ALLA FRANCE s.a.r.l.
ZI Du Bompas - 49120 Chemillé (France) - Phone +33Ø2 4130 5508 - Fax +33Ø2 4130 3467
www.allafrance.com

Chemillé, 01/10/2010

IMPORTANT INFORMATION : PLEASE READ THIS DOCUMENT CAREFULLY !

Ladies & Gentlemen !

The ALLA FRANCE catalogue has a new look!
While flicking through it, we invite you to discover our work and our knowledge in the production of glass instrumentation for laboratories, knowledge acquired during more than 2 centuries of manufacturing experience.

We have made the choice with this new catalogue format to highlight our product's qualitative features, their traceability, their technical advantages, their links to our interactive website and technical support as additional help for your Customer Service team. This document is decidedly oriented towards your sales staff and your customers.

Our new catalogue format : how it works?

- Each section introduces a product group with its benefits by trademark, by geographic area or by market segment.
- Tables indicating the official standard and/or the main technical features, are identified by a red code number, enabling you to identify the product in our product listing.
- On this complete listing are enumerated the reference numbers, the ranges and additional technical information.

Example:

1- catalogue table — SEE CODE

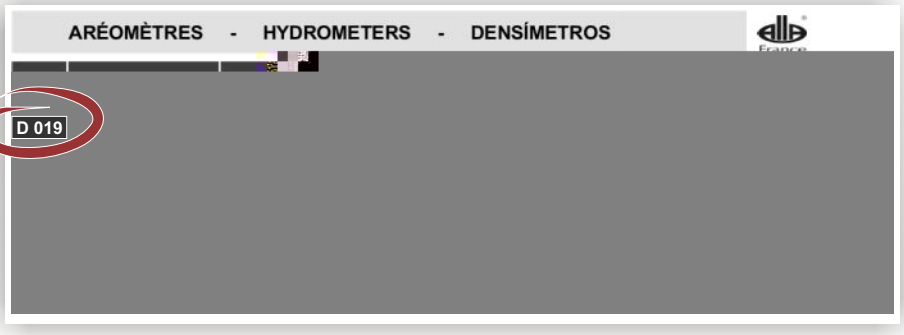
ISO 649 - NF B35511 - BS 718 - DIN 12791
A.S.T.M. method D1298
PETROLEUM INDUSTRY
They are calibrated for a low superficial tension (between 16 and 35 mN/m).
Reading below meniscus.

D 019 **L50 - SP Series**

		Range g/ml
Temp.	15 °C	
Division	0.0005 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.0003 g/ml	↓
Length	335 mm	..... - 1.050 1.050 - 1.100

2- listing

SEE CODE



SARL au capital 200 000 EUROS RCS Angers B 622 029 031 SIRET 622 029 031 00052 NAF 332B NIF CEE FR38 622 029 031

New reference numbers

Our recent change in computer software has obliged us to modify our reference numbers.
In order to help you as much as possible, we have indicated our old reference numbers next to the new ones. In addition, a support document listing all products by numerical order is available at the following link http://www.allafrance.com/cata/ref-croisees.htm

This new organisation will enable both our companies to organise marketing in different ways.

Us to you

- The product listing will act as a base for our price list, including price breaks and minimum quantities.

You to your market

- You could send our leaflet and our standard listing without prices to your main customers.
  By doing so, your advertising and those of our products are assured.

- If you wish, we can e-mail to you the IT version (Excel spreadsheet) of the listing. When using the spreadsheet or the extracts which interest you, by simply adding your reference numbers you can create a price list for your market.

By keeping our product reference next to yours, we will have already cross referenced products.
It is entirely up to you if you wish to modify the minimum order quantity, or, why not add a column "Available stock ", and indicate the stock quantity you hold.

Organised and Easy :

To send an order to ALLA FRANCE, why do you not use this spreadsheet or an extract from it?
You have just to :

- Add a column titled "Order"
- Indicate the quantity next to each article
- Programme the calculation into the column concerning CP (Cost Price) x Quantity
- Name the spreadsheet Purchase Order from "company name.xxxx"
- Stock it and send it

This file could then also be used as a base for an offer, a quote or a pro-forma.

Finally, this documentation is available in French, English and Spanish.

Additional products

As you certainly already know, ALLA FRANCE proposes several other complementary ranges, on a market segment basis, presented on page 3 of the catalogue.
Sector by sector leaflets are available in several languages and can be downloaded from our website www.allafrance.com

In the hope that this new support will permit our companies to increase our market share, we stay at your disposal for any additional information you may require.

With best regards,
ALLA FRANCE
Sales Department
sales@allafrance.com

SARL au capital 200 000 EUROS RCS Angers B 622 029 031 SIRET 622 029 031 00052 NAF 332B NIF CEE FR38 622 029 031

Instrumentation

FOR LABORATORIES & INDUSTRY







SECTIONS

ALLA FRANCE HISTORY



In the eighteenth & nineteenth century our company was already manufacturing measuring instruments, and had the good fortune to count as clients, scientific pioneers such as Mr. Goethe (1749-1832) and Mr. Réaumur (1683-1757).

During the twentieth century, despite two world wars, the company progressively evolved from an artisanal workshop to an industrial manufacturer, by investing in special machines, usually developed on-site.

Between the years of 1970 and 1980, as our competitors were concerned with reducing production in favour of buying an increasing number of products from Asia, ALLA FRANCE decided on the opposite approach, by investing regularly in production equipment.



- In 1988, we chose to leave our Paris location in order to relocate to Chemillé (300 km south west of Paris – 90 minutes by high speed train). During the last 22 years, we have tripled our production surface area. We produce in a modern, custom-built factory, responding perfectly to our needs.
  The manufacturing strategy, in which we placed our confidence now enables us to offer affordable high-quality instruments, thus increasing exportation to 80 countries on the world.
- Our long-standing experience has been a continual collaboration between know-how and modernity.
  This experience involves assured principles, a competent staff and regular investments in Research and Development, which account for more than 5% of our turnover.
  Moreover, the company is still principally led by our Managing Director Jean-Marc ALLA, which is not only a guarantee of independence, but also of maintaining our development strategy. This coherence and stability preserve in the long term our strong industrial vocation.
  In spite of the family like nature of our company, a business plan exists which has been studied and reviewed by a staff with various skills and nationalities, and whose contributions enable us to form our decisions according to diverse sensitivities and requirements.

ENVIRONMENT AND QUALITY OF WORK

"Our children's world, is the world which we prepare for them today"

CLEAN PRODUCTS CLEAN FACTORY

For us, the subject of the Environment is not merely an opportune manner of doing business. The Environment signifies more for us and is a philosophical perspective in harmony with the quality of living.

- **Our thermometers without mercury**
  This sentiment, above all, is what you will experience and what will contribute to your decision in taking interest in our line of "environmentally friendly" products. When consulting the catalogue section dedicated to our BIOTEMP thermometers, you can see that they already respond to many applications.
- **Our lead free hydrometers**
  Despite regulations still authorizing the use of lead in ballast hydrometers, and given the dangers it poses, we chose to eliminate its use. Ballast instruments which contain lead or similar alloys are no longer manufactured in our workshops.
- **Accident prevention at work**
  Even though our production site entails minimal need for this obligation, we have adopted a system of work risk prevention and of waste sorting and reprocessing.
- **Quality of work**
  Ensuring a safe, clean and happy workplace is one of our main concerns, and the foundation on which we have built our employee engagement.
- **Catalogue** printed on paper containing 60% post consumer recycled fiber and 40% **FSC** fiber (Forest Stewardship Council)



a view of our offices

INDUSTRIAL FIELDS & CATALOGUES

Our Industrial Fields

- Industrial laboratories
- Petroleum laboratories
- Educational
- Research centers
- Catering
- Food Industry
- Dairy industry
- Distilleries & Wine industry
- Farm produce
- Animal Husbandry
- Car accessories
- Refrigeration
- Air-conditioning
- Fishkeeping
- Photography
- Printing
- • •

Our Specific leaflets



»» Digital instruments



»» Catering & Food Industry



»» Distilleries & Wine Industry



»» Refractometers



»» Fishkeeping



»» Batteries & Antifreeze

Our brand names are protected around the world

France®

BIO TEMP®
Ecological line

Promo Lab® by France
Economic line

french cooking by France®
Catering line & food industry

CALIBRATION & CERTIFICATES

Traceable Calibration Certificates
delivered by our laboratory

On request, all standardized instruments can be delivered with a Calibration Certificate with traceability guarantee.



Each Traceable Certificate is registered in our data base with the following information: the standard or norm specification - the client's name the calibration date - the re-control date after 1 year - the calibration temperature - the immersion of the instrument - the individual instrument number - the individual certificate number - the Official Master used traceable to: **BNM-COFRAC, PTB-DAKKS/DKD, UKAS/NAMAS, NIST, GOST, INMETRO ...**
We control the instruments at 3 standard points.
Otherwise, you must mention the number of points of control required, as well as the temperatures at which the tests are to be performed.

- **The thermometer** is calibrated in thermostated baths in comparison with a standard.
- **The hydrometer** is calibrated in comparison with a standard of the same sensitivity and the same diameter, in a homogeneous liquid of constant temperature.

Our quality system allows us to produce calibration according to EN - ISO 9000 and our method follows the guide ISO 17 025.

Standards are connected to a National Calibration Channel of one of the signatories of the Mutual Recognition Multilateral Agreement MLA* as agreed by the EA* (European cooperation of Accreditation).
The traceability of our standardization is recognized by the signatories of the MLA (Multilateral Agreement) and of the MRA (Mutual Recognition Arrangement) of ILAC. The reported expanded uncertainty of measurement corresponds to a coverage probability not less than 95%. Standard uncertainties were calculated according to ISO GUM (Guide for the Uncertainty Measurement).

OUR MASTERS

Thermometers

MRA/ILAC (COFRAC-DAKKS/DKD UKAS/NAMAS...)
9712

NIST (USA)
65007051707

GOST (Russia)
65007040653

Hydrometers

MRA/ILAC (COFRAC - DAKKS/DKD - UKAS/NAMAS...) **A2LA** (U.S.A.)

1	17	5846	5854	5861	8312	24934	037592	061260	070321	070372	793793	893893
7	18	5848	5855	8306	8313	24939	037840	061283	070327	070851	793800	904666
9	15	5849	5856	8307	8314	010561	038745	061741	070329	071187	804525	904671
10	5842	5850	5857	8308	8315	018584	039055	062858	070333	706662	804538	904674
12	5843	5851	5858	8309	8316	024649	050012	063410	070339	706984	805377	993994
13	5844	5852	5859	8310	8317	024650	057381	070276	070342	708304	893893	993996
16	5845	5853	5860	8311	8318	037131	057852	070277	070358	793793	893893	

GOST
39021-08
39022-08

(*) Masters number updated to 01/03/2010

TRACEABILITY

INSTRUMENT ORDERED	ALLA FRANCE DATABASE
Individual N°on the instrument →	N. →
Individual N°on the Certificate →	N. →
Individual N°on the Official Master →	N. →

OFFICIAL MASTERS
Traceability guarantee
PTB-DAKKS/DKD - UKAS/NAMAS
BNM-COFRAC
A2LA-NIST-GOST-INMETRO

(*) MLA-EA: to know the list of the countries signatories to the 01/03/10, see following page



RE-CALIBRATION - SOLIDITY OF PACKING

All the instruments with Traceable Calibration Certificate are provided in a solid box, and they can be re-calibrated in our laboratory after 1 year.
To be informed of this service, please return us the "Bulletin of Traceability" delivered with the instrument duly filled in.

For more information on the EA, MRA, ILAC countries signatories visit:
http://www.european-accreditation.org and http://www.ilac.org

AUSTRIA	:BMwA
BELGIUM	:BELAC
CZECH REPUBLIC	:CAI
CROATIA	:HAA
DENMARK	:DANAK
ESTONIA	:EAK
FINLAND	:FINAS
FRANCE	:COFRAC
GERMANY	:DAKKS/DKD
GREECE	:ESYD
HUNGARY	:NAT
IRELAND	:INAB
ITALY	:COPA/SIT
LATVIA	:LATAK
LITHUANIA	:LA
NORWAY	:NA
NETHERLANDS	:RvA
POLAND	:PCA
PORTUGAL	:IPAC
ROMANIA	:RENAR
SLOVAKIA	:SNAS
SLOVENIA	:SA
SPAIN	:ENAC
SWEDEN	:SWEDAC
SWITZERLAND	:SAS
TURKEY	:TURKAK
UNITED KINGDOM	:UKAS/NAMAS

Signatories of the Multilateral Agreement EA

AUSTRALIA	: NATA
BRAZIL	: CGCRE/INMETRO
HONG KONG	: HKAS
ISRAËL	: ISRAC
NEWZEALAND	: IANZ
SINGAPORE	: SAC
SOUTH AFRICA	: SANAS
TUNISIE	: TUNAC

Signatories of Bilateral Agreements

ARGENTINA	: OAA
AUSTRALIA	: NATA
AUSTRIA	: BMwA
BELGIUM	: BELAC
BRAZIL	: CGCRE/INMETRO
CANADA	: SCC
COSTA RICA	: ECA
CUBA	: ONARC
CZECH REPUBLIC	: CAI
DENMARK	: DANAK
EGYPT	: EGAC
FINLAND	: FINAS
FRANCE	: COFRAC
GERMANY	: DAKKS/DKD
GREECE	: ESYD
HONG-KONG, CHINA	: HKAS
HUNGARY	: NAT
INDIA	: NABL
INDONESIA	: KAN
IRELAND	: INAB
ISRAËL	: ISRAC
ITALY	: COPA/SIT
JAPÄN	: JAB, IA, JAPAN
MALAYSIA	: DSM
MEXICO	: EMA
NETHERLANDS	: RvA
NEWZEALAND	: IANZ
NORWAY	: NA
PAKISTAN	: PNAC
PHILIPPINES	: PAO
POLAND	: PCA
PORTUGAL	: IPAC
REP OF KOREA	: KOLAS
ROMANIA	: RENAR
SINGAPORE	: SAC
SLOVAKIA	: SNAS
SLOVENIA	: SA
SOUTH AFRICA	: SANAS
SPAIN	: ENAC
SWEDEN	: SWEDAC
SWITZERLAND	: SAS
TAÏPEI	: TAF
THAILAND	: NSC - ONAC
TUNISIE	: TUNAC
TURKEY	: TURKAK
UEA	: DAC
UNITED KINGDOM	: UKAS/NAMAS
USA	: NIST, A2LA, N VLAP, ACLASS, IAS, L-A-B, PJLA
VIETNAM	: BoA

Signatories to the Mutual Recognition Arrangement ILAC

EA = European co-operation for Accreditation
ILAC = International Laboratory Accreditation Cooperation
MRA = Mutual Recognition Arrangement

EO Official Certificates
by an Accredited European Laboratory



OFFICIAL CALIBRATION CERTIFICATE

On request, all the standardized instruments can be delivered with an Official Calibration Certificate.
Unless otherwise stipulated on your purchase order, we reserve the right to choose the Official Laboratory which can propose the shortest delay.
If nothing else is stipulated, we control the instruments at 3 standard temperature points. Otherwise, you must mention the number of points of control required, as well as the temperatures at which the tests are to be performed.



OFFICIAL VERIFICATION CERTIFICATE

The High Precision Alcoholometers according to OIML can be delivered with an **Official Verification Certificate**.
This certificate indicate that the issue of a verification report bearing the COFRAC calibration logo guarantees the traceability of calibration measurements to the international System of Units SI. The errors of indication of this instrument are lower than the maximum permissible value equal to 0,1% Vol.

CC Other Certificates



TRACEABILITY AND CONFORMITY CERTIFICATE

All France Standardized Thermometers and Hydrometers are systematically delivered with a Traceability and Conformity Certificate connected to the principal International Chains of Calibration.

TRACEABILITY AND PRECISION CERTIFICATE

All France Precision Thermometers are systematically delivered with a Certificate of Precision and Traceability connected to the principal International Chains of Calibration.

