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General Purpose, Educational and Specification Laboratory Thermometers

Laboratory and Specification Glass Thermometers and Calibration Services - Introduction

S Brannan and Sons Ltd is a family company manufacturing thermometers, pressure gauges and other measuring instruments since the early part of the last century. Ninety years of tradition are combined with the most modern manufacturing methods. Our facilities in the UK and in Sweden provide an unequalled service.

The glass laboratory and specification thermometers included in this catalogue are produced on advanced automated machinery at our factory in North West England, on the edge of the Lake District.



Quality is of prime importance in the manufacture of these products and the company has had ISO 9002 approval since 1991.

Complimenting the production facilities, the company also provides a comprehensive calibration service operating a UKAS accredited laboratory where customers' existing instruments may be tested or recalibrated. In addition, new calibrated thermometers may also be supplied.



This catalogue details most of the commonly requested specification thermometers, together with our own standard general purpose instruments. These are normally available for immediate delivery.



With an increasing demand for alternative filling materials to mercury, a wider choice of organic, non hazardous materials are now used on temperature ranges from -50 to 330°C with greater accuracy and reliability.

A significant part of the manufacturing capability is devoted to non standard products made to customers' own design or specification or for the production of branded standard instruments.

In addition to this catalogue and the instruments listed, the company produces a wide range of other thermometers and gauges, a list of which is on the inside back cover. These instruments are sold world wide and local stocks or distributors frequently available.



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General Purpose Laboratory Thermometers, Mercury Filled, White Back or Yellow Back

Commercial grade mercury laboratory thermometer, are available in white back or easier to read, yellow back glass. They are fitted with a non roll cap and suspension ring.



Range °C	Division	Product No	
		White Back	Yellow Back
205mm, 76mm immersion Thermometers			
-10+110	1.0	40/423/0	41/423/0
-10+150	1.0	40/441/0	41/441/0
305mm, 76mm immersion Thermometers			
-35+50	1.0	40/001/8	41/001/8
-10+50	0.5	40/401/0	41/401/0
*-10+110	1.0	*40/403/0	*41/403/0
-10+110	0.5	40/803/0	41/803/0
*-10+150	1.0	*40/003/8	*41/003/8
-10+200	1.0	40/408/0	41/408/0
-10+250	1.0	40/410/0	41/410/0
-10+300	1.0	40/412/0	41/412/0
-10+360	2.0	40/414/0	41/414/0
405mm, 76mm immersion Thermometers			
-10+400	2.0	40/005/8	41/005/8
-10+500	2.0	40/006/8	41/006/8

155mm, Total immersion Thermometers			
-10+50	1.0	40/450/0	41/450/0
** -10+110	1.0	**40/430/0	**41/430/0
-10+250	5.0	—	41/453/0
-10+360	5.0	—	41/452/0

205mm, Total immersion Thermometers			
-10+110	1.0	40/100/3	41/100/3
-10+150	1.0	40/442/0	41/442/0

305mm, Total immersion Thermometers			
-35+50	1.0	40/009/8	41/009/8
-10+50	0.5	40/401/1	41/401/1
*-10+110	1.0	*40/010/8	*41/010/8
-10+110	0.5	40/803/1	41/803/1
*-10+150	1.0	*40/011/8	*41/011/8
-10+200	1.0	40/408/1	41/408/1
-10+250	1.0	40/410/1	41/410/1
-10+300	1.0	40/412/1	41/412/1
-10+360	2.0	40/414/1	41/414/1

405mm, Total immersion Thermometers			
-10+400	2.0	40/013/8	41/013/8
-10+500	2.0	40/014/8	41/014/8

*May be supplied with scale to -20°C

**May be supplied with scale -5 +105°C



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Special Purpose Laboratory Thermometers, Mercury Filled, Yellow Back

This page describes thermometers of higher accuracy with fractional degree subdivisions together with various special purpose thermometers. All these instruments are made from yellow back glass and are mercury filled, fitted with non roll cap and ring.

Range °C	Division	Length mm	Immersion	Product No
Fractional Degree Thermometers				
-1 +51	0.2	355	Total	48/434/0
-1 +51	0.1	355	Total	48/435/0
-1 +51	0.2	355	76mm	48/454/0
-1 +51	0.1	355	76mm	48/455/0
-1 +51	0.1	460	Total	41/024/8
-1 +101	0.2	460	Total	48/436/0
-1 +51	0.1	460	76mm	41/027/8
-1 +101	0.2	460	76mm	48/456/0
**Constricted Bore Maximum Reading Mercury Filled, Yellow Back				
-20 +110	1.0	305	Total	45/010/0
-10 +150	1.0	305	Total	45/011/0
-10 +200	1.0	305	Total	45/012/0
-10 +250	1.0	305	Total	45/013/0
*Teflon™, Safety Coated Thermometers Mercury Filled, Yellow Back				
-20 +110	1.0	305	76mm	41/903/0
-20 +150	1.0	305	76mm	41/906/0
-10 +200	1.0	305	76mm	41/908/0
-10 +250	1.0	305	76mm	41/910/0
'Masons Melting Point' Apparatus Mercury Filled, Yellow Back Thermometers				
0 +150	0.5	250	30mm	46/801/0
0 +360	1.0	305	30mm	46/802/0



* Teflon™ Registered trademark of Dupont

** Constricted Bore Thermometers are reset by swinging

LO-tox™ filled Laboratory Thermometers

LO-tox™ is an organic filling specially chosen to achieve a wide temperature span and provide the lowest practical levels of hazard. The quality and legibility make these an ideal substitute for mercury thermometers. Fitted with Brannan non roll end cap which has a ring to allow the thermometer to be suspended.



Range °C	Division	Product No	
		76mm Imm	Total Imm
155mm Blue LO-tox™ Filled			
-10+50	1.0	—	44/850/7
-10+110	1.0	—	44/830/7
305mm Blue LO-tox™ Filled			
-35+50	1.0	44/801/8	44/809/8
-10+50	0.5	44/800/8	44/808/8
-20+110	1.0	44/802/8	44/810/8
-20+150	1.0	44/803/8	44/811/8
405mm Blue LO-tox™ Filled			
-10+210	1.0	44/805/8	44/812/8
-10+260	1.0	44/804/8	—
305mm Brown LO-tox™ Filled			
-10+300	1.0	44/815/0	—
-10+330	2.0	44/814/0	—
Fractional Degree Thermometers 405mm Blue LO-tox™ Filled			
-1+51	0.1	44/820/0	44/821/0
-1+51	0.2	44/822/0	44/823/0
-1+101	0.2	44/824/0	44/825/0



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General Purpose Laboratory Thermometers, Spirit Filled

These thermometers use specially selected filling materials covering temperatures down to -200°C. Normal fillings are coloured red on a white back glass but alternative colours are available as shown. The -200°C range thermometers are filled with a colourless liquid. Thermometers normally supplied with the non roll cap with ring.

