

Designation: E617 - 18 E617 - 23

Standard Specification for Laboratory Weights and Precision Mass Standards¹

This standard is issued under the fixed designation E617; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

- 1.1 This specification covers weights and mass standards used in laboratories, specifically classes 000, 00, 0, 1, 2, 3, 4, 5, 6, and 7. This specification replaces National Bureau of Standards Circular 547, Section 1, which is out of print.
- 1.2 This specification and calibration method is intended for use by weight manufacturers, national metrology institutes, weight calibration laboratories, accreditation bodies, users of weights, and regulatory bodies.
- 1.3 This specification contains the principal physical characteristics and metrological requirements for weights that are used.
- 1.3.1 For the verification of weighing instruments;
- 1.3.2 For the calibration of weights of a lower class of accuracy; and
- 1.3.3 With weighing instruments.
- 1.4 Maximum Permissible Errors (formerly tolerances) and design restrictions for each class are described in order that both individual weights or sets of weights can be chosen for appropriate applications.
- 1.5 Weight manufacturers must be able to provide evidence that all new weights comply with specifications in this standard (for example, material, density, magnetism, surface finish, mass values, uncertainties). Statements of compliance by calibration laboratories during subsequent calibrations must meet the requirements of ISO/IEC 17025, 5.10.4.2 and indicate on the calibration report which sections have or have not been assessed. Subsequent calibrations must meet all the requirements (including environmental parameters as shown in Table 11, of Sections uncertainties) 7, 8, and 9; and the requirements of ISO/IEC 47025:2005, 5.10.4.2 to make any claim of compliance to Specification E617, E617, Maximum Permissible Errors, weight classes, or metrological traceability.
- 1.5.1 During subsequent calibrations, calibration laboratories must meet the requirements of ISO/IEC 17025:2017.
- 1.5.2 Subsequent calibrations must meet all the requirements, including Sections 7, 8, and 9, Table 8 and Table 11 (environmental parameters) to make any claim of compliance to Specification E617, Maximum Permissible Errors, weight classes, or metrological traceability.

¹ This specification is under the jurisdiction of ASTM Committee E41 on Laboratory Apparatusand is the direct responsibility of Subcommittee E41.06 on Laboratory Instruments and Equipment.

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Note 1—Requirements set forth in NIST IR 6969 and NIST IR 5672 are compliant with all the requirements of Specification E617, Sections 7, 8, and 9.

1.6 The values stated in SI units are to be regarded as standard.

1.7 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ISO Standards:²

ISO/IEC 1702517025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (2005)

2.2 NIST Standards:³

NIST Handbook 143 State Weights and Measures Laboratories Program Handbook (2007)(2019)

NIST SP 811 Guide for the Use of the International System of Unit (SI) 2008 Edition

NIST SP 1038 The International System of Units (SI) - Conversion Factors for General Use (May 2006)

NISTIR 5672 Advanced Mass Calibration and Measurement Assurance Program for State Calibration Laboratories (2014)(2019)

NISTIR 6969 Selected Laboratory and Measurement Practices to Support Basic Mass Calibrations (2017)(2019)

NIST Technical Note 1297 (1994) Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results (1994)

2.3 OIML Standards:⁴

OIML D 28 Conventional Value of the Result of Weighing in Air (2004)

OIML R111-1e04R 111-1 Weights of classes E1, E2, F1, F2, M1, M1-2, M2, M2-3 and M3 Part 1: Metrological and Technical Requirements (2004)(Edition 2004)

2.4 BIPM Standards:⁵

VIM: JCGM 200:2012 International Vocabulary of Metrology-Basic and General Concepts and Associated Terms

GUM: JCGM 100:2008 Evaluation of Measurement Data-Guide to the Expression of Uncertainty in Measurement

SI Brochure: 2019 The International System of Units (SI), 9th Edition

2.5 EURAMET Standards:⁶

EURAMET/cg-18/V. 4.0 Guidelines on the Calibration of Non-Automatic Weighing Instruments (2015)

3. Terminology

3.1 Definitions of Terms Specific to This Standard: ASTM E617-23

https://standards.iteh.ai/catalog/standards/sist/1b470a58-c582-477b-a8e6-522150d12990/astm-e617-23

- 3.1.1 *accuracy class of weights*—a class of weights that meets certain metrological requirements intended to keep the errors within specified limits.
- 3.1.2 balance—instrument indicating apparent mass that is sensitive to the following forces:

$$F_q = m \cdot g$$

Force due to gravity

 $F_b = v \cdot \rho_a \cdot g = \frac{m}{\rho} \rho_a \cdot g$

Air buoyancy equal to the weight of the displaced air.

$$F_z = \mu_o \iiint_{\mathcal{L}} (M + \chi H) \frac{\partial H}{\partial Z} dV$$

Vertical component of the magnetic interaction between the weight and the balance or the environment, or both.

H and M are vectors; z is the vertical cartesian coordinate. If magnetic effects are negligible, that is, the permanent magnetization (M) of the weight and the magnetic susceptibility (χ) are sufficiently small, and the balance is calibrated with reference weights of well-known mass, the balance can be used to indicate the conventional mass, m_c , of a body under conventionally chosen conditions.

² Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland, http://www.iso.org.

³ Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, http://www.nist.gov.

⁴ Available from Organisation Internationale de Metrologie Legale, 11 Rue Turgot, 75009 Paris, France, http://www.oiml.org.

⁵ Available from Bureau International des Poids et Mesures (BIPM), Pavilion de Breteuil, F-92312, Sèvres Cedex, France, http://www.bipm.org.

⁶ Available from Euramet, Bundesallee 100, 38116 Braunschweig, Germany, http://www.euramet.org.

- 3.1.3 *calibration (of weights)*—the acts of determining the mass difference between a standard of known mass value and an "unknown" test weight or set of weights, establishing the mass value and conventional mass value of the "unknown," and of determining a quantitative estimate of the uncertainty to be assigned to the stated mass or conventional mass value of the "unknown," or both, and providing metrological traceability to the "unknown."
- 3.1.3.1 *calibration (generally)*—set of operations that establish, under specified conditions, the relationship between values of quantities indicated by a measuring instrument or measuring system, or values represented by a material measure or a reference material, and the corresponding values realized by standards.
- 3.1.4 *calibration certificate*—certificate issued by calibration laboratories to document the results of a calibration.
- 3.1.5 conventional mass—conventional value of the result of weighing in air, in accordance to International Recommendation OIML D 28. For a weight taken at $\frac{20^{\circ}\text{C}}{20^{\circ}\text{C}}$, the conventional mass is the mass of a reference weight of a density of 8000 $\frac{\text{kg/mkg m}^3-3}{\text{kg/mkg m}^3-3}$ which it balances in air of density of 1.2 $\frac{\text{kg/mkg m}^3-3}{\text{kg/mkg m}^3-3}$.
- 3.1.6 *correction*—mass values are traditionally expressed by two numbers, one being the nominal mass of the weight, and the second being a correction. The mass of the weight is the assigned nominal value plus the assigned correction. Positive corrections indicate that the weight embodies more mass than is indicated by the assigned nominal value. Negative corrections indicate that the weight embodies less mass than is indicated by the assigned nominal value. The correction is equivalent to the "error."
- 3.1.7 *international prototype-kilogram*—the SI base unit of mass. Formerly the international prototype kilogram (IPK), the platinum-iridium cylinder maintained at the International Bureau of Weights and Measures (BIPM), at Sevres, France with an internationally accepted (BIPM) in Sèvres, France, was internationally accepted as having a defined mass of 1 kg. In 2018 the kilogram was redefined in terms of the Planck constant h (taken to be 6.626 070 15×10^{-34} kg m² s⁻¹) where the mass of primary mass standards may be determined by any primary method such as those described in the mise en pratique for the definition of the kilogram in the BIPM SI Brochure. The redefinition process ensured continuity of mass measurements before and after redefinition such that all mass values traceable to the IPK remained the same when the new definition came into effect, but the uncertainties of these mass values were increased by the relative standard uncertainty of the IPK immediately after the redefinition (1.0×10^{-8}) .
- 3.1.8 magnetism—effect that generates an attractive or repulsive force without the presence of charged species.
- 3.1.8.1 (volume) magnetic susceptibility (χ)—measure of the ability of a medium to modify a magnetic field. It is related to the magnetic permeability (μ) by the relation: $\mu/\mu_0 = 1 + \chi$. The quantity μ/μ_0 is sometimes referred to as the relative permeability, μ_r .
- 3.1.8.2 (permanent) magnetization (M)—parameter that specifies a magnetic state of material bodies such as weights, in the absence of an external magnetic field (most generally, magnetization is a vector whose magnitude and direction are not necessarily constant within the material). The magnetization of a body generates an inhomogeneous magnetic field in space and thus may produce magnetic forces on other materials.
- 3.1.9 *mass*—physical quantity, which can be ascribed to any material object and which gives a measure of its quantity of matter. The unit of mass is the kilogram.
- 3.1.10 *maximum permissible errors*—the maximum amount by which the sum of the conventional mass <u>correction</u> of the weight, its deviation from nominal value, and its associated uncertainty is allowed to deviate from the assigned nominal value.
- 3.1.11 *metrological traceability*—property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty. Metrological traceability requires an established calibration hierarchy. Elements for confirming metrological traceability to be an unbroken chain to an international measurement standard or a national measurement standard (IPK or NPS), a primary mass standard shall include a documented measurement uncertainty, a documented measurement procedure, accredited technical competence, metrological traceability to the SI, and established calibration intervals (see current VIM: JCGM 200).
- 3.1.12 reference standard—a standard, generally of the highest metrological quality available at a given location, from which measurements made at that location are derived.
- 3.1.13 roughness parameter or R-parameter (R_a or R_z)—parameter that describes the assessed roughness profile of a sample. The



letter R is indicative of the type of assessed profile, in this case R for roughness profile. The assessed profile of a sample can be in terms of different profile types: a roughness profile or R-parameter, primary profile or P-parameter, a waviness profile or W-parameter.