Metrology

CONVERSION TABLE



Thermometers

°C	Degrees	°F	°C	Degrees	°F	°C	Degrees	°F	°C	Degrees	°F	°C	Degrees	°F	°C	Degrees	°F
-167.8	-270	-454.0	-28.3	-19	-2.2	18.9	66	150.8	66.1	151	303.8	113.3	236	456.8	200.0	392	737.6
-165.0	-265	-445.0	-27.8	-18	-0.4	19.4	67	152.6	66.7	152	305.6	113.9	237	458.6	201.1	394	741.2
-162.2	-260	-436.0	-27.2	-17	1.4	20.0	68	154.4	67.2	153	307.4	114.4	238	460.4	202.2	396	744.8
-159.4	-255	-427.0	-26.7	-16	3.2	20.6	69	156.2	67.8	154	309.2	115.0	239	462.2	203.3	398	748.4
-156.7	-250	-418.0	-26.1	-15	5.0	21.1	70	158.0	68.3	155	311.0	115.6	240	464.0	204.4	400	752.0
-153.9	-245	-409.0	-25.6	-14	6.8	21.7	71	159.8	68.9	156	312.8	116.1	241	465.8	205.6	402	755.6
-151.1	-240	-400.0	-25.0	-13	8.6	22.2	72	161.6	69.4	157	314.6	116.7	242	467.6	206.7	404	759.2
-148.3	-235	-391.0	-24.4	-12	10.4	22.8	73	163.4	70.0	158	316.4	117.2	243	469.4	207.8	406	762.8
-145.6	-230	-382.0	-23.9	-11	12.2	23.3	74	165.2	70.6	159	318.2	117.8	244	471.2	208.9	408	766.4
-142.8	-225	-373.0	-23.3	-10	14.0	23.9	75	167.0	71.1	160	320.0	118.3	245	473.0	210.0	410	770.0
-140.0	-220	-364.0	-22.8	-9	15.8	24.4	76	168.8	71.7	161	321.8	118.9	246	474.8	211.1	412	773.6
-137.2	-215	-355.0	-22.2	-8	17.6	25.0	77	170.6	72.2	162	323.6	119.4	247	476.6	212.2	414	777.2
-134.4	-210	-346.0	-21.7	-7	19.4	25.6	78	172.4	72.8	163	325.4	120.0	248	478.4	213.3	416	780.8
-131.7	-205	-337.0	-21.1	-6	21.2	26.1	79	174.2	73.3	164	327.2	120.6	249	480.2	214.4	418	784.4
-128.9	-200	-328.0	-20.6	-5	23.0	26.7	80	176.0	73.9	165	329.0	121.1	250	482.0	215.6	420	788.0
-126.1	-195	-319.0	-20.0	-4	24.8	27.2	81	177.8	74.4	166	330.8	122.2	252	485.6	216.7	422	791.6
-123.3	-190	-310.0	-19.4	-3	26.6	27.8	82	179.6	75.0	167	332.6	123.3	254	489.2	217.8	424	795.2
-120.6	-185	-301.0	-18.9	-2	28.4	28.3	83	181.4	75.6	168	334.4	124.4	256	492.8	218.9	426	798.8
-117.8	-180	-292.0	-18.3	-1	30.2	28.9	84	183.2	76.1	169	336.2	125.6	258	496.4	220.0	428	802.4
-115.0	-175	-283.0	-17.8	0	32.0	29.4	85	185.0	76.7	170	338.0	126.7	260	500.0	221.1	430	806.0
-112.2	-170	-274.0	-17.2	1	33.8	30.0	86	186.8	77.2	171	339.8	127.8	262	503.6	222.2	432	809.6
-109.4	-165	-265.0	-16.7	2	35.6	30.6	87	188.6	77.8	172	341.6	128.9	264	507.2	223.3	434	813.2
-106.7	-160	-256.0	-16.1	3	37.4	31.1	88	190.4	78.3	173	343.4	130.0	266	510.8	224.4	436	816.8
-103.9	-155	-247.0	-15.6	4	39.2	31.7	89	192.2	78.9	174	345.2	131.1	268	514.4	225.6	438	820.4
-101.1	-150	-238.0	-15.0	5	41.0	32.2	90	194.0	79.4	175	347.0	132.2	270	518.0	226.7	440	824.0
-98.3	-145	-229.0	-14.4	6	42.8	32.8	91	195.8	80.0	176	348.8	133.3	272	521.6	227.8	442	827.6
-95.6	-140	-220.0	-13.9	7	44.6	33.3	92	197.6	80.6	177	350.6	134.4	274	525.2	228.9	444	831.2
-92.8	-135	-211.0	-13.3	8	46.4	33.9	93	199.4	81.1	178	352.4	135.6	276	528.8	230.0	446	834.8
-90.0	-130	-202.0	-12.8	9	48.2	34.4	94	201.2	81.7	179	354.2	136.7	278	532.4	231.1	448	838.4
-87.2	-125	-193.0	-12.2	10	50.0	35.0	95	203.0	82.2	180	356.0	137.8	280	536.0	232.2	450	842.0
-84.4	-120	-184.0	-11.7	11	51.8	35.6	96	204.8	82.8	181	357.8	138.9	282	539.6	233.3	452	845.6
-81.7	-115	-175.0	-11.1	12	53.6	36.1	97	206.6	83.3	182	359.6	140.0	284	543.2	234.4	454	849.2
-78.9	-110	-166.0	-10.6	13	55.4	36.7	98	208.4	83.9	183	361.4	141.1	286	546.8	235.6	456	852.8
-76.1	-105	-157.0	-10.0	14	57.2	37.2	99	210.2	84.4	184	363.2	142.2	288	550.4	236.7	458	856.4
-73.3	-100	-148.0	-9.4	15	59.0	37.8	100	212.0	85.0	185	365.0	143.3	290	554.0	237.8	460	860.0
-72.2	-98	-144.4	-8.9	16	60.8	38.3	101	213.8	85.6	186	366.8	144.4	292	557.6	238.9	462	863.6
-71.1	-96	-140.8	-8.3	17	62.6	38.9	102	215.6	86.1	187	368.6	145.6	294	561.2	240.0	464	867.2
-70.0	-94	-137.2	-7.8	18	64.4	39.4	103	217.4	86.7	188	370.4	146.7	296	564.8	241.1	466	870.8
-68.9	-92	-133.6	-7.2	19	66.2	40.0	104	219.2	87.2	189	372.2	147.8	298	568.4	242.2	468	874.4
-67.8	-90	-130.0	-6.7	20	68.0	40.6	105	221.0	87.8	190	374.0	148.9	300	572.0	243.3	470	878.0
-66.7	-88	-126.4	-6.1	21	69.8	41.1	106	222.8	88.3	191	375.8	150.0	302	575.6	244.4	472	881.6
-65.6	-86	-122.8	-5.6	22	71.6	41.7	107	224.6	88.9	192	377.6	151.1	304	579.2	245.6	474	885.2
-64.4	-84	-119.2	-5.0	23	73.4	42.2	108	226.4	89.4	193	379.4	152.2	306	582.8	246.7	476	888.8
-63.3	-82	-115.6	-4.4	24	75.2	42.8	109	228.2	90.0	194	381.2	153.3	308	586.4	247.8	478	892.4
-62.2	-80	-112.0	-3.9	25	77.0	43.3	110	230.0	90.6	195	383.0	154.4	310	590.0	248.9	480	896.0
-61.1	-78	-108.4	-3.3	26	78.8	43.9	111	231.8	91.1	196	384.8	155.6	312	593.6	250.0	482	899.6
-60.0	-76	-104.8	-2.8	27	80.6	44.4	112	233.6	91.7	197	386.6	156.7	314	597.2	251.1	484	903.2
-58.9	-74	-101.2	-2.2	28	82.4	45.0	113	235.4	92.2	198	388.4	157.8	316	600.8	252.2	486	906.8
-57.8	-72	-97.6	-1.7	29	84.2	45.6	114	237.2	92.8	199	390.2	158.9	318	604.4	253.3	488	910.4
-56.7	-70	-94.0	-1.1	30	86.0	46.1	115	239.0	93.3	200	392.0	160.0	320	608.0	254.4	490	914.0
-55.6	-68	-90.4	-0.6	31	87.8	46.7	116	240.8	93.9	201	393.8	161.1	322	611.6	255.6	492	917.6
-54.4	-66	-86.8	0.0	32	89.6	47.2	117	242.6	94.4	202	395.6	162.2	324	615.2	256.7	494	921.2
-53.3	-64	-83.2	0.6	33	91.4	47.8	118	244.4	95.0	203	397.4	163.3	326	618.8	257.8	496	924.8
-52.2	-62	-79.6	1.1	34	93.2	48.3	119	246.2	95.6	204	399.2	164.4	328	622.4	258.9	498	928.4
-51.1	-60	-76.0	1.7	35	95.0	48.9	120	248.0	96.1	205	401.0	165.6	330	626.0	260.0	500	932.0
-50.0	-58	-72.4	2.2	36	96.8	49.4	121	249.8	96.7	206	402.8	166.7	332	629.6	261.1	502	935.6
-48.9	-56	-68.8	2.8	37	98.6	50.0	122	251.6	97.2	207	404.6	167.8	334	633.2	262.2	504	939.2
-47.8	-54	-65.2	3.3	38	100.4	50.6	123	253.4	97.8	208	406.4	168.9	336	636.8	263.3	506	942.8
-46.7	-52	-61.6	3.9	39	102.2	51.1	124	255.2	98.3	209	408.2	170.0	338	640.4	264.4	508	946.4
-45.6	-50	-58.0	4.4	40	104.0	51.7	125	257.0	98.9	210	410.0	171.1	340	644.0	265.6	510	950.0
-44.4	-48	-54.4	5.0	41	105.8	52.2	126	258.8	99.4	211	411.8	172.2	342	647.6	266.7	512	953.6
-43.3	-46	-50.8	5.6	42	107.6	52.8	127	260.6	100.0	212	413.6	173.3	344	651.2	267.8	514	957.2
-42.2	-44	-47.2	6.1	43	109.4	53.3	128	262.4	100.6	213	415.4	174.4	346	654.8	268.9	516	960.8
-41.1	-42	-43.6	6.7	44	111.2	53.9	129	264.2	101.1	214	417.2	175.6	348	658.4	270.0	518	964.4
-40.0	-40	-40.0	7.2	45	113.0	54.4	130	266.0	101.7	215	419.0	176.7	350	662.0	271.1	520	968.0
-39.4	-39	-38.2	7.8	46	114.8	55.0	131	267.8	102.2	216	420.8	177.8	352	665.6	272.2	522	971.6
-38.9	-38	-36.4	8.3	47	116.6	55.6	132	269.6	102.8	217	422.6	178.9	354	669.2	273.3	524	975.2
-38.3	-37	-34.6	8.9	48	118.4	56.1	133	271.4	103.3	218	424.4	180.0	356	672.8	274.4	526	978.8
-37.8	-36	-32.8	9.4	49	120.2	56.7	134	273.2	103.9	219	426.2	181.1	358	676.4	275.6	528	982.4
-37.2	-35	-31.0	10.0	50	122.0	57.2	135	275.0	104.4	220	428.0	182.2	360	680.0	276.7	530	986.0
-36.7	-34	-29.2	10.6	51	123.8	57.8	136	276.8	105.0	221	429.8	183.3	362	683.6	277.8	532	989.6
-36.1	-33	-27.4	11.1	52	125.6	58.3	137	278.6	105.6	222	431.6	184.4	364	687.2	278.9	534	993.2
-35.6	-32	-25.6	11.7	53	127.4	58.9	138	280.4	106.1	223	433.4	185.6	366	690.8	280.0	536	996.8
-35.0	-31	-23.8	12.2	54	129.2	59.4	139	282.2	106.7	224	435.2	186.7	368	694.4	281.1	538	1000.4
-34.4	-30	-22.0	12.8	55	131.0	60.0	140	284.0	107.2	225	437.0	187.8	370	698.0	282.2	540	1004.0
-33.9	-29	-20.2	13.3	56	132.8	60.6	141	285.8	107.8	226	438.8	188.9	372	701.6	285.0	545	1013.0
-33.3	-28	-18.4	13.9	57	134.6	61.1	142	287.6	108.3	227	440.6	190.0	374	705.2	287.8	550	1022.0
-32.8	-27	-16.6	14.4	58	136.4	61.7	143	289.4	108.9	228	442.4	191.1	376	708.8	290.6	555	1031.0
-32.2	-26	-14.8	15.0	59	138.2	62.2	144	291.2	109.4	229	444.2	192.2	378	712.4	293.3	560	1040.0
-31.7	-25	-13.0	15.6	60	140.0	62.8	145	293.0	110.0	230	446.0	193.3	380	716.0	296.1	565	1049.0
-31.1	-24	-11.2	16.1	61	141.8	63.3	146	294.8	110.6	231	447.8	194.4	382	719.6	298.9	570	1058.0
-30.6	-23	-9.4	16.7	62	143.6	63.9	147	296.6	111.1	232	449.6	195.6	384	723.2	301.7	575	1067.0
-30.0	-22	-7.6	17.2	63	145.4	64.4	148	298.4	111.7	233	451.4	196.7	386	726.8	304.4	580	1076.0
-29.4	-21	-5.8	17.8	64	147.2	65.0	149	300.2	112.2	234	453.2	197.8	388	730.4	307.2	585	1085.0
-28.9	-20	-4.0	18.3	65	149.0	65.6	150	302.0	112.8	235	455.0	198.9	390	734.0	310.0	590	1094.0

How to convert °C to °F and vice-versa

$$°F = 32 + (1.8 \times °C) \qquad °C = \frac{°F - 32}{1.8}$$

THERMOMETERS

IMMERSIONS



If a thermometer is not used with the same immersion for which it was calibrated, it is necessary to make a correction:

HOW TO CONVERT TOTAL IMMERSION INTO PARTIAL IMMERSION ?

In some cases, it is not possible to immerse a total immersion thermometer to the summit of the liquid column. Therefore a measure error will occur due to the part of the liquid column that is not immersed. In the case of mercury, the emergent column correction C1 can be calculated with an accuracy of approximately 10% by using the formula:

$$C1 = k\,N\,(t1-t)$$

k is a coefficient having for value $0.00016°C^{-1}$.
In the case of thermometers filled with red or blue liquid, the value of k varies according to the temperature. As a first approximation, use $0.001°C^{-1}$. N is the number of degrees Celsius equivalent to the length of the emergent liquid column.
(t1-t) is the difference between the temperature t1 of the reservoir of the thermometer and the average temperature t of the emergent column.

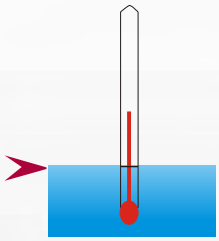
Example: a thermometer is immersed up to the 70°C graduation, whereas the column of liquid reaches the 100°C graduate. In this case, N equals 30°C (100-70).
If the temperature t1 of the reservoir of the thermometer is 100°C and the average temperature t of the emergent column is 58°C, the correction then becomes:
C1 = 0.00016 x 30 x (100-58) = + 0.2°C

HOW TO CONVERT PARTIAL IMMERSION INTO TOTAL IMMERSION ?

The correction of immersed column, C2 can be calculated with an accuracy of approximately 10% from the formula: $C2 = k\,(t2-t3)\,(t4-t5)$
In the case of mercury, k is a coefficient having for value $0.00016°C^{-1}$.
In the case of thermometers filled with red or blue liquid, the value of k varies according to the temperature. As a first approximation, use $0.001°C^{-1}$.
t2 corresponds to the reading at the immersion depth the thermometer is being used at.
t3 is the extrapolated temperature which corresponds to the level of immersion indicated.
t4 is the temperature as indicated in the following table.
t5 is the average temperature of the immersed column.

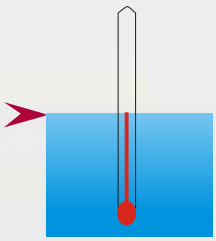
Reading temp.	60	80	100	120	140	160	180	200	220	250
t4	30	35	43	47	54	60	67	75	84	95

Example: the thermometer is immersed to the t2 graduation : 80°C .
The thermometer is calibrated for a partial immersion of 76 mm.
The extrapolated temperature for the instrument at 76 mm immersion is t3= -17°C.
The temperature reading being 80°C, according to the table, t4 = 35°C.
The temperature reading being 80°C, one can assume that the average temperature of the immersed column t5 is the same. So t5 = 80°C. The correction then becomes:
C1 = 0.00016 x (80-(-17)) x (35-80) = - 0.7°C



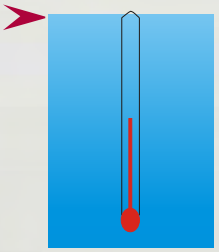
PARTIAL IMMERSION

The thermometer is calibrated to be partially immersed, to a depth of 76 mm (75 for ISO). If the thermometer is used at a different immersion, an emergent column correction must be made.



TOTAL IMMERSION

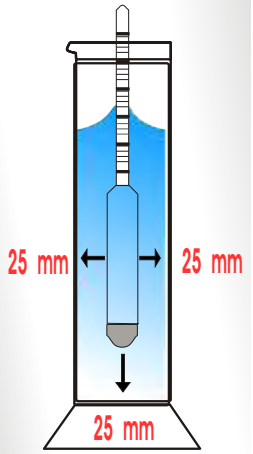
The thermometer must be immersed to the same level as the temperature reading.



COMPLETE IMMERSION

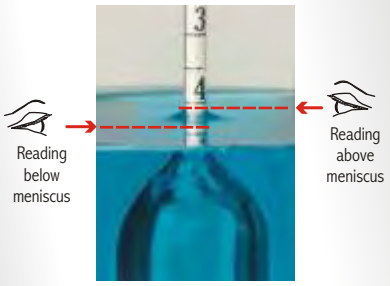
Very rarely used.
The thermometer is completely immersed in the liquid.
www.simas.ru

HOW TO USE
YOUR HYDROMETER



The test jar must be kept vertical, and the liquid to be tested at a temperature as close as possible to that at which the hydrometer has been calibrated.

Ensure that the hydrometers and the liquid sample are free from grease and oil, etc. Hold the hydrometer vertically by the top of the stem and gently lower it into the liquid until it floats freely.



The reading is taken below or above the meniscus according to the liquid used.



BAUMÉ/DENSITY CORRESPONDENCES

This unit of measure, obselete in most countries is still asked by certain industries or users.

