

TROEMNER

Stainless Steel Precision Weights and Weight Sets



*Our finest
weights for your
finest weighing*



TROEMNER *measuring up:*

Troemner, an ISO 9001 registered company, is the nation's leading supplier of precision weights and mass standards. We manufacture and certify weights to meet or exceed the highest



tolerance standards of the National Institute of Standards & Technology (NIST), the American Society for Testing & Materials (ASTM) and the International Organization of Legal Metrology (OIML). For the most demanding calibration needs, we offer Troemner UltraClassSM precision weights with tolerances 40% to 50% better than ANSI/ASTM E617 Class 1 and equal to or exceeding OIML Class E2 standards.

Our weight selection includes every imaginable size and type—from 5,000 lb cast iron test weights to the extremely precise, highly polished one- and two-piece stainless steel weights. We are also the country's largest independent commercial metrology laboratory offering complete, full-time weight calibration and certification services.

Troemner's staff of metrologists and calibrators is equipped with primary and secondary mass standards directly traceable to NIST as well as a full complement of the latest, finest, and most precise balances and mass comparators obtainable. Our

weighing instruments and mass standards are continually maintained according to NIST Mass Measurement Assurance Program (MMAAP) procedures and ISO 9001 guidelines.

Four Troemner mass metrology laboratories are built to specifications recommended by the NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP) and meet prescribed Accuracy Levels I and III respectively. Our Level I laboratories exceed the Environmental Cleanliness System according to FED-STD 209-E, Class 10,000 requirements.

Further evidence of Troemner's high quality standards is our accreditation by both NVLAP and its internationally recognized equivalent, UKAS. We also meet the exacting requirements of GLP, GMP, FDA, Military Standard ANSI/NCSL Z540-1 and the quality assurance criteria for nuclear power plants as described in Appendix B of 10CFR50. Troemner also complies with ISO Guide 17025 (formerly ISO Guide 25).

Since 1840, our business has been precision. We understand its importance to you. We are proud to offer you the weights and weight sets in this catalog—our most precise weights for your most precise work.

Troemner's Calibration & Certification Laboratories have been accredited by NIST/NVLAP and its international equivalent, UKAS, since 1995. More recently, Troemner has received accreditation from NIST/NVLAP to perform density determination—using a test conducted on one-piece weights. The method centers on comparing the density of unknown weight samples against the density of calibrated artifacts and producing accurate results of the density of weights. Troemner can also test for magnetic properties of weights and provide assurance that weights have extremely low magnetic permeability. Currently Troemner is seeking NIST/NVLAP magnetic susceptibility accreditation.

precise weights, precisely made



Troemner's Primary Standards Lab is the only dual accredited private mass laboratory in the world able to meet uncertainties at $\frac{1}{3}$ the E1 tolerance—giving Troemner the ability to certify weights worldwide. The laboratory houses three state-of-the-art Mettler Toledo automated mass comparators—the AT10005, AT1006 and AT106H. Because there is limited activity/movement in the lab—and no significant sources of heat—air changes can be reduced while maintaining tight temperature control. These exceptional physical arrangements allow the mass comparators to produce some of the best measurements in the world.

Every Troemner precision stainless steel weight is manufactured to meet the most exacting accuracy and appearance requirements.

We start with the best stainless steel bar stock, chosen for its uniform density, high resistance to wear and corrosion and low magnetic properties.

Precision & Detail

We precision machine this stainless steel with the latest computer-based metalworking equipment.

Even small details command great attention:

Weight bottoms are slightly recessed to expose the smallest possible area to wear. Weight heads and necks are precisely shaped to give a solid, sure grip to forceps or weight lifters.



We polish all surfaces to a perfect, mirror-like finish. With our one-piece weights, as little as one-quarter turn of the polishing wheel dictates a careful weighing to check our nearness to tolerance.

Our weights are adjusted on the basis of apparent mass versus material of 8.0 g/cm³ density, following the recommendations of both ANSI/ASTM E617 and OIML International Recommendation No. R111.

Certificates

All weights and weight sets come with a Statement of Accuracy. A variety of NIST-traceable certificates are available and are detailed on page 8 of this brochure.

Weight Cases

Troemner weight sets 500 grams and higher are supplied in strong cases of oak. These hand-crafted cases are fully lined with padded velvet or velour. Weight sets 200 grams and lower, as well as individual Class O and UltraClass tolerance weights, come in rugged polypropylene cases. Wood cases are available at an extra charge.

