosene	○	●	●	●	●	○	▶	●	●	*
	Methyl Alcohol	▶	○	○	○	*	○	●	○	▶	*
	Methyl Ethyl Ketone	●	○	●	*	●	●	▶	●	●	●
	Toluene	●	●	●	●	*	*	▶	●	●	*
Trichloroethane	●	●	●	●	*	*	▶		●	○	