Range °C	Division	Product No	
		76mm Imm	Total Imm
155mm Red Spirit Filled			
-10+50	1.0	—	44/450/0
-10+110	1.0	—	44/430/0
205mm Red Spirit Filled			
-10+110	1.0	44/423/0	44/100/4
-10+150	1.0	44/441/0	44/442/0
305mm Red Spirit Filled			
-10+50	0.5	44/401/0	44/401/1
*-10+110	1.0	44/403/0	*44/010/8
*-10+150	1.0	44/406/0	*44/011/8
Alternative Colour Spirit			
155mm Blue Spirit Filled			
-10+110	1.0	—	44/430/7
305mm Blue Spirit Filled			
-10+110	1.0	44/403/7	44/010/7
-10+200	1.0	44/408/0	44/408/1
155mm Green Spirit Filled			
-10+110	1.0	—	44/430/5
205mm Green Spirit Filled			
-10+110	1.0	44/423/5	—
305mm Green Spirit Filled			
-10+110	1.0	44/403/5	—
Low Range Thermometers			
305mm Red Spirit Filled			
-50+50	1.0	46/540/0	46/539/0
-100+50	1.0	—	46/456/0
355mm Clear Pentane Filled			
-200+30	1.0	—	46/440/0



*May be supplied with scale to -20°C

initialTM Brand and **breaksafe** Thermometers

The **initial**TM range of laboratory thermometers represents the best value in thermometers for schools. Produced in the UK in large volume to ensure a competitive price with no compromise in quality or accuracy.

They feature a moulded glass triangular top to prevent rolling and are available in different lengths with a safe green filling or traditional mercury.

Range °C	Division	Length mm	Immersion	Product No
Green Filled initial TM Brand Thermometers				
-10+110	1.0	150	Total	46/330/5
-10+110	1.0	200	76mm	46/323/5
-10+110	1.0	300	76mm	46/303/5
Mercury Filled initial TM Brand Thermometers				
-10+110	1.0	150	Total	46/430/0
-10+110	1.0	300	76mm	46/403/0
Uncalibrated Thermometer, Green Filled (for student calibration)				
Covers range -10+110°C, length 305mm				46/603/5

The **breaksafe** Safety Coated Thermometer is similar to the 200mm **initial**TM Brand thermometer above. The **breaksafe** thermometer is encapsulated in PVC to contain any glass or filling material in the event of breakage.

Range °C	Division	Length mm	Immersion	Product No
breaksafe PVC Coated Thermometers				
-10+110	1.0	200	76mm	44/425/0



Educational Thermometer Kits

The following kits have been developed for use in the classroom. They come complete with teaching notes and photocopyable worksheets. These kits assist teachers to operate within the National Curriculum.

Description	Contents	Product No
'Classroom' Kit of Laboratory thermometers	8 x 150mm initial brand green filled thermometers 7 x 300mm initial brand green filled thermometers 1 x 300mm uncalibrated green filled thermometer 1 x 'Classroom' notes	25/700/0
'Investigative Science' Kit of thermometers	4 x 150mm initial brand green filled thermometers 4 x 200mm initial brand green filled thermometers 2 x small classroom thermometers 1 x dial type maximum/minimum thermometer 1 x soil temperature thermometer 1 x 'Spotcheck' clinical thermometer 1 x 'Investigative Science' notes	25/701/0
'Classroom Wall' thermometer Kit	1 x 380mm classroom wall thermometer 1 x Classroom thermometer chart	25/702/0



SAMA Type General Purpose Laboratory Thermometers Mercury Filled, White Back or Yellow Back Glass

These thermometers generally conform to the American National Standards Institute specification ANSI Z 236.1 1983 (sponsored by the Scientific Apparatus Makers Association - SAMA). Mercury filled thermometers are available in white back, or easier to read, yellow back glass.

The thermometers are fitted with a non roll cap and suspension ring.



SAMA No	Range	Division	Length mm	Product No (white back)	Product No (yellow back)
Total Immersion Thermometers					
CT10	-35 +50C	1.0	305	40/009/8	41/009/8
CT15	-20 +110C	1.0	305	40/010/8	41/010/8
CT20	-20 +150C	1.0	305	40/011/8	41/011/8
CT25	-10 +260C	1.0	405	40/012/8	41/012/8
CT30	-10 +400C	2.0	405	40/013/8	41/013/8
CT35	-10 +500C	2.0	405	40/014/8	41/014/8
FT10	-30 +120F	1.0	305	40/015/7	41/015/7
FT15	0 +230F	2.0	305	40/016/7	41/016/7
FT20	0 +300F	2.0	305	40/017/7	41/017/7
FT25	+20 +500F	2.0	405	40/018/7	41/018/7
FT30	+20 +750F	5.0	405	40/019/7	41/019/7
FT35	+20 +930F	5.0	405	40/020/7	41/020/7
Partial, 76mm Immersion Thermometers					
CP10	-35 +50C	1.0	305	40/001/8	41/001/8
CP15	-20 +110C	1.0	305	40/002/8	41/002/8
CP20	-20 +150C	1.0	305	40/003/8	41/003/8
CP25	-10 +260C	1.0	405	40/004/8	41/004/8
CP30	-10 +400C	2.0	405	40/005/8	41/005/8
CP35	-10 +500C	2.0	405	40/006/8	41/006/8
FP10	-30 +120F	1.0	305	40/001/7	41/001/7
FP15	0 +230F	2.0	305	40/002/7	41/002/7
FP20	0 +300F	2.0	305	40/003/7	41/003/7
FP25	+20 +500F	2.0	405	40/004/7	41/004/7
FP30	+20 +750F	5.0	405	40/005/7	41/005/7
FP35	+20 +930F	5.0	405	40/006/7	41/006/7



SAMA Type General Purpose Laboratory Thermometers Mercury Filled, Yellow Back Glass

These products complete the list on the previous page with double scale thermometers and fractional degree types which are only available in yellow back glass. The thermometers are fitted with a non roll cap and suspension ring.

SAMA No	Range	Division	Length mm	Product No (yellow back)
Partial, 76mm Immersion Double Scale Thermometers				
CFP15	-20 +110C & 0 +230F	1.0 2.0	305	41/021/9
CFP25	-10 +260C & +20 +500F	1.0 2.0	405	41/022/9
CFP30	-10 +400C & +20 +750F	2.0 5.0	405	41/023/9
Fractional Degree, Total Immersion Thermometers				
CT40	-1 +51C	0.1	460	41/024/8
CT45	-1 +101C	0.1	610	41/025/8
CT50	-1 +201C	0.2	610	41/026/8
FT40	+30 +124F	0.2	460	41/024/7
FT55	+30 +214F	0.2	610	41/025/7
FT50	+30 +394F	0.5	610	41/026/7



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SAMA Type General Purpose Laboratory Thermometers **LO-tox™ Filled**

In addition to traditional red spirit filled instruments are the Brannan **LO-tox™** thermometers. **LO-tox™** is a specially selected organic filling normally coloured blue, stable over a greater temperature span and providing the lowest practical level of hazard.

The quality and legibility of these thermometers provide an ideal alternative to mercury. The thermometers are fitted with a non roll cap and suspension ring.



SAMA *No	Range	Division	Length mm	Product No LO-tox™
Total Immersion Thermometers				
CT10	-35 +50C	1.0	305	44/809/8
CT15	-20 +110C	1.0	305	44/810/8
CT20	-20 +150C	1.0	305	44/811/8
FT10	-30 +120F	1.0	305	44/809/7
FT15	0 +230F	2.0	305	44/816/7
FT20	0 +300F	2.0	305	44/817/7
—	-10 +210C	1.0	405	44/812/8
Partial, 76mm Immersion Thermometers				
CP10	-35 +50C	1.0	305	44/801/8
CP15	-20 +110C	1.0	305	44/802/8
CP20	-20 +150C	1.0	305	44/803/8
CP25	-10 +260C	1.0	405	44/804/8
—	#-10 +330C	2.0	305	#44/814/0
FP10	-30 +120F	1.0	305	44/801/5
FP15	0 +230F	2.0	305	44/802/7
FP20	0 +300F	2.0	305	44/803/7
FP25	+20 +500F	2.0	405	44/804/7
CFP15	-20 +110C	1.0	305	44/802/5
	0 +230F	2.0		
CFP20	-20 +150C	1.0	305	44/803/5
	0 +300F	2.0		
CFP25	-10 +260C	1.0	405	44/804/5
	+20 +500F	2.0		

LO-tox™ Brown filling

* The SAMA numbers used are the codes for the equivalent mercury thermometers and are for reference only.