LIQUIDS LIGHTER THAN WATER

BAUMÉ	g/ml
10	1.000
20	0.933
30	0.875
40	0.824
50	0.778
60	0.737
70	0.700

140/(MV 60°F) - 130
or
140/(MV 15.6°C) - 130

$$°Bé = \frac{140}{(MV^* \ 60°F)} - 130 \quad \text{or} \quad \frac{140}{(MV^* \ 15.6°C)} - 130$$

* MV = DENSITY

LIQUIDS HEAVIER THAN WATER

BAUMÉ	g/ml
0	1.000
10	1.074
20	1.160
30	1.261
40	1.381
50	1.526
60	1.706
70	1.933

145 - 145/(MV 60°F)
or
145 - 145/(MV 15.6°C)

$$°Bé = 145 - \frac{145}{(MV^* \ 60°F)} \quad \text{or} \quad \frac{145}{(MV^* \ 15.6°C)}$$

* MV = DENSITY

TWADDLE/DENSITY CORRESPONDENCES

Twaddle expresses the degree of sugar content in a liquid from the following formula:

[(SG 60/60°F)-1000] x 200
where
SG 60/60°F is the Specific Gravity 60/60°F

API/DENSITY CORRESPONDENCES

The °API is used for the petroleum products and satisfies the formula:

141.5/(SG 60/60°F) - 131.5

$$°API = \frac{141.5}{(SG \ 60/60°F^*)} - 131.5$$

* SG 60/60°F = Specific Gravity 60/60°F

BRIX/DENSITY CORRESPONDENCES

g/l 20°C	°BRIX 20°C
998.2	0.0
1002.1	1.0
1005.9	2.0
1009.9	3.0
1013.8	4.0
1017.8	5.0
1021.8	6.0
1025.8	7.0
1029.9	8.0
1034.0	9.0
1038.1	10.0
1042.2	
1046.4	
1050.6	
1054.8	
1059.1	
1063.4	
1067.7	
1072.1	
1076.5	
1080.9	

CORRECTIONS OF HYDROMETERS

CORRECTION TEMPERATURE FOR DENSITY HYDROMETERS

For hydrometers calibrated to a reference temperature at 20 °C (68°F) **or 15 °C** (59°F).

If the hydrometer reading is taken at a temperature other than the standard temperature for the hydrometer, the reading will be in error due to the change in volume of the hydrometer between the two temperatures.

Appropriate corrections making allowance for this temperature effect are given in the table.

Reference Temp. 20°C (68°F)	Reference Temp. 15°C (59°F)	hydrometer reading kg/m³ or 10^{-3} g/ml							
Temperature of Liquid °C		kg/m³	600	800	1000	1200	1400	1600	1800	2000
		g/ml	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
0	-		+0.3	+0.4	+0.5	+0.6	+0.7	+0.8	+0.9	+1.0
5	0		+0.2	+0.3	+0.4	+0.5	+0.5	+0.6	+0.7	+0.8
10	5		+0.2	+0.2	+0.3	+0.3	+0.4	+0.4	+0.5	+0.5
15	10		+0.1	+0.1	+0.1	+0.2	+0.2	+0.2	+0.2	+0.3
20	15		0	0	0	0	0	0	0	0
25	20		-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3
30	25		-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5
35	30		-0.2	-0.3	-0.5	-0.5	-0.5	-0.6	-0.7	-0.8
40	35		-0.3	-0.4	-0.6	-0.6	-0.7	-0.8	-0.9	-1.0
45	40		-0.4	-0.5	-0.8	-0.8	-0.9	-1.0	-1.1	-1.3

These corrections when applied to the hydrometer reading at t °C give the density of the liquid in kg/m³ or g/ml at t °C.

SURFACE TENSION OF THE HYDROMETERS (kg/m³ or 10^{-3} g/ml)

Reading of a hydrometer depends on the surface tension of the liquid in which it is used. This table gives an indication of possible errors, in the form of corrections which may be applied on account of difference between the surface tension of the liquid and the surface tension for which the hydrometer is graduated.

Surface tension corrections

The surface tension of liquid minus that for which the hydrometer is graduated (mN/m)	L20				L50 & L50 SP				M50 & M50 SP				M100				S50 & S50 SP			
	Hydrometer reading				Hydrometer reading				Hydrometer reading				Hydrometer reading				Hydrometer reading			
kg/m³	600	1 000	1 500	2 000	600	1 000	1 500	2 000	600	1 000	1 500	2 000	600	1 000	1 500	2 000	600	1 000	1 500	2 000
g/ml	0.6	1.0	1.5	2.0	0.6	1.0	1.5	2.0	0.6	1.0	1.5	2.0	0.6	1.0	1.5	2.0	0.6	1.0	1.5	2.0
-40	–	-0.54	-0.45	-0.39	–	-1.2	-0.9	-0.8	–	-1.9	-1.5	-1.4	–	-3.0	-3.0	-2.0	-3.0	-2.5	-2.0	-2.0
-30	–	-0.41	-0.34	-0.30	–	-0.9	-0.7	-0.6	–	-1.4	-1.1	-1.0	–	-2.0	-2.0	-2.0	-2.5	-2.0	-1.5	-1.5
-20	–	-0.27	-0.22	-0.20	–	-0.6	-0.5	-0.4	–	-0.9	-0.8	-0.7	–	-2.0	-1.0	-1.0	-1.5	-1.5	-1.0	-1.0
-10	-0.18	-0.14	-0.11	-0.10	-0.3	-0.3	-0.2	-0.2	-0.6	-0.5	-0.4	-0.3	-1.0	-1.0	-1.0	-1.0	-1.0	-0.5	-0.5	-0.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+10	+0.18	+0.14	+0.11	+0.10	+0.3	+0.3	+0.2	+0.2	+0.6	+0.5	+0.4	+0.3	+1.0	+1.0	+1.0	+1.0	+1.0	+0.5	+0.5	+0.5
+20	–	+0.27	+0.22	+0.20	–	+0.6	+0.5	+0.4	–	+0.9	+0.8	+0.7	–	+2.0	+1.0	+1.0	+1.5	+1.5	+1.0	+1.0
+30	–	+0.41	+0.34	+0.30	–	+0.9	+0.7	+0.6	–	+1.4	+1.1	+1.0	–	+2.0	+2.0	+2.0	+2.5	+2.0	+1.5	+1.5
+40	–	+0.54	+0.45	+0.39	–	+1.2	+0.9	+0.8	–	+1.9	+1.5	+1.4	–	+3.0	+3.0	+2.0	+3.0	+2.5	+2.0	+2.0

For hydrometers of different dimensions permitted under this specification the surface tension allowances may vary from the above amounts by up to approximately ±10%

Examples of surface tension

Category	kg/m³ Density	Surface tension mN/m					Examples of liquids to which the category is appropriate	
		0	20	40	60	80		
Low	600	15	16	17	18	19	Generally organic liquids (including ethers, petroleum distillates, coaltar distillates), and all types of oils aqueous solutions of low molecular mass organic substances.	Due to the extreme variability of the surface tension of acetic acid solutions, such solutions have not been included in the table.
	700	20	21	22	23	24		
	800	25	26	27	28	29		
	900	30	31	32	33	34		
	1 000 to 1 300	35					Acetic acid solutions, the free surfaces of which have not been specially cleaned.	
Medium	600 to 940	35					Aqueous solutions of low molecular mass organic substances (including those of ethyl and methyl alcohol, but excluding acetic acid solutions), the free surfaces of which have been specially cleaned or not.	
	600	40						
	700	45						
	800	50						
	900							
	1 000 to 2 000	55					Nitric acid solutions of densities greater than 1300 kg/m³ or 1.3 g/ml whether the free surfaces have been specially cleaned or not.	
High	1 000 to 2 000	75					Aqueous solutions, the surfaces of which have been specially cleaned, except: nitric acid of density greater than 1 300 kg/m³ and acetic acid solutions.	

www.allafrance.com
France

ETYMOLOGY



HYDROMETER

from Greek: **"HUDÔR"**= water & **"METRON"**= measure

An instrument of measurement which functions based on Archimede's Principle. The reading is determined at the surface level of a liquid when the hydrometer floats freely. It is used for estimating the composition of a liquid or for preparing an identified liquid.
Among all of the units of measurement, the Voluminal mass (g/ml, Kg/l) is recommended by ISO.



ALCOHOLOMETER

from Latin:**"ALKO(HO)L"** & from Greek: **"METRON"**= measure & from Arabic:**"AL-KUHL"** = pulverized antimony

Hydrometer measuring the alcohol content of liquids, specially calibrated for use with water/ethanol solutions. The official unit of measure is the % of Volume at 20 °C. Other less commonly used units exist: Tralles, Cartier, Gay Lussac, Richter, which you will find, as well, in our catalogue.



SACCHAROMETER

from Latin: **"SACCARUM"** & from Greek: **"SAKKHAROS"**= sugar & **"METRON"**= measure

Hydrometer used to determine the proportion of sugar concentration in a solution. It is graduated in % MASS or weight of sugar in a water/sugar solution.



THERMOMETER

from Greek: **"THERMOS"**= hot & **"METRON"**= measure

Instrument which measures temperature.
There are a large number of thermometers. The most simple rest on the fact that the substance dilates as the temperature increases: liquid filled thermometers (mercury, derived from oil or alcohol), or gas filled thermometers (helium).
These thermometers are composed of a liquid-filled glass reservoir linked with a glass capillary tube. A variation in temperature provokes a variation in the volume of the liquid, interpreted by a rise or descent of the liquid column inside the capillary.



CALIBRATION

from Arabic: **"QÂLIB"** = form, moulde

The set of operations which establishes, under specified conditions, the relationship between values indicated by a measuring system, and the corresponding known values of a measurand.

SOME NAMES OF INTEREST ...

ARCHIMEDES (287 - 212 B.C.)
The most well-known physicist in history who notably determined the push that a surrounding fluid exerts on a solid.

BAUMÉ (1728 - 1804)
French chemist, the basis on which was formed the graduated hydrometers in degrees Baumé. This unit of measure is no longer used in most countries today.

CELCIUS (1701 - 1744)
Swedish astronomist who made known the centesimal graduation of the thermometer.
Degree Celsius= °C

FAHRENHEIT (1686 - 1736)
Prussian physicist who gave his name to a scale of temperature. This scale is still used in Great Britain and North America.
0°C corresponds to 32°F and 100°C corresponds to 212°F.
You will find a conversion table °C / °F in our catalogue (pg 6).

GALILEO (1564 - 1642)
Italian physicist, mathematician and astronomer, founder of experiemental science and inventor of the Thermometer.

GAY-LUSSAC (1778 - 1850)
French physicist and chemist who discovered the law of expansion of gases which holds his name.

RÉAUMUR (1683 - 1757)
French physicist and chemist, inventor of the alcohol thermometer (around 1730).
The Réaumur thermometric scale has been replaced by the Celsius scale.

Glass Thermometers





Thermometers

Promo Lab® by France

a complete line of

ECONOMY THERMOMETERS

Ideal for daily use in classrooms and laboratories



The glass

The glass used has a diameter of about 6-7 mm.
The colour of the glass is standardised in yellow giving a much better reading than the white back, mainly for mercury filled thermometers. This is a quality choice even if the white glass is usually less expensive than yellow.

Immersion

These thermometers are available in partial or total immersion.
When the thermometer is calibrated for partial immersion, there is a line printed around the thermometer at 76mm with a clear mention: “Imm. 76mm”. This mark enables the user to immerse the thermometer to the correct depth ①

More details on the immersions types of thermometers in page 7
or on our website page www.allafrance.com/help.html

Bulb size

The bulbs have different sizes even for the same reference article because the diameter of the internal bore can have some variations. We detect variations of the bore to within 0.01mm and we separate according to bore diameter.
In order to compensate these variations, we change the size of the bulb in order to keep the correct volume.



1



2

The scale is very clear and durable and it is an international protected design.

Scale

The numbers are printed every 10 °C , and the graduation is much larger than usual enabling an easier reading for the user. The negative temperature numbers are printed vertically while the positive temperature numbers from 0° C (32°F) are printed horizontally.
The scale is printed very dark in order to have a clear reading.
The graduation of is printed and fused in the glass with a special process. (Note concerning thermometers from the competition: some thermometers, mainly those for high temperatures, are still engraved and the ink does not resist to solvents or other chemical products).
The graduation becomes unreadable. The graduation resists to all chemical products except fluoridric acid and hot soda (to a lesser extent) because these 2 products attack the glass.



Cap

ALLA FRANCE has developed a special cap in place of a glass ring ③
The cap has a non roll form. It resists in hot liquid during 30 seconds at 150°C (302°F).
There is a window in front of the expansion chamber enabling the user to verify if there is any column separation ④



5

Packing

The thermometers are packed in a strong plastic packaging with a square form, non roll. 10 thermometers of the same article are packed inside a white cardboard box ⑤
Two labels on the box indicate:
- The reference and a GEN code
- The temperature range and the subdivision
- The liquid filling

HELP

The link to our page www.allafrance.com/help.html is printed on the back of our thermometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

MERCURY FREE

PRECISION THERMOMETERS

BIO TEMP®

A lucky four leaved clover identifies the range

A full line of ecological thermometers to preserve our environment



The glass

The glass used has a diameter of about 6-7 mm.
The colour of the glass is standardised in yellow giving a much better reading than the white back, mainly for mercury filled thermometers. This is a quality choice even if the white glass is usually less expensive than yellow.

Filling

This special line of safe thermometers is with a non toxic filling liquid.
In case of breakage the residue after decomposition becomes : $H_2O + CO_2$

Scale

The graduation of our safe thermometers is printed in blue. The graduation is printed and fused in the glass with a special process. Even if you can feel a relief when touching the graduation, the thermometer is not engraved.
We try to print the scale as dark as possible and feature an arrow printed every 10°C making the temperature much easier to read.





Immersion

These thermometers are available in partial or total immersion.
When the thermometer is calibrated for partial immersion (76mm usually), there is a line printed around the thermometer at 76mm with a clear mention: “Imm. 76mm”.
This mark enables the user to immerse the thermometer to the correct depth.
A strong triangular ring is moulded at the top of the thermometer avoiding the thermometer to roll on an inclined lab table.

More details on the immersions types of thermometers in page 7
or on our website page www.allafrance.com/help.html

Packing

Individually packed in recyclable sturdy plastic concertina box's, ideal for storing the instrument when not in use.
Some references are also available in sealed blister by 6 pcs ①

Systematically delivered with a Precision and Traceability Certificate

LABORATORIES GUARANTEE ALLA FRANCE

T 003 BIO-TEMP® solid stem thermometers

	Range °C	Accuracy °C	Imm.	mm
Div. 0.1°C	-1+51	0.5	TOT	460
	-1+101	0.5	TOT	610
Div. 0.2°C	-1+51	0.6	TOT	460
	-1+101	0.6	TOT	460
Div. 0.5°C	-10+60	0.8	76 mm	305
	-10+60	0.8	TOT	305
	-10+110	0.8	76 mm	305
	-10+110	0.8	TOT	305
Div. 1°C	-100+30	2	76 mm	305
	-100+30	2	TOT	305
	-50+110	2	76 mm	305
	-50+110	2	TOT	305
	-20+110 (*)	1	76 mm	305
	-20+110 (*)	1	TOT	305
	-20+150	1	76 mm	305
	-20+150	1	TOT	305
	-10+250	2	76 mm	405

(*) Available in sealed pack of 6 pcs

PVC coating	Range °C	Accuracy °C	Imm.	mm
Div. 1°C	-100+30	2	76 mm	305
	-100+30	2	TOT	305
	-50+110	2	76 mm	305
	-50+110	2	TOT	305
	-20+110	2	76 mm	305
	-20+110	2	TOT	305

Téflon® coating	Range °C	Accuracy °C	Imm.	mm
Div. 0.1°C	-1+51	0.5	TOT	460
	-1+101	0.5	TOT	610
Div. 0.2°C	-1+51	0.6	TOT	460
	-1+101	0.6	TOT	460
Div. 1°C	-100+30	2	76 mm	305
	-100+30	2	TOT	305
	-50+110	2	76 mm	305
	-50+110	2	TOT	305
	-20+110	2	76 mm	305
	-20+110	2	TOT	305
	-20+150	2	76 mm	305
	-20+150	2	TOT	305
	-10+250	3	76 mm	405

PVC coated

PVC coated thermometers are very robust and have a magnifying effect ①
Less expensive than Téflon® coated thermometers.

Téflon® coated

Thermometers coated with Téflon® are very robust and completely protected in case of breakage of glass ②

Teflon® = Reg TM E.I. du Pont de Nemours & Co.

1



2



BOTTLE-BASE HDPE BIO-TEMP® Thermometers

A high density polyethylene base houses the reservoir of the thermometer, acting as a thermal brake.
These thermometers are supplied with adhesive strip, magnets and with a Certificate of Conformity.

EU Traceable Calibration Certificate upon request

T 004

③

Téflon® coating	Applications	Range °C	Accuracy °C	mm
Div. 0.5°C	FREEZERS-REFRIGERATORS	-30+5	0.5	150
	CULTURE OF BACTERIA, VIRUS	-5+30	0.5	150
	INCUBATORS	+20+50	0.5	150
Div. 1°C	CRYOGENICS	-80+20	1	150
	OVENS	+20+130	1	150

3



BIO-TEMP® demonstration thermometer

Extra large thermometer.
Readable at 9ft / 3 m.
Ideal for use in classrooms.
Without certificate.