- 3.1.14 set of weights—a series of weights, usually presented in a case so arranged to make possible any weighing of all loads between the mass of the weight with the smallest nominal value and the sum of the masses of all weights of the series with a progression in which the mass of the smallest nominal value weight constitutes the smallest step of the series.
- 3.1.15 temperature (t)—in degrees Celsius, is related to the absolute thermodynamic temperature scale, called the Kelvin scale, by t = T 273.15 K.
- 3.1.16 test weight (m_t) —weight that is to be tested according to this standard.
- 3.1.17 *tolerance test*—verification that the <u>sum of the</u> conventional mass <u>corrections</u> of the weights and their corresponding uncertainties as <u>tested</u> are correct within the maximum permissible errors of the respective weight class.
- 3.1.18 *uncertainty*—non-negative parameter characterizing the dispersion of the quantity values being attributed to a measurand, based on the information used.
- 3.1.19 *units*—the units used are: (1) for mass, the milligram (mg), the gram (g) and the kilogram (kg); (2) for density, the kilogram per cubic meter (kg m^{-3}).
- 3.1.20 U.S. National prototype standard—platinum-iridium kilogram identified as K20, maintained at the National Institute of Standards and Technology, with value assigned relative to the International Prototype Kilogram provides the United States access to the mass unit.
- 3.1.20 *weight*—material measure of mass, regulated in regard to its physical and metrological characteristics: shape, dimensions, material, surface quality, nominal value, density, magnetic properties and maximum permissible error.

Note 2—The term "weight" is also used as the physical quantity of the gravitational force of a body. From the context it is usually clear in which sense the term is used. If the sense is not clear, one may use the words "weight force" or "weight piece," depending on its meaning.

3.2 Symbols:

Symbol	Unit	Definition
Ä	_	represents weighing the reference
В	-	weight in a weighing cycle represents weighing the test weight in a weighing cycle
C	-	correction factor for air buoyancy
D	kg	difference of balance readings between minimum and maximum values from eccentricity test
d	kg	scale interval
d_{τ}	m	estimated distance between centers of weights during loading
d_2	m	estimated distance from the center of the load receptor to one of the corners
F_{b}	N	air buoyancy equal to the weight of the displaced air
F_{α}	N	gravitational force
F_g F_z	N	magnetic force between a mass comparator and a weight in the vertical or z-direction
g	m s ⁻²	gravitational acceleration
Н	A m ⁻¹	magnetizing field strength
hr	%	relative humidity
\underline{h}_r	<u>%</u> kg	relative humidity
I	kg	indication of the weighing instruments (scale division)
ΔI	kg	indication difference of the balance, where $\Delta I = I_t - I_r$

Symbol ΔI_1	Unit kg	Definition indication difference using an
Δl_2	kg	automatic exchange mechanism with weights in first position indication difference using an
$\Delta I_{\mathtt{S}}$	kg	automatic exchange mechanism with weights in reversed position change in indication of balance due to
i	-	sensitivity weight subscript used as an index in
i		summations
j k	-	subscript for number of test weights or number of series of measurements coverage factor, typically 2 or 3
М	A m ⁻¹	permanent magnetization (see also $\mu_0 M$)
m Δm	kg kg	mass of a rigid body (weight) mass difference, usually between test and reference weight
δm	kg	maximum permissible error on the weights
m_0	kg	mass, nominal value of the weight
$m_{\rm c}$	kg	(e.g. 1 kg) conventional mass of the weight
$\Delta m_{ m c}$	kg	conventional mass difference between test weight and reference weight
$\Delta \overline{m_c}$	kg	average conventional mass difference between test weight and reference
		weight
$m_{\rm cr}$	kg	conventional mass of the reference weight
$m_{ m ct}$	kg	conventional mass of the test weight
m _s m _t	kg h Standards	mass of the sensitivity weight mass of the test weight
n	Ten Standards	subscript for number of measurement
р R _a	(https: Pa/standards.it	sequences barometric pressure mean height of roughness profile (R-
R_z	Document Previe	parameter) maximum height of roughness profile
r	Document 1 levic	subscript for reference weight
s s	– kg	subscript for sensitivity weight standard deviation
s^2	kg ² ASTM E617-23	variance
https://standards.iteh.a	ai/catalog/standards/sist/1b470a58-c582-477b-a	thermodynamic temperature using the International Temperature Scale of 1990 (ITS-90)
ΔT^{\star}	°C	initial difference between weight tem- perature and laboratory temperature
t t	- °C	subscript for test weight
ı	C	temperature in degrees Celsius, where $t = T - 273.15 \text{ K}$
U u	kg kg	uncertainty, expanded uncertainty uncertainty, standard uncertainty
$u_{\rm b}$	kg	uncertainty of air buoyancy correction
и _{ba} и _с	kg kg	uncertainty of the balance combined standard uncertainty
$u_{\rm d}$	kg	uncertainty due to the display resolu-
u_{E}	kg	tion of a digital balance uncertainty due to eccentricity
u_F	kg m ^{−3}	uncertainty of the formula used to cal-
$u_{\rm hr}$	%	culate air density uncertainty in relative humidity
u_{inst}	kg	uncertainty due to instability of the ref- erence weight
u_{ma}	kg	uncertainty due to magnetism
u_{p} u_{s}	Pa kg	uncertainty in barometric pressure uncertainty due to the sensitivity of the
		balance
и _t и _w	°C kg	uncertainty in temperature uncertainty due to the weighing pro-
V	m ³	cess
v z	m	volume of a solid body (weight) vertical cartesian coordinate
μ	N A ⁻²	magnetic permeability



Symbol	Unit	Definition
μ_0	N A ⁻²	magnetic constant (magnetic
		permeability of vacuum), $\mu_0 = 4\pi \times 10^{-7}$ N A ⁻²
$\mu_{o}M$	Т	magnetic polarization
μ_{r}	_	relative magnetic permeability (μ/μ_0)
V _{eff}	_	effective degrees of freedom
ρ	kg m ⁻³ kg m ⁻³	mass of a rigid body (weight)
ρο	kg m ⁻³	density of air as a reference value
		equal to 1.2 kg m ⁻³
$ ho_{ t a}$	kg m ⁻³	density of moist air
$ ho_{al}$	kg m ⁻³	density of moist air during the last
		(previous) calibration of the reference
		weight
ρ_{r}	kg m ⁻³	density of a reference weight with
		mass m_r
ρ_{t}	kg m ^{–3}	density of the weight being tested
χ	_	magnetic susceptibility

4. Maximum Permissible Errors

- 4.1 For each weight, the expanded uncertainty *U* at approximately 95 % confidence (See(see Section 9) of the conventional mass shall be less than or equal to one-third of the maximum permissible error given in Table 1 as defined in Section 9. Subsequent calibrations must meet all the requirements (including environmental parameters as shown in Table 11, of Sections 7, 8, and 9; and the requirements of ISO/IEC 17025:2005, 5.10.4.217025:2017, 7.8.6 to make any claim of compliance to Specification E617, Maximum Permissible Errors, weight classes, or metrological traceability.
- 4.1.1 For each weight, the conventional mass, m_c (determined with an expanded uncertainty), shall not differ by more than the difference: maximum permissible error δm minus expanded uncertainty, from the nominal value of the weight, m_o :

$$m_o - (\delta m - U) \le (m_c) \le m_o + (\delta m - U) \tag{1}$$

- 4.2 Maximum permissible errors for classes 000, 00, 0, 1, 2, 3, 4, 5, 6, and 7 are given in Table 1. These maximum permissible errors apply to conventional mass values.
- 4.3 Maximum Permissible Errors for weights of denomination intermediate between those listed, the maximum permissible error shall be proportional to the values shown.interpolated from the nearest values shown. Maximum permissible errors for nominal values outside the ranges listed in Table 1 shall be interpolated from the nearest metric equivalents.
- 4.4 For class 000, 00, and 0 weights, which are always accompanied by certificates giving the mass values and uncertainties, the deviation from the nominal value, $m_c m_0$, shall be taken into account by the user.

5. Physical Characteristics

- 5.1 Construction:
- 5.1.1 *Type*—Weights are divided into two types based upon the design:
- 5.1.1.1 *Type I*—These weights are of one-piece construction and contain no added adjusting material. They must be specified when weights are to be used as standards for the calibration of weights of Classes 000, 00, 0, 1, 2, and 3, and where maximum stability is required. A precise measurement of density can only be made for one-piece weights.
- 5.1.1.2 *Type II*—Weights of this type can be of any appropriate design such as screw knob, ring, or sealed plug. Adjusting material can be used provided it is of a material at least as stable as the base material and is contained in such a way that it will not become separated from the weight.
- 5.1.2 Class 000, 00, and 0 shall be Type I, one piece construction. Weights with nominal values less than 1 g shall have unique shapes to differentiate the weights from one another. See Table 2. The shape of weights smaller than 1 mg shall be discussed and verified with the customer.
- 5.1.3 Class 1, 2, 3, 4, 5, 6, and 7 may be either Type I or Type II depending on the application.

