



CREAS

Silicon carbide Shell & Tube Heat exchanger 碳化矽管殼式換熱器

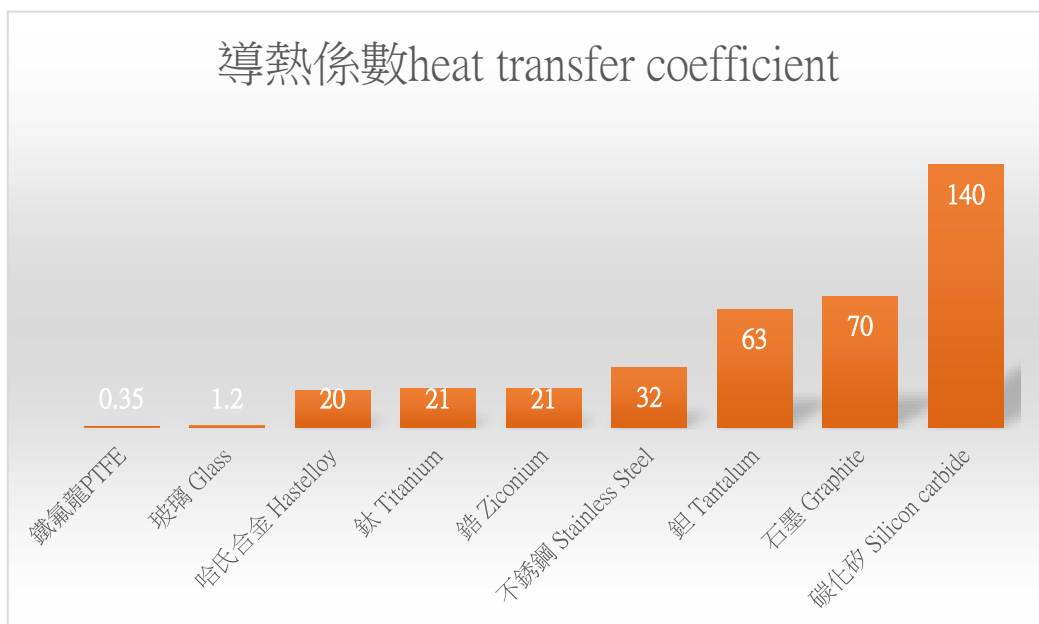
ACEMENDER



Silicon carbide Heat Exchanger 碳化矽換熱器

Our silicon carbide heat exchanger uses a single-phase, pressureless sintered silicon carbide ceramic tubes with excellent characteristics of high-purity crystallization and extremely low porosity. The extremely high thermal conductivity of silicon carbide can be used as an excellent substitute for traditional heat exchanger materials such as graphite, stainless steel, tantalum, zirconium, Hastelloy, Teflon, etc. It is used in extreme environments of high temperature, strong corrosion, and high wear in the chemical, pharmaceutical, metallurgical and other industries.

我們的碳化矽換熱器採用一種單相，無壓燒結碳化矽陶瓷管，具有高純度結晶和極低氣孔率的優良特性，碳化矽極高的熱傳導性可以作為石墨，不銹鋼，鈦，鈳，哈氏合金，鐵氟龍等傳統換熱器材料的絕佳替代品運用在化工，製藥，冶金等行業的高溫，強腐蝕，高磨損的極端環境中。