4

T 005

④

	Range °C	Accuracy °C	Imm.	mm
Div. 1°C	-10+110	2	150 mm	650

HELP

The link to our page www.allafrance.com/help.html is printed on the back of our thermometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

BIO-TEMP® Precision Thermometers

www.allafrance.com

PRECISION THERMOMETERS



1

The glass

These thermometers are manufactured using a type N 16 Sodocalcique glass with a diameter of about 6-7 mm.
The colour of the glass is standardised in yellow giving a much better reading than the white back, mainly for mercury filled thermometers. This is a quality choice even if the white glass is usually less expensive than yellow. They possess an expansion chamber to support temperatures higher than those of the thermometer.



Scale

The graduation is printed and fused in the glass with a special process. The graduation resists to all chemical products except fluoridric acid and hot soda (to a lesser extent) because these 2 products attack the glass. Even if you can feel a relief when touching the graduation, the thermometer is not engraved.

Immersion

These thermometers are available in partial or total immersion.
When the thermometer is calibrated for partial immersion (76mm usually), there is a line printed around the thermometer at 76mm with a clear mention: “Imm. 76mm” ①. This mark enables the user to immerse the thermometer to the correct depth.

More details on the immersions types of thermometers in page 7
or on our website page www.allafrance.com/help.html

Packing

Individually packed in recyclable sturdy plastic concertina box's, ideal for storing the instrument when not in use.
Some references are also available in sealed blister by 6 or 15 pcs.

Systematically delivered with a Precision and Traceability Certificate

HELP

The link to our page www.allafrance.com/help.html is printed on the back of our thermometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

Mercu e br rmMer sl er T

PVC coated

Advantages of these thermometers:
- magnifying effect
- in case of breakage, the glass and the filling liquid are contained inside the PVC sleeve
- less expensive than Téflon coating thermometers

EUROPEAN

MRA TRACEABLE

STANDARDIZED THERMOMETERS ISO, BS, DIN, NF, IP ...



1

- **The glass**

These standardized thermometers are manufactured using a type N 16 Sodocalcique glass used has a diameter of about 6-7 mm. The colour of the glass is standardised in yellow giving a much better reading than the white back, mainly for mercury filled thermometers. This is a quality choice even if the white glass is usually less expensive than yellow.

- **Scale**

Graduation lines are fine and easily readable. The graduation is printed and fused in the glass with a special process. The graduation resists to all chemical products except fluoridric acid and hot soda (to a lesser extent) because these 2 products attack the glass. Even if you can feel a relief when touching the graduation, the thermometer is not engraved.
They possess a suspension ring and an expansion chamber to support temperatures higher than those of the thermometer.



- **Immersion**

They are calibrated for total immersion.
Some references are also available with partial immersion, upon request.

More details on the immersions types of thermometers in page 7
or on our website page www.allafrance.com/help.html

- **Traceability**

Every standard thermometer has an individual number printed on the back.
This number is stocked in our data base and fully traceable to our official masters.

- **Calibration and Certificates**

Our official masters are regularly controlled and are traceable in over 68 countries worldwide (see page5).

Systematically delivered with a Traceability and Conformity Certificate

Available, upon request with an ALLA FRANCE EU Traceable Calibration Certificate, or an EO Official Calibration Certificate controlled by an accredited European Laboratory (see pages 4-5 for more information about Certificates).

HELP

The link to our page www.allafrance.com/help.html is printed on the back of our thermometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

ISO 653 - DIN 12775 - NF 35502 - BS 5074

They possess an auxiliary scale around the "ZERO" point when the temperature scale is positive.
The filling liquid is Mercury or Mercury Thallium.
They are calibrated for total immersion.

EO EU
Official or Traceable Calibration Certificate upon request

T 011 **STL Series**

Serie	Range °C	Div. °C	Accuracy °C	Auxiliary Scale	mm
STL1	-25+5	0.1	0.1	-	375
STL2	-5+25	0.1	0.1	-	375
STL3	+20+45	0.1	0.1	-0.5+0.5	375
STL4	+40+65	0.1	0.1	-0.5+0.5	375
STL5	+60+85	0.1	0.1	-0.5+0.5	375
STL6	+80+105	0.1	0.1	-0.5+0.5	375
STL7	-55+5	0.2	0.2	-	375
STL8	-35+25	0.2	0.2	-	375
STL9	-15+45	0.2	0.2	-	375
STL10	+35+85	0.2	0.2	-	375
STL11	+75+125	0.2	0.2	-1+1	375
STL12	+115+165	0.2	0.2	-1+1	375
STL13	+155+205	0.2	0.2	-1+1	375
STL14	-35+115	0.5	0.5	-	375
STL15	+90+210	0.5	0.5	-3+3	375
STL16	+190+310	0.5	0.5	-3+3	375
STL17	-30+270	1	1	-	375
STL18	+180+420	1	1	-5+5	375

ISO 1770 - DIN 12778 - NF 35506 - BS 1704

The filling liquid is mercury, except for thermometers used below -38°C, for which we use a red tinted organic liquid.
They are calibrated for total immersion.

EO EU
Official or Traceable Calibration Certificate upon request

T 012

Serie	Range °C	Div. °C	Accuracy °C	mm
A	-100+30	1	2	305
B	-35+30	0.5	1	305
C	0+60	0.5	0.5	305
D	0+100	1	1	305
E	0+160	1	2	305
F	0+250	1	2	305
G	0+360	2	4	305
H	0+500	5	10	350
J	-100+50	1	2	305
K	-50+50	1	2	305
L	-1+51	0.1	0.3	460
M	-1+101	0.1	0.3	610
N	-1+201	0.2	0.5	610
P	-35+50	1	0.5	305
R	-20+110	1	0.5	305
S	-20+150	1	0.5	305
T	-10+260	1	1	405
V	-10+400	2	4	405
W	-10+500	2	4	405

Partial immersion upon request

ISO 651 - NF B 35508

The diameter is 9 mm.
The filling liquid is Mercury.

T 013 **Calorimeter thermometers**

Range °C	Div. °C	Accuracy °C	mm
+9+15	0.01	0.1	750
+12+18	0.01	0.1	750
+15+21	0.01	0.1	750
+18+24	0.01	0.1	750
+21+27	0.01	0.1	750
+24+30	0.01	0.1	750
+27+33	0.01	0.1	750
+30+36	0.01	0.1	750
+33+39	0.01	0.1	750
+36+42	0.01	0.1	750
+39+45	0.01	0.1	750

- **I.P.** is a British Standard.
  Made in accordance with the specifications of the **INSTITUTE OF PETROLEUM (I.P.)**.

- **Calibration points**
  The IP Thermometers with Calibration Certificate are checked at the specified points in the standard (More information on the different types of Certificates on pages 4-5).

EO EU
Official or Traceable Calibration Certificate upon request



Many **I.P.** thermometers correspond to the American standard **A.S.T.M.**

If an **I.P.** thermometer has an equivalent **A.S.T.M** thermometer, both standards are printed on the back of the instrument.

IP °C / A.S.T.M. °C Correspondences

IP	1	2	5	6	14	15	16	17	18	20	21	23	24	28	29	30	31	32	33	34
ASTM	5	6	7	8	114	9	10	14	54	33	34	18	22	11	44	45	28	121	128	29
IP	35	36	47	59	60	61	62	63	64	65	66	67	68	69	71	72	73	77	78	79
ASTM	47	129	13	35	15	16	2	61	12	43	46	72	73	74	126	71	3	37	38	39
IP	80	81	82	83	84	85	86	87	88	89	90	92	93	94	95	96	97	99	102	
ASTM	40	41	42	102	103	104	105	106	107	113	48	120	110	122	123	124	125	127	132	

T 014 **I.P Series**

I.P.		Range °C	Div. °C	Imm.	mm
1C	Cloud and Pour	-38 +50	1	108 mm	230
2C	Low Cloud and Pour	-80 +20	1	76 mm	230
3C	Demulsification	-1+105	0.5	TOT	305
4C	Crude Oil Distillation	-4+360	2	TOT	310
5C	Low Distillation	-2 +300	1	TOT	385
6C	High Distillation	-2 +400	1	TOT	385
8C	Flushing-Case Low	0 +45	0.2	65 mm	340
9C	Flushing-Case Medium	+40 +85	0.2	65 mm	340
14C	Aviation Fuel Freezing P.	-80 +20	0.5	TOT	300
15C	Low Pensky-Martens	-5 +110	0.5	57 mm	290
16C	High Pensky-Martens	+90 +370	2	57 mm	290
17C	Wax Melting Point	+38 +82	0.1	79 mm	375
18C	Congealing Point	+20 +100.6	0.2	TOT	310
20C	Low Aniline Point	-38 +42	0.2	50 mm	420
21C	Medium Aniline Point	+25 +105	0.2	50 mm	420
22C	Oxidation	+195 +205	0.1	100 mm	300
23C	Raid Vapor Pressure	+34 +42	0.1	TOT	275
24C	Oxidation Stability	+95 +103	0.1	TOT	275
28C	Cleveland Open Flash	-6 +400	2	25 mm	310
29C	Kinematic Viscosity	+18.6 +21.4	0.05	TOT	305
30C	Kinematic Viscosity	+23.6 +26.4	0.05	TOT	305
31C	Kinematic Viscosity	+36.6 +39.4	0.05	TOT	305
32C	Kinematic Viscosity	+98.6 +101.4	0.05	TOT	305
33C	Kinematic Viscosity	-1.4 +1.4	0.05	TOT	305
34C	Kinematic Viscosity	+52.6 +55.4	0.05	TOT	305
35C	Kinematic Viscosity	+58.6 +61.4	0.05	TOT	305
36C	Kinematic Viscosity	+91.6 +94.4	0.05	TOT	305
37C	Sludge	+144 +156	0.2	100 mm	270
38C	Pen	+23 +27	0.1	TOT	260
39C	Density	-1 +38	0.1	TOT	440
40C	Low Drop Point	+20 +120	1	100 mm	250
41C	High Drop Point	+100 +230	1	100 mm	250
42C	Breaking Point	-38 +30	0.5	250 mm	370
43C	FP Cut-Back (Int)	+10 +110	0.5	61 mm	305
44C	FP Cut-Back (Ext)	+15 +121	0.5	89 mm	305
45C	Refractometer	+15 +30	0.2	22 mm	160
46C	Westphal Balance	+14.5 +21	0.1	TOT	160
47C	Loss on Heat	+155 +170	0.5	TOT	155
48C	Tank Low	-38 +30	0.5	TOT	310
49C	Tank Medium	-15 +40	0.5	TOT	310
50C	Tank High	+10 +65	0.5	TOT	310
51C	Tank Heated Fuel	+35 +120	0.5	TOT	310
52C	Tank Bitumen	+90 +260	1	TOT	310
53C	Tank Cargo	0 +80	0.5	TOT	310
59C	High Aniline Point	+90 +170	0.2	50 mm	420
60C	Low Softening Point	-2 +80	0.2	TOT	395
61C	High Softening Point	+30 +200	0.5	TOT	395
62C	Partial Immersion	-5 +300	1	76 mm	390
63C	Petrolatum Melting Point	+32 +127	0.2	79 mm	380
64C	Density-Wide Range	-20 +102	0.2	TOT	420
65C	Kinematic Viscosity Low	-51.6 -34	0.1	TOT	417
66C	Kinematic Viscosity	+48.6 +51.4	0.05	TOT	305
67C	Kinematic Viscosity	-19.4 -16.6	0.05	TOT	305
68C	Kinematic Viscosity	-41.4 -38.6	0.05	TOT	305
69C	Kinematic Viscosity	-55.4 -52.6	0.05	TOT	305
71C	Kinematic Viscosity	-27.4 -24.6	0.05	TOT	305
72C	Oil in Wax	-37 +21	0.5	76 mm	355
73C	Partial Immersion	-5 +400	1	76 mm	415
74C	Abel Oil Cup Wide Range	-35 +70	0.5	61 mm	310
75C	Abel Water Bath Wide R.	-30 +80	0.5	89 mm	310
76C	Engler Viscosity	+10 +55	0.5	93 mm	240
77C	Solvents Distillation	-2 +52	0.2	100 mm	395
78C	Solvents Distillation	+24 +78	0.2	100 mm	395
79C	Solvents Distillation	+48 +102	0.2	100 mm	395
80C	Solvents Distillation	+72 +126	0.2	100 mm	395
81C	Solvents Distillation	+98 +152	0.2	100 mm	395
82C	Solvents Distillation	+95 +255	0.5	100 mm	395
83C	Solvents Distillation	+123 +177	0.2	100 mm	395
84C	Solvents Distillation	+148 +202	0.2	100 mm	395
85C	Solvents Distillation	+173 +227	0.2	100 mm	395
86C	Solvents Distillation	+198 +252	0.2	100 mm	395
87C	Solvents Distillation	+223 +277	0.2	100 mm	395
88C	Solvents Distillation	+248 +302	0.2	100 mm	395
89C	Softening Point (Bitumen)	-1 +175	0.5	TOT	405
90C	Kinematic Viscosity	+80.6 +83.4	0.05	TOT	305
91C	Rapid Flash	0 +110	1	44 mm	198
92C	Kinematic Viscosity	+38.6 +41.4	0.05	TOT	305
93C	Kinematic Viscosity	+133.6 +136.4	0.05	TOT	305
94C	Brookfield Viscosity	-45 -35	0.1	TOT	300
95C	Brookfield Viscosity	-35 -25	0.1	TOT	300
96C	Brookfield Viscosity	-25 -15	0.1	TOT	300
97C	Brookfield Viscosity	-15 -5	0.1	TOT	300
98C	Rapid Flash High	+100 +300	2	44 mm	197
99C	Kinematic Viscosity	-21.4 -18.6	0.05	TOT	305
100C	Kinematic Viscosity	+78.6 +81.4	0.05	TOT	305
101C	Medium Pensky Martens	+20 +150	1	57 mm	290
102C	Kinematic Viscosity	+148.6 +151.4	0.05	TOT	305



European standardized Thermometers

www.allafrance.com

U.S.A

NIST TRACEABLE

STANDARDIZED THERMOMETERS A.S.T.M



- **A.S.T.M** is an American standard. These thermometers are manufactured according to the E-1 specifications of the **AMERICAN SOCIETY FOR TESTING AND MATERIAL** (A.S.T.M.).

- **The glass**
  The colour of the glass of our A.S.T.M thermometers is standardized in yellow giving a much better reading than the white back, mainly for mercury filled thermometers. This is a quality choice even if the white glass is usually less expensive than yellow.

- **Scale**
  Graduation lines are fine and easily readable.
  The measurement scale is fused into the glass with a special manufacturing process makes it completely indelible and very resistant to chemical agents exept fluoridric acid and hot soda (to a lesser extent) because these 2 products attack the glass. Even if you can feel a slight relief on the glass, the thermometer is not engraved.

- **Traceability**
  Every standardized thermometer has an individual number printed on the back. This number is stocked in our data base and fully traceable to our official masters.
  The thermometer is fully marked on the back with the ASTM number, the purpose and ASTM method.

If an **A.S.T.M** thermometer has an equivalent **I.P**, both standards are printed on the back of the instrument.

- **Calibration and Certificates**
  Our official masters are regularly controlled and are traceable in over 68 countries worldwide (see page 5).

Systematically delivered with a Traceability and Conformity Certificate

Available, upon request with an ALLA FRANCE EU Traceable Calibration Certificate, or an EO Official Calibration Certificate controlled by an accredited European Laboratory (see pages 4-5 for more information about Certificates).

HELP

The link to our page www.allafrance.com/help.html is printed on the back of our thermometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

Calibration points

The A.S.T.M thermometers with Calibration Certificate are checked at the specified points in the standard.