Troemner's new UltraClass Weight Alloy 8 is a specially developed austenitic stainless steel for use in precision weights and mass standards. UltraClass Weight Alloy 8 possesses closely controlled density, extremely low magnetic permeability, good stability and resistance to corrosion and handling damage.

Ultra Class Weight Alloy 8 has a density of 8.0 at 25°C (controlled to +/-0.1%). It is essentially non magnetic in the annealed condition. Its austenitic structure will not transform to magnetic properties under any combination of temperature and cold work down to -320°F.

Ultra Class Weight Alloy 8 meets and exceeds all stainless steel material specifications that NBS (NIST) specified over 35 years ago when purchasing the original state laboratory mass standards which Troemner helped supply.

Troemner Precision Laboratory Weights

AVOIRDUPOIS WEIGHT SETS¹

Weight Set	ANSI/ASTM E617			
	Class 1 Cat.#	Class 2 Cat.#	Class 3 Cat.#	Class 4 Cat.#
50 lb—1/32 oz	6200-1	6200-2	6200-3	6200-4
50 lb—0.001 lb	6201-1	6201-2	6201-3	6201-4
30 lb—1/32 oz	6202-1	6202-2	6202-3	6202-4
30 lb—0.001 lb	6203-1	6203-2	6203-3	6203-4
25 lb—1/32 oz	6204-1	6204-2	6204-3	6204-4
25 lb—0.001 lb	6205-1	6205-2	6205-3	6205-4
20 lb—1/32 oz	6206-1	6206-2	6206-3	6206-4
20 lb—0.001 lb	6207-1	6207-2	6207-3	6207-4
10 lb—1/32 oz	6208-1	6208-2	6208-3	6208-4
10 lb—0.001 lb	6209-1	6209-2	6209-3	6209-4
5 lb—1/32 oz	6210-1	6210-2	6210-3	6210-4
5 lb—0.001 lb	6211-1	6211-2	6211-3	6211-4
2 lb—1/32 oz	6212-1	6212-2	6212-3	6212-4
2 lb—0.001 lb	6213-1	6213-2	6213-3	6213-4
1 lb—1/32 oz	6214-1	6214-2	6214-3	6214-4
1 lb—0.001 lb	6215-1	6215-2	6215-3	6215-4
8 oz—1.32 oz	6216-1	6216-2	6216-3	6216-4
0.5 lb—0.001 lb	6217-1	6217-2	6217-3	6217-4

TO ORDER WEIGHTS WITH CERTIFICATION: Specify the Troemner part number followed by a "W" for a NVLAP Weight Calibration Certificate, an "NA" for a UKAS Certificate of Calibration, an "M" for a MMAP Certificate or a "T" for a Traceable Certificate. See page 8 for certificate descriptions.

Troemner produces both one- and two-piece precision weights. While both are manufactured to meet or exceed tolerance specifications for their class, one-piece weights should be used when the application calls for reference standards or when maximum stability is required. A precise measurement of density can only be made with one-piece standards.

For calibration applications, two-piece weights should be specified. Here, where weights are subject to more wear, two-piece weights offer the advantage of being repairable—and can be adjusted and refinished over time.