Silicon carbide Heat Exchanger

碳化矽換熱器

性能参数 Performance parameters

检测项目 Physical Properties	单位 Units	数据 SE
材质名称 Composition(phases)		SiC
密度 Density	G/cm3	3.05
晶粒尺寸 Grain Size	Microns	4.10
硬度(努氏硬度) Hardness(Knoop)	Kg/mm2	2800
抗弯强度 Flexural Strength	Mpa	280
四点弯曲强度(室温)4pt.@RT	x 103lb/in2	40
抗压强度(室温)	Mpa	100
Compressive \$trength@RT	x 103lb/in2	14.5
弹性模量(室温)	x 106lb/in	410
Modulus of Elasticity@RT		59
韦伯模量(两参数)		10
Weibull Modulus(2 parameiers)		
泊松比 Poisson Ratio	Mpa/√m	0.14
断裂韧性(室温)Fracture Toughness@RT	103lb/in2√in	4.6
双扭转法&SENB法 Double Torsion&SENB	x 10-6mm/mm ° K	4.2
热膨胀系数(室温至700℃)	x 10-6in/in ° F	4.02
Coeficient of Thermal Expansion RT to 700℃	° K	2.2
最高使用温度(空气中)Max.Service Temp(air)	° F	1900
	J/gm ° K	3450
比热(室温)Mean Specific Heat@RT	W/m ° K	0.67
导热系数(室温)	Btu/fth ° F	140
Thermal Conductivity@RT	W/m ° K	80.90
渗透率(室温到1000℃)Permeabillily RT to 1000℃		31MPa内无气体泄漏 all impervious to gases over 31 mpa
电阻率(室温)Electrical Resistivity@RT	Ohm-cm	102-108
电阻率(1000℃)Electrical Resistivity@1000℃	Ohm-cm	0.01-0.2
热辐射系数 Emissivity		0.9

Heat transfer area of Heat exchanger m²
 换热器的换热面积 m²

Specification 規格 DN	布管數 tube number	Length of heatexchange tubes 換熱管長度 mm					
		1000	1500	2000	2500	3000	4000
Φ14x1.5 mm silicon carbide tube 碳化矽管							
150	22	0.97	1.45	1.94	2.42	2.90	-
200	42	1.85	2.77	3.69	4.62	5.54	-
250	73	3.21	4.82	6.42	8.03	9.63	-
300	109	4.79	7.19	9.59	11.99	14.38	-
350	151	6.64	9.96	13.28	16.60	19.92	-
400	199	8.75	13.13	17.50	21.88	26.26	-
450	253	11.13	16.69	22.26	27.82	33.38	-
500	313	13.77	20.65	27.53	34.42	41.30	-
600	450	19.79	29.69	39.58	49.48	59.38	-
700	508	22.34	33.51	44.69	55.86	67.03	-
800	760	33.43	50.14	66.85	83.57	100.28	-
900	976	42.93	64.39	85.85	107.32	128.78	-
1000	1216	53.48	80.22	106.97	133.71	160.45	-
Φ19x2.25 mm silicon carbide tube 碳化矽管							
150	14	0.84	1.25	1.67	2.09	2.51	3.34
200	31	1.85	2.78	3.70	4.63	5.55	7.40
250	48	2.87	4.30	5.73	7.16	8.60	11.46
300	73	4.36	6.54	8.71	10.89	13.07	17.43
350	100	5.97	8.95	11.94	14.92	17.91	23.88
400	130	7.76	11.64	15.52	19.40	23.28	31.04
450	170	10.15	15.22	20.29	25.37	30.44	40.59
500	212	12.65	18.98	25.31	31.64	37.96	50.62
600	313	18.68	28.02	37.37	46.71	56.05	74.73
700	388	23.16	34.74	46.32	57.90	69.48	92.64
800	520	31.04	46.56	62.08	77.60	93.12	124.16
900	676	40.35	60.53	80.70	100.88	121.05	161.40
1000	840	50.14	75.21	100.28	125.35	150.42	200.56
Φ25x3 mm silicon carbide tube 碳化矽管							
150	8	0.63	0.94	1.26	1.57	1.88	2.51
200	19	1.49	2.24	2.98	3.73	4.48	5.97
250	31	2.43	3.65	4.87	6.09	7.30	9.74
300	55	4.32	6.48	8.64	10.80	12.96	17.28
350	68	5.34	8.01	10.68	13.35	16.02	21.36
400	92	7.23	10.84	14.45	18.06	21.68	28.90
450	121	9.50	14.26	19.01	23.76	28.51	38.01
500	151	11.86	17.79	23.72	29.65	35.58	47.44
600	212	16.65	24.98	33.30	41.63	49.95	66.60
700	284	22.31	33.46	44.61	55.76	66.92	89.22
800	376	29.53	44.30	59.06	73.83	88.59	118.12
900	475	37.31	55.96	74.61	93.27	111.92	149.23
1000	588	46.18	69.27	92.36	115.45	138.54	184.73



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