



Product Information

Corrosion Resistance Properties of Niobium



Corrosion Resistance of Niobium in Liquid Metals

METAL	°C (°F)
Gallium	400 (752)
Zinc	450 (842)
Bismuth	560 (1040)
Mercury	600 (1112)
Lead	850 (1562)
Th-Mg Eutectic	850 (1562)
Lithium	1000 (1832)
Potassium	1000 (1832)
Sodium	1000 (1832)
Aluminum	Not resistant

Corrosion Resistance of Niobium to Gases

Air	230°C (446°F) Reaction begins 388°C (730°F) Accelerated reaction begins
Nitrogen	300°C (572°F) Reaction begins
Hydrogen	204°C (400°F) Reaction begins
Fluorine	Attacked at room temperature
Chlorine	200°C (392°F) Reaction begins
Steam	399°C (750°F) Fair resistance



Corrosion Resistance of Niobium Up to 100 Degrees C

S = no attack V = variable depending on concentration and temperature X = not resistant

Chemical	20°C (68°F)	60°C (140°F)	100°C (212°F)	Chemical	20°C (68°F)	60°C (140°F)	100°C (212°F)
Acetic acid (10%)	S	S	S	Lactic acid (100%)	S	S	S
Acetic acid, Glacial & Anhy.	S	S	S	Maleic acid	S	S	S
Acetone	S	S	S	Mercuric chloride	S	V	V
Acetylene	S	S	S	Naphthalene	S	S	S
Alcohols, most	S	S	S	Nickel salts	S	S	S
Alihaptic esters, halogen compounds (e.g. chloroform)	S	S	S	Nitric acid (25%)	S	S	S
Alum	S	S	S	Nitric acid (70%)	S	S	S
Aluminum chloride	S	S	S	Nitric acid (95%)	V	V	X
Ammonia, anhy.	S	S	S	Oils, essential	S	S	S
Ammonium chloride	S	S	S	Oils, mineral	S	S	S
Amyl acetate	S	S	S	Oils, vegetable & animal	S	S	S
Amyl chloride	S	S	S	Oxalic acid	X	X	X
Aniline	S	S	S	Oxygen	S	S	V
Aniline compounds	S	S	S	Perchloric acid	S	S	S
Aqua regia	V	X	X	Phenol	S	S	S
Benzoic acid	S	S	S	Phosphoric acid, (25%)	S	V	X
Boric acid	S	S	S	Phosphoric acid, (50%)	S	V	X
Brines, saturated	S	S	S	Phosphoric acid, (95%)	V	V	X
Bromine, moist	S	S	V	Potassium hydroxide	X	X	X
Calcium	S	S	S	Pyridine & compounds	S	S	S
Carbon disulfide	S	S	S	Sea water	S	S	S
Carbonic acid	S	S	S	Silicic acid	S	S	S
Chlorine, dry	S	S	S	Silver nitrate	S	S	S
Chlorine, wet	S	S	S	Sodium carbonate	S	S	S
Chlorides of: Na, K Mg	S	S	S	Sodium hydroxide	X	X	X
Chromic acid (80%)	S	S	V	Sodium hypochlorite	X	X	X
Citric acid	S	S	S	Sodium silicate	X	X	X
Copper sales, most	S	S	S	Sodium sulfide	S	S	S
Cyclohexane	S	S	S	Starch	S	S	S
Detergent, synthetic	S	S	S	Sugar & Syrups	S	S	S
Emulsifiers	X	X	X	Sulfates of Na, K, Mg, Ca	S	S	S
Ether	S	S	S	Sulfites of Na, K, Mg, Ca	S	S	S
Fatty acids (C=C6)	S	S	S	Sulfonic acids	S	S	S
Ferric chloride	S	S	S	Sulfur	S	S	S
Ferric sulfate	S	S	S	Sulfur dioxide, dry	S	S	S
Fluorine	X	X	X	Sulfur dioxide, wet	S	S	V
Formaldehyde	S	S	S	Sulfur trioxide	X	X	X
Formic acid	S	S	S	Sulfuric acid (20%)	S	S	S
Glycerine	S	S	S	Sulfuric acid (50%)	V	X	X
Glycols	S	S	S	Sulfuric acid (70%)	V	X	X
Hexamine	S	S	S	Sulfuric acid (95%)	X	X	X
Hydrochloric acid (10%)	S	V	X	Tallow	S	S	S
Hydrochloric acid, concentrated	V	X	X	Tannic acid (10%)	S	S	S
Hydrofluoric acid	X	X	X	Tartaric acid	S	S	S
Hydrogen peroxide	V	X	X	Vinegar	S	S	S
Hydrogen sulfide	S	S	S	Yeast	S	S	S
Ketones	S	S	S	Zinc chloride	S	S	S

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