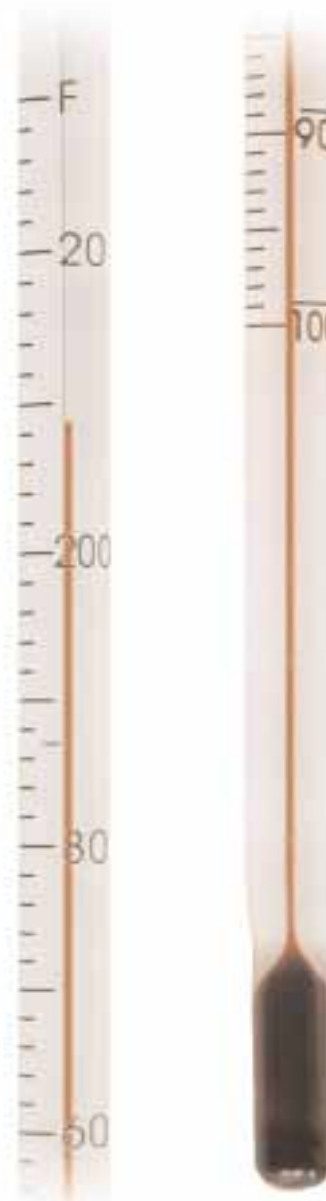
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SAMA Type General Purpose Laboratory Thermometers Red Spirit Filled

The Low Temperature SAMA thermometers have always been specified with organic filling. Included below are additional 'SAMA type' spirit filled thermometers to satisfy the preference for non-mercury fillings.

SAMA *No	Range	Division	Length mm	Product No Red Spirit
Total Immersion Thermometers				
CT55	-100 +50C	1.0	305	46/456/0
CT60	-50 +50C	1.0	305	46/539/0
CT10	-35 +50C	1.0	305	44/009/8
CT15	-20 +110C	1.0	305	44/010/8
CT20	-20 +150C	1.0	305	44/011/8
FT10	-30 +120F	1.0	305	44/009/7
FT15	0 +230F	2.0	305	44/016/7
FT20	0 +300F	2.0	305	44/017/7
—	-20 +110C 0 +230F	1.0 2.0	305	44/010/9
—	-20 +150C 0 +300F	1.0 2.0	305	44/011/9
Partial, 76mm Immersion Thermometers				
—	-100 +50C	1.0	305	46/457/0
—	-50 +50C	1.0	305	46/540/0
CP10	-35 +50C	1.0	305	44/001/8
CP15	-20 +110C	1.0	305	44/002/8
CP20	-20 +150C	1.0	305	44/003/8
FP10	-30 +120F	1.0	305	44/001/7
FP15	0 +230F	2.0	305	44/002/7
FP20	0 +300F	2.0	305	44/003/7
CFP15	-20 +110C 0 +230F	1.0 2.0	305	44/002/9
CFP20	-20 +150C 0 +300F	1.0 2.0	305	44/003/9

* Other than CT55 and CT60, the SAMA numbers used are the codes for the equivalent mercury thermometers and are for reference only.



BS 1704 : 1985 General Purpose Laboratory Thermometers

BS 1704 : 1985 is identical to ISO 1770 - 1981 (revised in 1983). The specification includes standard thermometers (designation A to H) and thermometers of higher accuracy (designation J to W).

Thermometers with ranges below -35°C are red spirit filled. All other ranges are mercury filled and are made of yellow back glass, wherever possible.

The designation reference for partial (75mm) immersion types is suffixed "/75".



Designation		Range °C	Division	Length mm	Product No	
Total	Partial				Total Imm	75mm Imm
A	—	*-100 +30C	1.0	305	*50/121/0	—
B	B/75	-35 +30C	0.5	305	50/122/0	50/142/0
C	C/75	-5 +60C	0.5	305	50/123/0	50/143/0
D	D/75	-5 +105C	1.0	305	50/124/0	50/144/0
E	E/75	-10 +160C	1.0	305	50/125/0	50/145/0
F	F/75	-10 +250C	1.0	305	50/126/0	50/146/0
G	G/75	-10 +360C	2.0	305	50/127/0	50/147/0
H	H/75	-10 +500C	5.0	305	50/128/0	50/148/0
Thermometers of Higher Accuracy						
J	—	*-100 +50C	1.0	305	*50/129/0	—
K	—	*-50 +50C	1.0	305	*50/130/0	—
P	P/75	-35 +50C	1.0	305	50/131/0	50/151/0
R	R/75	-20 +110C	1.0	305	50/132/0	50/152/0
S	S/75	-20 +150C	1.0	305	50/133/0	50/153/0
T	T/75	-10 +260C	1.0	405	50/134/0	50/154/0
V	V/75	-10 +400C	2.0	405	50/135/0	50/155/0
W	W/75	-10 +500C	2.0	405	50/136/0	50/156/0
Fractional Degree Thermometers						
L	L/75	-1 +51C	0.1	460	50/137/0	50/157/0
M	M/75	-1 +101C	0.1	610	50/138/0	50/158/0
N	N/75	-1 +201C	0.2	610	50/139/0	50/159/0

*Red spirit filled



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BS 593 : 1989 Laboratory Thermometers

The thermometers covered by this Standard as listed below provide a higher accuracy than the BS 1704 : 1985 (150 1770-1981) on the previous page. We have only included celsius thermometers to the BS 593 specification. The thermometers are supplied as standard in yellow back glass wherever possible.

Instruments whose range does not include 0°C are specified to have an auxillary “ice point” scale.

Designation	Nominal Range °C	Sub Div °C	Max Length mm	Product No
Total Immersion Thermometers				
A 10°C/Total	-30 +10	0.1	405	51/059/5
A 20°C/Total	-20 +20	0.1	405	51/060/0
A 40°C/Total	0 +40	0.1	405	51/061/0
A 70°C/Total	+40 +70	0.1	405	51/062/0
A 100°C/Total	+70 +100	0.1	405	51/063/0
A 130°C/Total	+100 +130	0.1	405	51/064/0
A 160°C/Total	+130 +160	0.1	405	51/065/0
B 60°C/Total	-20 +60	0.2	405	51/066/0
B 110°C/Total	+50 +110	0.2	405	51/067/0
B 160°C/Total	+100 +160	0.2	405	51/068/0
B 210°C/Total	+150 +210	0.2	405	51/069/0
B 260°C/Total	+200 +260	0.2	405	51/070/0
Partial (100mm) Immersion Thermometers				
A 10°C/100	-30 +10	0.1	405	51/001/0
A 20°C/100	-20 +20	0.1	405	51/002/0
A 40°C/100	0 +40	0.1	405	51/003/0
A 70°C/100	+40 +70	0.1	405	51/004/0
A 100°C/100	+70 +100	0.1	405	51/005/0
A 130°C/100	+100 +130	0.1	405	51/006/0
A 160°C/100	+130 +160	0.1	405	51/007/0
B 60°C/100	-20 +60	0.2	405	51/008/0
B 110°C/100	+50 +110	0.2	405	51/009/0
B 160°C/100	+100 +160	0.2	405	51/010/0
B 210°C/100	+150 +210	0.2	405	51/011/0
B 260°C/100	+200 +260	0.2	405	51/012/0



BS 593 : 1989 Laboratory Thermometers

The table below completes the list of BS 593 celsius thermometers. These products with designation 'F' are identical to certain IP (BS:2000) and ASTM specifications and thermometers are marked accordingly. All these products are supplied in yellow back glass wherever possible.