More information about Certificates on pages 4-5 of our Catalogue or on our website page http://www.allafrance.com/certification.html

T 015 A.S.T.M °C Series

A.S.T.M		Range °C	Div. °C	Imm.	mm	Control points °C
1C	Partial immersion	-20 +150	1	76 mm	322	
2C	Partial immersion	-5 +300	1	76 mm	390	0 75 150 225
3C	Partial immersion	-5 +400	1	76 mm	415	0
5C	Cloud and Pour	-38 +50	1	108 mm	230	-35
6C	Low Cloud and Pour	-80 +20	1	76 mm	230	-70
7C	Low Distillation	-2 +300	1	TOT	385	0
8C	High Distillation	-2 +400	1	TOT	385	0
9C	Low Pensky-Martens	-5 +110	0.5	57 mm	290	0
10C	High Pensky-Martens	+90 +370	2	57 mm	290	100
11C	Cleveland Open Flash	-6 +400	2	25 mm	310	0
12C	Density-Wide Range	-20 +102	0.2	TOT	420	
13C	Loss on Heat	+155 +170	0.5	TOT	155	155
14C	Wax Melting Point	+38 +82	0.1	79 mm	375	40
15C	Low Softening Point	-2 +80	0.2	TOT	395	0
16C	High Softening Point	+30 +200	0.5	TOT	395	30
17C	Saybolt Viscosity	+19 +27	0.1	TOT	275	21
18C	Reid vapor pressure	+34 +42	0.1	TOT	275	38
19C	Saybolt Viscosity	+49 +57	0.1	TOT	275	50
20C	Saybolt Viscosity	+57 +65	0.1	TOT	275	60
21C	Saybolt Viscosity	+79 +87	0.1	TOT	275	82
22C	Oxidation Stability	+95 +103	0.1	TOT	275	99
23C	Engler Viscosity	+18 +28	0.2	90 mm	212	20
24C	Engler Viscosity	+39 +54	0.2	90 mm	237	40
25C	Engler Viscosity	+95 +105	0.2	90 mm	212	95
26C	Stab. Test of Sol. Nitroc.	+130 +140	0.1	TOT	463	130
27C	Turpentine Distillation	+147 +182	0.5	76 mm	301	155
28C	Kinematic Viscosity 37.8°C	+36.6 +39.4	0.05	TOT	305	0
29C	Kinematic Viscosity 54.4°C	+52.6 +55.4	0.05	TOT	305	0
33C	Low Aniline Point	-38 +42	0.2	50 mm	420	-35
34C	Medium Aniline Point	+25 +105	0.2	50 mm	420	25
35C	High Aniline Point	+90 +170	0.2	50 mm	420	100
36C	Titer Test	-2 +68	0.2	45 mm	405	0
37C	Solvents Distillation	-2 +52	0.2	100 mm	395	0
38C	Solvents Distillation	+24 +78	0.2	100 mm	395	25
39C	Solvents Distillation	+48 +102	0.2	100 mm	395	50
40C	Solvents Distillation	+72 +126	0.2	100 mm	395	75
41C	Solvents Distillation	+98 +152	0.2	100 mm	395	100
42C	Solvents Distillation	+95 +255	0.5	100 mm	395	100
43C	Kinematic Viscosity	-51.6 -34	0.1	100 mm	420	-50
44C	Kinematic Viscosity	+18.6 +21.4	0.05	TOT	305	0
45C	Kinematic Viscosity	+23.6 +26.4	0.05	TOT	305	0
46C	Kinematic Viscosity	+48.6 +51.4	0.05	TOT	305	0
47C	Kinematic Viscosity	+58.6 +61.4	0.05	TOT	305	0
48C	Kinematic Viscosity	+80.6 +83.4	0.05	TOT	305	0
49C	Stormer Viscosity	+20 +70	0.2	65 mm	305	
52C	Butad. Boiling P.Range	-10 +5	0.1	TOT	162	-10
54C	Congealing Point	+20 +100.6	0.2	TOT	310	20
56C	Bomb Calorimeter	+19 +35	0.02	TOT	595	
57C	Tag Closed Tester, Low R.	-20 +50	0.5	57 mm	287	-20
58C	Tank	-34 +49	0.5	TOT	305	-30
59C	Tank	-18 +82	0.5	TOT	305	0
60C	Tank	+77 +260	1	TOT	305	100
61C	Petrolatum Melting Point	+32 +127	0.2	79 mm	380	
62C	Precision	-38 +2	0.1	TOT	379	
63C	Precision	-8 +32	0.1	TOT	379	0 75 150 225
64C	Precision	+25 +55	0.1	TOT	379	
65C	Precision	+50 +80	0.1	TOT	379	
66C	Precision	+75 +105	0.1	TOT	379	
67C	Precision	+95 +155	0.2	TOT	379	

... A.S.T.M °C Series

A.S.T.M		Range °C	Div. °C	Imm.	mm	Control points °C
68C	Precision	+145 +205	0.2	TOT	379	
69C	Precision	+195 +305	0.5	TOT	379	
70C	Precision	+295 +405	0.5	TOT	379	
71C	Oil in Wax	-37 +21	0.5	76 mm	355	
72C	Kinematic Viscosity	-19.4 -16.6	0.05	TOT	305	
73C	Kinematic Viscosity	-41.4 -38.6	0.05	TOT	305	
74C	Kin Visc -53.9°C	-55.4 -52.6	0.05	TOT	305	
82C	Fuel rating, Engine	-15 +105	1	30 mm	162	
83C	Fuel Rating, Air low	+15 +70	1	40 mm	171	25 70
84C	Fuel Rating, Orifice Tank	+25 +80	1	249 mm	382	30 80
85C	Fuel Rating, Surge	+40 +150	1	181 mm	310	50 150
86C	Fuel Rating, Mix	+95 +175	1	35 mm	167	100 175
87C	Fuel Rating, Coolant	+150 +205	1	40 mm	172	160 200
88C	Vegetable Oil Flash	+10 +200	1	57 mm	287	
89C	Solidification Point	-20 +10	0.1	76 mm	370	
90C	Solidification Point	0 +30	0.1	76 mm	370	
91C	Solidification Point	+20 +50	0.1	76 mm	370	
92C	Solidification Point	+40 +70	0.1	76 mm	370	
93C	Solidification Point	+60 +90	0.1	76 mm	370	
94C	Solidification Point	+80 +110	0.1	76 mm	370	
95C	Solidification Point	+100 +130	0.1	76 mm	370	
96C	Solidification Point	+120 +150	0.1	76 mm	370	
97C	Tank	-18 +49	0.5	TOT	302	
98C	Tank	+16 +82	0.5	TOT	302	
99C	Weathering Test	-50 +5	0.2	35 mm	302	
100C	Solidification Point	+145 +205	0.2	76 mm	370	
101C	Solidification Point	+195 +305	0.5	76 mm	370	
102C	Solvents Distillation	+123 +177	0.2	100 mm	395	
103C	Solvents Distillation	+148 +202	0.2	100 mm	395	
104C	Solvents Distillation	+173 +227	0.2	100 mm	395	
105C	Solvents Distillation	+198 +252	0.2	100 mm	395	
106C	Solvents Distillation	+223 +277	0.2	100 mm	395	
107C	Solvents Distillation	+248 +302	0.2	100 mm	395	
110C	Kinematic Viscosity	+133.6 +136.4	0.05	TOT	305	
111C	Tar Acids Distillation	+170 +250	0.2	100 mm	395	
112C	Solidification P.Benzene	+4 +6	0.02	TOT	215	
113C	Soft.P.(Bitumen) Wide R.	-1 +175	0.5	TOT	405	
114C	Aviation Fuel Freezing P.	-80 +20	0.5	TOT	300	
116C	Bomb Calorimeter	+18.9 +25.1	0.01	TOT	609	
117C	Bomb Calorimeter	+23.9 +30.1	0.01	TOT	609	
118C	Kinematic Viscosity	+28.6 +31.4	0.05	TOT	305	
119C	Coolant (Antif.) Fr. Pt.	-38.3 -30	0.1	100 mm	420	
120C	Kinematic Viscosity	+38.6 +41.4	0.05	TOT	305	
121C	Kinematic Viscosity	+98.6 +101.4	0.05	TOT	305	
122C	Brookfield Viscosity	-45 -35	0.1	TOT	300	
123C	Brookfield Viscosity	-35 -25	0.1	TOT	300	
124C	Brookfield Viscosity	-25 -15	0.1	TOT	300	
125C	Brookfield Viscosity	-15 -5	0.1	TOT	300	
126C	Kinematic Viscosity	-27.4 -24.6	0.05	TOT	305	
127C	Kinematic Viscosity	-21.4 -18.6	0.05	TOT	305	
128C	Kinematic Viscosity	-1.4 +1.4	0.05	TOT	305	0 1
129C	Kinematic Viscosity	+91.6 +94.4	0.05	TOT	305	0 93.3 94
130C	Tank	-7 +105	0.5	TOT	303	0 35 70 105
132C	Kinematic Viscosity	+148.6 +151.4	0.05	TOT	305	0 150 151
133C	Bending Beam Rheometer	-38 +2	0.1	76 mm	379	-36 -30 -18
134C	Sludge	+144 +156	0.2	100 mm	270	145 150 155 T 0 305 0
135C	Fuel Rating Air-High	+38 +93	1	40 mm	171	50 90
136C	Aviation Fuel Density	-20 +60	0.2	TOT	290	-20 -10 0 10 20 30 40 50 60
137C	Oxidation Cell Te	+80 +100	0.1	76 mm	255	80 90 100



Official or Traceable Calibration Certificate upon request

T 016 A.S.T.M °F Series

A.S.T.M		Range °F	Div. °F	Imm.	mm
1F	Partial immersion	0 +302	2	76 mm	327
2F	Partial immersion	+20 +580	2	76 mm	395
3F	Partial immersion	+20 +760	2	76 mm	420
5F	Cloud and Pour	-36 +120	2	108 mm	235
6F	Low Cloud and Pour	-112 +70	2	76 mm	235
7F	Low Distillation	+30 +580	2	TOT	390
8F	High Distillation	+30 +760	2	TOT	390
9F	Low Pensky-Martens	+20 +230	1	57 mm	295
10F	High Pensky-Martens	+200 +700	5	57 mm	295
11F	Cleveland Open Flash	+20 +760	5	25 mm	315
12F	Density-Wide Range	-5 +215	0.5	TOT	425
14F	Wax Melting Point	+100 +180	0.2	79 mm	380
15F	Low Softening Point	+30 +180	0.5	TOT	400
16F	High Softening Point	+85 +392	1	TOT	400
17F	Saybolt Viscosity	+66 +80	0.2	TOT	280
18F	Reid vapour pressure	+94 +108	0.2	TOT	280
19F	Saybolt Viscosity	+120 +134	0.2	TOT	280
20F	Saybolt Viscosity	+134 +148	0.2	TOT	280
21F	Saybolt Viscosity	+174 +188	0.2	TOT	280
22F	Oxidation Stability	+204 +218	0.2	TOT	280
28F	Kinematic Viscosity	+97.5 +102.5	0.1	TOT	310
29F	Kinematic Viscosity	+127.5 +132.5	0.1	TOT	310
30F	Kinematic Viscosity	+207.5 +212.5	0.1	TOT	310
33F	Low Aniline Point	-36.5 +107.5	0.5	50 mm	425
34F	Medium Aniline Point	+77 +221	0.5	50 mm	425
35F	High Aniline Point	+194 +338	0.5	50 mm	425
43F	Kinematic Viscosity	-61 -29	0.2	TOT	425
44F	Kinematic Viscosity	+66.5 +71.5	0.1	TOT	310
45F	Kinematic Viscosity	74.5 +79.5	0.1	TOT	310
46F	Kinematic Viscosity	+119.5 +124.5	0.1	TOT	310
47F	Kinematic Viscosity	+137.5 +142.5	0.1	TOT	310
48F	Kinematic Viscosity	+177.5 +182.5	0.1	TOT	310
50F	Gas Colorimeter Inlet	+54 +101	0.1	TOT	473
51F	Gas Colorimeter Outlet	+69 +116	0.1	TOT	473
54F	Congealing Point	+68 +213	0.5	TOT	315
56F	Bomb Calorimeter	+66 +95	0.05	TOT	600
57F	Tag Closed Tester Low R.	-4 +122	1	57 mm	292
58F	Tank	-30 +120	1	TOT	305
59F	Tank	0 +180	1	TOT	305
60F	Tank	+170 +500	2	TOT	305
61F	Petrolatum Melting Point	+90 +260	0.5	79 mm	385
62F	Precision	-36 +35	0.2	TOT	384
63F	Precision	+18 +89	0.2	TOT	384
64F	Precision	+77 +131	0.2	TOT	384
65F	Precision	+122 +176	0.2	TOT	384
66F	Precision	+167+221	0.2	TOT	384
67F	Precision	+203 +311	0.5	TOT	384
68F	Precision	+293 +401	0.5	TOT	384
69F	Precision	+383 +581	1	TOT	384
70F	Precision	+563 +761	1	TOT	384
71F	Oil in Wax	-35 +70	1	76 mm	360
72F	Kinematic Viscosity	-2.5 +2.5	0.1	TOT	310
73F	Kinematic Viscosity	-42.5 -37.5	0.1	TOT	310
74F	Kinematic Viscosity	-67.5 -62.5	0.1	TOT	310
75F	Coolant (Antif.) Fr. Pt.	-35 +35	0.5	100 mm	413
76F	Coolant (Antif.) Fr. Pt.	-65 +5	0.5	100 mm	413
77F	Saybolt Viscosity	+245 +265	0.5	TOT	280
78F	Saybolt Viscosity	+295 +315	0.5	TOT	280
79F	Saybolt Viscosity	+345 +365	0.5	TOT	280
80F	Saybolt Viscosity	+395 +415	0.5	TOT	280
81F	Saybolt Viscosity	+445 +465	0.5	TOT	280
82F	Fuel Rating, Engine	0 +220	2	30 mm	165
83F	Fuel Rating, Air	+60 +160	1	40 mm	174
84F	Fuel Rating, Orifice Tank	+75 +175	1	249 mm	387
85F	Fuel Rating, Surge	+100 +300	2	181 mm	314
86F	Fuel Rating, Mix	+200 +350	2	35 mm	170
87F	Fuel Rating, Coolant	+300 +400	1	40 mm	175
88F	Vegetable Oil Flash	+50 +392	2	57 mm	292
97F	Tank	0 +120	1	TOT	305
98F	Tank	+60 +180	1	TOT	305
99F	Weathering Test	-58 +41	0.5	35 mm	305
108F	Saybolt Viscosity	+270 +290	0.5	TOT	280
109F	Saybolt Viscosity	+320 +340	0.5	TOT	280
110F	Kinematic Viscosity	+272.5 +277.5	0.1	TOT	310
113F	Soft.P.(Bitumen) Wide R.	+30 +350	1	TOT	410
118F	Kinematic Viscosity	+83.5 +88.5	0.1	TOT	310
119F	Coolant (Antif.) Fr. Pt.	-37 -22	0.2	TOT	425
126F	Kinematic Viscosity	-17.5 -12.5	0.1	TOT	310
128F	Kinematic Viscosity	+29.5 +34.5	0.1	TOT	310
129F	Kinematic Viscosity	+197.5 +202.5	0.1	TOT	310
130F	Tank	+20 +220	1	TOT	305
135F	Fuel Rating, Air-High	+100 +200	1	40 mm	168
136F	Aviation Fuel Density	-5 +140	0.5	TOT	285

Control points °F										
0	32	122	212	302						
32	150	300	450	580						
32	200	370	540	700						
-30	32	120								
-94	-30	32	70							
32	100	200	300	400	500	570				
32	200	370	540	700						
32	100	160	220							
212	390	570	700							
32	200	370	540	700						
-5	15	32	60	85	110	135	160	185	210	
100	120	140	160	180						
32	70	100	140	180						
90	140	190	240	290	340	390				
70	77									
100	107									
122	130									
140	147									
180	187									
210	212									
32	100	102								
32	130	132								
32	210	212								
-31	-4	32	68	104						
77	113	149	185	212						
212	250	285	320	338						
-60	-50	-40	-30	32						
32	68	70								
32	77	79								
32	122	124								
32	140	142								
32	180	182								
55	60	65	70	75	80	85	90	95	100	
70	75	80	85	90	95	100	105	110	115	
70	120	170	210							
66	70	74	78	82	88	92	95			
-3	32	77	122							
-20	32	80	120							
32	80	130	180							
212	350	490								
100	150	200	250							
-35	-15	0	15	32						
20	32	50	70	88						
32	80	95	115	130						
32	125	145	160	175						
32	168	185	200	220						
32	205	240	275	310						
32	300	340	370	400						
32	400	460	520	580						
32	570	640	700	760						
-30	0	32	70							
-2	0	32								
-42	-40	32								
-67	-65	32								
-35	0	32								
-65	-30	5								
250	260									
300	310									
350	360									
400	410									
450	460									
32	100	200								
85	135									
100	150									
150	250									
225	325									
300	400									
110	212	300	392							
0	32	70	110							
60	100	140	180							
-50	-25	0	32							
275	285									
325	335									
32	275	277								
32	122	212	302	347						
32	86	88								
-36	-22	32								
-17	-15	32								
32	34									
32	200	202								
32	100	160	220							
125	195									
-5	15	32	60	85	110	135				

A.S.T.M standardized Thermometers

www.allafrance.com

RUSSIAN

GOST TRACEABLE

STANDARDIZED THERMOMETERS
ТИН (TIN) - ТН (TN) - ТЛ (TL)

ТИН THERMOMETERS

Registered by the Russian State.
Certificate N° 27660.

T 017

N° ТИН	Range °C	Div. °C	Imm.	mm	A.S.T.M Equivalence
ТИН 2-2	+39 +54	0.2	90 mm	237	24C
ТИН 2-3	+95 +105	0.2	90 mm	212	25C
ТИН 3-1	-38 +50	1	108 mm	230	5C
ТИН 3-3	-80 +20	1	76 mm	230	6C
ТИН 4-1	-2 +400	1	TOT	385	8C
ТИН 4-2	-2 +300	1	TOT	385	7C
ТИН 7-2	+25 +105	0.2	50 mm	420	34C
ТИН 7-3	+90 +170	0.2	50 mm	420	35C
ТИН 7-4	-38 +42	0.2	50 mm	420	33C
ТИН 8	-80 +20	0.5	TOT	300	114C
ТИН 10-1	+18,6 +21,4	0.05	TOT	305	44C
ТИН 10-2	+36,6 +39,4	0.05	TOT	305	28C
ТИН 10-3	+48,6 +51,4	0.05	TOT	305	46C
ТИН 10-4	+98,6 +101,4	0.05	TOT	305	121C
ТИН 10-7	+23,6 +26,4	0.05	TOT	305	45C
ТИН 10-8	+38,6 +41,4	0.05	TOT	305	120C
ТИН 12	+34 +42	0.1	TOT	275	18C

1



2



Every standardized thermometer has an individual serial number.

