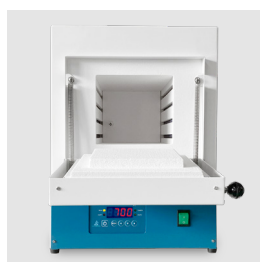
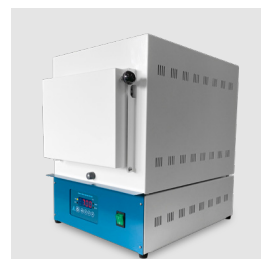
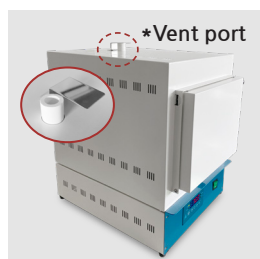


1050°C Muffle Furnace

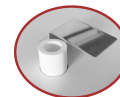


Model	SH-FU-3MGE	SH-FU-5MGE	SH-FU-7MGE	SH-FU-11MGE
Max Temp	1050°C (2192°F)			
Temp Controller	Digital PID Controller			
Sensor	K type			
Heater Capa	1100 W	1500 W	2000 W	2800 W
Capa	3 L	5.1 L	7.4 L	11.2 L
Dimension Internal (WxDxH)	130x220x110mm	150x260x130mm	170x290x150mm	200x310x180mm
	5.12x8.66x4.33"	5.91x10.24x5.12"	6.69x11.42x5.91"	7.87x12.20x7.09"
Dimension External (WxDxH)	300x378x405mm	320x428x425mm	340x458x445mm	370x468x475mm
	11.81x14.88x15.94"	12.60x16.85x16.73"	13.39x18.03x17.52"	14.57x18.43x18.70"
Material External	Steel plate with powder heating coated			
Weight	19 Kg	22 Kg	28 Kg	34 Kg
Heater Element	KANTAL A-1 with CERAMIC FIBER			
Insulation	Ceramic Board & Wool			
Electrical Requirements 120V ,50/60Hz, 1Φ	10 A	14 A	18 A	25 A
Cat. No.	FU3MGE120	FU5MGE120	FU7MGE120	FU11MGE120
Electrical Requirements 230V ,50/60Hz, 1Φ	5 A	7 A	9 A	13 A
Cat. No.	FU3MGE230	FU5MGE230	FU7MGE230	FU11MGE230

• Safety Device

- Automatic reset function incoming power cut
- Buzzer on when set time arrived
- Over temperature alarm

1200°C Muffle Furnace



*Vent port

Model	SH-FU-3MG	SH-FU-5MG	SH-FU-14MG	SH-FU-27MG
Max Temp	1200°C (2192°F)			
Temp Controller	Digital PID Controller			
Sensor	K type			
Heater Capa	1400 W	1670 W	4000 W	4600 W
Capa	2.9 L	4.5 L	14 L	27 L
Dimension Internal (WxDxH)	130x250x90mm 5.12x9.87x3.54"	150x300x100mm 5.91x11.81x3.93"	250x350x160mm 9.84x13.78x6.30"	300x300x300mm 11.81x11.81x11.81"
Dimension External (WxDxH)	370x505x570mm 14.57x19.88x22.44"	390x555x580mm 15.30x21.85x22.83"	500x605x670mm 19.69x23.82x26.38"	580x585x840mm 22.83x23.03x33.07"
Material External	Steel plate with powdr heating coated			
Weight	34 Kg	48 Kg	70 Kg	114 Kg
Heater Element	KANTHAL A-1 (Ceramic heating)			
Insulation	Ceramic Board & Wool (Ceramic fiber)			
Electrical Requirements 120V, 50/60Hz, 1Φ	11.7 A	13.9 A	33.3 A	N/A
Cat. No.	FU3MG120	FU5MG120	FU14MG120	N/A
Electrical Requirements 230V, 50/60Hz, 1Φ	6.1 A	7.3 A	17.4A	20 A
Cat. No.	FU3MG230	FU5MG230	FU14MG230	FU27MG230
Electrical Requirements 230V, 50/60Hz, 3Φ	N/A			12.3 A
				FU27MG230-3
Electrical Requirements 380V, 50/60Hz, 3Φ	N/A			7.5 A
Cat. No.				FU27MG380