Designation	IP Equiv	ASTM Equiv	Nominal Range °C	Sub Div °C	Max Length mm	Product No
Partial (100MM) Immersion Thermometers						
F 50°C/100	77C	37C	-2 +52	0.2	400	58/077/2
F 75°C/100	78C	38C	+24 +78	0.2	400	58/078/2
F 100°C/100	79C	39C	+48 +102	0.2	400	58/079/2
F 125°C/100	80C	40C	+72 +126	0.2	400	58/080/2
F 150°C/100	81C	41C	+98 +152	0.2	400	58/081/2
F 175°C/100	83C	102C	+123 +177	0.2	400	58/083/2
F 200°C/100	84C	103C	+148 +202	0.2	400	58/084/2
F 225°C/100	85C	104C	+173 +227	0.2	400	58/085/2
F 250°C/100	86C	105C	+198 +252	0.2	400	58/086/2
F 275°C/100	87C	106C	+223 +277	0.2	400	58/087/2
F 300°C/100	88C	107C	+248 +302	0.2	400	58/088/2
F 255°C/100	82C	42C	+95 +255	0.5	400	58/082/2
Partial (76MM) Immersion Thermometers						
F 150°C/76	-	1C	-20 +150	1.0	327	59/001/2
F 300°C/76	62C	2C	-5 +300	1.0	395	58/062/2
F 400°C/76	73C	3C	-5 +400	1.0	420	58/073/2



IP Thermometers

BS 2000 : Part 0 Section 0.1:1999

The thermometers listed below are made in accordance with specifications drawn up by the Institute of Petroleum (IP) for use with specific test methods of petroleum and its products. Many of the tests and instrument specifications are jointly agreed with ASTM and they are marked accordingly. The list of these thermometers is now part of a British Standard.

While these thermometers were designed for specific tests, many of them have other uses as quality precision thermometers.

They are supplied in yellow back glass whenever possible.

IP No	ASTM Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
1C	5C	CLOUD & POUR	-38 +50	1.0	235	108	58/001/2
2C	6C	LOW CLOUD & POUR	-80 +20	1.0	235	76	58/002/2
3C	-	DEMULSIFICATION	-1 +105	0.5	305	TOTAL	58/003/2
4C	-	CRUDE OIL DISTILLATION	-4 +360	2.0	320	TOTAL	58/004/2
5C	7C	LOW DISTILLATION	-2 +300	1.0	390	TOTAL	58/005/2
6C	8C	HIGH DISTILLATION	-2 +400	1.0	390	TOTAL	58/006/2
8C	-	FLUSHING-CASE LOW	0 +45	0.2	350	65	58/008/2
9C	-	FLUSHING-CASE MEDIUM	+40 +85	0.2	350	65	58/009/2
14C	114C	AVIATION FUEL FREEZING POINT	-80 +20	0.5	305	TOTAL	58/014/2
15C	9C	LOW PENSKY-MARTENS	-5 +110	0.5	295	57	58/015/2
16C	10C	HIGH PENSKY-MARTENS	+90 +370	2.0	295	57	58/016/2
17C	14C	WAX MELTING POINT	+38 +82	0.1	380	79	58/017/2
18C	54C	CONGEALING POINT	+20 +100,6	0.2	315	TOTAL	58/018/2
20C	33C	LOW ANILINE POINT	-38 +42	0.2	425	50	58/020/2
21C	34C	MEDIUM ANILINE POINT	+25 +105	0.2	425	50	58/021/2
22C	-	OXIDATION	+195 +205	0.1	310	100	58/022/2
23C	18C	REID VAPOUR PRESSURE	+34 +42	0.1	280	TOTAL	58/023/2
24C	22C	OXIDATION STABILITY	+95 +103	0.1	280	TOTAL	58/024/2
-	-	ABEL WATER BATH CELSIUS	+32 +88	0.5	228	# 61	58/025/2
-	-	ABEL OIL CUP CELSIUS	+10 +65	0.5	228	# 89	58/026/2
28C	11C	CLEVELAND OPEN FLASH	-6 +400	2.0	315	25	58/028/2
29C	44C	KINEMATIC VISCOSITY 20°C	+18,6 +21,4	0.05	310	TOTAL	58/029/2
30C	45C	KINEMATIC VISCOSITY 25°C	+23,6 +26,4	0.05	310	TOTAL	58/030/2
31C	28C	KINEMATIC VISCOSITY 37,8°C	+36,6 +39,4	0.05	310	TOTAL	58/031/2
32C	121C	KINEMATIC VISCOSITY 98,9°C	+98,6 +101,4	0.05	310	TOTAL	58/032/2
33C	128C	KINEMATIC VISCOSITY 0°C	-1,4 +1,4	0.05	310	TOTAL	58/033/2

To suit 'Abel Apparatus'

IP Thermometers

BS 2000 : Part 0 Section 0.1:1999

IP No	ASTM Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
34C	29C	KINEMATIC VISCOSITY 54,4°C	+52,6 +55,4	0.05	310	TOTAL	58/034/2
35C	47C	KINEMATIC VISCOSITY 60°C	+58,6 +61,4	0.05	310	TOTAL	58/035/2
36C	129C	KINEMATIC VISCOSITY 93,3°C	+91,6 +94,4	0.05	310	TOTAL	58/036/2
37C	-	SLUDGE	+144 +156	0.2	280	100	58/037/2
38C	-	PEN	+23 +27	0.1	270	TOTAL	58/038/2
39C	-	DENSITY	-1 +38	0.1	450	TOTAL	58/039/2
40C	-	DROP POINT, LOW	+20 +120	1.0	260	100	58/040/2
41C	-	DROP POINT, HIGH	+100 +230	1.0	260	100	58/041/2
42C	-	BREAKING POINT	-38 +30	0.5	380	250	58/042/2
43C	-	F P CUT BACK (INT)	+10 +110	0.5	305	# 61	58/043/2
44C	-	F P CUT BACK (EXT)	+15 +121	0.5	305	# 89	58/044/2
45C	-	REFRACTOMETER	+15 +30	0.2	170	22	58/045/2
46C	-	WESTPHAL BALANCE	+14,5 +21	0.1	170	TOTAL	58/046/2
47C	13C	LOSS ON HEATING	+155 +170	0.5	160	TOTAL	58/047/2
48C	-	TANK LOW	-38 +30	0.5	315	TOTAL	58/048/2
49C	-	TANK MEDIUM	-15 +40	0.5	315	TOTAL	58/049/2
50C	-	TANK HIGH	+10+65	0.5	315	TOTAL	58/050/2
51C	-	TANK HEATED FUEL	+35 +120	0.5	315	TOTAL	58/051/2
52C	-	TANK BITUMEN	+90 +260	1.0	315	TOTAL	58/052/2
53C	-	TANK CARGO	0 +80	0.5	315	TOTAL	58/053/2
54C	-	ANGLE STEM - TANK LOW	-38 +30	0.5	*	*	58/054/2
55C	-	ANGLE STEM - TANK MEDIUM	-15 +40	0.5	*	*	58/055/2
56C	-	ANGLE STEM - TANK HIGH	+10 +65	0.5	*	*	58/056/2
57C	-	ANGLE STEM - TANK HEATED FUEL	+35 +120	0.5	*	*	58/057/2
58C	-	ANGLE STEM - TANK BITUMEN	+90 +260	1.0	*	*	58/058/2
59C	35C	HIGH ANILINE POINT	+90 +170	0.2	425	50	58/059/2
60C	15C	LOW SOFTENING POINT	-2 +80	0.2	400	TOTAL	58/060/2
61C	16C	HIGH SOFTENING POINT	+30 +200	0.5	400	TOTAL	58/061/2
62C	2C	PARTIAL IMMERSION	-5 +300	1.0	395	76	58/062/2
63C	61C	PETROLATUM MELTING POINT	+32 +127	0.2	385	79	58/063/2
64C	12C	DENSITY WIDE RANGE	-20 +102	0.2	425	TOTAL	58/064/2
65C	43C	KINEMATIC VISCOSITY LOW	-51,6 -34	0.1	425	TOTAL	58/065/2
66C	46C	KINEMATIC VISCOSITY 50°C	+48,6 +51,4	0.05	310	TOTAL	58/066/2
67C	72C	KINEMATIC VISCOSITY -17,8°C	-19,4 -16,6	0.05	310	TOTAL	58/067/2
68C	73C	KINEMATIC VISCOSITY -40°C	-41,4 -38,6	0.05	310	TOTAL	58/068/2