AVOIRDUPOIS INDIVIDUAL WEIGHTS

Weight	ANSI/ASTM E617			
	Class 1 Cat.#	Class 2 Cat.#	Class 3 Cat.#	Class 4 Cat.#
2000 lb				6000-4
1000 lb				6001-4
500 lb				6002-4
100 lb	6003-1	6003-2	6003-3	6003-4
50 lb	6004-1	6004-2	6004-3	6004-4
30 lb	6005-1	6005-2	6005-3	6005-4
25 lb	6006-1	6006-2	6006-3	6006-4
20 lb	6007-1	6007-2	6007-3	6007-4
10 lb	6008-1	6008-2	6008-3	6008-4
5 lb	6009-1	6009-2	6009-3	6009-4
4 lb	6010-1	6010-2	6010-3	6010-4
3 lb	6011-1	6011-2	6011-3	6011-4
2 lb	6012-1	6012-2	6012-3	6012-4
1 lb	6013-1	6013-2	6013-3	6013-4
0.5 lb	6014-1	6014-2	6014-3	6014-4
0.3 lb	6015-1	6015-2	6015-3	6015-4
0.2 lb	6016-1	6016-2	6016-3	6016-4
0.1 lb	6017-1	6017-2	6017-3	6017-4
0.05 lb	6018-1	6018-2	6018-3	6018-4
0.03 lb	6019-1	6019-2	6019-3	6019-4
0.02 lb	6020-1	6020-2	6020-3	6020-4
0.01 lb	6021-1	6021-2	6021-3	6021-4
0.005 lb	6022-1	6022-2	6022-3	6022-4
0.003 lb	6023-1	6023-2	6023-3	6023-4
0.002 lb	6024-1	6024-2	6024-3	6024-4
0.001 lb	6025-1	6025-2	6025-3	6025-4
8 oz	6026-1	6026-2	6026-3	6026-4
4 oz	6027-1	6027-2	6027-3	6027-4
2 oz	6028-1	6028-2	6028-3	6028-4
1 oz	6029-1	6029-2	6029-3	6029-4
1/2 oz	6030-1	6030-2	6030-3	6030-4
1/4 oz	6031-1	6031-2	6031-3	6031-4
1/8 oz	6032-1	6032-2	6032-3	6032-4
1/16 oz	6033-1	6033-2	6033-3	6033-4
1/32 oz	6034-1	6034-2	6034-3	6034-4
1/64 oz	6035-1	6035-2	6035-3	6035-4
0.5 oz	6036-1	6036-2	6036-3	6036-4
0.3 oz	6037-1	6037-2	6037-3	6037-4
0.2 oz	6038-1	6038-2	6038-3	6038-4
0.1 oz	6039-1	6039-2	6039-3	6039-4
0.05 oz	6040-1	6040-2	6040-3	6040-4
0.03 oz	6041-1	6041-2	6041-3	6041-4
0.02 oz	6042-1	6042-2	6042-3	6042-4
0.01 oz	6043-1	6043-2	6043-3	6043-4

Casing for avoirdupois individual weights is available at an extra charge.



Troemner milligram weights from 500 mg to 1 mg are flat, with one side turned up to form a handle. Corners and edges are smooth. Each weight is embossed with its value.

Larger weights are cylindrical in shape with a knob on top for easy handling.

CLASS 0: Class 0 is a new ASTM designation with tolerances that are 50% of Class 1. The physical characteristics are one-piece construction containing no adjusting materials. A precise measurement of density can only be made for one-piece weights. These weights are used in a primary laboratory as reference standards. To order, simply select the appropriate set or weight catalog number in the Troemner UltraClass columns below, but add a second "0", i.e. 7202-00.

METRIC WEIGHT SETS¹

Weight Set	Troemner	ANSI/ASTM E617			
	Ultra Class sm Cat.#	Class 1 Cat.#	Class 2 Cat.#	Class 3 Cat.#	Class 4 Cat.#
50 kg—1 g		7200-2	7200-2	7200-3	7200-4
50 kg—1 mg		7201-1	7201-2	7201-3	7201-4
30 kg—1 g	7202-0	7202-1	7202-2	7202-3	7202-4
30 kg—1 mg	7203-0	7203-1	7203-2	7203-3	7203-4
25 kg—1 g	7204-0	7204-1	7204-2	7204-3	7204-4
25 kg—1 mg	7205-0	7205-1	7205-2	7205-3	7205-4
20 kg—1 g	7206-0	7206-1	7206-2	7206-3	7206-4
20 kg—1 mg	7207-0	7207-1	7207-2	7207-3	7207-4
10 kg—1 g	7208-0	7208-1	7208-2	7208-3	7208-4
10 kg—1 mg	7209-0	7209-1	7209-2	7209-3	7209-4
5 kg—1 g	7210-0	7210-1	7210-2	7210-3	7210-4
5 kg—1 mg	7211-0	7211-1	7211-2	7211-3	7211-4
2 kg—1g ²	7212-0	7212-1	7212-2	7212-3	7212-4
2 kg—1mg ²	7213-0	7213-1	7213-2	7213-3	7213-4
2 kg—1 g	7214-0	7214-1	7214-2	7214-3	7214-4
2 kg—1 mg	7215-0	7215-1	7215-2	7215-3	7215-4
1 kg—1 g	7216-0	7216-1	7216-2	7216-3	7216-4
1 kg—1 mg	7217-0	7217-1	7217-2	7217-3	7217-4
500 g—1 g	7218-0	7218-1	7218-2	7218-3	7218-4
500 g—1 mg	7219-0	7219-1	7219-2	7219-3	7219-4
200 g—1g ³	7220-0	7220-1	7220-2	7220-3	7220-4
200 g—1mg ³	7221-0	7221-1	7221-2	7221-3	7221-4
200 g—1 g	7222-0	7222-1	7222-2	7222-3	7222-4
200 g—1 mg	7223-0	7223-1	7223-2	7223-3	7223-4
100 g—1 g	7224-0	7224-1	7224-2	7224-3	7224-4
100 g—100mg	7225-0	7225-1	7225-2	7225-3	7225-4
100 g—10 g	7226-0	7226-1	7226-2	7226-3	7226-4
100 g—5 mg	7227-0	7227-1	7227-2	7227-3	7227-4
100 g—1 mg	7228-0	7228-1	7228-2	7228-3	7228-4
50 g—1 g	7229-0	7229-1	7229-2	7229-3	7229-4
50 g—100mg	7230-0	7230-1	7230-2	7230-3	7230-4
50 g—10 mg	7231-0	7231-1	7231-2	7231-3	7231-4
50 g—5 mg	7232-0	7232-1	7232-2	7232-3	7232-4
50 g—1 mg	7233-0	7233-1	7233-2	7233-3	7233-4
20 g—1 g	7234-0	7234-1	7234-2	7234-3	7234-4
20 g—100mg	7235-0	7235-1	7235-2	7235-3	7235-4
20 g—10 mg	7236-0	7236-1	7236-2	7236-3	7236-4
20 g—5 mg	7237-0	7237-1	7237-2	7237-3	7237-4
20 g—1 mg	7238-0	7238-1	7238-2	7238-3	7238-4
500 mg—10 mg	7239-0	7239-1	7239-2	7239-3	7239-4
500 mg—1 mg	7240-0	7240-1	7240-2	7240-3	7240-4