TABLE 1 Maximum Permissible Errors

Note 1—Maximum Permissible Errors are reported in SI units, typically milligrams.

Note 2—The "grain" is the same in avoirdupois, troy, and apothecaries units of mass.

Note 3—See NIST SP 811 and NIST SP 1038 for conversion and units of measure.

Note 4—For nominal values not listed, see 4.3.

Denomination					±mg excep	ot as noted				
Denomination	Class 000	Class 00	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
Metric										
5000 kg					25 g	50 g	100 g	250 g	500 g	750 g
3000 kg					15 g	30 g	60 g	150 g	300 g	450 g
2000 kg					10 g	20 g	40 g	100 g	200 g	300 g
1000 kg					5.0 g	10 g	20 g	50 g	100 g	150 g
500 kg					2.5 g	5.0 g	10 g	25 g	50 g	75 g
300 kg					1.5 g	3.0 g	6.0 g	15 g	30 g	45 g
200 kg					1.0 g	2.0 g	4.0 g	10 g	20 g	30 g
100 kg 50 kg	12 ma	OE ma	62 ma	100 ma	500 mg	1.0 g	2.0 g 1.0 g	5.0 g 2.5 g	10 g 5.0 g	15 g
— 30 kg	13 mg 7.5	25 mg 15	63 mg 38	120 mg 75	250 150	500 mg 300	600 mg	2.5 g 1.5 g	3.0 g	7.5 g
30 kg	7.5	15			150	300	600 mg		3.0 g	4.5 g 5.1 g
25 kg	6.25	12.5	38 31	75 62	130 125	250	500 mg	<u>1.5 g</u> 1.2 g	3.0 g 2.5 g	3.8 g
25 kg	6.25		21		125	<u>250</u>	<u>500</u>		2.5 g	_
20 kg	5.0	<u>12.5</u> 10	<u>31</u> 25	<u>62</u> 50	100	200	400	<u>1.3 g</u> 1.0 g	2.5 g 2.0 g	<u>4.5 g</u> 3.8 g
20 kg 10 kg	2.5	5.0	13	25	50	100	200	500 mg	2.0 g 1.0 g	2.2 g
5 kg	1.3	2.5	6.0	12	25	50	100	250	500 mg	1.4 g
3 kg	0.75	1.5	3.8	7.5	15	30	60	150	300 mg	1.4 g 1.0 g
2 kg	0.75	1.0	2.5	5.0	10	20	40	100	200	750 mg
1 kg	0.25	0.5	1.3	2.5	5.0	10	20	50	100	470
— 500 g	0.23 0.13	0.5 0.25	0.60	2.5 1.2	2.5	5.0	10	20	50	300
500 g	0.13	0.25	0.60	1.2	2.5	5.0	10	35	70	300
300 g	0.13 0.075	0.25 0.15	0.00	0.75	1.5	3.0	6.0	30 35 20	70 30	210
300 g	0.075	0.15	0.38	0.75	1.5	3.0		20	50	210
200 g	0.075	0.13 0.10	0.36 0.25	0.75	1.0 1.0	3.0 2.0	6.0 4.0	30 15	60 20	160
	0.05		0.25					20	40	160
200 g 100 g	0.05 0.025	0.10 0.05	0.25	0.50 0.25	$\frac{1.0}{0.50}$	$\frac{2.0}{1.0}$	$\frac{4.0}{2.0}$	<u>20</u> 9.0	40 10	100 100
100 g	0.025	0.05	0.13	0.25	0.50	1.0	2.0	9.0 10	20	100
- 50 g	0.025 0.015	0.03	0.060	0.23	0.30 0.25	0.60	1.2	<u>10</u> 5.6	<u>20</u> 7.0	62
50 g	0.015	0.030	0.060	0.12	0.25	0.60	1.2	<u>5.0</u>	10	62
30 g	0.013	0.030 0.026	0.000	0.12	0.25 0.15	0.00	0.90	4.0	5.0	<u>62</u> 44
30 g	0.014	0.026	0.037	0.074	0.15	0.45 0.45	0.90	3.0	6.0	44
- 20 g	0.014	0.025	0.037	0.074	0.13 0.10	0.45	0.30	3.0	3.0	$\frac{44}{33}$
_ 20 g	0.013	0.025	0.037	0.074	1 E0.107-2	3 0.35	0.70	<u>2.0</u>	4.0	33
10 g	0.010	0.020	0.025	0.050	0.074	0.25	0.50	2.0 2.0	2.0	33 21
10 g:/sta	and 0.010 tel	0.020	0.025	0.050	0.074	$2-4_{\underline{0.25}}^{0.25}$ - a	866 0.50 21	$50d_{1.0}^{2.0990}$	$ast_{2.0}^{2.0}e61$	$7-2\frac{7}{21}$
-5 g	0.005	0.010	0.017	0.034	0.054	0.18	0.36	1.3	2.0	13
_ 5 g	0.005	0.010	0.017	0.034	0.054	0.18	0.36	0.75		13
-3 g	0.005	0.010	0.017	0.034	0.054	0.15	0.30	0.95	1.5 2.0	<u>13</u> 9.4
3 g	0.005	0.010	0.017	0.034	0.054	0.15	0.30	0.64	1.3	9.4
	0.005	0.010	0.017	0.034	0.054	0.13	0.26	0.75	2.0	7.0
_ 2 g	0.005	0.010	0.017	0.034	0.054	0.13	0.26	0.56	1.1	
-1 g	0.005	0.010	0.017	0.034	0.054	0.10	0.20	0.50	2.0	$\frac{7.0}{4.5}$
1 g	0.005	0.010	0.017	0.034	0.054	0.10	0.20	0.45	0.90	4.5
-500 mg	0.002	0.003	0.005	0.010	0.025	0.080	0.16	0.38	1.0	$\frac{4.5}{3.0}$
500 mg	0.002	0.003	0.005	0.010	0.025	0.080	0.16	0.36	0.72	3.0
300 mg	0.002	0.003	0.005	0.010	0.025	0.070	0.14	0.30	1.0	2.2
300 mg	0.002	0.003	0.005	0.010	0.025	0.070	0.14	0.31	0.61	2.2
200 mg	0.002	0.003	0.005	0.010	0.025	0.060	0.12	0.26	1.0	2.2 1.8
200 mg	0.002	0.003	0.005	0.010	0.025	0.060	0.12	0.27	0.54	<u>1.8</u>
-100 mg	0.002	0.003	0.005	0.010	0.025	0.050	0.10	0.20	1.0	1.2
100 mg	0.002	0.003	0.005	0.010	0.025	0.050	0.10	0.22	0.43	1.2
50 mg	0.002	0.003	0.005	0.010	0.014	0.042	0.085	0.16		0.88
50 mg	0.002	0.003	0.005	0.010	0.014	0.042	0.085	0.17	0.35	0.88
30 mg	0.002	0.003	0.005	0.010	0.014	0.038	0.075	0.14		0.68
30 mg	0.002	0.003	0.005	0.010	0.014	0.038	0.075	0.15	0.30	0.68
20 mg	0.002	0.003	0.005	0.010	0.014	0.035	0.070	0.12		0.56
20 mg	0.002	0.003	0.005	0.010	0.014	0.035	0.070	0.13	0.26	0.56
10 mg	0.002	0.003	0.005	0.010	0.014	0.030	0.060	0.10	0.21	0.40
- 5 mg	0.002	0.003	0.005	0.010	0.014	0.028	0.055	0.080		
_ 5 mg	0.002	0.003	0.005	0.010	0.014	0.028	0.055	0.083	0.17	
-3 mg	0.002	0.003	0.005	0.010	0.014	0.026	0.052	0.070	_	
3 mg	0.002	0.003	0.005	0.010	0.014	0.026	0.052	0.071	0.14	
2 mg	0.002	0.003	0.005	0.010	0.014	0.025	0.050	0.060		
_ 2 mg	0.002	0.003	0.005	0.010	0.014	0.025	0.050	0.062	0.12	
1 mg	0.002	0.003	0.005	0.010	0.014	0.025	0.050	0.050	0.10	