• Option

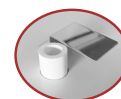
- Programmable controller (FC-1000 or SP590)
- Hybrid recorder

• Safety Device

- Automatic reset function incoming power cut
- Buzzer on when set time arrived
- Door open alarm
- Over temperature controller



1500°C Muffle Furnace



*Vent port



Model	SH-FU-4MH	SH-FU-11MH	SH-FU-22MH	SH-FU-36MH
Max Temp	1500°C (2732°F)			
Temp Controller	Programmable Controller(FC-1000)			
Sensor	R type			
Heater Capa	3300 W	7700 W	9600 W	11 KW
Capa	4.5 L	11 L	22 L	36 L
Dimension Internal (WxDxH)	150x200x150mm	200x270x200mm	250x350x250mm	300x400x300mm
	5.91x7.87x5.91"	7.87x10.63x7.87"	9.84x13.78x9.84"	11.81x15.75x11.81"
Dimension External (WxDxH)	820x560x737mm	870x625x787mm	920x705x867mm	970x760x920mm
	32.28x22.05x29.02"	34.25x24.61x30.98"	36.22x27.76x34.13"	38.19x29.92x36.22"
Material External	Steel plate with powdr heating coated			
Weight	92 Kg	102 Kg	1 47 Kg	154 Kg
Heater Element	SIC			
Insulation	Ceramic Board & Wool (Ceramic fiber)			
Electrical Requirements 230V ,50/60Hz, 1Φ	14.3 A	33.5 A	41.7 A	N/A
Cat. No.	FU4MH230	FU11MH230	FU22MH230	
Electrical Requirements 230V ,50/60Hz, 3Φ	N/A			27.7 A
Cat. No.				FU36MH230-3

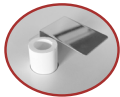
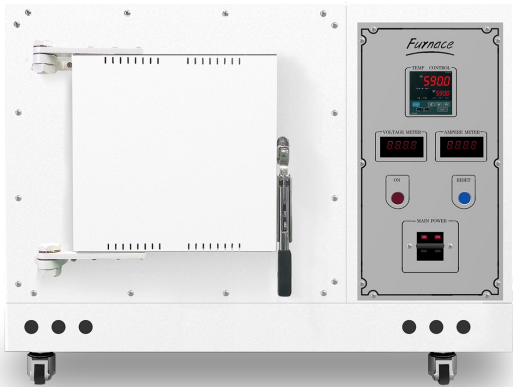
• Option

-Hybrid recorder

• Safety Device

-Automatic reset function incoming power cut
-Buzzer on when set time arrived
-Over temperature alarm

1700°C / 1800°C Muffle Furnace



*Vent port



Model(1700°C / 1800°C)		SH-FU-4MS	SH-FU-11MS	SH-FU-22MS
Max Temp		1700°C (3092°F) / 1800°C (3272°F)		
Temp Controller		Programmable Controller(SP590)		
Sensor		R type (1700°C) / B type (1800°C)		
Heater Capa	1700°C	4.2 KW	7.1 KW	13.0 KW
	1800°C	3.0 KW	5.2 KW	9.7 KW
Capa		4.5 L	11 L	22 L
Dimension Internal (WxDxH)		150x200x150mm	200x270x200mm	250x350x250mm
		5.91x7.87x5.91"	7.87x10.63x7.87"	9.84x13.78x9.84"
Dimension External (WxDxH)		920x600x765mm	1000x670x835mm	1080x750x910mm
		36.22x23.62x30.12"	39.37x26.38x32.87"	42.52x29.53x35.83"
Material External		Steel plate with powdr heating coated		
Weight		150 Kg	186 Kg	210 Kg
Heater Element		MoSi2		
Insulation		Ceramic Board & Wool (Ceramic fiber)		
Electrical Requirements 230V ,50/60Hz, 1Φ		19.0 A / 13.6 A	30.8 A / 22.6 A	59.1 A / 42.1 A
Cat. No	Max 1700°C	FU4MS230-17	FU11MS230-17	FU22MS230-17
	Max 1800°C	FU4MS230-18	FU11MS230-18	FU22MS230-18