The serial number and the standard are printed on the back of the instrument.

STANDARD

GOST 400-80
ТН - ТЛ THERMOMETERS

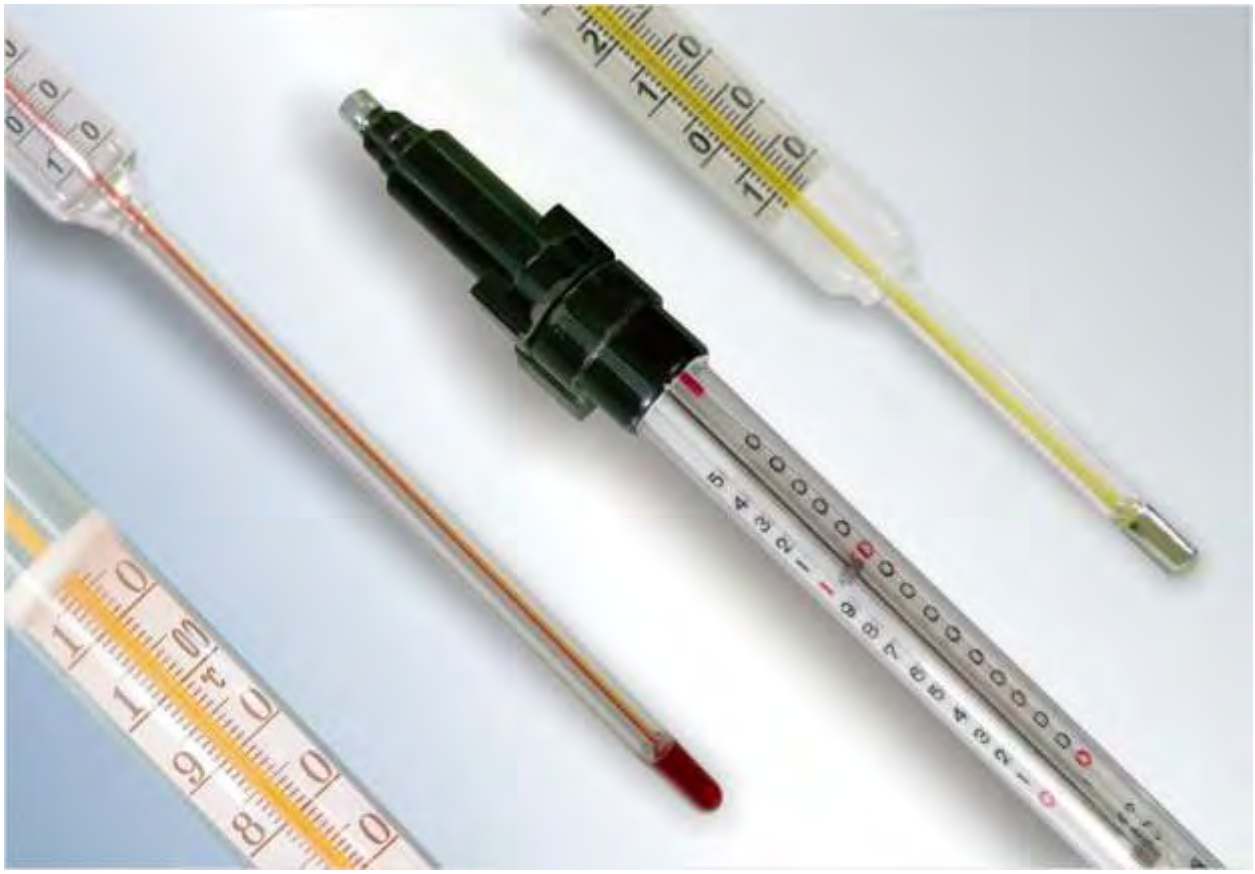
Registered by the Russian State.
Certificate N° 27661.

T 018

Type	Range °C	Div. °C	mm	Ø
ТН-6	-30+60	1	300 ±10	10 ±1
ТН-8М	-80+60	1	400 ±10	11 ±1
ТЛ4-2	0+55	0.1	500/530	11/12

INDUSTRIAL & CONTACT

THERMOMETERS



INDUSTRIAL THERMOMETERS

Upper body: diameter standard 20 mm.
other diameter possible: 13, 15, 17, 24, 32 mm (±1 mm).

Lower stem: - diameter standard 7 mm (length until 700 mm).
diameter standard 10/11 mm (length over 700 mm).
- length in 50 mm increments, possible up to and over 2500 mm (100, 150, 200, 250, 300...).

Reflecting capillary: yellow standard reflecting. Clear reflecting capillaries available upon request.

Immersion: for our standard industrial thermometers, the immersion is the length of the lower stem.
other immersions possible upon request.

More details on the immersions types of thermometers in page 7
or on our website page www.allafrance.com/help.html

INFO Special or angled thermometers on request. Generally the angles are 45° or 90° which must be specified on the purchase order. In every case we require a plan.

These thermometers are not available with Calibration Certificates

INDUSTRIAL THERMOMETERS

The details given below should only be used as a guide.

We have tried to define some standard parameters, by using standard specifications such as **AFNOR B 37-003 and DIN 16-174** with the aim of reducing delivery delays, and increasing customer satisfaction.



1

T 021 **Industrial thermometers with red liquid** (1)

Range °C	Div °C	Upper body mm
-10+60	1	200
-10+110	1	200
-10+150	1	200
-30+110	1	200
-50+50	1	200
-80+50	1	200
-100+30	1	200

T 022 **Industrial thermometers with mercury filling**

Range °C	Div °C	Upper body mm
-10+60	1	200
-10+110	1	200
-10+150	1	200
-10+200	1	250
-30+110	1	200
-10+250	2	200
-10+300	2	250
-10+360	2	250
-10+420	5	200
-10+480	5	200

CONTACT THERMOMETERS

Double scale models (2)

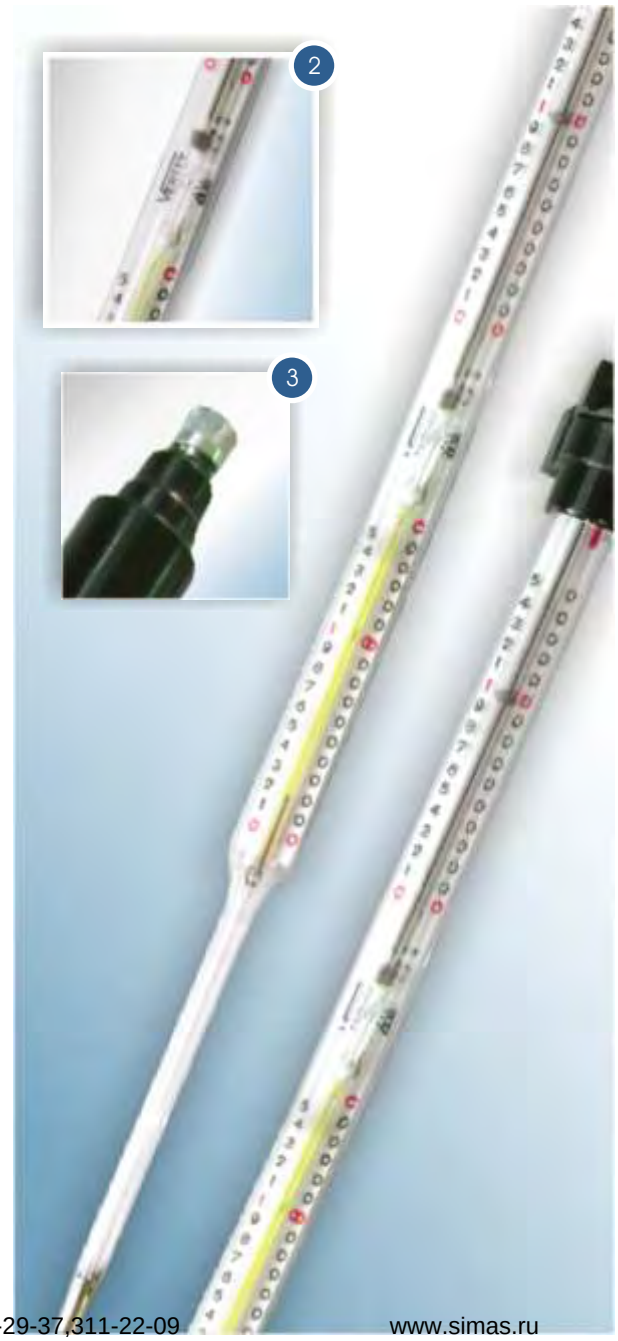
The filling liquid is Mercury.

Adjustment is made by means of a rotating magnet, which can be locked by a screw, so maintaining the setting (3)
Easy connection by means of an isolated and protected plug.

Standard lower part lengths from 50 to 300 mm.
(to specify on the purchase order)

T 023

Range °C	Div °C	Lower part mm.
0+100	0.1	50 at 300
0+50	0.2	50 at 300
0+100	0.2	50 at 300
0+50	0.5	50 at 300
0+100	0.5	50 at 300
0+150	0.5	50 at 300
0+50	1	50 at 300
0+100	1	50 at 300
0+150	1	50 at 300
0+200	1	50 at 300
0+250	1	50 at 300
0+300	1	50 at 300
-38+40	1	50 at 300
0+200	2	50 at 300
0+250	2	50 at 300
0+300	2	50 at 300



2

3

VARIOUS THERMOMETERS

2

4

1

3

MAXIMUM READING SWINGING THERMOMETERS

Solid stem thermometers.
The mercury column is stabilized at the maximum temperature. Before performing a new test, the mercury column must be brought back down to ambiente temperature by shaking the thermometer.

T 024 ①

	Range °C	Imm.	mm
Div. 1°C	-10+110	TOT	260
	-10+150	TOT	260
	-10+250	TOT	300

STEM THERMOMETER for battery

The glass used has a diameter of 6.5-7mm

T 025

Red liquid	Range °C	Imm. mm	mm
Div. 1°C	-10+70°C	90/100	255

INTERNAL SCALE THERMOMETERS

The glass used has a diameter of about 8-10 mm.
With suspension ring.
Other divisions are available upon request :
0.1°C / 0.2°C / 0.5°C.

T 026 ②

	Range °C	Accuracy °C	Imm.	mm
Red liquid Div. 1°C	-10+60	1	TOT	200
	-10+110	1	TOT	260
	-10+150	1	TOT	260
Mercury Div. 1°C	-10+60	1	TOT	200
	-10+110	1	TOT	260
	-10+150	1	TOT	260
	-10+250	1.5	TOT	300
	-10+360	1.5	TOT	340

WET & DRY THERMOMETERS

Thermometer in plastic with red liquid.
The table printed on the instrument is used to calculate humidity from the difference between the wet and dry bulb temperatures at a given temperature.

T 027 ③

	Range °C	Accuracy °C	mm
Div. 1°C	-10+50	1	300x75
	0+100	2	300x75

LIQUID CRYSTAL THERMOMETERS

T 028 Self adhesive ④

	Range °C	Models	mm
Div. 1°C	+18+34 *	vertical	132x14
	+18+34	vertical	132x20
Div. 2°C	0+12	vertical	132x20
	+10+40	vertical	132x20
	+16+40	horizontal	101x12
Div. 3°C	-24-3	vertical	132x20

(*) In blister

Other thermometers in our specific catalogue
Catering & food Industry

www.simas.ru Компания СИМАС - официальный дилер ALLA FRANCE. info@simas.ru

Glass Hydrometers





Hydrometers

info@simas.ru т/ф (495) 980-29-37,311-22-09 www.simas.ru

EUROPEAN

MRA TRACEABLE

STANDARDIZED HYDROMETERS ISO, BS, DIN, NF ...



- **Scale**
  The scale of the hydrometer is fully marked with all the reference norms, the calibration temperature, the superficial tensions, the individual number of the instrument, the serial number and the France logo.

- **Benchmark**
  Engraved on the stem to show any displacement of the scale (see page 8).



- **Calibration and Certificates**
  Our official masters are regularly controlled and are traceable in over 68 countries worldwide (see page 5).

More information about the signatory countries on
http://www.european-accreditation.org/content/mla/scopes.htm

Available, upon request with an ALLA FRANCE EU Traceable Calibration Certificate, or an EO Official Calibration Certificate controlled by an accredited European Laboratory (see pages 4-5 for more information about Certificates).

Systematically delivered with a Traceability and Conformity Certificate

High temperature calibration upon request (see page 43)

HELP

The link of our page www.allafrance.com/help.html is printed on the body of our hydrometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

NF T 60101
PETROLEUM INDUSTRY

They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 010 M50 Series

		Range g/ml
Temp.	15 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.001 g/ml	
Accuracy	0.001 g/ml	
Length	270 mm	

D 011 S50 Series

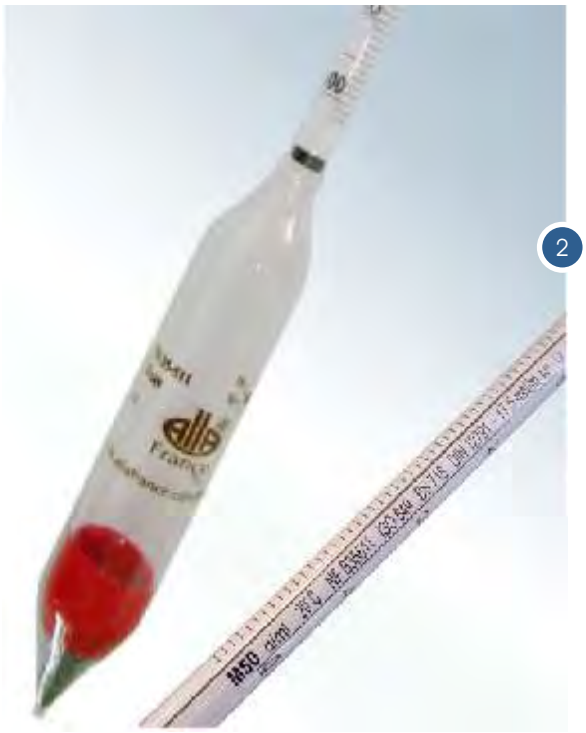
		Range g/ml
Temp.	15 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.001 g/ml	
Accuracy	0.001 g/ml	
Length	190 mm	

D 012 L50 Series ①

		Range g/ml
Temp.	15 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.0005 g/ml	
Accuracy	0.0005 g/ml	
Length	335 mm	



①



②

ISO 649 - NF B35511 - BS 718 - DIN 12791
PETROLEUM INDUSTRY

They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 013 M50 - SP Series ②

		Range g/ml
Temp.	20 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.001 g/ml	
Accuracy	0.0006 g/ml	
Length	270 mm	

D 014 S50 - SP Series

		Range g/ml
Temp.	20 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.001 g/ml	
Accuracy	0.001 g/ml	
Length	190 mm	

D 015 L50 - SP Series

		Range g/ml
Temp.	20 °C	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Division	0.0005 g/ml	
Accuracy	0.0003 g/ml	
Length	335 mm	

D 016 BS 718 SP Aviation fuel

		Range g/ml
Temp.	15 °C and 20°C	0.775 - 0.825
Division	0.001 g/ml	
Accuracy	0.0006 g/ml	
Length	270 mm	

ISO 649 - NF B35511 - BS 718 - DIN 12791
Density hydrometers (g/ml)
GENERAL PURPOSE

They are calibrated according to the following surface tensions:
from 0.600 to 1.000 g/ml= 16 at 35 mN/m (low tension)
from 1.000 to 1.300 g/ml= 55 mN/m (medium tension)
from 1.300 to 2.000 g/ml= 75 mN/m (high tension)
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request



D 001 M100 Series

Temp.	20 °C	Range g/ml
Division	0.002 g/ml	0.600 - 0.700 0.700 - 0.800 0.800 - .....
Accuracy	0.002 g/ml	↓
Length	250 mm	..... - 1.900 1.900 - 2.000

D 002 S50 Series

Temp.	20 °C	Range g/ml
Division	0.002 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.002 g/ml	↓
Length	190 mm	..... - 1.950 1.950 - 2.000

D 003 M50 Series ①

Temp.	20 °C	Range g/ml
Division	0.001 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.001 g/ml	↓
Length	270 mm	..... - 1.950 1.950 - 2.000

D 004 L50 Series

Temp.	20 °C	Range g/ml
Division	0.0005 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.0005 g/ml	↓
Length	335 mm	..... - 1.950 1.950 - 2.000

D 005 L20 Series

Temp.	20 °C	Range g/ml
Division	0.0002 g/ml	0.600 - 0.620 0.620 - 0.640 0.640 - .....
Accuracy	0.0002 g/ml	↓
Length	335 mm	..... - 1.980 1.980 - 2.000

When an **ISO 650** hydrometer has an equivalent **ASTM** hydrometer, both standards are printed on the back of the instrument.