TABLE 1 Continued

Performination							nt oo noted				
0.5 mg	Denomination		01 00	01 0	01 1		•	01 4	01 5	01 0	01 7
O.S. mg										Class 6	Class 7
0.2 mg	•										
0.2 mg 0.002 0.003 0.005 0.010 0.014 0.014 0.018 0.002 0.003 0.005 0.010 0.010 0.016 0.010							0.025	0.050	0.0540	0.080	
0.11 mg							0.025				
O. 10 mg						0.014					
Normalization Class 0 Class 1 Class 2 Class 3 Class 6 Class 6 Class 6 Class 7 Class 8 Class 7	•										
Pound mg mg mg mg g k mg		0.002	0.003			Class 2	Class 3	Class 4	Clace 5	Class 6	Class 7
10000 b											
5000 b				9	9	9					
3000 b										•	
2500 lb							14 g				
1000 lb	2500 lb										
SOO ID	2000 lb						9.1 g	18 g	45 g	91 g	140 g
300 lb							4.5 g	9.1 g		45 g	68 g
200 b											
100 lb											
So b											
30 b											
25 lb 14 28 57 110 230 570 11.1 g 2.4 g 2.0 lb 12 2.0 lb 12 2.3 4.5 91 180 450 910 mg 2.0 g 10 lb 15.5 11 12 33 45 91 230 450 11.3 g 2.0 g 780 mg 2.0 g 3 lb 2.7 5.4 11 23 45 91 230 450 13.3 g 3 lb 1.7 3.4 6.8 14 27 68 140 580 13.3 g 1.7 3.4 6.8 14 27 68 140 580 13.3 g 1.7 3.4 6.8 14 27 68 140 580 13.3 g 1.7 3.4 6.8 1.4 27 68 140 580 13.3 lb 1.7 3.4 6.8 1.4 27 68 140 580 140 580 14.7 15.1 15.1 15.1 15.1 15.1 15.1 15.1 15											4.1 g
20 lb 12 23 45 91 180 450 910 mg 2.0 g											
10 lb											
5 b										0	
3 lb 1.7 3.4 6.8 14 27 68 140 580 140 1-2 12 3 4.5 9.1 18 45 91 440 1-16 10.5 16 1-16 10.5 11 18 0.6 5 1-1 2.3 4.5 9.1 18 45 91 440 1-16 11 10 0.5 1.1 12 2.3 4.5 9.1 35 70 270 0.5 11 10 0.5 11 12 2.3 4.5 9.1 35 70 270 0.5 11 0.5 15 10 0.2 14 11 12 2.3 4.5 9.1 35 70 270 0.5 15 10 0.5 15 10 0.2 14 11 12 2.3 4.5 9.1 35 70 270 0.5 15 10 0											
2 lb											
1-lb											
1 lb											
0.51b 0.27 0.54 1.1 2.3 4.5 23 45 170 0.34b 0.34b 0.68b 1.4 2.7 11 1 4.2 120 0.31b 0.117 0.34 0.68b 1.4 2.7 114 1.4 120 0.31b 0.117 0.34 0.68b 1.4 2.7 114 1.2 17 120 0.24b 0.24b 0.42b 0									35		
0.51b 0.27 0.54 1.1 2.3 4.5 23 45 170 0.34b 0.34b 0.68b 1.4 2.7 11 1 4.2 120 0.31b 0.117 0.34 0.68b 1.4 2.7 114 1.4 120 0.31b 0.117 0.34 0.68b 1.4 2.7 114 1.2 17 120 0.24b 0.24b 0.42b 0				0.27		1.1	2.3	4.5	16	23	
0.3 lb 0.17 0.34 0.68 1.4 2.7 14 27 120 0.2 lb 0.12 0.23 0.45 0.91 1.8 9.0 18 97 0.1 lb 0.055 0.11 0.23 0.45 1.1 4.5 9.1 59 0.1 lb 0.055 0.11 0.23 0.57 1.1 4.5 9.1 59 0.05 lb 0.067 0.984 0.91 0.986 0.77 3.3 4.5 37 0.05 lb 0.031 0.037 0.074 0.11 0.36 0.77 2.3 4.5 37 0.03 lb 0.029 0.039 0.083 0.92 0.59 1.4 2.7 26 0.02 lb 0.047 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.9							2.3	4.5	23	45	
0.3 lb 0.17 0.34 0.68 1.4 2.7 14 27 120 0.2 lb 0.12 0.23 0.45 0.91 1.8 9.0 18 97 0.1 lb 0.055 0.11 0.23 0.45 1.1 4.5 9.1 59 0.1 lb 0.055 0.11 0.23 0.57 1.1 4.5 9.1 59 0.05 lb 0.067 0.984 0.91 0.986 0.77 3.3 4.5 37 0.05 lb 0.031 0.037 0.074 0.11 0.36 0.77 2.3 4.5 37 0.03 lb 0.029 0.039 0.083 0.92 0.59 1.4 2.7 26 0.02 lb 0.047 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.964 0.9	0.3 lb					0.68	1.4	2.7	11	14	
0.2 lb 0.+1+b 0.12 0.+1b 0.23 0.055 0.11 0.23 0.45 0.11 0.91 0.57 1.1 1.4 1.5 0.77 9.1 1.5 1.5 0.77 1.9 0.05 0.77 1.1 4.5 0.77 1.1 4.5 0.77 1.1 3.3 4.5 3.7 1.1 3.7 1.1 4.5 0.77 1.1 3.3 4.5 3.7 1.1 4.5 3.7 1.1 4.5 3.2 2.2 2.6 3.2 2.2 2.6 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	0.3 lb						1.4	2.7	14	27	
0.1 lb								1.8	8.2		97
0.1 lb								<u>1.8</u>	9.0	<u>18</u>	<u>97</u>
0.05 lb 0.037 b 0.074 b 0.11 b 0.36 b 0.77 b 2.3 b 4.5 a 26 b 0.03 lb 0.029 b 0.059 b 0.083 b 0.32 b 0.59 b 1.4 a 2.7 a 26 b 0.02 lb 0.024 b 0.047 b 0.083 b 0.32 b 0.45 b 1.9 a 28 b 0.02 lb 0.024 b 0.047 b 0.070 b 0.23 b 0.45 b 1.9 a 28 b 0.02 lb 0.041 b 0.024 b 0.047 b 0.070 b 0.23 b 0.45 b 1.9 a 1.8 a 20 b 0.01 lb 0.017 b 0.016 b 0.016 b 0.016 b 0.034 b 0.73 b 1.5 b 12 b 0.005 lb 0.017 c 0.034 b 0.054 b 0.14 b 0.27 b 0.58 b 0.94 f 7.8 b 0.003 lb 0.017 c 0.034 b 0.054 b 0.14 b 0.27 b 0.56 b 0.94 f 7.8 b 0.003 lb 0.017 c 0.034 b 0.054 b 0.11 b 0.22 b 0.50											59
0.05 lb 0.037 b 0.074 b 0.11 b 0.36 b 0.77 b 2.3 b 4.5 a 26 b 0.03 lb 0.029 b 0.059 b 0.083 b 0.32 b 0.59 b 1.4 a 2.7 a 26 b 0.02 lb 0.024 b 0.047 b 0.083 b 0.32 b 0.45 b 1.9 a 28 b 0.02 lb 0.024 b 0.047 b 0.070 b 0.23 b 0.45 b 1.9 a 28 b 0.02 lb 0.041 b 0.024 b 0.047 b 0.070 b 0.23 b 0.45 b 1.9 a 1.8 a 20 b 0.01 lb 0.017 b 0.016 b 0.016 b 0.016 b 0.034 b 0.73 b 1.5 b 12 b 0.005 lb 0.017 c 0.034 b 0.054 b 0.14 b 0.27 b 0.58 b 0.94 f 7.8 b 0.003 lb 0.017 c 0.034 b 0.054 b 0.14 b 0.27 b 0.56 b 0.94 f 7.8 b 0.003 lb 0.017 c 0.034 b 0.054 b 0.11 b 0.22 b 0.50								<u>1.1</u>	<u>4.5</u>	<u>9.1</u>	<u>59</u>
0.03 b 0.029 0.059 0.083 0.32 0.59 1.4 2.7 26									3.3	4.5	37
0.03 b 0.029 0.059 0.083 0.32 0.59 1.4 2.7 26				0.037			0.36	0.77	2.3	4.5	37
0.02 lb 0.01+b 0.022 0.012 0.042 0.023 0.024 0.024 0.16 0.024 0.24 0.16 0.034 0.11 0.22 0.034 0.12 0.034 0.13 0.034 0.73 0.73 0.15 0.066 1.8 0.99 0.99 0.99 0.99 0.99 0.99 0.903 lb 0.017 0.034 0.005 lb 0.017 0.034 0.0075 0.054 0.045 0.045 0.14 0.054 0.14 0.021 0.014 0.022 0.031 lb 0.077 0.034 0.003 lb 0.017 0.034 0.0075 0.045 0.0054 0.003 lb 0.017 0.034 0.003 lb 0.017 0.034 0.0075 0.034 0.054 0.001 lb 0.011 0.022 0.000 lb 0.0075 0.0015 0.0015 0.0015 0.0015 0.0010 0.024 0.091 0.0010 0.0024 0.0010 0.11 0.022 0.001 lb 0.015 0.0030 0.0040 0.0010 0.024 0.0078 0.0024 0.0010 0.019 0.024 0.0078 0.0064 0.0064 0.0001 0.19 0.0044 0.0001 0.0023 0.064 0.0001 0.0023 0.064 0.0001 0.0001 0.19 0.004 0.0001 0.0023 0.064 0.0001 0.00001 0.0001 0.00001 0.0001 0.00001 0.0001 0.0001 0.0001 0.00001 0.0001 0.0001 0.											26
0.02 lb 0.01+b 0.022 0.012 0.042 0.023 0.024 0.024 0.16 0.024 0.24 0.16 0.034 0.11 0.22 0.034 0.12 0.034 0.13 0.034 0.73 0.73 0.15 0.066 1.8 0.99 0.99 0.99 0.99 0.99 0.99 0.903 lb 0.017 0.034 0.005 lb 0.017 0.034 0.0075 0.054 0.045 0.045 0.14 0.054 0.14 0.021 0.014 0.022 0.031 lb 0.077 0.034 0.003 lb 0.017 0.034 0.0075 0.045 0.0054 0.003 lb 0.017 0.034 0.003 lb 0.017 0.034 0.0075 0.034 0.054 0.001 lb 0.011 0.022 0.000 lb 0.0075 0.0015 0.0015 0.0015 0.0015 0.0010 0.024 0.091 0.0010 0.0024 0.0010 0.11 0.022 0.001 lb 0.015 0.0030 0.0040 0.0010 0.024 0.0078 0.0024 0.0010 0.019 0.024 0.0078 0.0064 0.0064 0.0001 0.19 0.0044 0.0001 0.0023 0.064 0.0001 0.0023 0.064 0.0001 0.0001 0.19 0.004 0.0001 0.0023 0.064 0.0001 0.00001 0.0001 0.00001 0.0001 0.00001 0.0001 0.0001 0.0001 0.00001 0.0001 0.0001 0.							0.32	0.59	1.4	2.7	<u>26</u>
0.01 lb 0.017 0.034 0.054 0.16 0.34 0.73 1.5 12 0.005 lb 0.0075 0.045 0.054 0.14 0.27 0.86 0.04 7.8 0.003 lb 0.017 0.034 0.054 0.14 0.27 0.58 1.2 7.8 0.003 lb 0.017 0.034 0.054 0.14 0.22 0.64 0.91 5.4 0.003 lb 0.017 0.034 0.054 0.11 0.22 0.64 0.91 5.4 0.002 lb 0.015 0.030 0.049 0.091 0.19 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.20 0.04 0.02											20
0.01 lb 0.017 0.034 0.054 0.16 0.34 0.73 1.5 12 0.005 lb 0.0075 0.045 0.054 0.14 0.27 0.86 0.04 7.8 0.003 lb 0.017 0.034 0.054 0.14 0.27 0.58 1.2 7.8 0.003 lb 0.017 0.034 0.054 0.14 0.22 0.64 0.91 5.4 0.003 lb 0.017 0.034 0.054 0.11 0.22 0.64 0.91 5.4 0.002 lb 0.015 0.030 0.049 0.091 0.19 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44 0.69 0.44				/			0.23	0.45	504 12000	Vacti <mark>1.0</mark>	7 7 12
0.005 lb 0.017 0.034 0.054 0.14 0.27 0.58 1.2 7.8 0.003 lb 0.0075 0.045 0.024 0.11 0.22 0.50 0.99 5.4 0.002 lb 0.0076 0.046 0.011 0.22 0.50 0.99 5.4 0.002 lb 0.0075 0.046 0.024 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0075 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0050 0.010 0.024 0.078 0.15 0.35 0.70 2.9 0.001 lb 0.0045 0.091 0.023 0.064 0.13 0.28 0.56 2.0 0.0005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0004 lb 0.0045 0.0091 0.023 0.064 0.11 0.23 0.56 2.0 0.0002 lb											12