METRIC INDIVIDUAL WEIGHTS

Weight	Troemner	ANSI/ASTM E617			
	Ultra Class sm Cat.#	Class 1 Cat.#	Class 2 Cat.#	Class 3 Cat.#	Class 4 Cat.#
1000 kg					7000-4
500 kg					7001-4
300 kg					7002-4
200 kg					7003-4
100 kg					7004-4
50 kg		7005-1	7005-2	7005-3	7005-4
30 kg	7006-0	7006-1	7006-2	7006-3	7006-4
25 kg	7007-0	7007-1	7007-2	7007-3	7007-4
20 kg	7008-0	7008-1	7008-2	7008-3	7008-4
10 kg	7009-0	7009-1	7009-2	7009-3	7009-4
5 kg	7010-0	7010-1	7010-2	7010-3	7010-4
3 kg	7011-0	7011-1	7011-2	7011-3	7011-4
2 kg	7012-0	7012-1	7012-2	7012-3	7012-4
1 kg	7013-0	7013-1	7013-2	7013-3	7013-4
500 g	7014-0	7014-1	7014-2	7014-3	7014-4
300 g	7015-0	7015-1	7015-2	7015-3	7015-4
200 g	7016-0	7016-1	7016-2	7016-3	7016-4
100 g	7017-0	7017-1	7017-2	7017-3	7017-4
50 g	7018-0	7018-1	7018-2	7018-3	7018-4
30 g	7019-0	7019-1	7019-2	7019-3	7019-4
20 g	7020-0	7020-1	7020-2	7020-3	7020-4
10 g	7021-0	7021-1	7021-2	7021-3	7021-4
5 g	7022-0	7022-1	7022-2	7022-3	7022-4
3 g	7023-0	7023-1	7023-2	7023-3	7023-4
2 g	7024-0	7024-1	7024-2	7024-3	7024-4
1 g	7025-0	7025-1	7025-2	7025-3	7025-4
500 mg	7026-0	7026-1	7026-2	7026-3	7026-4
300 mg	7027-0	7027-1	7027-2	7027-3	7027-4
200 mg	7028-0	7028-1	7028-2	7028-3	7028-4
100 mg	7029-0	7029-1	7029-2	7029-3	7029-4
50 mg	7030-0	7030-1	7030-2	7030-3	7030-4
30 mg	7031-0	7031-1	7031-2	7031-3	7031-4
20 mg	7032-0	7032-1	7032-2	7032-3	7032-4
10 mg	7033-0	7033-1	7033-2	7033-3	7033-4
5 mg	7034-0	7034-1	7034-2	7034-3	7034-4
3 mg	7035-0	7035-1	7035-2	7035-3	7035-4
2 mg	7036-0	7036-1	7036-2	7036-3	7036-4
1 mg	7037-0	7037-1	7037-2	7037-3	7037-4

Casing for metric individual weights is provided for 200 g and above.

