

TECHNICAL INFORMATION

STAINLESS STEEL DIN 1.4541(V2A) , AISI 321 SPECIFICATION

COMPOSITION			
C – 0,08% , Fe – 68% , Cr – 18% , Ni – 11% , Mn – 2% , P – 0,045% , S – 0,03% , Si – 1% , Ti – 0,15%			
DESCRIPTION			
Titanium – bearing , austenitic , chromium – nickel steel . Stabilized against carbide precipitation and designed to work within the temperature range where carbide precipitation develops . Ti content helps prevent chromium carbide precipitation resulting from welding or elevated temperatures . Stabilized at annealing temperatures between 950 ± 1010 °C. Resist scaling and vibration fatigue. Application include aircraft exhaust stacks and manifolds , chemical processing equipment, weld equipment ,jet engine parts .			
PHISICAL PROPERTIES			
Property	Unit	Value	Comments
Density	g/cm ³	8	
MECHANICAL PROPERTIES			
Hardness	Rockwell B	80	
Tensile Strength , Ultimate	MPa	620	
Tensile Strength , Yield	MPa	240	
Elongation at Break	%	45	in 50 mm
Modulus of Elasticity	GPa	193 ±200	
Charpy Impact	J	165	v-notch
Izod Impact	J	135	
ELECTRICAL PROPERTIES			
Electrical Resistivity	ohm · cm	7.2 e- 0,05	at 20 °C
Magnetic Permeability		1.008	at RT
THERMAL PROPERTIES			
CTE linear 500° C	µm / m · °C	18,5	0-540 °C
Heat Capacity	J / g · °C	0,5	from 0 – 100 °C
Thermal Conductivity	W / m · K	16,1	100 °C
Melting point	°C	1400 - 1425	
Maximum service Temperatures , Air	°C	870	Continuous Service
Maximum service Temperatures , Air	°C	925	Intermittent Service

SUGGESTED APPLICATION

CORRODENT	TEMP. °C	TEMP. °F	CONC.%	CORRODENT	TEMP. °C	TEMP. °F	CONC.%
Acetone	100	212	ALL	Lacquers & Thinners	149	300	ALL
Acetylene	204	400		Linseed Oil	24	75	
Alcohols	100	212	ALL	Magnesium Hydroxide (or Oxide)	24	75	ALL
Ammonia Dry	100	212	ALL	Magnesium Sulfate	100	212	40%
Ammonium Hydroxide (Ammonia Aqua)	100	212	ALL	Mercury	371	700	100%
Asphalt	121	250		Methylene Chloride	100	212	ALL
Atmosphere (Industrial and Marine)				Methyl Chloride , Dry	24	75	
Barium Compounds	SEE CALCIUM			Milk , fresh or sour	82	180	
Beer	21	70		Molasses	SEE GLUCOSE		
Benzene (Benzol)	100	212		Natural Gas	21	70	
Butane	204	400	ALL	Nitric Acid	24	75	ALL
Butyl Alcohol	SEE ALCOHOLS			Oxygen	24	75	ALL
Carbolic Acid	SEE PHENOL			Oleic Acid	SEE FATTY ACIDS		
Carbonated Water	100	212	ALL	Photographic Bleaching	38	100	ALL
Carbonated Beverages	100	212		Palmitic Acid	SEE FATTY ACIDS		
Carbon Disulfide	93	200		Potassium Compounds	SEE SODIUM COMPOUNDS		
Cider	149	300		Propane	149	300	
Copper Plating Solution (Cyanide)	82	180		Soap & Detergents	100	212	ALL
Copper Plating Solution (Acid)	24	75		Sodium Bisulphite	100	212	20%
Corn oil	93	200		Sodium Bisulphate	100	212	20%
Creosole	93	200	ALL	Salt or Brine	SEE SODIUM CHLORIDE		
Ethyl Acetate	SEE LACQUER THINNER			Sodium Cyanide	100	212	ALL
Ethyl Chloride Dry	260	500		Sodium Nitrate	100	212	40%
Ethanol	SEE ALCOHOLS			Sodium Phosphate	100	212	10%
Ethylene Glycol (Uninhibited)	100	212	ALL	Sodium Silicate	100	212	10%
Ethylene Oxide	24	75		Sodium Sulfite	100	212	30%
Ferric Sulfate	149	300	ALL	Sodium Thiosulfate	100	212	ALL
Freon	149	300		Steam			
Fluorine , Anhydrous	38	100		Stearic Acid	SEE FATTY ACIDS		
Gasoline	149	300		Sugar Solutions	SEE GLUCOSE		
Glucose	149	300		Sulfur	260	500	
Glue ph 6-8	149	300		Toluene	24	75	
Hydrogen Chloride , Dry	260	500		Varnish	66	150	
Hydrocyanic Acid	100	212	ALL				
Hydrogen Fluoride , Dry	79	175					
Hydrogen Peroxide	52	125	10-100%				
Kerosene	149	300	ALL				