To suit 'Abel Apparatus'

* Dimensions not specified



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IP Thermometers

BS 2000 : Part 0 Section 0.1:1999

IP No	ASTM Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
69C	74C	KINEMATIC VISCOSITY -53,9°C	-55,4 -52,6	0.05	310	TOTAL	58/069/2
71C	126C	KINEMATIC VISCOSITY -26,1°C	-27,4 -24,6	0.05	310	TOTAL	58/071/2
72C	71C	OIL IN WAX	-37 +21	0.5	360	76	58/072/2
73C	3C	PARTIAL IMMERSION	-5 +400	1.0	420	76	58/073/2
74C	-	ABEL OIL CUP - WIDE RANGE	-35 +70	0.5	320	# 61	58/074/2
75C	-	ABEL WATER BATH - WIDE RANGE	-30 +80	0.5	320	# 89	58/075/2
76C	-	ENGLER VISCOSITY	+10 +55	0.5	250	93	58/076/2
77C	37C	SOLVENTS DISTILLATION	-2 +52	0.2	400	100	58/077/2
78C	38C	SOLVENTS DISTILLATION	+24 +78	0.2	400	100	58/078/2
79C	39C	SOLVENTS DISTILLATION	+48 +102	0.2	400	100	58/079/2
80C	40C	SOLVENTS DISTILLATION	+72 +126	0.2	400	100	58/080/2
81C	41C	SOLVENTS DISTILLATION	+98 +152	0.2	400	100	58/081/2
82C	42C	SOLVENTS DISTILLATION	+95 +255	0.5	400	100	58/082/2
83C	102C	SOLVENTS DISTILLATION	+123 +177	0.2	400	100	58/083/2
84C	103C	SOLVENTS DISTILLATION	+148 +202	0.2	400	100	58/084/2
85C	104C	SOLVENTS DISTILLATION	+173 +227	0.2	400	100	58/085/2
86C	105C	SOLVENTS DISTILLATION	+198 +252	0.2	400	100	58/086/2
87C	106C	SOLVENTS DISTILLATION	+223 +277	0.2	400	100	58/087/2
88C	107C	SOLVENTS DISTILLATION	+248 +302	0.2	400	100	58/088/2
89C	113C	BITUMEN SOFTENING POINT WIDE RANGE	-1 +175	0.5	410	TOTAL	58/089/2
90C	48C	KINEMATIC VISCOSITY 82,2°C	+80,6 +83,4	0.05	310	TOTAL	58/090/2
91C	-	RAPID FLASH	0 +110	1.0	200	44	58/091/2
92C	120C	KINEMATIC VISCOSITY 40°C	+38,6 +41,4	0.05	310	TOTAL	58/092/2
93C	110C	KINEMATIC VISCOSITY 135°C	+133,6 +136,4	0.05	310	TOTAL	58/093/2
94C	122C	BROOKFIELD VISCOSITY	-45 -35	0.1	305	TOTAL	58/094/2
95C	123C	BROOKFIELD VISCOSITY	-35 -25	0.1	305	TOTAL	58/095/2
96C	124C	BROOKFIELD VISCOSITY	-25 -15	0.1	305	TOTAL	58/096/2
97C	125C	BROOKFIELD VISCOSITY	-15 -5	0.1	305	TOTAL	58/097/2
98C	-	RAPID FLASH (HIGH)	+100 +300	2.0	200	44	58/098/2
99C	127C	KINEMATIC VISCOSITY -20°C	-21,4 -18,6	0.05	310	TOTAL	58/099/2
100C	-	KINEMATIC VISCOSITY 80°C	+78,6 +81,4	0.05	310	TOTAL	58/100/2
101C	-	MEDIUM PENSKY MARTENS	+20 +150	1.0	295	57	58/101/2
102C	132C	KINEMATIC VISCOSITY 150°C	+148,6 +151,4	0.05	310	TOTAL	58/102/2

To suit 'Abel Apparatus'

ASTM Thermometers - designation : E1-01

The thermometers listed below are in accordance with specifications of the American Society for Testings and Materials (ASTM). Many of the instruments are identical to the IP (BS 2000) thermometers listed earlier and are marked accordingly.

While these thermometers were designed for use in specific tests many of them are used in other applications when precision thermometers are required.

They are supplied in yellow back glass whenever possible.

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
1C	-	PARTIAL IMMERSION	-20 +150C	1.0C	327	76	59/001/2
1F	-	PARTIAL IMMERSION	0 +302F	2.0F	327	76	59/001/1
2C	62C	PARTIAL IMMERSION	-5 +300C	1.0C	395	76	58/062/2
2F	-	PARTIAL IMMERSION	+20 +580F	2.0F	395	76	59/002/1
3C	73C	PARTIAL IMMERSION	-5 +400C	1.0C	420	76	58/073/2
3F	-	PARTIAL IMMERSION	+20 +760F	2.0F	420	76	59/003/1
5C	1C	CLOUD & POUR	-38 +50C	1.0C	235	108	58/001/2
5F	-	CLOUD & POUR	-36 +120F	2.0F	235	108	59/005/1
6C	2C	LOW CLOUD & POUR	-80 +20C	1.0C	235	76	58/002/2
6F	-	LOW CLOUD & POUR	-112 +70F	2.0F	235	76	59/006/1
7C	5C	LOW DISTILLATION	-2 +300C	1.0C	390	TOTAL	58/005/2
7F	-	LOW DISTILLATION	+30 +580F	2.0F	390	TOTAL	59/007/1
8C	6C	HIGH DISTILLATION	-2 +400C	1.0C	390	TOTAL	58/006/2
8F	-	HIGH DISTILLATION	+30 +760F	2.0F	390	TOTAL	59/008/1
9C	15C	LOW PENSKY-MARTENS	-5 +110C	0.5C	295	57	58/015/2
9F	-	LOW PENSKY-MARTENS	+20 +230F	1.0F	295	57	59/009/1
10C	16C	HIGH PENSKY-MARTENS	+90 +370C	2.0C	295	57	58/016/2
10F	-	HIGH PENSKY-MARTENS	+200 +700F	5.0F	295	57	59/010/1
11C	28C	CLEVELAND OPEN FLASH	-6 +400C	2.0C	315	25	58/028/2
11F	-	CLEVELAND OPEN FLASH	+20 +760F	5.0F	315	25	59/011/1
12C	64C	DENSITY WIDE RANGE	-20 +102C	0.2C	425	TOTAL	58/064/2
12F	-	DENSITY WIDE RANGE	-5 +215F	0.5F	425	TOTAL	59/012/1
13C	47C	LOSS ON HEAT	+155 +170C	0.5C	160	TOTAL	58/047/2
14C	17C	WAX MELTING POINT	+38 +82C	0.1C	380	79	58/017/2
14F	-	WAX MELTING POINT	+100 +180F	0.2F	380	79	59/014/1
15C	60C	LOW SOFTENING POINT	-2 +80C	0.2C	400	TOTAL	58/060/2
15F	-	LOW SOFTENING POINT	+30 +180F	0.5F	400	TOTAL	59/015/1
16C	61C	HIGH SOFTENING POINT	+30 +200C	0.5C	400	TOTAL	58/061/2
16F	-	HIGH SOFTENING POINT	+85 +392F	1.0F	400	TOTAL	59/016/1