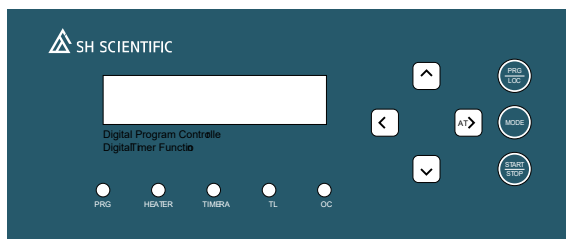
• Option

-Hybrid recorder

• Safety Device

-Automatic reset function incoming power cut
-Over temperature alarm

Programmable Controller (FC-1000)



- LCD Display
- Program mode, Standard Mode Selectable.
- Parameter setting
- Auto tune function
- Timer function
- PV,SV can be displayed together

Display	Size(WxH)	190x75mm / 7.48x2.95"
	PV/SP Display	4 Digit
Operation Mode		Program / Standard
Control Mode		1CH Control
Max Channel		-
Features	Patterns & Segments	5 patterns, 9 Segments / pattern, Total 45 Segments
	Cycles	1 ~ 999
Input	TC	K

Programmable Controller (SP-590)



- High Accuracy($\pm 0.1\%$) with excellent Function
- Multi Input : TC, RTD, DCV
- Simultaneous and Multi output available in Max 4 Points
- Easy parameter and value setting
- Function to protect over shoot
- RUN/STOP Function in the external Input contact point
- Display of Running status in Auxiliary Output
- Large Program Capacity : 2 Patterns / 30 Segments
- Variety of Auxiliary Output available (ex IS, TS, PEND etc)
- Input Piece Bias Function(Max 4 zone)
- Automatic PID Parameter Calculation
- Variety of communication Protocols
- Reliable quality(CE, CUL, ISO applied)

Display	Size(WxHxL)	96x96x68mm(3.8x3.8x2.68") / 72x72x68mm(2.83x2.83x2.68")
	PV/SP Display	4 Digit
Operation Mode		Program / Reset, 2 Zone PID
Control Mode		1CH Control
Max Channel		-
Pattern & Segments		2 Pattern / Max 30 segments
Input	TC	K, J, E, T, R, B, S, L, N, U, W, C, Platinel II
	RTD	Pt100 Ω , JPt100 Ω
	Analog Voltage Input	-10~20mV, 0~100mV, 0.4~2.0V DC, 1~5V DC, 0~10V DC
Communication	Interface	RS485
	Protocol	PC-Link, MODBUS(ASCII, RTU), SYNC(Master, Slave)
	Speed	Max 115,200 bps
Power	Power	100 ~ 240V AC, 50 ~ 60Hz
	Power Consumption	Max 10W

Hybrid Recorder Options

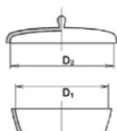


- 50mm thermal transfer method of paper recorder
- Data logger functions for recording without paper
- Supports RS485 communication and dedicated communication port to set or monitor parameters in real-time by PC/PLC
- Multi-input with high accuracy 0.2% level (RTD, TC, Analog)
- 2-channel simultaneous recording in graphic mode and digital mode
- High visibility and easy setting by LCD dot matrix
- Supports various option I/O functions
- Small size(W96×H96×L100mm / 3.78x3.78x3.94"), light weight

Record accuracy		±0.5%F.S.
Alarm output		CH1 (AL1, AL2), CH2(AL1, AL2) Relay out put(250 VAC/30 VDC 3 A 1 a)
Alarm output hysteresis		ON/OFF interval setting for alarm output: 1 to 999digit variable
Communication output		RS485 communication output(Modbus RTU protocol)
Set method		Setting by front keys
Sampling cycle		500 ms/channel x 2 channels = 1000 ms
Dielectric strength		2300 VAC 50/60 Hz for 1 min.(charging terminal of the other polarity)
Vibration		0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 min.) in each of X, Y, Z directions for 1 hour
Relay life cycle		Mechanical: Over 5,000,000 operations, Electrical: Over 100,000 operations
Insulation resistance		Over 100 MΩ (at 500 VDC megger)
Noise resistance		Square shaped noise by noise simulator (pulse width 1 μs)±2 kV
Print	Method	Direct thermal line print
	Resolution	8 dot/mm
	Dots	384 dot/Line
	Life cycle	50 km
Record	Graphic mode	• Record speed(recording paper speed): 10, 30, 60, 120, 240, 480, 940 mm/hour • Memo cycle: 30 s, 1 m, 5 m, 10 m, 15 m, 30 m, 1 h, 2 h, 3 h, 4 h, 8 h, 16 h, 24 h
	Digital mode	TEXT mode record cycle: 00 m 05 s to 99 m 59 s
	Paper	Thermal Direct Receipt Paper (57 mm x 16 m)
	Paper supply method	Clamshell Type
	Language	Korean, English
Environment	Ambient temperature	0 to 50 ℃, storage: -20 to 60 ℃
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH
Approval		CE
Unit weight		Approx. 700 g