0.005 lb 0.017 0.034 0.054 0.14 0.27 0.58 1.2 7.8 0.003 lb 0.0075 0.045 0.024 0.11 0.22 0.50 0.99 5.4 0.002 lb 0.0076 0.046 0.011 0.22 0.50 0.99 5.4 0.002 lb 0.0075 0.046 0.024 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0075 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0050 0.010 0.024 0.078 0.15 0.35 0.70 2.9 0.001 lb 0.0045 0.091 0.023 0.064 0.13 0.28 0.56 2.0 0.0005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0004 lb 0.0045 0.0091 0.023 0.064 0.11 0.23 0.56 2.0 0.0002 lb								0.01		0.91	7.8
0+003-lb 0.0075 0+015 0+024 0+11 0+22 0+64 0.94 5-4 0-002-lb 0.0076 0+015 0+024 0+091 0+19 0+50 0.99 5-4 0-002-lb 0.0015 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0-004-lb 0.0045 0.016 0.024 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0050 0.010 0.024 0.078 0.15 0.35 0.70 2.9 0.0005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.00045 0.0091 0.023 0.045 0.11 0.23 0.14 0.28 0.00051 lb											7.8
0.003 lb 0.017 0.034 0.054 0.11 0.22 0.50 0.99 5.4 0.002 lb 0.0015 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0075 0.015 0.024 0.068 0.15 0.35 0.70 2.9 0.001 lb 0.0050 0.010 0.024 0.068 0.15 0.35 0.70 2.9 0.001 lb 0.0050 0.010 0.024 0.078 0.15 0.35 0.70 2.9 0.0005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0002 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0002 lb 0.0045 0.0091 0.023 0.064 0.11 0.23 0.56 2.0 0.0002 lb 0.0045 0.0091 0.023 0.044 0.14 0.23 0.14 0.23 0.14								0.22		0.91	5.4
0.002 lb 0.015 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0010 0.0050 0.010 0.024 0.068 0.15 0.36 0.91 2.9 0.005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0004 lb 0.0045 0.0091 0.023 0.064 0.11 0.23 0.56 2.0 0.0004 lb 0.0045 0.0091 0.023 0.044 0.11 0.23 1.5 0.0001 lb 0.0045 0.0091 0.023 0.045 0.095 0.20 1.2 0.0001 lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.084 0.00003 lb											
0.002 lb 0.015 0.030 0.049 0.091 0.19 0.44 0.87 4.2 0.001 lb 0.0050 0.010 0.024 0.068 0.15 0.36 0.91 2.9 0.005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003 lb 0.0045 0.0091 0.023 0.064 0.11 0.28 0.56 2.0 0.0004 lb 0.0045 0.0091 0.023 0.064 0.11 0.23 1.5 0.0004 lb 0.0045 0.0091 0.023 0.041 0.086 0.16 0.20 1.2 0.0001 lb 0.0045 0.0091 0.023 0.041 0.086 0.16 0.04 0.84 0.0001 lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.84 0.00003 lb											
0.001-lb 0.0050 0.010 0.024 0.078 0.15 0.36 0.91 2.9 0.001 lb 0.0050 0.010 0.024 0.078 0.15 0.35 0.70 2.9 0.0005-lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0003-lb 0.0045 0.0091 0.023 0.054 0.11 0.23 0.56 2.0 0.0002-lb 0.0045 0.0091 0.023 0.045 0.41 0.23 1.5 0.0001-lb 0.0045 0.0091 0.023 0.045 0.41 0.23 1.5 0.00001-lb 0.0045 0.0091 0.023 0.041 0.095 0.20 1.2 0.00005-lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.00002-lb 0.0045 0.0091 0.014 0.032 0.064 0.11 0.00002-lb 0.0045 0.0091 0.014 0.023 0.054 </td <td>0.002 lb</td> <td></td> <td></td> <td>0.015</td> <td>0.030</td> <td>0.049</td> <td>0.091</td> <td>0.19</td> <td>0.44</td> <td>0.87</td> <td>4.2</td>	0.002 lb			0.015	0.030	0.049	0.091	0.19	0.44	0.87	4.2
0:0005-lb 0:0045 0:0091 0:023 0:064 0:13 0:27 2:1 0:0005 lb 0:0045 0:0091 0:023 0.064 0:13 0.28 0.56 2.0 0:0003-lb 0:0045 0:0091 0:023 0:064 0:11 0:23 1.5 0:0002-lb 0:0045 0:0091 0:023 0:045 0:095 0:20 1.2 0:0001-lb 0:0045 0:0091 0:023 0:041 0:086 0:16 0:84 0:0001-lb 0:0045 0:0091 0:014 0:036 0:073 0:14 0:0003-lb 0:0045 0:0091 0:014 0:036 0:073 0:14 0:0003-lb 0:0045 0:0091 0:014 0:032 0:064 0:11 0:00002-lb 0:0045 0:0091 0:014 0:032 0:064 0:14 0:00002-lb 0:0045 0:0091 0:014 0:022 0:054 0:091 0:00000-lb 0:0045				0.0075			0.068				2.9
0.0005 lb 0.0045 0.0091 0.023 0.064 0.13 0.28 0.56 2.0 0.0002 lb 0.0045 0.0091 0.023 0.054 0.11 0.23 1.5 0.0002 lb 0.0045 0.0091 0.023 0.045 0.095 0.20 1.2 0.0001 lb 0.0045 0.0091 0.023 0.041 0.086 0.16 0.84 0.0005 lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.84 0.0003 lb 0.0045 0.0091 0.014 0.032 0.064 0.11 0.04 0.004							0.078			0.70	2.9
0.0003-lb							0.064				2.1
0.0002-lb 0.0045 0.0091 0.023 0.045 0.095 0.20 1.2 0.0001-lb 0.0045 0.0091 0.023 0.041 0.086 0.16 0.84 0.00005-lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.00002-lb 0.0045 0.0091 0.014 0.032 0.064 0.11 0.00001-lb 0.0045 0.0091 0.014 0.029 0.059 0.091 0.00001-lb 0.0045 0.0091 0.014 0.027 0.054 0.091 0.00005-lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00002-lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00000-lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00000-lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00000-lb 0.00005 0.001 0.014 0.023										0.56	
0.0001 b											
0.00005 lb 0.0045 0.0091 0.014 0.036 0.073 0.14 0.00003 lb 0.0045 0.0091 0.014 0.032 0.064 0.11 0.00002 lb 0.0045 0.0091 0.014 0.029 0.059 0.091 0.00001 lb 0.0045 0.0091 0.014 0.027 0.054 0.091 0.000003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4											
0.00003 lb 0.0045 0.0091 0.014 0.032 0.064 0.11 0.00002 lb 0.0045 0.0091 0.014 0.029 0.059 0.091 0.00001 lb 0.0045 0.0091 0.014 0.027 0.064 0.091 0.00003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg mg mg mg mg mg mg mg 10 oz 0.05 0.05 1.4											0.84
0.00002 lb 0.0045 0.0091 0.014 0.029 0.059 0.091 0.00001 lb 0.0045 0.0091 0.014 0.027 0.054 0.001 0.000005 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00000 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg											
0.00001 lb 0.0045 0.0091 0.014 0.027 0.054 0.091 0.000005 lb 0.0045 0.0091 0.014 0.023 0.054 0.001 0.000003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg											
0.000005 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.00001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg n											
0.000003 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000002 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg											
0.000002 lb 0.00001 lb 0.0045 0.0045 0.0091 0.0091 0.014 0.014 0.023 0.054 0.091 0.054 0.091 0.091 Avoirdupois Ounce Class 0 mg Class 1 mg Class 2 mg Class 3 mg Class 4 mg Class 5 mg Class 6 mg Class 7 mg 10 oz 8 oz 5 oz 0.35 0.27 0.70 0.54 1.4 1.1 1.1 2.8 2.8 2.3 4.5 5.4 4.5 1.6 2.3 4.5 28 23 4.5 23 4.5 57 20 20 23 4.5 170 20 170 20 20 20 20 20 20 20 20 20 20 20 20 20											
0.000001 lb 0.0045 0.0091 0.014 0.023 0.054 0.091 Avoirdupois Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Ounce mg mg </td <td></td>											
Avoirdupois Class 0 mg Class 1 mg Class 2 mg Class 3 mg Class 3 mg Class 4 mg Class 5 mg Class 6 mg Class 7 mg 0unce mg											
Ounce mg										Class 6	Class 7
10-oz 0.35 0.70 1.4 2.8 5.4 19 23 200 10 oz 0.35 0.70 1.4 2.8 5.4 28 57 200 8 oz 0.27 0.54 1.1 2.3 4.5 16 23 170 8 oz 0.27 0.54 1.1 2.3 4.5 23 45 170 5 oz 0.18 0.35 0.71 1.4 2.8 12 11 130											
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							2.8	5.4	19	23	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$						1.4	2.8	5.4	28	57	200
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				027		1.1	2.3	4.5	16	23	
	8 oz					<u>1.1</u>	2.3	4.5	23	<u>45</u>	<u>170</u>
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				0.18	0.35	0.71	1.4	2.8			
4-oz 0.14 0.28 0.57 1.1 2.3 9.5 11 110							1.4	2.8	<u>14</u>	28	
	4 oz			0.14	0.28	0.57	1.1	2.3	9.5	11	110