ASTM Thermometers - designation : E1-01

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
17C	-	SAYBOLT VISCOSITY	+19 +27C	0.1C	280	TOTAL	59/017/2
17F	-	SAYBOLT VISCOSITY	+66 +80F	0.2F	280	TOTAL	59/017/1
18C	23C	REID VAPOUR PRESSURE	+34 +42C	0.1C	280	TOTAL	58/023/2
18F	-	REID VAPOUR PRESSURE	+94 +108F	0.2F	280	TOTAL	59/018/1
19C	-	SAYBOLT VISCOSITY	+49 +57C	0.1C	280	TOTAL	59/019/2
19F	-	SAYBOLT VISCOSITY	+120 +134F	0.2F	280	TOTAL	59/019/1
20C	-	SAYBOLT VISCOSITY	+57 +65C	0.1C	280	TOTAL	59/020/2
20F	-	SAYBOLT VISCOSITY	+134 +148F	0.2F	280	TOTAL	59/020/1
21C	-	SAYBOLT VISCOSITY	+79 +87C	0.1C	280	TOTAL	59/021/2
21F	-	SAYBOLT VISCOSITY	+174 +188F	0.2F	280	TOTAL	59/021/1
22C	24C	OXIDATION STABILITY	+95 +103C	0.1C	280	TOTAL	58/024/2
22F	-	OXIDATION STABILITY	+204 +218F	0.2F	280	TOTAL	59/022/1
23C	-	ENGLER VISCOSITY	+18 +28C	0.2C	217	90	59/023/2
24C	-	ENGLER VISCOSITY	+39 +54C	0.2C	242	90	59/024/2
25C	-	ENGLER VISCOSITY	+95 +105C	0.2C	217	90	59/025/2
26C	-	NITROCELLULOSE STABILITY	+130 +140C	0.1C	468	TOTAL	59/026/2
27C	-	TURPENTINE DISTILLATION	+147 +182C	0.5C	306	76	59/027/2
28C	31C	KINEMATIC VISCOSITY	+36,6 +39,4C	0.05C	310	TOTAL	58/031/2
28F	-	KINEMATIC VISCOSITY	+97,5 +102,5F	0.1F	310	TOTAL	59/028/1
29C	34C	KINEMATIC VISCOSITY	+52,6 +55,4C	0.05C	310	TOTAL	58/034/2
29F	-	KINEMATIC VISCOSITY	+127,5 +132,5F	0.1F	310	TOTAL	59/029/1
30F	-	KINEMATIC VISCOSITY	+207,5 +212,5F	0.1F	310	TOTAL	59/030/1
33C	20C	LOW ANILINE POINT	-38 +42C	0.2C	425	50	58/020/2
33F	-	LOW ANILINE POINT	-36,5 +107,5F	0.5F	425	50	59/033/1
34C	21C	MEDIUM ANILINE POINT	+25 +105C	0.2C	425	50	58/021/2
34F	-	MEDIUM ANILINE POINT	+77 +221F	0.5F	425	50	59/034/1
35C	59C	HIGH ANILINE POINT	+90 +170C	0.2C	425	50	58/059/2
35F	-	HIGH ANILINE POINT	+194 +338F	0.5F	425	50	59/035/1
36C	-	TITER TEST	-2 +68C	0.2C	410	45	59/036/2
37C	77C	SOLVENTS DISTILLATION	-2 +52C	0.2C	400	100	58/077/2
38C	78C	SOLVENTS DISTILLATION	+24 +78C	0.2C	400	100	58/078/2
39C	79C	SOLVENTS DISTILLATION	+48 +102C	0.2C	400	100	58/079/2
40C	80C	SOLVENTS DISTILLATION	+72 +126C	0.2C	400	100	58/080/2
41C	81C	SOLVENTS DISTILLATION	+98 +152C	0.2C	400	100	58/081/2
42C	82C	SOLVENTS DISTILLATION	+95 +255C	0.5C	400	100	58/082/2
43C	65C	KINEMATIC VISCOSITY	-51,6 -34C	0.1C	425	TOTAL	58/065/2
43F	-	KINEMATIC VISCOSITY	-61 -29F	0.2F	425	TOTAL	59/043/1

ASTM Thermometers - designation : E1-01

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
44C	29C	KINEMATIC VISCOSITY	+18,6 +21,4C	0.05C	310	TOTAL	58/029/2
44F	-	KINEMATIC VISCOSITY	+66,5 +71,5F	0.1F	310	TOTAL	59/044/1
45C	30C	KINEMATIC VISCOSITY	+23,6 +26,4C	0.05C	310	TOTAL	58/030/2
45F	-	KINEMATIC VISCOSITY	+74,5 +79,5F	0.1F	310	TOTAL	59/045/1
46C	66C	KINEMATIC VISCOSITY	+48,6 +51,4C	0.05C	310	TOTAL	58/066/2
46F	-	KINEMATIC VISCOSITY	+119,5 +124,5F	0.1F	310	TOTAL	59/046/1
47C	35C	KINEMATIC VISCOSITY	+58,6 +61,4C	0.05C	310	TOTAL	58/035/2
47F	-	KINEMATIC VISCOSITY	+137,5 +142,5F	0.1F	310	TOTAL	59/047/1
48C	90C	KINEMATIC VISCOSITY	+80,6 +83,4C	0.05C	310	TOTAL	58/090/2
48F	-	KINEMATIC VISCOSITY	+177,5 +182,5F	0.1F	310	TOTAL	59/048/1
49C	-	STORMER VISCOSITY	+20 +70C	0.2C	310	65	59/049/1
50F	-	GAS COLORIMETER INLET	+54 +101F	0.1F	473	TOTAL	59/050/1
51F	-	GAS COLORIMETER OUTLET	+69 +116F	0.1F	473	TOTAL	59/051/1
52C	-	BUTADIENE BOILING POINT RANGE	-10 +5C	0.1C	167	TOTAL	59/052/2
54C	18C	CONGEALING POINT	+20 +100,6C	0.2C	315	TOTAL	58/018/2
54F	-	CONGEALING POINT	+68 +213F	0.5F	315	TOTAL	59/054/1
56C	-	BOMB CALORIMETER	+19 +35C	0.02C	600	TOTAL	59/056/2
56F	-	BOMB CALORIMETER	+66 +95F	0.05F	600	TOTAL	59/056/1
57C	-	TAG CLOSED TESTER LOW RANGE	-20 +50C	0.5C	292	57	59/057/2
57F	-	TAG CLOSED TESTER LOW RANGE	-4 +122F	1.0F	292	57	59/057/1
58C	-	TANK	-34 +49C	0.5C	305	TOTAL	59/058/2
58F	-	TANK	-30 +120F	1.0F	305	TOTAL	59/058/1
59C	-	TANK	-18 +82C	0.5C	305	TOTAL	59/059/2
59F	-	TANK	0 +180F	1.0F	305	TOTAL	59/059/1
60C	-	TANK	+77 +260C	1.0C	305	TOTAL	59/060/2
60F	-	TANK	+170 +500F	2.0F	305	TOTAL	59/060/1
61C	63C	PETROLATUM MELTING POINT	+32 +127C	0.2C	385	79	58/063/2
61F	-	PETROLATUM MELTING POINT	+90 +260F	0.5F	385	79	59/061/1
62C	-	PRECISION	-38 +2C	0.1C	384	TOTAL	59/062/2
62F	-	PRECISION	-36 +35F	0.2F	384	TOTAL	59/062/1
63C	-	PRECISION	-8 +32C	0.1C	384	TOTAL	59/063/2
63F	-	PRECISION	+18 +89F	0.2F	384	TOTAL	59/063/1