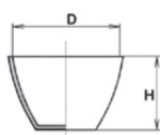
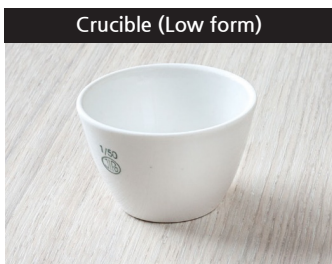
Ceramic consumable & Furnace accessory

Lid for crucible



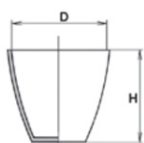
Model	D1xD2(mm)
641 321 000 301 (D/30)	30x34
641 321 000 351 (D/35)	35x39
641 321 000 401 (D/40)	40x44
641 321 000 451 (D/45)	45x49
641 321 000 501 (D/50)	50x54
641 321 000 601 (D/60)	60x64
641 321 000 701 (D/70)	70x74
641 321 000 801 (D/80)	80x84

Crucible (Low form)



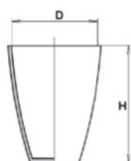
Model	DxH(mm)	V/ml approx.
641 321 100 301 (1/30)	30x19	5
641 321 100 351 (1/35)	35x22	10
641 321 100 401 (1/40)	40x25	17
641 321 100 451 (1/45)	45x28	21
641 321 100 601 (1/60)	60x38	62
641 321 100 701 (1/70)	70x44	91

Crucible (Middle form)



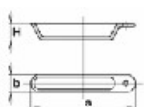
Model	DxH(mm)	V/ml approx.
641 321 200 301 (2/30)	30x25	10
641 321 200 351 (2/35)	35x28	12
641 321 200 401 (2/40)	40x32	20
641 321 200 451 (2/45)	45x36	30
641 321 200 501 (2/50)	50x40	45
641 321 200 601 (2/60)	60x48	80
641 321 200 701 (2/70)	70x56	120
641 321 200 801 (2/80)	80x62	200

Crucible (High form)



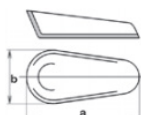
Model	DxH(mm)	V/ml approx.
641 321 300 301 (3/30)	30x38	15
641 321 300 351 (3/35)	35x44	26
641 321 300 401 (3/40)	40x50	35
641 321 300 451 (3/45)	45x56	50
641 321 300 501 (3/50)	50x62	72
641 321 300 601 (3/60)	60x75	120

Combustion boat



Model	axbH(mm)
641 312 214 200 (214/2)	75x13x8
641 312 214 300 (214/3)	105x14x9
641 312 214 400 (214/4)	85x13x8
641 312 214 800 (214/8)	90x13x8

Weighing boat



Model	axb(mm)
641 329 252 001 (252/0)	37x17
641 329 252 101 (252/1)	53x23
641 329 252 201 (252/2)	64x29

Crucible with lid



43(D)x27(H), 19ml

Gooch crucible


30(D)x36(H), 17ml / 35(D)x43(H), 25ml
39(D)x49(H), 35ml / 60(D)x71(H), 120ml

Annealing dish


40(D)x20(H), 21ml / 50(D)x25(H), 35ml
60(D)x30(H), 64ml / 70(D)x35(H), 103ml

Annealing dish


50(a)x35(b)x12(H), 6ml / 62(a)x40(b)x12(H), 13ml
74(a)x49(b)x14(H), 14ml / 95(a)x65(b)x14(H), 40ml

Evaporating dish


50(D)x20(H), 20ml / 63(D)x25(H), 30ml
80(D)x32(H), 60ml / 81(D)x38(H), 107ml
94(D)x42(H), 140ml / 100(D)x40(H), 150ml
125(D)x50(H), 285ml