TABLE 1 Continued

Commission Class					TABLE	I Continue	ea				
Class 000 Class 00 Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7	Denomination					±mg exce	pt as noted				
4 02	Denomination	Class 000	Class 00	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
9 ort	4 07										
\$\frac{3}{2} \text{car}\$ \$\begin{array}{cccccccccccccccccccccccccccccccccccc	3.07				0.20 0.21	0.37		2.5 1.8	8 <u>-1-</u>	<u>20</u> 5-4	110
2 or											90
2 or	2 07							1.3	5.9		70
1 oz											70
1 oz									3.9	3.2	42
12 02 0.030 0.080 0.085 0.30 0.59 1.4 2 8 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 14 14 14 14 14 14 14 14 14 14 14 14										5.4	42
12 02 0.030 0.080 0.085 0.30 0.59 1.4 2 8 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 28 27 144 0.09 1.4 14 14 14 14 14 14 14 14 14 14 14 14 14				0.017					2.5	2.3	 27
1/4 oz											27
1/4 oz										1.4	17
### 6											
188 oz							0.16				10
### 6.00											
1/16 oz							0.12	0.24	0.73	0.91	6.5
1322 oz	1/16 oz			0.017	0.034	0.054		0.24	0.50	1.1	6.5
1322 oz						0.024	0.095	0.19	0.50	_	4.2
164 az 0.0050 0.010 0.023 0.077 0.15 0.35 0.698 2.8 0.50 az 0.050 0.006 0.005 0.30 0.59 1.4 2.8 27 0.50 az 0.006 0.006 0.32 0.50 1.4 2.8 27 0.30 az 0.006 0.006 0.32 0.46 1.8 1.4 1.9 0.30 az 0.006 0.006 0.23 0.45 0.80 1.8 1.9 0.50 az 0.006	1/32 oz				0.029	0.047				0.87	4.2
164 az 0.0050 0.010 0.023 0.077 0.15 0.35 0.698 2.8 0.50 az 0.050 0.006 0.005 0.30 0.59 1.4 2.8 27 0.50 az 0.006 0.006 0.32 0.50 1.4 2.8 27 0.30 az 0.006 0.006 0.32 0.46 1.8 1.4 1.9 0.30 az 0.006 0.006 0.23 0.45 0.80 1.8 1.9 0.50 az 0.006											2.8
0.5 oz	1/64 oz			0.0050	0.010		0.077	0.15	0.35	0.69	2.8
0.5 oz	0.5 oz					0.071			2.5	2.3	27
0.3 oz 0.068 0.23 0.45 0.89 1.8 19 0.2 oz 0.067 0.19 0.38 0.78 1.6 14 0.2 oz 0.057 0.19 0.38 0.78 1.6 14 0.1 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.1 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.056 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.055 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.055 oz 0.054 0.11 0.23 0.58 1.5 5.7 0.05 oz 0.054 0.11 0.23 0.58 1.0 5.7 0.05 oz 0.054 0.077 0.18 0.40 0.05 0.054 0.077 0.18 0.40 0.05 0.054 0.077 0.18 0.40 0.05 0.055 0.10 0.023 0.05 0.05 0.05 0.050 0.054 0.077 0.18 0.40 0.05 0.020 0.022 0.022 0.022 0.022 0.040 oz 0.022 0.022 0.023 0.05 0.040 oz 0.022 0.022 0.024 0.14 0.050 oz 0.022 0.023 0.064 0.14 0.30 0.60 2.2 0.056 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.056 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.050 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.050 oz 0.003 0.004 0.14 0.086 0.16 0.020 0.000 oz 0.003 0.004 0.044 0.086 0.16 0.020 0.000 oz 0.003 0.004 0.044 0.086 0.16 0.020 0.000 oz 0.004 0.004 0.004 0.004 0.000 oz 0.004 0.004 0.005 0.005 0.000 oz 0.004 0.005 0.005 0.005 0.000 oz 0.005 0.005 0.005 0.005	0.5 oz			0.030	0.060			0.59			27
0.3 oz 0.068 0.23 0.45 0.89 1.8 19 0.2 oz 0.067 0.19 0.38 0.78 1.6 14 0.2 oz 0.057 0.19 0.38 0.78 1.6 14 0.1 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.1 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.056 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.055 oz 0.054 0.14 0.29 0.83 1.3 9.0 0.055 oz 0.054 0.11 0.23 0.58 1.5 5.7 0.05 oz 0.054 0.11 0.23 0.58 1.0 5.7 0.05 oz 0.054 0.077 0.18 0.40 0.05 0.054 0.077 0.18 0.40 0.05 0.054 0.077 0.18 0.40 0.05 0.055 0.10 0.023 0.05 0.05 0.05 0.050 0.054 0.077 0.18 0.40 0.05 0.020 0.022 0.022 0.022 0.022 0.040 oz 0.022 0.022 0.023 0.05 0.040 oz 0.022 0.022 0.024 0.14 0.050 oz 0.022 0.023 0.064 0.14 0.30 0.60 2.2 0.056 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.056 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.050 oz 0.003 0.004 0.14 0.030 0.60 2.2 0.050 oz 0.003 0.004 0.14 0.086 0.16 0.020 0.000 oz 0.003 0.004 0.044 0.086 0.16 0.020 0.000 oz 0.003 0.004 0.044 0.086 0.16 0.020 0.000 oz 0.004 0.004 0.004 0.004 0.000 oz 0.004 0.004 0.005 0.005 0.000 oz 0.004 0.005 0.005 0.005 0.000 oz 0.005 0.005 0.005 0.005						0.034			1.8	1.4	19
0.2 oz											19
0.2 oz							0.19				14
0.1 oz						0.057	0.19	0.38	0.78		14
0.1 oz						0.024	0.14	0.29	0.91		9.0
0.05 oz											9.0
0.05 oz								0.23			5.7
0.080 ex	0.05 oz					0.054		0.23			
0.03 oz						0.024	0.095				4.1
0-0-2						0.045					
0.029 0.077 0.18 0.38 0.75 3.2 0.01 oz 0.023 0.064 0.14 0.30 0.60 2.2 0.01 oz 0.023 0.064 0.14 0.30 0.60 2.2 0.01 oz 0.023 0.064 0.14 0.30 0.60 2.2 0.02						0.024					3.2
0.01 oz											3.2
0.01 oz						0.023					2.2
0.008-oz 0.064 0.11 0.28 1.5 0.496 0.095 0.095 0.19 1.1 0.28 0.008 0.008 0.095 0.095 0.095 0.095 0.096 0.095 0.096											2.2
0+009-0z 0+0050 0+0050 0+0050 0+10 0+002 0+0040 0+0080 0+16 0+002 0+0040 0+0080 0+16 0+0080 0+16 0+0080 0+16 0+0080 0+16 0+14 0+14 0+0080 0+14											
0.002-pc 0.0023 0.044 0.066 0.16 0.92 0.0016-pc 0.0023 0.003 0.004 0.11 0.006 0.0005-pc 0.0014 0.002 0.0064 0.11 0.47 0.0000-pc 0.0014 0.002 0.0064 0.006 0.0001-pc 0.0014 0.002 0.006 0.0073 0.006 0.0001-pc 0.0014 0.002 0.004 0.002 0.0001-pc 0.0014 0.002 0.004 0.002 0.0001-pc 0.0014 0.002 0.002 0.002 0.0001-pc 0.0014 0.002 0.0001-pc 0.0014 0											
0.001 + oz											
0.0065-ce 0.014 0.032 0.066 0.095 0.095 0.095 0.0905 0.0902-ce 0.0004 0.014 0.022 0.065 0.0905 0.	0.001 oz					0.023	0.038	0.077	0.13		0.66
θ-0002-ex 0-00041-ex 0-00040-ex 1000 cz t Class 0 0-018s 1 Class 2 0-018s 2 Class 3 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 4 Class 5 0-018s 5 Class 6 0-018s 6 Class 7 0-018s 7 Troy Ounce Class 1 Class 2 0-018s 7 Class 3 0-018s 7 Class 5 0-018s 7 Class 6 0-018s 7 Class 7 0-018s 7 1000 0z t 310 mg 620 mg 1.6 g 91 190 470 930 mg 1.6 g 330 mg 1.6 g 100 310 780 mg 1.6 g 330 mg 1.6 g 100 310 780 mg 1.6 g 330 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 2 12 39 77 77 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0.0005 oz					0.014		0.064	0.11		0.47