¹Sets are supplied in a 5-2-2-1 series unless a 5-3-2-1 series is specified. 5-2-2-1 series means that weights beginning with a "2" are doubled in each decade and weights beginning with a "5" and a "1" are single in each decade. For example, for a set from 50g to 1g, there is one 50g, two 20g, one 5g, two 2g and one 1g. 5-3-2-1 series means that weights beginning with a "5", "3", "2" and "1" are single in each decade.

²Set contains two 2 kg weights. ³Set contains two 200g weights.

ACCESSORIES

Weight Lifters



Chrome-plated, chamois covered lifter

To Lift: 10-25 kg
or
 20-50 lb L-25

1-5 kg
or
 2-10 kg L-26

Wood lifter

To Lift: 200-500 g
or
 1/2-1 lb L-27



Forceps

Plastic forceps, with tips contoured to fit weight necks. Cat.# F-2



Precision Hook, Slotted & Special Weights

Troemner offers a complete line of precision hook and slotted weights. Both types are available in all tolerance classes and a wide range of materials, including stainless steel and brass.

Hook weights are supplied in three styles:

Hook top, flat bottom, Hook top and bottom;

Hook top and bottom, with bottom hook recessed to permit stacking or upright placement of the weights.

Slotted weights are available in either flat or interlocking styles. Interlocking weights have raised areas on top and matching recessed areas on the bottom for secure, slip-free stacking. Larger weights have side indents or handles for easier lifting.

Weight hangers in a variety of tolerances, capacities and materials are also available.



PRECISION HOOK & SLOTTED WEIGHTS: To order, specify the Troemner catalog number, followed by a B for brass weights or an S for stainless steel weights. Also specify the ASTM or OIML **adjustment tolerance class** required.

Weight	Hook			Slotted	
	Hook top only Cat.#	Hook top & Bottom Cat.#	Hook top & bottom Bottom recessed Cat.#	Interlocking Cat.#	Flat Cat.#
Avoirdupois					
50 lb	12000	12100	12200	12600	12700
25 lb	12002	12102	12202	12602	12702
20 lb	12004	12104	12204	12604	12704
10 lb	12006	12106	12206	12606	12706
5 lb	12008	12108	12208	12608	12708
2 lb	12010	12110	12210	12610	12710
1 lb	12012	12112	12212	12612	12712
0.5 lb	12014	12114	12214	12614	12714
0.2 lb	12016	12116	12216	12616	12716
0.1 lb	12018	12118	12218	12618	12718
8 oz	12020	12120	12220	12620	12720
4 oz	12022	12122	12222	12622	12722
2 oz	12024	12124	12224	12624	12724
1 oz	12026	12126	12226	12626	12726
1/2 oz	12028	12128	12228	12628	12728
1/4 oz	12030	12130	12230	12630	12730
1/8 oz	12032	12132	12232	12632	12732
1/16 oz	12034	12134	12234	12634	12734
1/32 oz	12036	12136	12236	12636	12736
Metric					
25 kg	12300	12400	12500	12800	12900
20 kg	12302	12402	12502	12802	12902
10 kg	12304	12404	12504	12804	12904
5 kg	12306	12406	12506	12806	12906
3 kg	12308	12408	12508	12808	12908
2 kg	12310	12410	12510	12810	12910
1 kg	12312	12412	12512	12812	12912
1/2 kg	12314	12414	12514	12814	12914
500 g	12316	12416	12516	12816	12916
200 g	12318	12418	12518	12818	12918
100 g	12320	12420	12520	12820	12920
50 g	12322	12422	12522	12822	12922
20 g	12324	12424	12524	12824	12924
10 g	12326	12426	12526	12826	12926
5 g	12328	12428	12528	12828	12928
2 g	12330	12430	12530	12830	12930
1 g	12332	12432	12532	12832	12932

Special and custom weights are available to meet virtually any requirement, from 50 micrograms to 5,000 kilograms and larger. We can supply weights in any size, shape, material or denomination. We can precisely adjust them to whatever tolerance class you specify. For a quotation on your custom weight needs, just fax or phone us. The variety of special and custom weights that Troemner can manufacture and calibrate to your exact specifications is almost limitless...