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ASTM Thermometers - designation : E1-01

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
64C	-	PRECISION	+25 +55C	0.1C	384	TOTAL	59/064/2
64F	-	PRECISION	+77 +131F	0.2F	384	TOTAL	59/064/1
65C	-	PRECISION	+50 +80C	0.1C	384	TOTAL	59/065/2
65F	-	PRECISION	+122 +176F	0.2F	384	TOTAL	59/065/1
66C	-	PRECISION	+75 +105C	0.1C	384	TOTAL	59/066/2
66F	-	PRECISION	+167 +221F	0.2F	384	TOTAL	59/066/1
67C	-	PRECISION	+95 +155C	0.2C	384	TOTAL	59/067/2
67F	-	PRECISION	+203 +311F	0.5F	384	TOTAL	59/067/1
68C	-	PRECISION	+145 +205C	0.2C	384	TOTAL	59/068/2
68F	-	PRECISION	+293 +401F	0.5F	384	TOTAL	59/068/1
69C	-	PRECISION	+195 +305C	0.5C	384	TOTAL	59/069/2
69F	-	PRECISION	+383 +581F	1.0F	384	TOTAL	59/069/1
70C	-	PRECISION	+295 +405C	0.5C	384	TOTAL	59/070/2
70F	-	PRECISION	+563 +761F	1.0F	384	TOTAL	59/070/1
71C	72C	OIL IN WAX	-37 +21C	0.5C	360	76	58/072/2
71F	-	OIL IN WAX	-35 +70F	1.0F	360	76	59/071/1
72C	67C	KINEMATIC VISCOSITY	-19,4 -16,6C	0.05C	310	TOTAL	58/067/2
72F	-	KINEMATIC VISCOSITY	-2,5 +2,5F	0.1F	310	TOTAL	59/072/1
73C	68C	KINEMATIC VISCOSITY	-41,4 -38,6C	0.05C	310	TOTAL	58/068/2
73F	-	KINEMATIC VISCOSITY	-42,5 -37,5F	0.1F	310	TOTAL	59/073/1
74C	69C	KINEMATIC VISCOSITY	-55,4 -52,6C	0.05C	310	TOTAL	58/069/2
74F	-	KINEMATIC VISCOSITY	-67,5 -62,5F	0.1F	310	TOTAL	59/074/1
75F	-	COOLANT (ANTI-FREEZE) FREEZING POINT	-35 +35F	0.5F	413	100	59/075/1
76F	-	COOLANT (ANTI-FREEZE) FREEZING POINT	-65 +5F	0.5F	413	100	59/076/1
77F	-	SAYBOLT VISCOSITY	+245 +265F	0.5F	280	TOTAL	59/077/1
78F	-	SAYBOLT VISCOSITY	+295 +315F	0.5F	280	TOTAL	59/078/1
79F	-	SAYBOLT VISCOSITY	+345 +365F	0.5F	280	TOTAL	59/079/1
80F	-	SAYBOLT VISCOSITY	+395 +415F	0.5F	280	TOTAL	59/080/1
81F	-	SAYBOLT VISCOSITY	+445 +465F	0.5F	280	TOTAL	59/081/1
82C	-	FUEL RATING, ENGINE	-15 +105C	1.0C	165	30	59/082/2
82F	-	FUEL RATING, ENGINE	0 +220F	2.0F	165	30	59/082/1
83C	-	FUEL RATING, AIR	+15 +70C	1.0C	174	40	59/083/2
83F	-	FUEL RATING, AIR	+60 +160F	1.0F	174	40	59/083/1
84C	-	FUEL RATING, ORIFICE TANK	+25 +80C	1.0C	387	249	59/084/2
84F	-	FUEL RATING, ORIFICE TANK	+75 +175F	1.0F	387	249	59/084/1

ASTM Thermometers - designation : E1-01

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
85C	-	FUEL RATING, SURGE	+40 +150C	1.0C	314	181	59/085/2
85F	-	FUEL RATING, SURGE	+100 +300F	2.0F	314	181	59/085/1
86C	-	FUEL RATING, MIX	+95 +175C	1.0C	170	35	59/086/2
86F	-	FUEL RATING, MIX	+200 +350F	2.0F	170	35	59/086/1
87C	-	FUEL RATING, COOLANT	+150 +205C	1.0C	175	40	59/087/2
87F	-	FUEL RATING, COOLANT	+300 +400F	1.0F	175	40	59/087/1
88C	-	VEGETABLE OIL FLASH	+10 +200C	1.0C	292	57	59/088/2
88F	-	VEGETABLE OIL FLASH	+50 +392F	2.0F	292	57	59/088/1
89C	-	SOLIDIFICATION POINT	-20 +10C	0.1C	375	76	59/089/2
90C	-	SOLIDIFICATION POINT	0 +30C	0.1C	375	76	59/090/2
91C	-	SOLIDIFICATION POINT	+20 +50C	0.1C	375	76	59/091/2
92C	-	SOLIDIFICATION POINT	+40 +70C	0.1C	375	76	59/092/2
93C	-	SOLIDIFICATION POINT	+60 +90C	0.1C	375	76	59/093/2
94C	-	SOLIDIFICATION POINT	+80 +110C	0.1C	375	76	59/094/2
95C	-	SOLIDIFICATION POINT	+100 +130C	0.1C	375	76	59/095/2
96C	-	SOLIDIFICATION POINT	+120 +150C	0.1C	375	76	59/096/2
97C	-	TANK	-18 +49C	0.5C	305	TOTAL	59/097/2
97F	-	TANK	0 +120F	1.0F	305	TOTAL	59/097/1
98C	-	TANK	+16 +82C	0.5C	305	TOTAL	59/098/2
98F	-	TANK	+60 +180F	1.0F	305	TOTAL	59/098/1
99C	-	WEATHERING TEST	-50 +5C	0.2C	305	35	59/099/2
99F	-	WEATHERING TEST	-58 +41F	0.5F	305	35	59/099/1
100C	-	SOLIDIFICATION POINT	+145 +205C	0.2C	375	76	59/100/2
101C	-	SOLIDIFICATION POINT	+195 +305C	0.5C	375	76	59/101/2
102C	83C	SOLVENTS DISTILLATION	+123 +177C	0.2C	400	100	58/083/2
103C	84C	SOLVENTS DISTILLATION	+148 +202C	0.2C	400	100	58/084/2
104C	85C	SOLVENTS DISTILLATION	+173 +227C	0.2C	400	100	58/085/2
105C	86C	SOLVENTS DISTILLATION	+198 +252C	0.2C	400	100	58/086/2
106C	87C	SOLVENTS DISTILLATION	+223 +277C	0.2C	400	100	58/087/2
107C	88C	SOLVENTS DISTILLATION	+248 +302C	0.2C	400	100	58/088/2
108F	-	SAYBOLT VISCOSITY	+270 +290F	0.5F	280	TOTAL	59/108/1
109F	-	SAYBOLT VISCOSITY	+320 +340F	0.5F	280	TOTAL	59/109/1
110C	93C	KINEMATIC VISCOSITY	+133,6 +136,4C	0.05C	310	TOTAL	58/093/2
110F	-	KINEMATIC VISCOSITY	+272,5 +277,5F	0.1F	310	TOTAL	59/110/1
111C	-	TAR ACID DISTILLATION	+170 +250C	0.2C	400	100	59/111/2