θ-0002-ex 0-00041-ex 0-00040-ex 1000 cz t Class 0 0-018s 1 Class 2 0-018s 2 Class 3 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 3 Class 5 0-018s 4 Class 5 0-018s 5 Class 6 0-018s 6 Class 7 0-018s 7 Troy Ounce Class 1 Class 2 0-018s 7 Class 3 0-018s 7 Class 5 0-018s 7 Class 6 0-018s 7 Class 7 0-018s 7 1000 0z t 310 mg 620 mg 1.6 g 91 190 470 930 mg 1.6 g 330 mg 1.6 g 100 310 780 mg 1.6 g 330 mg 1.6 g 100 310 780 mg 1.6 g 330 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 31 78 160 310 780 mg 1.6 g 1.6 2 12 39 77 77 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0.0003 oz					0.014	0.029	0.059	0.095		
Troy Ounce Class 0 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7	0.0002 oz					0.014	0.027	0.054	0.086		
1000 oz t	0.0001 oz					0.014	0.026 - a	0.050	0.073		
1000 oz t 310 mg 620 mg 1.6 g 3.1 g 500 oz t 160 310 780 mg 1.6 g 3.1 g 300 oz t 91 190 470 930 mg 200 oz t 62 120 310 620 310 50 oz t 31 62 160 310 50 oz t 16 31 78 160 310 50 oz t 9.1 19 47 93 93 93 93 93 93 93 9	Troy Ounce			Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
500 oz t 310 780 mg 16 g 300 oz t 91 190 470 930 mg 200 oz t 62 120 310 620 100 oz t 31 62 160 310 50 oz t 16 31 78 160 30 oz t 9.1 19 47 93 20 oz t 6.2 12 39 77 10 oz t 3.1 6.2 21 10 oz t 3.1 6.2 24 10 oz t 3.1 16 3.1 16 5 oz t 1.6 3.1 16 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.2 12 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 1.6 0.1 0.5 oz t 0.31 0.62 1.6 0.2 0.5 oz t 0.24 0.49 1.9 0.9 0.5 oz t 0.24 0.49 1.9 1.8 0.2 oz t 0.20 0.40 0.80 1.6							mg	mg	g & mg		
500 oz t 160 310 780 mg 1.6 g 300 oz t 91 190 470 930 mg 200 oz t 62 120 310 620 100 oz t 31 62 160 310 50 oz t 16 31 78 160 30 oz t 9.1 19 47 93 20 oz t 6.2 42 36 20 oz t 6.2 42 36 20 oz t 3.1 6.2 29 10 oz t 3.1 6.2 24 10 oz t 3.1 6.2 24 10 oz t 3.1 16 3.1 16 3 oz t 9.91 1.9 8.4 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.5 12 2 oz t 0.71 1.4 6.2 12 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 1.6 0.2	1000 oz t						310 mg	620 mg	1.6 g	3.1 g	
300 oz t 100 oz t 190 470 300 mg 200 oz t 100 oz t 311 62 160 310 50 oz t 16 31 78 160 310 50 oz t 16 31 78 160 30 oz t 19 47 93 93 20 oz t 19 47 93 20 oz t 19 47 47 47 47 48 48 48 48	500 oz t										
200 oz t 62 120 310 620 100 oz t 31 62 160 310 50 oz t 16 31 78 160 30 oz t 9.1 19 47 93 20 oz t 6.2 12 39 77 40 oz t 3.1 6.2 24 7 10 oz t 3.1 6.2 30 61 5 oz t 3.1 6.2 30 61 5 oz t 4.6 3.1 16 31 3 oz t 9.91 1.9 9.3 19 2 oz t 9.74 1.4 6.5 19 2 oz t 0.71 1.4 6.2 12 4 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.24 0.49 1.9 0.9 0.3 oz t 0.24 0.49 0.92 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.10 oz t 0.15 0.30 0.65 1.3	300 oz t							190	470	930 mg	
100 oz t 31 62 160 310 50 oz t 9.1 19 47 93 20 oz t 6.2 42 35 77 20 oz t 6.2 12 39 77 10 oz t 3.1 6.2 24 24 10 oz t 3.1 6.2 30 61 5 oz t 1.6 3.1 16 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.5 2 oz t 0.71 1.4 6.2 12 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.31 0.62 1.6 0.3 oz t 0.20 0.40 0.90 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.1 oz t 0.15 0.30 0.65 1.3 0.1 oz t 0.15 0.30 0.65 0.65	200 oz t						62	120	310	620	
50 oz t 16 31 78 160 30 oz t 9.1 19 47 93 20 oz t 6.2 42 35 10 oz t 3.1 6.2 24 5 oz t 3.1 6.2 31 42 5 oz t 1.6 3.1 16 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.2 12 4 oz t 0.45 0.91 3.1 6.2 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.24 0.49 1.9 0.3 oz t 0.20 0.40 0.80 1.6 0.2 oz t 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.15 0.30 0.65 1.3										310	
30 oz t 9.1 19 47 93 20 oz t 6.2 42 35 77 10 oz t 3.1 6.2 24 77 10 oz t 3.1 6.2 30 61 5 oz t 1.6 3.1 16 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.5 12 1 oz t 0.45 0.91 4.2 10 1 oz t 0.45 0.91 4.2 6.2 0.5 oz t 0.31 0.62 2.6 6.2 0.5 oz t 0.24 0.49 0.92 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.2 oz t 0.10 z t 0.10 z t 0.05 0.05 1.3 0.65 oz t 0.20 0.40 0.80 1.6 0.2 oz t 0.10 z t 0.10 z t 0.05 0.65 1.3 0.1 oz t 0.10 z t 0.10 z t 0.06 z t 0.65 1.3 0.05 oz t									78	160	
20 oz t 6.2 42 36 20 oz t 6.2 12 39 77 40 oz t 3.1 6.2 24 61 5 oz t 3.1 6.2 30 61 5 oz t 4.6 3.1 42 31 5 oz t 6.91 4.9 8.4 3 oz t 6.91 4.9 9.3 19 2 oz t 6.7 4.4 6.5 12 1 oz t 6.2 0.91 4.2 12 1 oz t 6.2 0.91 3.1 6.2 0.5 oz t 6.3 0.91 3.1 6.2 0.5 oz t 6.3 0.62 2.6 6.2 0.5 oz t 0.31 0.62 1.6 3.1 0.3 oz t 0.24 0.49 0.92 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.6 oz t 0.15 0.30 0.65 1.3 0.6 oz t 0.12 0.22 0.65 0.65							9.1	19	47	93	
20 oz t 6.2 12 39 77 10 oz t 3.1 6.2 24 61 5 oz t 3.1 6.2 30 61 5 oz t 3.1 1.6 3.1 16 31 3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.2 12 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.30 0.62 1.6 3.1 0.3 oz t 0.24 0.49 1.9 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.15 0.30 0.65 1.3										_	
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$								6.2	30	61	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								3.1	12	_	
3 oz t 0.91 1.9 9.3 19 2 oz t 0.71 1.4 6.5 12 2 oz t 0.45 0.91 4.2 10 1 oz t 0.45 0.91 3.1 6.2 0.5 oz t 0.31 0.62 1.6 3.1 0.3 oz t 0.24 0.49 0.92 1.8 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.15 0.30 0.65 1.3										31	
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0.5 oz t 0.31 0.62 2.6 0.5 oz t 0.31 0.62 1.6 3.1 0.3 oz t 0.24 0.49 1.9 1.8 0.2 oz t 0.20 0.40 1.5 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.12 0.23 0.65 1.3										6.2	
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0.3 oz t 0.24 0.49 0.92 1.8 0.2 oz t 0.20 0.40 1.5 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.12 0.23 0.65 1.3										3.1	
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0.2 oz t 0.20 0.40 1.5 0.2 oz t 0.20 0.40 0.80 1.6 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.12 0.23 0.65 1.3										1.8	
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0.1 oz t 0.15 0.30 0.97 0.1 oz t 0.15 0.30 0.65 1.3 0.05 oz t 0.12 0.23 0.65										1.6	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$											
$0.05 \cdot \text{oz} \cdot \text{t}$ $0.12 \cdot 0.23 \cdot 0.65$										1.3	
										1.0	