ISO 650
Specific Gravity hydrometers (Sp.Gr)
GENERAL PURPOSE

They are calibrated according to the following surface tensions:
from 0.600 at 1.000 Sp.Gr = 16 at 35 mN/m (low tension)
from 1.000 at 1.300 Sp.Gr = 55 mN/m (medium tension)
from 1.300 at 2.000 Sp.Gr = 75 mN/m (high tension)
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 006 M100 Series ②

Temp.	60/60°F	Range Sp.Gr
Division	0.002 Sp.Gr	0.600 - 0.700 0.700 - 0.800 0.800 - .....
Accuracy	0.002 Sp.Gr	↓
Length	250 mm	..... - 1.900 1.900 - 2.000

D 007 S50 Series

Temp.	60/60°F	Range Sp.Gr
Division	0.002 Sp.Gr	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.002 Sp.Gr	↓
Length	190 mm	..... - 1.950 1.950 - 2.000

D 008 M50 Series

Temp.	60/60°F	Range Sp.Gr
Division	0.001 Sp.Gr	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.001 Sp.Gr	↓
Length	270 mm	..... - 1.950 1.950 - 2.000

D 009 L50 Series

Temp.	60/60°F	Range Sp.Gr
Division	0.0005 Sp.Gr	0.600 - 0.650 0.650 - 0.700 0.700 - .....
Accuracy	0.0005 Sp.Gr	↓
Length	335 mm	..... - 1.950 1.950 - 2.000

ISO 649 - NF B35511 - BS 718 - DIN 12791
A.S.T.M. method D1298
PETROLEUM INDUSTRY

They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

Official or Traceable Calibration Certificate upon request

D 017 M50 - SP Series

Temp.	15 °C	Range g/ml
Division	0.001 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Accuracy	0.0006 g/ml	
Length	270 mm	

D 018 S50 - SP Series

Temp.	15 °C	Range g/ml
Division	0.001 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Accuracy	0.001 g/ml	
Length	190 mm	

D 019 L50 - SP Series

Temp.	15 °C	Range g/ml
Division	0.0005 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.050 1.050 - 1.100
Accuracy	0.0003 g/ml	
Length	335 mm	

NF 41008 - DIN 12804 - ISO 3993
OIL AND GAS INDUSTRY

These instruments are designed for the control of gas, such as butane and propane.
They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

D 020 NF 41008

Temp.	15 °C	Series	Range g/ml
Division	0.001 g/ml	PRO-050TH	0.500 - 0.550
Accuracy	0.001 g/ml	BUT-055TH	0.550 - 0.600
Length	350 mm		

D 021 DIN 12804

Temp.	15 °C	Series	Range g/ml
Division	0.0005 g/ml	T1	0.500 - 0.550
Length	330 mm	T2	0.550 - 0.600
		T3	0.600 - 0.650

D 022 ISO 3993

Temp.	15 °C	Series	Range g/ml
Division	0.001 g/ml	ISO-050	0.500 - 0.580
Length	330 mm	ISO-057	0.570 - 0.650

ECE/ENERGY/19
DRAFT SURVEY HYDROMETERS

For determining the apparent density (in air) of seawater or fresh water.
Used for ship draft survey calculations.
Medium surface tension (55 mN/m).

Official or Traceable Calibration Certificate upon request

D 023 ①

Temp.	15 °C	Range kg/l
Division	0.0005 kg/l	0.990 - 1.040
Accuracy	0.0005 kg/l	
Length	335 mm	

BS 1377
SOIL HYDROMETERS

They are calibrated for medium surface tension (55 mN/m). Reading below meniscus.

D 024 ②

Temp.	20 °C	Range g/ml
Division	0.001 g/ml	0.995 - 1.030
Accuracy	0.001 g/ml	
Length	280 mm	

BS 734 & NF B 35 522
MILK HYDROMETERS

They are calibrated for medium surface tension (45 mN/m). Reading upper meniscus.

D 025

Temp.	20 °C	Range g/ml
Division	0.0002 or 0.0005 g/ml	1.015 - 1.025 1.025 - 1.035 1.035 - 1.045
Accuracy	0.0002 or 0.0005 g/ml	
Length	240 or 250 mm	

1

2

European standardized Hydrometers

www.allafrance.com

France

U.S.A

A2LA TRACEABLE

STANDARDIZED HYDROMETERS A.S.T.M, °API ...



- **A.S.T.M.** is an American standard.
  These hydrometers are manufactured according to the standards from the last ASTM E100 Committee of the **AMERICAN SOCIETY FOR TESTING AND MATERIAL**.

- **Scale**
  The scale of the hydrometer is fully marked with all the reference norms, the calibration temperature, the superficial tensions, the individual number of the instrument, the serial number and the France logo.

HELP

The link of our page www.allafrance.com/help.html is printed on the body of our hydrometers and accessible to the user. This page answers most metrological questions asked and allows you to limit repetitive questions to your Customer Service, while being a solid support for your sales force.

- **Benchmark**
  Engraved on the stem to show any displacement of the scale (see page 8).

- **Calibration and Certificates**
  Our official masters are regularly controlled and are traceable in over 68 countries worldwide (see page 5).

More information about the signatory countries on
http://www.european-accreditation.org/content/mla/scopes.htm

Systematically delivered with a Traceability and Conformity Certificate

A.S.T.M. E100
SPECIFIC GRAVITY HYDROMETERS (Sp.Gr)

Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 026 Low surface tension ① (16 at 35 mN/m)

Temp.	60/60°F
Division	0.0005 Sp.Gr
Accuracy	0.0005 Sp.Gr
Length	335 mm

Series	Range Sp.Gr
82H62	0.650 - 0.700
83H62	0.700 - 0.750
84H62	0.750 - .....
↓	↓
	..... - 1.050
90H62	1.050 - 1.100

D 027 Medium surface tension (55 mN/m)

Temp.	60/60°F
Division	0.0005 Sp.Gr
Accuracy	0.0005 Sp.Gr
Length	335 mm

Series	Range Sp.Gr
98H62	0.950 - 1.000
111H62	1.000 - 1.050
112H62	1.050 - .....
↓	↓
	..... - 1.450
120H62	1.450 - 1.500

D 028 Medium and high surface tension

Temp.	60/60°F
Division	0.001 Sp.Gr
Accuracy	0.001 Sp.Gr
Length	270 mm

Series	Range Sp.Gr
102H62	0.650 - 0.700
103H62	0.700 - 0.750
104H62	0.750 - .....
↓	↓
	..... - 1.800
141H62	1.800 - 1.850

①

A.S.T.M. E100 °API
PETROLEUM INDUSTRY

They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 029

Temp.	60/60°F
Division	0.1 °API
Accuracy	0.1 °API
Length	335 mm

Series	Range °API
1H62	-1 - 11
2H62	9 - 21
↓	↓
9H62	79 - 91
10H62	89 - 101

D 030

Temp.	60/60°F
Division	0.1 °API
Accuracy	0.1 °API
Length	168 mm

Series	Range °API
21H62	0 - 6
22H62	5 - 11
↓	↓
39H62	90 - 96
40H62	95 - 101



②

Thermometer in the body : 2°F
0+150°F (or) +30+180°F (or) +60+220°F ②

D 031

Temp.	60/60°F
Division	0.1 °API
Accuracy	0.1 °API
Length	387 mm

Series	Range °API
41H62	15 - 23
42H62	22 - 30
↓	↓
59H62	79 - 91
60H62	89 - 101

D 032 **Thermometer in the stem** : 2°F +30+220°F

Temp.	60/60°F
Division	0.1 °API
Accuracy	0.1 °API
Length	387 mm

Series	Range °API
71H62	-1 - 11
72H62	9 - 21
73H62	19 - 31
74H62	29 - 41

U.S.A standardized Hydrometers
www.allafrance.com
France

A.S.T.M. E100
PETROLEUM INDUSTRY
Canadian Government Agreement

They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

EO EU
Official or Traceable Calibration Certificate upon request

D 033 ①

		Series	Range kg/m³
Temp.	15°C	311H	600 - 650
Division	0.5 kg/m³	312H	650 - .....
Accuracy	0.5 kg/m³	⋮	⋮
Length	330 mm	319H	..... - 1 050
		320H	1 050 - 1 100

With thermometer in the body : 1°C
-20+65°C (or) 0+85°C (or)+20+105°C

D 034 ②

		Series	Range kg/m³
Temp.	15°C	300H	600 - 650
Division	0.5 kg/m³	301H	650 - .....
Accuracy	0.5 kg/m³	⋮	⋮
Length	380 mm	308H	..... - 1 050
		309H	1 050 - 1 100

3



A.S.T.M. D 422 (E100)
SOIL HYDROMETERS
They are calibrated for medium surface tension (55 mN/m)
Reading below meniscus.

D 038 ③

		Serie	Range Sp.Gr
Temp.	68/68°F	151H62	0.995 - 1.038
Division	0.001 Sp.Gr		
Accuracy	0.001 Sp.Gr		
Length	280 mm		

D 039

		Serie	Range g/l
Temp.	68°F	152H62	-5 +60
Division	1 g/l		
Accuracy	1 g/l		
Length	280 mm		

A.S.T.M. D287 - A.S.T.M. E100
OIL AND GAS INDUSTRY
These instruments are designed for the control of gas, such as butane and propane.
They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

D 035 **A.S.T.M. D287** (specific gravity)

		Series	Range Sp.Gr
Temp.	60/60°F	D-050	0.500 - 0.580
Division	0.001 Sp.Gr or 0.0005 Sp.Gr	D-057	0.570 - 0.650
Length	330 mm		

D 036 **A.S.T.M. E100** (specific gravity)
with thermometer: +30+60°F - HG

		Serie	Range Sp.Gr
Temp.	60/60°F	101H62	0.500 - 0.650
Division	0.001 Sp.Gr		
Length	387 mm		

D 037 **A.S.T.M. E100**
with thermometer: 0+35°C - HG

		Serie	Range kg/m³
Temp.	15 °C	310H	500 - 650
Division	1 kg/m³		
Longueur	387 mm		



RUSSIAN

GOST TRACEABLE

STANDARDIZED HYDROMETERS AH (AN), AHT-1 (ANT-1), AHT-2 (ANT-2)



STANDARD

These hydrometers are **registered by the Russian State.**
Certificate N° 33218 ①

Scale
The scale of the hydrometer is fully marked with all the reference norms, the calibration temperature, the surface tensions and the individual number.

Benchmark
Engraved on the stem to show any displacement of the scale (see page 8).



PETROLEUM INDUSTRY
They are calibrated for a low surface tension (between 16 and 35 mN/m).
Reading below meniscus.

D 040 **AH Series** ②

		Range kg/m³
Temp.	15°C or 20°C	650 - 680 680 - 710 710 - ..... ↓ ..... - 1040 1040 - 1070
Division	0.5 kg/m³	
Accuracy	0.5 kg/m³	
Length	300 mm	

PETROLEUM INDUSTRY WITH THERMOMETER
Red liquid thermometer -20+45°C : 1°C
Reading below meniscus.

D 041 **AHT-1 Series** ③

		Range kg/m³
Temp.	15°C or 20°C	650 - 710 710 - 770 770 - ..... ↓ ..... - 1010 1010 - 1070
Division	0.5 kg/m³	
Accuracy	0.5 kg/m³	
Length	500 mm	

Red liquid thermometer -20+35°C : 1°C
Reading below meniscus.

D 042 **AHT-2 Series** ④

		Range kg/m³
Temp.	15°C or 20°C	670 - 750 750 - 830 830 - 910 910 - 990
Division	1 kg/m³	
Accuracy	1 kg/m³	
Length	300 mm	

www.allafrance.com

COMMERCIAL GRADE
HYDROMETERS

COMMERCIAL GRADE
Density hydrometers (g/ml)
Reading below meniscus.

D 045 Range finder hydrometers g/ml ①

		Range g/ml
Temp.	20°C	0.650 - 1.000 1.000 - .....
Division	0.005 or 0.010 g/ml	▼
Accuracy	0.005 or 0.010 g/ml	.....- 2.000 1.500 - 2.000
Length	235 or 300 mm	

D 046 Hydrometers > 2000 g/ml

		Range g/ml
Temp.	20°C	2.000 - 2.500 2.500 - .....
Division	0.002-0.005-0.010 g/ml	▼
Accuracy	0.004-0.010-0.020 g/ml	..... - 3.500 3.500 - 4.000
Length	300 mm	

D 047 300 g/ml Series

		Range g/ml
Temp.	20°C	1.000 - 1.300 1.300 - 1.600 1.600 - 1.900
Division	0.005 g/ml	
Accuracy	0.010 g/ml	
Length	300 mm	

D 048 200 g/ml Series ②

		Range g/ml
Temp.	20°C	0.600 - 0.800 0.800 - 1.000 1.000 - .....
Division	0.002 g/ml	▼
Accuracy	0.004 g/ml	..... - 1.800 1.800 - 2.000
Length	300 mm	

D 049 100 g/ml Series

		Range g/ml
Temp.	20°C	0.600 - 0.700 0.700 - 0.800 0.800 - .....
Division	0.001 g/ml	▼
Accuracy	0.002 g/ml	..... - 1.900 1.900 - 2.000
Length	300 mm	

D 050 100 g/ml Series - Scale shifted

		Range g/ml
Temp.	20°C	0.650 - 0.750 0.750 - 0.850 0.850 - .....
Division	0.001 g/ml	▼
Accuracy	0.002 g/ml	..... - 1.950 1.950 - 2.050
Length	300 mm	



Other temperatures of calibration upon request

D 051 60 g/ml Series ③

		Range g/ml
Temp.	15°C	0.600 - 0.660 0.650 - 0.710 0.700 - .....
Division	0.001 g/ml	▼
Accuracy	0.002 g/ml	..... - 1.960 1.950 - 2.010
Length	280 mm	

D 052 60 g/ml Series - Small size

		Range g/ml
Temp.	20°C	0.700 - 0.760 0.760 - 0.820 0.820 - .....
Division	0.001 g/ml	▼
Accuracy	0.002 g/ml	..... - 1.900 1.900 - 1.960
Length	160 mm	

These hydrometers are not delivered with Calibration Certificates

COMMERCIAL GRADE

Density hydrometers (g/ml)

With benchmark.

Reading below meniscus.

D 053 — **70 g/ml Series** ①

Temp.	20°C	Range g/ml
Division	0.001 g/ml	0.635 - 0.705 0.695 - 0.765 0.755 - .....
Accuracy	0.001 g/ml	↓
Length	185 mm	..... - 1.905 1.895 - 1.965

WITH THERMOMETERS

Density hydrometers (g/ml)

Red liquid Thermometer 0+40°C : 1°C

Reading below meniscus.

D 054 — **100 g/ml Series with thermometer** ②

Temp.	20°C	Range g/ml
Division	0.001 g/ml	0.600 - 0.700 0.700 - 0.800 0.800 - .....
Accuracy	0.001 g/ml	↓
Length	310 mm	..... - 1.900 1.900 - 2.000

D 055 — **60 g/ml Series with thermometer** ③

Temp.	15°C	Range g/ml
Division	0.001 g/ml	0.600 - 0.660 0.650 - 0.710 0.700 - .....
Accuracy	0.001 g/ml	↓
Length	280 mm	..... - 1.960 1.950 - 2.010





Other temperatures of calibration upon request (see page 43)

COMMERCIAL GRADE

Specific gravity hydrometers (Sp.Gr)

Reading below meniscus.

D 056 — **Range finder hydrometers Sp.Gr.** ④

Temp.	60/60°F	Range Sp.Gr
Division	0.005 or 0.010 Sp.Gr	0.650 - 1.000 1.000 - .....
Accuracy	0.005 or 0.010 Sp.Gr	↓
Length	235 at 310 mm	..... - 2.000 1.500 - 2.000

D 057 — **200 Sp.Gr. Series** ⑤

Temp.	60/60°F	Range Sp.Gr
Division	0.002 Sp.Gr	0.600 - 0.800 0.800 - 1.000 1.000 - .....
Accuracy	0.004 Sp.Gr	↓
Length	300 mm	..... - 1.800 1.800 - 2.000

D 058 — **100 Sp.Gr. Series** ⑥

Temp.	60/60°F	Range Sp.Gr
Division	0.001 Sp.Gr	0.600 - 0.700 0.700 - 0.800 0.800 - .....
Accuracy	0.002 Sp.Gr	↓
Length	300 mm	..... - 1.900 1.900 - 2.000

These hydrometers are not delivered with Calibration Certificates

HYDROMETERS FOR TROPICAL COUNTRIES



1

The reference temperature for density hydrometers is 20°C. In special circumstances and in tropical countries, it is necessary to operate at an ambiente temperature above 20°C. In the standard ISO 387 we accept the use of 27°C for standardized instruments and up to 27.5°C for non standardized instruments.

ISO 387 - NF B 35-510
Density hydrometers (g/ml)
GENERAL PURPOSE

They are calibrated according to the following surface tensions:
from 0.600 to 1.000 g/ml= 16 at 35 mN/m (low tension)
from 1.000 to 1.300 g/ml= 55 mN/m (medium tension)
from 1.300 to 2.000 g/ml= 75 mN/m (high tension)
Reading below meniscus.