- Pennyweight and Troy weights
 - Newton weights
 - Grain weights
 - Factor weights
 - Normal sugar weights
 - Carat weights
 - Assay ton weights
- ...and many, many more.



ANSI/ASTM & Troemner UltraClassSM Weight Tolerances

AVOIRDUPOIS

Weight	1	2	3	4
	Ind mg	Ind mg	mg	g & mg
1,000 lb				9.1 g
500 lb				4.5 g
100 lb	110	230	450	910
50 lb	57	110	230	450
30 lb	34	68	140	270
25 lb	28	57	110	230
20 lb	23	45	91	180
10 lb	11	23	45	91
5 lb	5.4	11	23	45
3 lb	3.4	6.8	14	27
2 lb	2.3	4.5	9.1	18
1 lb	1.1	2.3	4.5	9.1
0.5 lb	0.54	1.1	2.3	4.5
0.3 lb	0.34	0.68	1.4	2.7
0.2 lb	0.23	0.45	0.91	1.8
0.1 lb	0.11	0.23	0.45	1.1
0.05 lb	0.054	0.11	0.36	0.77
0.03 lb	0.034	0.068	0.32	0.59
0.02 lb	0.034	0.045	0.23	0.45
0.01 lb	0.023	0.034	0.16	0.34
0.005 lb	0.015	0.024	0.14	0.27
0.003 lb	0.015	0.024	0.11	0.22
0.002 lb	0.015	0.024	0.091	0.19
0.001 lb	0.015	0.024	0.068	0.15
0.0005 lb	0.0091	0.023	0.064	0.13
0.0003 lb	0.0091	0.023	0.054	0.11
0.0002 lb	0.0091	0.023	0.045	0.095
0.0001 lb	0.0091	0.023	0.041	0.086

METRIC

Weight	Troemner UltraClass SM mg	0	1	2	3	4	5	6
		mg	mg	mg	mg	g & mg	g & mg	g & mg
1,000 kg						20g	50g	100g
500 kg						10	25	50
300 kg						6.0	15	30
200 kg						4.0	10	20
100 kg						2.0	5	10
50 kg		63	125	250	500	1.0	2.5	5
30 kg	45	38	75	150	300	600mg	1.5	3
25 kg	37	31	62	125	250	500	1.2	2.5
20 kg	30	25	50	100	200	400	1.0	2
10 kg	15	13	25	50	100	200	500mg	1
5 kg	7	6	12	25	50	100	250	500mg
3 kg	4.5	3.8	7.5	15	30	60	150	300
2 kg	3.0	2.5	5.0	10	20	40	100	200
1 kg	1.5	1.3	2.5	5.0	10	20	50	100
500 g	0.70	0.60	1.2	2.5	5.0	10	30	50
300 g	0.45	0.38	0.75	1.5	3.0	6.0	20	30
200 g	0.30	0.25	0.50	1.0	2.0	4.0	15	20
100 g	0.15	0.13	0.25	0.50	1.0	2.0	9	10
50 g	0.07	0.060	0.12	0.25	0.60	1.2	5.6	7
30 g	0.044	0.037	0.074	0.15	0.45	0.90	4.0	5
20 g	0.044	0.037	0.074	0.10	0.35	0.70	3.0	3
10 g	0.03	0.037	0.050	0.074	0.25	0.50	2.0	2
5 g	0.02	0.017	0.034	0.054	0.18	0.36	1.3	2
3 g	0.02	0.017	0.034	0.054	0.15	0.30	0.95	2.0
2 g	0.02	0.017	0.034	0.054	0.13	0.26	0.75	2.0
1 g	0.02	0.017	0.034	0.054	0.10	0.20	0.50	2.0
500 mg	0.005	0.005	0.010	0.025	0.080	0.16	0.38	1.0
300 mg	0.005	0.005	0.010	0.025	0.070	0.14	0.30	1.0
200 mg	0.005	0.005	0.010	0.025	0.060	0.12	0.26	1.0
100 mg	0.005	0.005	0.010	0.025	0.050	0.10	0.20	1.0
50 mg	0.005	0.005	0.010	0.014	0.042	0.085	0.16	0.50
30 mg	0.005	0.005	0.010	0.014	0.038	0.075	0.14	0.50
20 mg	0.005	0.005	0.010	0.014	0.035	0.070	0.12	0.50
10 mg	0.005	0.005	0.010	0.014	0.030	0.060	0.10	0.50
5 mg	0.005	0.005	0.010	0.014	0.028	0.055	0.080	0.20
3 mg	0.005	0.005	0.010	0.014	0.026	0.052	0.070	0.20
2 mg	0.005	0.005	0.010	0.014	0.025	0.050	0.060	0.20
1 mg	0.005	0.005	0.010	0.014	0.025	0.050	0.050	0.10