TABLE 1 Continued

Denomination										
					±mg excep					
	Class 000	Class 00	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
0.03 oz t						0.097	0.19	0.49		
0.03 oz t						0.097	<u>0.19</u>	0.44	0.88	
0.02 oz t						0.084	0.17	0.41		
0.02 oz t						0.084	0.17	0.39	0.77	
0.01 oz t						0.071	0.14	0.31	0.62	
0.005 oz t						0.056	0.11	0.23		
0.005 oz t						0.056	0.11	0.25	0.50	
0.003 oz t						0.049	0.097	0.19		
0.002 oz t						0.044	0.091	0.17		
0.001 oz t						0.038	0.078	0.14		
0.0005 oz t						0.033	0.065	0.11		
0.0003 oz t						0.030	0.060	0.097		
0.0002 oz t						0.028	0.056	0.084		
0.0001 oz t						0.026	0.052	0.071		
Pennyweight			Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
						mg	g & mg	g & mg		
					mg	mg	mg	g & mg		
10000 dwt						155	0.31 g	0.78 g		
10000 dwt							310	780	<u>1.6 g</u>	
5000 dwt						155 78	0 .16 g	0 .39 g	<u> g</u>	
5000 dwt						78	160	<u>390</u>	780 mg	
3000 dwt						$\frac{78}{47}$	91 mg	0.23 g	9	
3000 dwt							91	230	470	
2000 dwt						47 31	91 62	0.16 g		
2000 dwt							62		210	
1000 dwt						31 16	<u>62</u> 31	<u>160</u> 78 mg	<u>310</u>	
1000 dwt							21		160	
500 dwt						<u>16</u> 7.8	31 16	78 41	<u>160</u>	
						7.8	10	41	07	
500 dwt						7.8 4.7 4.7 3.1	<u>16</u> 9.1	43 28	<u>87</u>	
300 dwt						9 4.7 C	9.1	28		
300 dwt						4.7	9.1 6.2	34 21	<u>68</u>	
200 dwt							6.2	21		
200 dwt						3.1 1.6	6.2 3.1	30 12	<u>61</u>	
100 dwt						1.6	3.1	12		
100 dwt						1.6 0.78	3.1	<u>16</u> 7.8	31	
50 dwt						0.78	1.6	7.8	31 16	
30 dwt						0.58 0.58	1.2	5.3	_	
30 dwt						0.58	1.2	4.7	9.3	
20 dwt						0.46	1.2 0.91	$\frac{4.7}{4.2}$		
20 dwt									6.2	
10 dwt						0.46 0.31	0.91 0.62	3.1 2.6		
10 dwt						0.31	0.62	1.6	3.1	
5 dwt						$2-4\frac{0.00}{0.22}$ = 8	3e 0.44 2 1	5000.89990	/asti <mark>1.7</mark> e61	
3 dwt						0.17	0.34	1.3	dour COI	
3 dwt						0.17		0.73	<u>1.5</u>	
						0.17	0.01	0.70		
							4.3	0.07	_	
2 dwt							0.34 0.3	0.97		
2 dwt 2 dwt						0.15	0.3	0.97 <u>0.65</u>	1.3	
2 dwt 2 dwt 1 dwt						0.15 0.12	0.3 0.23	0.97 0.65 0.65	<u>1.3</u>	
2 dwt 2 dwt 1 dwt 1 dwt			Class 0	Class 1	Class 2	0.15 0.12 0.12	0.3 0.23 0.23	0.97 0.65 0.65 0.52	1.3 1.0	Class 7
2 dwt 2 dwt 1 dwt			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3	0.3 0.23 0.23 Class 4	0.65 0.65 0.52 Class 5	1.3 1.0 Class 6	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg	0.3 0.23 0.23 Class 4 mg	0.97 0.65 0.65 0.52 Class 5 mg	1.3 1.0 Class 6 mg	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5	0.3 0.23 0.23 Class 4 mg	0.97 0.65 0.65 0.52 Class 5 mg 36	1.3 1.0 Class 6 mg 64	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5	0.3 0.23 0.23 Class 4 mg	0.97 0.65 0.65 0.52 Class 5 mg 36	1.3 1.0 Class 6 mg 64 79	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5 3.2	0.3 0.23 0.23 Class 4 mg 13 6.5	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22	1.3 1.0 Class 6 mg 64 79 32	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5 3.2 3.2	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22	1.3 1.0 Class 6 mg 64 79 32 61	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5 3.2 3.2 1.9	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15	1.3 1.0 Class 6 mg 64 79 32 61 20	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 3000 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5 3.2 1.9	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 3.9	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15	1.3 1.0 Class 6 mg 64 79 32 61 20	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 3000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.9 1.3	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 3000 gr 2000 gr 2000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 2.6	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 3000 gr 2000 gr 2000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 6.5 3.9 2.6 2.6 1.4	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 3.2 1.9 1.9 1.3 0.71	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 3.9 2.6 1.4 1.4	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5 6.5	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 3.2 1.9 1.9 1.3 0.71 0.71 0.48	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 3.9 2.6 2.6 1.4 1.4 0.91	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 6.5 4.3	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 5000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.9 1.3 0.71 0.48 0.48	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 6.5 4.3	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 1000 gr 500 gr			Class 0	Class 1	Class 2	0.15 0.12 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.9 1.3 0.71 0.48 0.48 0.48 0.35	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91 0.65	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5 2.3	Class 7
2-dwt 2-dwt 1-dwt 1-dwt 1-dwt 1-0000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 1000 gr 1000 gr 1000 gr 3000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.35 0.35	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 6.5 3.9 2.6 2.6 1.4 1.4 0.91 0.65 0.65	0.97 0.65 0.65 0.52 Class 5 mg 36 22 31 15 19 14 13 6.5 6.5 4.3 3.2 3.0 1.9	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5 2.3 3.9	Class 7
2-dwt 2-dwt 1-dwt 1-dwt 1-dwt 1-0000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 1000 gr 1000 gr 3000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.35 0.35	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91 0.65	0.97 0.65 0.65 0.52 Class 5 mg 36 22 31 15 19 14 13 6.5 6.5 4.3 3.2 3.0 1.9	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 1000 gr 500 gr 300 gr 300 gr 300 gr 300 gr 300 gr 300 gr 500 gr 300 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.48 0.35 0.35 0.28	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 2.6 1.4 1.4 0.91 0.91 0.65 0.65 0.65	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.3 1.3	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5 2.3 3.9 1.4	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 1000 gr 1000 gr 1000 gr 500 gr 3000 gr 2000 gr 2000 gr 1000 gr 500 gr 2000 gr 2000 gr 2000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.48 0.35 0.28 0.28	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 6.5 3.9 2.6 1.4 1.4 0.91 0.91 0.65 0.65 0.57	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.3 1.3	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5 2.3 3.9 1.4 2.6	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 2000 gr 200 gr 200 gr 200 gr 200 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 6.71 0.71 0.48 0.48 0.35 0.28 0.28 0.20	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91 0.65 0.65 0.57 0.57 0.40	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 4.3 3.2 3.0 1.9 2.9 1.3 1.5	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.5 2.3 3.9 1.4 2.6 0.91	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 2000 gr 1000 gr 500 gr 200 gr 1000 gr 500 gr 200 gr 1000 gr 500 gr 300 gr 200 gr 1000 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.9 1.3 0.71 0.71 0.48 0.48 0.35 0.28 0.28 0.20 0.20	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.65 0.65 0.57 0.57 0.40 0.40	0.97 0.65 0.65 0.52 Class 5 mg 36 36 32 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.9 1.9 2.9 1.3 1.5 0.82	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3-2 6.5 2.3 3.9 1.4 2.6 0.91 1.6	Class 7
2-dwt 2 dwt 1-dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 1000 gr 500 gr 2000 gr 1000 gr 500 gr 200 gr 1000 gr 500 gr 300 gr 1000 gr 500 gr 1000 gr 500 gr 1000 gr 500 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.35 0.28 0.28 0.20 0.15	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91 0.65 0.65 0.57 0.57 0.40 0.40 0.30	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.9 1.9 2.9 1.3 1.5 0.82 0.97	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3-2 6.5 2.3 3.9 1.4 2.6 0.91 1.6 0.91	Class 7
2-dwt 2-dwt 1-dwt			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.48 0.48 0.48 0.28 0.28 0.28 0.28 0.20 0.15	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 6.5 3.9 2.6 2.6 1.4 1.4 0.91 0.65 0.65 0.57 0.40 0.40 0.30 0.30	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.3 1.3 1.5 0.82 0.97 0.65	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3.2 6.5 2.3 3.9 1.4 2.6 0.91 1.6 0.91 1.3	Class 7
2 dwt 2 dwt 1 dwt 1 dwt Grain 10000 gr 10000 gr 5000 gr 5000 gr 3000 gr 2000 gr 2000 gr 1000 gr 1000 gr 500 gr 2000 gr 1000 gr 2000 gr 1000 gr 500 gr 200 gr 1000 gr 500 gr 1000 gr 500 gr 1000 gr 500 gr 1000 gr 500 gr			Class 0	Class 1	Class 2	0.15 0.12 Class 3 mg 6.5 6.5 3.2 1.9 1.3 0.71 0.71 0.48 0.48 0.35 0.28 0.28 0.20 0.15	0.3 0.23 0.23 Class 4 mg 13 6.5 6.5 3.9 2.6 1.4 0.91 0.91 0.65 0.65 0.57 0.57 0.40 0.40 0.30	0.97 0.65 0.65 0.52 Class 5 mg 36 36 22 31 15 19 11 13 6.5 6.5 4.3 3.2 3.0 1.9 2.9 1.9 2.9 1.3 1.5 0.82 0.97	1.3 1.0 Class 6 mg 64 79 32 61 20 39 14 26 6.4 13 3-2 6.5 2.3 3.9 1.4 2.6 0.91 1.6 0.91	Class 7