D 059 — 100 g/ml Series

Temp.	27 °C	Range g/ml
Division	0.002 g/ml	0.600 - 0.700 0.700 - 0.800 0.800 - ..... ↓ ..... - 1.900 1.900 - 2.000
Accuracy	0.002 g/ml	
Length	250 mm	

D 060 — 50 g/ml Series ①

Temp.	27 °C	Range g/ml
Division	0.001 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.950 1.950 - 2.000
Accuracy	0.001 g/ml	
Length	270 mm	

D 061 — 50 g/ml Series

Temp.	27 °C	Range g/ml
Division	0.0005 g/ml	0.600 - 0.650 0.650 - 0.700 0.700 - ..... ↓ ..... - 1.950 1.950 - 2.000
Accuracy	0.0005 g/ml	
Length	335 mm	

COMMERCIAL GRADE
Density hydrometers (g/ml)
Reading below meniscus.

D 062 — Range finder hydrometers

Temp.	27.5°C	Range g/ml
Division	0.005 g/ml	0.650 - 1.000 1.000 - 1.500
Accuracy	0.010 g/ml	
Length	235 - 300 mm	

D 063 — 200 g/ml Series

Temp.	27.5°C	Range g/ml
Division	0.002 g/ml	0.600 - 0.800 0.800 - 1.000 1.000 - ..... ↓ ..... - 1.800 1.800 - 2.000
Accuracy	0.004 g/ml	
Length	300 mm	

D 064 — 100 g/ml Series

Temp.	27.5°C	Range g/ml
Division	0.001 g/ml	0.600 - 0.700 0.700 - 0.800 0.800 - ..... ↓ ..... - 1.900 1.900 - 2.000
Accuracy	0.002 g/ml	
Length	300 mm	

D 065 — 100 g/ml Series with red liquid thermometer 0+40°C : 1°C

Temp.	27.5°C	Range g/ml
Division	0.001 g/ml	0.600 - 0.700 0.700 - 0.800 0.800 - ..... ↓ ..... - 1.500 1.500 - 1.600
Accuracy	0.002 g/ml	
Length	310 mm	

Other scales available upon request

°BAUME

HYDROMETERS

1

This unit of measure, obselete in most countries is still asked for by certain industries or users.
They can be asked for in order to perform general purpose or specific usages.

D 066 **Range finder hydrometers °Bé** ① ②

Temp.	15°C	Range °Bé
Division	0.5 or 1 °Bé	0 - 70 0 - ....
Accuracy	1 or 2 °Bé	▼
Length	240 at 320 mm	40 - 70

D 067 **15 °Bé Series**

Temp.	15°C	Range °Bé
Division	0.1 or 0.5 °Bé	0 - 15 15 - .....
Accuracy	0.2 or 1 °Bé	▼
Length	280 mm	... - 60 60 - 75

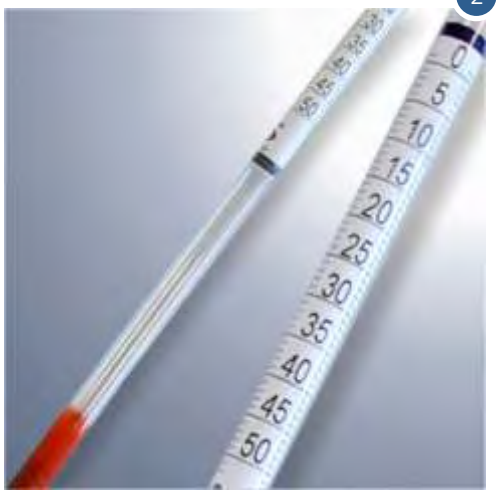
D 068 **10 °Bé Series** ③

Temp.	15°C	Range °Bé
Division	0.1 °Bé	0 - 10 10 - ...
Accuracy	0.2 °Bé	▼
Length	280 mm	... - 60 60 - 70

D 069 **10 °Bé Series - Scale shifted**

Temp.	15°C	Range °Bé
Division	0.1 °Bé	5 - 15 15 - .....
Accuracy	0.2 °Bé	▼
Length	280 mm	... - 65 65 - 70

2



Other temperature of calibration upon request

3



Other scales available in our specific catalogues

These hydrometers are not delivered with Calibration Certificates

° BRIX & ° TWADDLE

HYDROMETERS



1 2

° BRIX SACCHAROMETERS

Reading below meniscus.
Available, upon request with an ALLA FRANCE Traceable Calibration Certificate EU

D 070 — **Range finder hydrometers** ①

Temp.	20°C
Division	0.5 °Bx
Accuracy	0.5 or 1 °Bx
Length	300 mm

Range °Bx: 0 - 35; 0 - 30 (*); 30 - 60; 60 - 90

(*) exist in 0.2 °Bx

D 071 — **15 °Brix Series**

Temp.	20°C
Division	0.1 °Bx
Accuracy	0.1 °Bx
Length	300 mm

Range °Bx: 0 - 15; 15 - ....; ▼; .... - 75; 75 - 90

D 072 — **10 °Brix Series**

Temp.	20°C
Division	0.1°Bx
Accuracy	0.1 °Bx
Length	300 mm

Range °Bx: -5 + 5; 0 - 10; 10 - ...; ▼; .... - 80; 80 - 90

Saccharometers in °PLATO upon request

SUGAR HYDROMETERS

Reading below meniscus.

D 073

Temp.	20°C
Division	1 kg/m³
Accuracy	1 kg/m³
Length	270 or 320 mm

Range kg/m³: -0.5 - 3; 0 - 3; 3 - ...; ▼; ... - 15; 15 - 18

° BRIX SACCHAROMETERS

With thermometer 0+40°C : 1°C
Reading below meniscus.
Available, upon request with an ALLA FRANCE Traceable Calibration Certificate EU

D 074 — **Red liquid thermometer** ②

Temp.	20°C
Division	0.1 °Bx
Accuracy	0.1 °Bx
Length	320 mm

Range °Bx: 0 - 10; -5 + 5; 10 - 20; 20 - 30; 0 - 35 (*)

(*) in 0.5 °Bx

D 075 — **HG thermometer**

Temp.	20°C
Division	0.1 °Bx
Accuracy	0.1 °Bx
Length	360 mm

Range °Bx: -5 + 5; 0 - 10; 10 - ....; ▼; ... - 90; 0 - 30 (*)

(*) in 0.2 °Bx

3



° TWADDLE HYDROMETERS

Reading below meniscus.

D 076 ③

Temp.	15.6°C / 60°F
Division	0.5 and 1 °Tw
Accuracy	1 °Tw
Length	170 or 280 mm

Range °Tw: 0 - 24; 24 - ....; ▼; ..... - 138; 138 - 170

ALCOHOLOMETERS

ALCOHOLOMETERS WITH OFFICIAL CONTROL

According to OIML ISO 4801- NF B 35-515
Standard 76/765/CEE - Class II
Ethanol by % Vol.
Official mark engraved on the body.
With an Official Verification
L.N.E. Certificate
(accredited laboratory COFRAC)



EU Traceable Calibration Certificate upon request

D 077 ①

Temp.	20°C	Range %Vol
Division	0.1 %Vol	0 - 10 6 - 16 ↓
Accuracy	0.1 %Vol	90 - 100 95 - 103
Length	350 mm	

HIGH PRECISION ALCOHOLOMETERS

ISO 4801 - NF B 35-515
Ethanol en % Vol.
Delivered with a Certificate of Conformity

EU Traceable Calibration Certificate upon request

D 080 **0.1% Vol Series - OIML type**

Temp.	20°C	Range %Vol
Division	0.1 %Vol	0 - 10 5 - 15 ↓
Accuracy	0.1 %Vol	90 - 100 95 - 103
Length	350 mm	

D 081 **0.2% Vol Series**

Temp.	20°C	Range %Vol
Division	0.2 %Vol	0 - 20 20 - 40 ↓
Accuracy	0.2 %Vol	60 - 80 80 - 100
Length	350 mm	

PRECISION ALCOHOLOMETERS

Delivered with a Certificate of Conformity

D 078 **Range finder** ②

Temp.	20°C	Range
Division	1 %Vol / GL / Tralles 0.5 Cartier	0-100 %Vol / GL / Tralles 10 - 44 Cartier
Accuracy	1 %Vol / GL / Tralles 0.5 Cartier	
Length	360 mm	

Temp.	20°C	Range %Vol
Division	0.5 %Vol	0 - 35 35 - 70 70 - 100
Accuracy	0.5 %Vol	
Length	320 mm	



PRECISION THERMO-ALCOHOLOMETERS

Delivered with a Certificate of Conformity

D 079 **Red liquid thermometer** 0+40°C :1°C ③

Temp.	20°C	Range
Division	1 %Vol / GL / Tralles 0.5 Cartier	0-100 %Vol / GL / Tralles 10 - 44 Cartier
Accuracy	1 %Vol / GL / Tralles 0.5 Cartier	
Length	370 mm	

Temp.	20°C	Range %Vol
Division	0.5 %Vol	0 - 35 35 - 70 70 - 100
Accuracy	0.5 %Vol	
Length	335 mm	

Other series are availa
in our specific catalogu
for Distilleries
& Wine industry



COMMERCIAL GRADE
MILK HYDROMETERS



MILK HYDROMETERS

Surface tension: 45 mN/m
Reading upper meniscus.

D 082

Temp.	20°C	Range g/ml
Division	0.001 g/ml	1.000 - 1.040 1.015 - 1.040 (*)
Accuracy	0.002 g/ml	
Length	165 or 225 mm	

(*) Quevenne Hydrometer

Temp.	20°C	Range % milk fat
Division	1 % milk fat	0 - 4
Accuracy	1 % milk fat	
Length	200 mm	



QUEVENNE HYDROMETER

Thermometer in the stem 0+40°C :1°C LR or HG
Surface tension: 45 mN/m
Reading upper meniscus.

D 083 ①

Temp.	20°C	Range g/ml
Division	0.0005 g/ml and 0.001 g/ml	1.015 - 1.040
Accuracy	0.001 g/ml	
Length	300 mm	

GERBER HYDROMETER NEGATIVE SCALE

Thermometer in the stem 0+40°C :1°C LR or HG
Surface tension: 45 mN/m
Reading upper meniscus.

D 084 ②

Temp.	20°C	Range g/ml
Division	0.0005 g/ml	1.020 - 1.040
Accuracy	0.001 g/ml	
Length	300 mm	

DORNIC HYDROMETER

Red liquid thermometer in body 0+40°C : 1°C
Surface tension: 45 mN/m
Reading upper meniscus.

D 085 ③

Temp.	20°C	Range g/ml
Division	0.001 g/ml	1.018 - 1.038
Accuracy	0.002 g/ml	
Length	220 mm	

www.allafrance.com
France


France

CLEAN PRODUCTS CLEAN FACTORY

For an environmentally RESPONSIBLE ATTITUDE



1

MERCURY DECONTAMINATION KIT WITH GUARANTEE FROM THE TREATMENT CENTRE A 007

Make easy the collection of mercury



From the time that the chemical powder has absorbed the mercury, the vapours are neutralised.

In the case of a broken mercury thermometer,
De-pollutes up to 99%

When the used kit is returned to us, we look after the re-processing at no extra charge.
The package enables it to be transported back to us without problem. For companies under ISO 14001, we provide a document proving correct reprocessing & recycling by the treatment centre.

The kit ① is composed of:
- a sealed plastic sachet, containing zinc powder (15 grams)
- 2 open sealable boxes
- a foam protected hermetically sealing envelope in which to return the contaminated mixture
- an instructions for use notice

It is automatically supplied with :
- normalised mercury filled thermometers
- Electronic ebulliometer (see specialised catalogue)

The blister packed mercury thermometers in packs of 15 pcs (pg. 17), are supplied with the zinc powder and 2 sealable boxes.


1


2


3


4


5

How to use ?

www.allafrance.com/kit-mercure.html

We strongly suggest that you put on gloves, mask and goggles before starting to clean up spilled mercury.

Find and isolate the droplets of mercury. Open the sachet, and sprinkle the powder onto the mercury droplets. Wait a few minutes to enable the powder to absorb the mercury.

While the powder is reacting with the mercury, take the broken thermometer tube, hold it over the empty box and tap the glass gently until all remaining mercury comes out, before carefully disposing of the broken glass in an adapted bin. Using a damp absorbent paper, collect the mixture, and put it in the empty box. If you do not have absorbent paper, a plastic or stainless steel utensil can be used. Alternatively, a pipette can be used, and the tip placed with the contaminated mixture to be returned.

Close the box containing the contaminated mixture. It is now sealed. Put the box and the absorbent paper or pipette tip into the sachet, and seal. Place the sachet in the envelope, and send it back to the supplier, who will look after its collection.
Do not return the broken glass of the thermometer.

To completely de-pollute the surface affected by the spill, mix a solution of sulphur and calcium carbonate, and scrub thoroughly, before wiping clean with water.

GROUND JOINT ADAPTATION KIT A 008

This kit enables adaptation of all solid stem thermometers (diameter 6/7 mm) for use with glass testing apparatus requiring temperature measurment during testing.
The kit is to be placed on a cone-shaped female ground joint 14/23.

The kit ② is composed of:
- a cone-shaped male ground joint 14/23 glass welded to a threaded tapered tube
- a sealing silicon joint with PTFE coating
- a sliding cap enabling the user to insert the thermometer to the distance required compatible with solid stem thermometer of diameter 6/7mm.


2

PROTECTION SLEEVES FOR THERMOMETERS A 009

For the protection of our laboratory stem thermometers ø 6/7 mm without ring (see pg 17), we propose 2 types of sleeves: wood sleeve ③ or metal sleeve ④.


3

4

INDEX

A

AFNOR (NF) ..... 19, 29, 33 at 35
Alcoholometers 10, 46
- OIML (with official control) 46
- Precision type 46
- Printing (for) 48
- Range finder 46
- % Volume, Cartier, Gay Lussac, Tralles 46

API 37
A.S.T.M ..... 22 at 25, 36 at 38

B

Balling 45
Baumé 10, 44
BIO-TEMP ® 14, 15
Breweries and beer industry 44, 45
Brix 45
BS 19, 33, 34, 35
Bulletin of traceability 4
Burette taps 50

C

Calibration 4, 5, 10
Calorimeter 19
Cartier 46
Catalogues 3
Certificates 4, 5
Commercial Grade Hydrometers 41, 42
Contact ALLA FRANCE 1
Conversion of Hydrometer Units 8
Conversion table - Temperature 6
Correction temperature for Hydrometers 9
Cylinders 50

D

Decontamination kit (for mercury) 51
DIN ..... 19, 33 at 35
Distilleries 46
Documentations 3
Dornic 47
DP-DA 40
Draft Survey Hydrometers 35

E

EA 5
EIC 27
Environment 2
Etymology 10

G

Gay Lussac 10, 46
Gelatinometer 48
Gerber 47
Gost 26, 39
Grappa alcoholometers 46
Ground joint Adaptation kit 51

H

History of ALLA FRANCE 2
Hydrometers ..... 31 at 48
- Acetic Acid & Vinegar 48
- Acid - General Use 48
- AH, AHT-1, AHT-2 (Russian Standard) 39
- Alkalis 48
- Ammonia 48
- Antifreeze Ethylene glycol 48
- Antifreeze Propylene glycol 48
- API 37
- A.S.T.M (USA Standard) ..... 36 at 38
- Baumé (in degree) 44
- Bee Food 48
- Bleach 48
- Boiler Water 48
- Breweries and Sugar Refineries 44, 45
- Brix and Balling (in degree) 45
- Caustic Potash 48
- Citric & Tartaric Acids 48
- Commercial grade 41, 42, 43
- Density ..... 33 at 35, 40 at 41, 43, 47
- DP-DA (Brazilian Standard) 40
- Draft Survey 35
- Ether 48
- Gelatinometer 48
- Glycerine 48
- Heating Oil Fuel 48
- High temperature (for) 43
- Hydrochloric Acid 48
- Hyposulfite Photo 48
- ISO, BS, DIN, NF (European Standard) ..... 32 at 35
- Isopropyl alcohol (for printing) 48
- Latexmeter 48
- Liquified Gas 35, 38
- Mead hydrometer 48
- Milk (for) 35, 47
- Nitric & Sulfuric Acids 48
- Oil 48
- Olive oil hydrometer 48
- Oxygenated Water 48
- Petroleum Industry ..... 34, 35, 37 at 39
- Phosphate 48
- Plato (in degree) 45
- Saccharometers 45
- Salt 48
- Sea water 48
- Soap 48
- Soil (for) 35, 38
- Specific Gravity 37, 38, 42
- Standardized Hydrometers ..... 32 at 40
- Sulfurdioxide in water 48
- Sulphate 48
- Syrup hydrometer 48
- Thermo-Hydrometers ..... 37 at 39, 42 at 43, 45 at 47
- Twaddle (in degree) 45
- Urine 48
- Whitewash 48

I

ILAC 5
Immersion for Thermometers 7
Industrial Fields ALLA FRANCE 3
INMETRO/DIMEL 27, 40
IP 20, 21
ISO ..... 18, 19, 32 at 35