Evaporating dish



96(D)x30(H), 110ml / 110(D)x37(H), 160ml

Evaporating dish


60(D)x14(H), 20ml / 80(D)x20(H), 55ml
100(D)x25(H), 110ml / 130(D)x30(H), 250ml

Evaporating dish


54(D)x22(H), 22ml / 70(D)x30(H), 62ml
86(D)x33(H), 93ml / 98(D)x40(H), 154ml
112(D)x50(H), 265ml

Unglazed, Mortar rough


56(D)x36(H), 30ml / 63(D)x41(H), 70ml
90(D)x56(H), 160ml / 125(D)x71(H), 400ml

Pestle unglazed



20(D)x88(L)

Pestle unglazed


14(D)x54(L) / 24(D)x115(L)
30(D)x135(L) / 36(D)x150(L)
42(D)x175(L) / 55(D)x210(L)

Pestle glazed



30(D)x135(L) / 36(D)x150(L)

Funnel Buechner



48(D1)x38(D2)x1(D3)x24(H1)x43(H2), 35ml
 62(D1)x45(D2)x1(D3)x30(H1)x64(H2), 70ml
 77(D1)x58(D2)x1(D3)x35(H1)x64(H2), 120ml
 97(D1)x70(D2)x2(D3)x40(H1)x71(H2), 240ml
 116(D1)x95(D2)x2(D3)x49(H1)x83(H2), 400ml
 130(D1)x110(D2)x2(D3)x52(H1)x85(H2), 600ml

Plate for desiccator DIN



140(D) / 190(D) / 235(D) / 280(D)

Plate for desiccator CSN



189(D) / 241(D) / 290(D)

Plate with cavities



112(a)x81(b)x25(c), 6Qty
 115(a)x91(b)x17(c), 12Qty

Stirring spatula+scoop



103(L) / 148(L) / 164(L) / 187(L)
 200(L) / 250(L)

Quartz boat



Model No.	Size (ml.LxWxH)	Temp-Limit
SH-QB-2	2ml, 15x48x8mm / 0.59x1.89x0.31"	Operation Temp 1100°C Max Temp 1250°C
SH-QB-3	3ml, 16x77x11mm / 0.63x3.03x0.43"	
SH-QB-5	5ml, 20x77x11mm / 0.79x3.03x0.43"	
SH-QB-8	8ml, 20x92x11mm / 0.79x3.62x0.43"	
SH-QB-10	10ml, 20x102x11mm / 0.79x4.02x0.43"	
SH-QB-15	15ml, 27x105x11mm / 1.06x4.13x0.43"	

Quartz crucible with lid



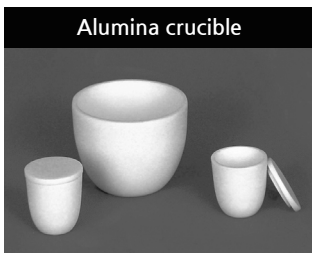
Model No.	Capa(ml)	Size	Temp-Limit
SH-QC-30	30 ml	ø47, ø25xh36mm	Operation Temp 1100°C Max Temp 1250°C
SH-QC-50	50 ml	ø54, ø34xh42mm	
SH-QC-100	100 ml	ø70, ø34xh55mm	
SH-QC-250	250 ml	ø110, ø50xh80mm	
SH-QC-500	500 ml	ø130, ø70xh100mm	

Nickel crucible with lid



Model No.	Capa(ml)	Size	Temp-Limit
SH-NC-30	30 ml	ø38xh38mm	Operation Temp 600~1000°C
SH-NC-50	50 ml	ø48xh48mm	
SH-NC-100	100 ml	ø55xh55mm	

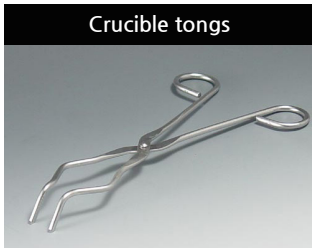
Alumina crucible



Model No.	Capa(ml)	Size	Max Temp
SH-ALC-10B	10 ml	ø29xh30mm	1700℃
SH-ALC-20B	20 ml	ø39xh29mm	
SH-ALC-30B	30 ml	ø52xh39mm	
SH-ALC-50B	50 ml	ø61xh49mm	
SH-ALC-100B	100 ml	ø72xh58mm	
SH-ALC-150B	150 ml	ø81xh67mm	
SH-ALC-200B	200 ml	ø86xh70mm	
SH-ALC-250B	250 ml	ø92xh75mm	
SH-ALC-500B	500 ml	ø110xh105mm	