Troemner precision weights are of the following materials:

Base Material	Density	Weight Range
Stainless	7.84 or 8.0 g/cm ³ at 20°C	1 g and larger
Steel-18-8	8.0 g/cm ³ at 20°C	50 mg to 500 mg
Aluminum-1100	2.7 g/cm ³ at 20°C	30 mg and smaller

Troemner UltraClassSM Weight Calibration & Certification Services

Troemner has long offered economical, fast and highly reliable calibration and certification services—all traceable to NIST. Today, however, with mass laboratories built to specifications recommended by the NIST-administered National Voluntary Laboratory Accreditation Program (NVLAP), we provide a new, higher level of service—Troemner UltraClass Calibration & Certification. These calibrations/certificates are now available:

NIST/NVLAP Weight Calibration Certificate—

Procedures and processes used to generate this multi-page certificate, as well as its format and content, are prescribed by the National Voluntary Laboratory Accreditation Program (NVLAP). It meets all ISO, FDA, GMP, GLP, DOD, ANSI/NCSL Z540-1 and Nuclear requirements. The document contains: customer name, address, date of calibration, equipment and standards used in calibration, accuracy class, true mass value (mass in a vacuum), “as found” mass correction (for recalibration), “as left” mass corrections for each weight, uncertainty of measurement process for each weight, environmental conditions during test, construction and density of weights, calibration procedures used, statement of traceability to NIST and a helpful list of terms and definitions.

NIST/NVLAP Density Certificate—Troemner also performs NIST/NVLAP accredited density determinations on calibration weights using an immersed balance method pioneered by NIST scientists. Typically such tests are performed on one-piece high-precision weights in ASTM Class 0 and OIML Class E1 and E2. Troemner’s Density Calibration Certificate contents are virtually identical to the foregoing Weight Calibration Certificate, covering over a dozen cogent points.

UKAS Certificate of Calibration—

Similar to the NVLAP Certificate, this certificate content and layout, as well as the enhanced measurement processes utilized, meet the requirements of the United Kingdom Accreditation Service (UKAS). This certificate is universally accepted throughout the world. Troemner is the only UKAS-accredited U.S. mass metrology laboratory offering its customers this internationally recognized weight certification.

NIST-MMAP Report of Mass Values—As a participant in NIST’s Mass Measurement Assurance Program (MMAP), Troemner offers a detailed statistical analysis of mass values, generated by NIST, of our measurements of customer’s weights. MMAP certification follows a carefully designed calibration procedure—resulting in the highest possible statistical confidence level. A NVLAP Weight Calibration Certificate is provided along with a multi-page NIST/ MMAP report—the same report one receives if weights are calibrated directly by NIST.

Traceable Certificate—Our new, expanded Traceable Certificate includes nominal value, mass correction and tolerance for each weight in addition to the basic contents of customer name, address, purchase order number, date of calibration, accuracy class, density and statement of traceability to NIST. The Traceable Certificate measurement process uses only one series of comparisons using a single standard.

Statement of Accuracy—Each Troemner weight and weight set is supplied with a Statement of Accuracy which contains both date of calibration and density of each weight. It verifies that the product has been manufactured to meet all specifications for its class and has been calibrated using standards traceable to NIST.



Troemner weight sets 500 grams and higher are supplied in strong cases of oak. These handcrafted cases are fully lined with padded velvet or velour. Weight sets 200 grams or lower, as well as individual Class 0 and UltraClass tolerance weights, come in rugged polypropylene cases. Wood cases are available at an extra charge.

- Participant in the National Institute of Standards & Technology Mass Measurement Assurance Program
- Participant in the Mid-western, Northeastern and Southeastern Measurement Assurance Programs
- Member, National Conference of Standards Laboratories

TROEMNER
Henry Troemner LLC

201 Wolf Drive • PO Box 87 • Thorofare, NJ 08086-0087
Phone: 856-686-1600 • Fax: 856-686-1601
www.troemner.com • email: troemner@troemner.com



Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code 105013.