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ASTM Thermometers - designation : E1-01

ASTM No	IP Equiv	Name	Range °C	Sub Div °C	Max Length mm	Immersion Length mm	Product No
112C	-	SOLIDIFICATION POINT OF BENZENE	+4 +6C	0.02C	220	TOTAL	59/112/2
113C	89C	BITUMEN SOFTENING POINT WIDE RANGE	-1 +175C	0.5C	410	TOTAL	58/089/2
113F	-	BITUMEN SOFTENING POINT WIDE RANGE	+30 +350F	1.0F	410	TOTAL	59/113/1
114C	14C	AVIATION FUEL FREEZING POINT	-80 +20C	0.5C	305	TOTAL	58/014/2
115C	-	ENCLOSED SCALE BECKMAN TYPE	5 OR 6C Adjustable between -10+120c	0.01C	640	-	59/115/2
116C	-	BOMB CALORIMETER	+18,9 +25,1C	0.01C	614	TOTAL	59/116/2
117C	-	BOMB CALORIMETER	+23,9 +30,1C	0.01C	614	TOTAL	59/117/2
118C	-	KINEMATIC VISCOSITY	+28,6 +31,4C	0.05C	310	TOTAL	59/118/2
118F	-	KINEMATIC VISCOSITY	+83,5 +88,5F	0.1F	310	TOTAL	59/118/1
119C	-	COOLANT (ANTI-FREEZE) FREEZING POINT	-38.3 -30C	0.1C	425	100	59/119/2
119F	-	COOLANT (ANTI-FREEZE) FREEZING POINT	-37 -22F	0.2F	425	100	59/119/1
120C	92C	KINEMATIC VISCOSITY	38,6 +41,4C	0.05C	310	TOTAL	58/092/2
121C	32C	KINEMATIC VISCOSITY	+98,6 +101,4C	0.05C	310	TOTAL	58/032/2
122C	94C	BROOKFIELD VISCOSITY	-45 -35C	0.1C	305	TOTAL	58/094/2
123C	95C	BROOKFIELD VISCOSITY	-35 -25C	0.1C	305	TOTAL	58/095/2
124C	96C	BROOKFIELD VISCOSITY	-25 -15C	0.1C	305	TOTAL	58/096/2
125C	97C	BROOKFIELD VISCOSITY	-15 -5C	0.1C	305	TOTAL	58/097/2
126C	71C	KINEMATIC VISCOSITY	-27,4 -24,6C	0.05C	310	TOTAL	58/071/2
126F	-	KINEMATIC VISCOSITY	-17,5 -12,5F	0.1F	310	TOTAL	59/126/1
127C	99C	KINEMATIC VISCOSITY	-21,4 -18,6C	0.05C	310	TOTAL	58/099/2
128C	33C	KINEMATIC VISCOSITY	-1,4 +1,4C	0.05C	310	TOTAL	58/033/2
128F	-	KINEMATIC VISCOSITY	+29,5 +34,5F	0.1F	310	TOTAL	59/128/1
129C	36C	KINEMATIC VISCOSITY	+91,6 +94,4C	0,05C	310	TOTAL	58/036/2
129F	-	KINEMATIC VISCOSITY	+197,5 +202,5F	0.1F	310	TOTAL	59/129/1
130C	-	TANK	-7 +105C	0.5C	305	TOTAL	59/130/2
130F	-	TANK	+20 +220F	1.0F	305	TOTAL	59/130/1
132C	102C	KINEMATIC VISCOSITY	+148,6 +151,4C	0.05C	310	TOTAL	58/102/2
133C	-	PRECISION	-38 +2C	0.1C	384	76MM	59/133/2

Protective and Sampling Cases

To protect the standard 6.5mm diameter laboratory thermometer from breakage, a variety of cases are available. These have a slot front for easy reading, a suspension ring at the top and holes in the bulb end to ensure quick response to temperature. Also available is a case with a sampling cup at the bulb end for use when the thermometer cannot be read while immersed.



For Length mm	Product No
Brass Slot Front Cases	
155	47/732/0
305	47/432/0
355	47/832/0
405	47/932/0
Stainless Slot Front Cases	
305	47/434/0
405	47/934/0
Stainless Sampling Cup Case	
305	47/435/0



Calibration Services

To complement the production facilities of the company, a comprehensive calibration service is available for temperature, pressure and density instruments.



Calibration Services

UKAS Accredited Laboratory

Our facilities conform to (BS) EN ISO/IEC 17025:2000 - General requirements for the competence of testing and calibration laboratories.

For temperature measurement our laboratory can calibrate all types of liquid-in-glass thermometers, dial type temperature indicators and recorders and temperature sensors. Certification is available for test temperatures between -70°C and $+250^{\circ}\text{C}$ with best measurement capability from 0.01°C .

An efficient and competitive service is provided to examine, report on and calibrate customers' instruments in addition to supplying new, calibrated thermometers.

Before calibration takes place all instruments are examined in detail to confirm they are free from any defects and to ensure that they conform to the current revision of any relevant specification. Customers are automatically advised of any non-conformities of instruments they have submitted, prior to calibration.



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Calibration Services

Certificates of Calibration

Certificates are produced with reference to the International Temperature Scale of 1990 (ITS-90). Certificates are issued within the requirements of the United Kingdom Accreditation Service and provide traceability to recognised national standards. Certificates record the test temperature, the reading on the instrument subject to test, the emergent column temperature during calibration (for partial immersion thermometers) and the uncertainty of the test.

Calibration Temperatures

Unless requested by a customer or required by a particular specification, calibration will take place at five evenly spaced temperatures covering a minimum of 80% of the instrument's scale and will generally include the ice point.

Where an instrument is to be used at particular temperatures, these may be specified by the customer as test temperatures.

Changes of Calibration and Re-certification

Secular changes can occur as the bulb glass stabilises, particularly over the first year or two after manufacture.

These changes can be monitored by regular verification of the ice point only, thus avoiding the expense of a complete calibration certificate. BS 1041 Section 2.1 (Guide to selection and use of liquid-in-glass thermometers) recommends such checks should take place at least annually and that complete re-calibration should take place at intervals of not more than five years.



Calibration Services



Suitable Thermometers for Certification

It is recommended that mercury thermometers for certification should be selected from instruments which conform to a recognised standard (as page 11 onwards in this catalogue).

These standards can also provide thermometers which are suitable for use as sets comprising a number of instruments which together cover a wide temperature band in subdivisions of 0.2°C or 0.01°C.

Examples are BS 593 series 'A' or series 'B' or a selection from series 'F';
ASTM types 37C to 42C (equivalent to IP 77C to 82C) and ASTM 62C to 68C.

Very few non-mercury thermometers are included in these specifications and where non-mercury instruments are to be certificated it is recommended that they be selected from the '**LO-tox**' products on page 3.



Other Catalogues available on Request

The Company produces a wide range of instruments with many applications. Catalogues are available on request covering one or more of the following product groups.

- Hydrometers
- Educational and Scientific Thermometers
- Environmental and Meteorological Instruments
- Healthcare Products
- Thermometers and other Instruments for the Home and Garden
- Promotional Products
- Industrial Glass Pipe Thermometers
- Dial Thermometers and Pressure Gauges for Heating and Ventilation, Process and Refrigeration
- Dial Instruments for Shipping and Exhaust Gas Temperatures

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