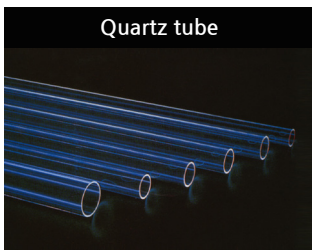
Lid	
Model No.	Capa(mm)
SH-ALC-10L	10 ml
SH-ALC-20L	20 ml
SH-ALC-30L	30 ml
SH-ALC-50L	50 ml
SH-ALC-100L	100 ml
SH-ALC-150L	150 ml
SH-ALC-200L	200 ml
SH-ALC-250L	250 ml
SH-ALC-500L	500 ml

Crucible tongs



Model No.	Opening Size(Φ)	Length
SH-CT-300	2~30 Φ	300mm / 11.81"
SH-CT-400	2~30 Φ	400mm / 15.75"
SH-CT-500	2~30 Φ	500mm / 19.69"

Quartz tube



Model No.	Size(I.D/O.D×L)	Model No.	Size(I.D/O.D×L)
SH-QT-50	46/50×1000mm/1.81/1.97x39.37"	SH-QT-50(1200)	46/50×1000mm/1.81/1.97x39.37"
SH-QT-60	55/60×1000mm/2.17/2.36x39.37"	SH-QT-60(1200)	55/60×1000mm/2.17/2.36x39.37"
SH-QT-80	74/80×1000mm/2.91/3.15x39.37"	SH-QT-80(1200)	74/80×1000mm/2.91/3.15x39.37"
SH-QT-100	94/100×1000mm/3.70/3.94x39.37"	SH-QT-100(1200)	94/100×1000mm/3.70/3.94x39.37"
SH-QT-120	114/120×1000mm/4.49/4.72x39.37"	SH-QT-120(1200)	114/120×1000mm/4.49/4.72x39.37"
SH-QT-150	144/150×1000mm/4.49/5.91x39.37"	SH-QT-150(1200)	144/150×1000mm/4.49/5.91x39.37"
SH-QT-180	174/180×1000mm/6.85/7.08x39.37"	SH-QT-180(1200)	174/180×1000mm/6.85/7.08x39.37"
SH-QT-200	193/200×1000mm/7.60/7.87x39.37"	SH-QT-200(1200)	193/200×1000mm/7.60/7.87x39.37"

High temp proof gloves



Model No.	Temp-Limit
SH-SG-500	Max 500℃
SH-SG-900	Max 900℃

Alumina tube



Model No.	Size(I.D/O.D×L)	Alumina Purity : OVER 98%
SH-AT-25	20/25x1000mm / 0.79/0.98x39.37"	
SH-AT-30	24/30x1000mm / 0.94/1.18x39.37"	
SH-AT-35	28/35x1000mm / 1.10/1.38x39.37"	
SH-AT-50	42/50x1000mm / 1.65/1.97x39.37"	
SH-AT-60	50/60x1000mm / 1.97/2.36x39.37"	
SH-AT-70	60/70x1000mm / 2.36/2.76x39.37"	
SH-AT-80	70/80x1000mm / 2.76/3.15x39.37"	
SH-AT-90	80/90x1000mm / 3.15/3.54x39.37"	
SH-AT-100	88/100x1000mm / 3.46/3.94x39.37"	
SH-AT-120	110/120x1000mm / 4.33/4.72x39.37"	

Gas sealing mask



Model No.	Material
SH-SM-50	50Φ TUBE용, Aluminum(Optional: SUS), 2ea/pack
SH-SM-60	60Φ TUBE용, Aluminum(Optional: SUS), 2ea/pack
SH-SM-80	80Φ TUBE용, Aluminum(Optional: SUS), 2ea/pack
SH-SM-100	100Φ TUBE용, Aluminum(Optional: SUS), 2ea/pack
SH-SM-120	120Φ TUBE용, Aluminum(Optional: SUS), 2ea/pack