TECHNICAL INFORMATION

STAINLESS STEEL DIN 1.4571 (V4A) , AISI 316 Ti SPECIFICATION

COMPOSITION			
C-0,08% , Fe-62% , Cr-18% , Ni-14% , Mn-2% , Mo- 3% , Ti-0,4% , P-0,045% , S-0,05% , Si-1%			
DESCRIPTION			
Molybdenum content increased resistance to marine environments. High creep strength at elevated temperatures and good heat resistance . Biocompatible . Food and pharmaceutical processing equipment , marine exterior trim , surgical implants , and industrial equipment that handles the corrosive process chemicals used to produce inks , rayons , photographic chemicals , paper , textiles , bleaches , and rubber . Resists sodium and calcium brines ; hypochlorite solutions , phosphoric acid ; and the sulfite liquors and sulfurous acid used in the paper pulp industry .			
PHISICAL PROPERTIES			
Property	Unit	Value	Comments
Density	g/cm ³	8	
MECHANICAL PROPERTIES			
Hardness	Rockwell B	79	
Tensile strength , Ultimate	MPa	580	
Tensile strength , Yield	MPa	290	
Elongation at Break	%	50	in 50 mm
Modulus of Elasticity	GPa	193	in tension
Charpy Impact	J	105	V - notch
Izod Impact	J	129	
ELECTRICAL PROPERTIES			
Electrical Resistivity	ohm · cm	7,4e - 005	
Magnetic Permeability		1,008	at RT
THERMAL PROPERTIES			
CTE linear 500°C	µm / m · °C	17,5	0-540°C
Heat capacity	J/g · °C	0,5	
Thermal conductivity	W/m · K	16,3	100°C
Melting point	°C	1370 - 1400	
Maximum service Temperature , Air	°C	870	Continuous service
Maximum service Temperature , Air	°C	925	Intermittent service

SUGGESTED APPLICATION

CORRODENT	TEMP. °C	TEMP. °C	CONC. %	CORRODENT	TEMP. °C	TEMP. °C	CONC. %
Aluminium Sulfate	100	212	ALL	Oxygen	24	75	ALL
Ammonia , Dry	100	212	ALL	Oleic Acid	SEE FATTY ACIDS		
Ammonium Hydroxide (Ammonia , Aqua)	100	212	ALL	Palmitic Acid	SEE FATTY ACIDS		
Ammonium Sulfate	100	212	ALL	Phosphoric Acid	100	212	ALL
Barium Compounds	SEE CALCIUM			Phenol	100	212	ALL
Benzene (Benzol)	100	212		Potassium Compounds	SEE SODIUM COMPOUNDS		
Benzoic Acid	100	212		Propane	149	300	
Boric Acid	200	400	ALL	Rosin	371	700	100%
Butane	204	400	ALL	Sodium Bicarbonate	100	212	20%
Butyl Alcohol	SEE ALCOHOLS			Sodium Carbinat	100	212	40%
Calcium Hypochlorite	SEE BLEACHING POWDER			Salt or Brine	SEE SODIUM CHLORIDE		
Carbolic Acid	SEE PHENOL			Sodium Hydroxide	100	212	30%
Copper (10) Nitrate	149	300	ALL	Sodium Nitrite	24	75	20%
Copper (10) Sulfate	149	300	ALL	Sodium Phosphate	100	212	10%
Ethyl Acetate	SEE LACQUER TRINNER			Sodium Silicate	100	212	10%
Ethyl Chloride , Dry	260	500		Sodium Sulfate	100	212	30%
Ethanol	SEE ALCOHOLS			Sodium Sulfide	100	212	10%
Ethylene Oxide	24	75		Stearic Acid	SEE FATTY ACIDS		
Fatty Acids	260	500	ALL	Sugar Solutions	SEE GLUCOSE		
Formaldehyde	100	212	40%	Sulfur Chloride	24	75	DRY
Formic Acid	149	300	ALL	Sulfur Dioxide	260	500	DRY
Freon	149	300		Sulfur Trioxide	260	500	DRY
Furfural	232	450		Sulfuric Acid	100	212	10%
Gasoline	149	300		Sulfuric Acid	100	212	90-100%
Hydrogen Fluoride ,Dry	79	175		Sulfurous Acid	24	75	20%
Kerosene	149	300	ALL	Titanium Tetrachloride	24	75	ALL
Lactic Acid	149	300	ALL	Toluene	24	75	
Lime	100	212	ALL	Turpentine	24	75	
Linseed Oil	24	75		Varnish	66	150	
Mercury	371	700	100%	Zinc Sulfate	100	212	ALL
Methyl Chloride , Dry	24	75					
Molasses	SEE GLUCOSE						
Nitric Acid	149	300	ALL				