



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE

Extracts from the  
**CALIFORNIA CODE OF REGULATIONS**  
**TITLE 4, DIVISION 9**

**WEIGHTS AND MEASURES FIELD REFERENCE MANUAL (2019)**

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**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE**  
**DIVISION OF MEASUREMENT STANDARDS**

## DISCLAIMER

This document represents the Division of Measurement Standards' field manual for enforcing regulations pertaining to weights and measures in California. This field manual is not to be considered as the official Code of Regulations, as published by Barclays Law Publishers.

To find the latest online version of the California Code of Regulations (CCR) Title 4, Division 9, visit the California Office of Administration Law (OAL) at:

<http://ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome>

The CCR may also be accessed at <http://oal.ca.gov/> by selecting the link Titled "California Code of Regulations" under the list of "Sponsored Links" in the left column on the OAL Home page.

For information concerning the contents of this document, please contact the Division of Measurement Standards by e-mail at [dms@cdfa.ca.gov](mailto:dms@cdfa.ca.gov).

## REFERENCED PUBLICATIONS

**NIST Handbook 44 (2019 Edition)** - Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices as adopted by the 10st National Conference on Weights and Measures in July 2018 is available at:

<https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-44>

**NIST Handbook 130 (2019 Edition)** - Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality as adopted by the 103rd National Conference on Weights and Measures in July 2018 is available at:

<https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-130>

**NIST Handbook 133 (2019 Edition)** - Checking the Net Contents of Packaged Goods as adopted by the 103rd National Conference on Weights and Measures in July 2018 is available at:

<https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-133>

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**FIELD REFERENCE MANUAL  
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**Division of Measurement Standards  
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**2019**  
**Division of Measurement Standards**  
 Field Reference Manual Revision Index

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**See the 2019 Field Reference Manual Revision Index for changes to the language in;**  
**NIST Handbook 44 §§4000, 4001, & 4002,**  
**NIST Handbook 130 §§ 4510, 4511, & 4512 and**  
**NIST Handbook 133 § 4600.**

**NEW:** NIST Handbook 133-2019 (current edition) is now part of the 2019 Field Reference Manual CCR Chapter 11, §4600. National Uniformity.

**The Office of Administrative Law approved the proposed amendments to the Natural Gas Motor Vehicle Fuel Specifications that became effective in April 1, 2018:**

- CCR Title 4, Div. 9, Ch. 1 §§ 4001 and 4002.10 and
- CCR Title 4, Div. 9, Chapter 7, §§ 4200, 4201, 4206 and 4207.

**2018**  
**Division of Measurement Standards**  
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**See the 2018 Field Reference Manual Revision Index for changes to the language in**  
**NIST Handbooks 44, 130 and 133.**

**NEW:** NIST Handbook 133-2018 (current edition) is now part of the 2018 Field Reference Manual CCR Chapter 11, §4600. National Uniformity.

<p><b>Chapter 8. Motor Oil Fee</b></p> <p>§ 4300. Definition of “Motor Oil” and Other Terms for Purposes of Fee Responsibility.</p> <p>§ 4302. Fee Responsibility and Exemption.</p> <p>§ 4304. Fees and Remittance Forms.</p> <p>§ 4306. Penalties.</p>	<p>§ 4307. Refund of Fees Paid.</p> <p>§ 4308. Records.</p> <p>Revised Form: <u>“Motor Oil Fee Remittance Form”</u> (Form 41-054, Rev. 1/1/18):                  (<a href="https://www.cdfa.ca.gov/dms/programs/petroleum/MotorOilFeeRemittanceForm.pdf">https://www.cdfa.ca.gov/dms/programs/petroleum/MotorOilFeeRemittanceForm.pdf</a>)</p>
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## NIST Handbook 44 Amendments for the 2019 Edition

The following table lists the codes, paragraphs, and pages in which the 102<sup>nd</sup> National Conference on Weights and Measures made amendments. In the column headed "Action," changes are noted as "added," "amended," "deleted," or "renumbered." Each code, section, or paragraph that has been changed will be noted as "Added 2018" or "Amended 2018."

SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	HB-44 PAGE
2.20.	Scales	SCL-6	S.1.2.2.3. Deactivation of "d" Resolution.	Added and renumbered subsequent paragraphs	2-9
2.22.	Automatic Bulk Weighing Systems	ABW-4	A.2. Exceptions.	Added and renumbered subsequent paragraphs	2-75
3.30.	Liquid-Measuring Devices	LMD-2	S.1.6.7. Recorded Representations	Amended	3-11
			S.1.6.8. Recorded Representations for Transactions Where a Post-Delivery Discount(s) is Provided.	Amended	3-11
			UR.3.4. Printed Ticket.	Amended	3-24
3.31.	Vehicle-Tank Meters	VTM-1	S.3.1. Diversion of Measured Liquid.	Amended	3-36
			S.3.1.1. Means for Clearing the Discharge Hose.	Added	3-37
			UR.2.6. Clearing the Discharge Hose.	Added	3-43
			UR.2.6.1. Records.	Added	3-43
3.32.	LPG and Anhydrous Ammonia Liquid-Measuring Devices	LPG-1	S.2.1. Air/Vapor Elimination.	Amended	3-52
3.34.	Cryogenic Liquid-Measuring Devices	CLM-3	S.2.1. Air/Vapor Elimination.	Amended	3-77
3.36.	Water Meters	WTR-2	S.2.1. Provisions for Sealing.	Amended	3-99
			Table S.2.1. Categories of Device and Methods of Sealing.	Added	3-99
3.38.	Carbon Dioxide Liquid-Measuring Devices	CDL-3	S.2.1. Air/Vapor Elimination.	Amended	3-125
5.54.	Taximeters	TXI-1	S.1.2.2. Distance Mechanism.	Amended	5-28
			S.1.5.3. Distance Not Recording.	Amended	5-29
Appendix D	Definitions	ABW-4	batching systems	Added	D-7

## NIST Handbook 44 Editorial Changes for the 2018 Edition

SECTION	CODE	PARAGRAPH	ACTION	HB-44 PAGE
3.34.	Cryogenic Liquid-Measuring Devices	Table N.4. Density or Volume Correction Factors	Updated URL (web link) to make it generic.	3-81
3.39.	Hydrogen Gas-Measuring Devices – Tentative Code	N.7. Density	Updated the reference documents and URLs.	3-145
4.41.	Liquid Measures	S.1. Units	Added preamble to clarify (a) applies when marked with SI units and (b) applies when marked in U.S. customary units.	4-11
Appendix C	General Tables of Units of Measurement	Avoirdupois Units of Mass	Added parentheses around “or long”: 20 gross (or long) hundredweights = 1 gross (or long) ton	C-6
Appendix D	Definitions	basic tolerances	Deleted the re-statement of the term being defined “basic tolerances” and streamlined the language for clarity.	D-7
		calibration parameter	- Delete reference to “3.39,” since this is still a tentative code. - Add “5.54,” which should have been added when the “Categories of Devices and Methods of Sealing” table was added to this code.	D-8
		configuration parameter and	- Added “3.31, 3.32, 3.34, 3.35, 3.36,3.38, 5.54, and 5.58,” which should have been added when the “Categories of Devices and Methods of Sealing” table was added to each of these codes.	D-9
		remote configuration capability		D-24
		commercial equipment	- Add “3.36” and “3.37” since these devices are commonly used in commercial applications.	D-9
		event counter and	- Add “2.24, 3.31, 3.32, 3.34, 3.35, 3.38, and 5.58,” which should have been added when the “Categories of Devices and Method of Sealing” table was added to each of these codes.	D-12
		event logger		D-12
		unit price	- Add “2.20, 3.31, 3.32, and 3.37,” which should have been added when requirements for computing-type devices and systems were added to these codes.	C-28



## NIST Handbook 130 Amendments for the 2019 Current Edition

The following table lists the laws and regulations amended by the 103<sup>rd</sup> (2018) National Conference on Weights and Measures (NCWM). As appropriate, the text on the cited pages indicates the changes to the law or regulation, section, or paragraph as “Added 2018” or “Amended 2018.” Unless otherwise noted, the effective date of the regulations added or amended in 2018 is January 1, 2019.

Law or Regulation	L&R Committee Item No.	Section	Action	HB 130 Page
<b>IV. Uniform Regulations</b>				
<b>A. Uniform Packaging and Labeling Regulation</b>	PAL-1	6.12. Supplementary Quantity Declaration Prohibited.	Amended	71
		Note 5	Added	71
		6.14. Qualification of Declaration Prohibited.	Amended	72
		Note <del>56</del> .	Renumbered	72
		Note <del>67</del> .	Renumbered	72
		Note <del>78</del> .	Renumbered	78
		Note <del>89</del> .	Renumbered	83
		Note <del>910</del> .	Renumbered	85
		Note <del>1011</del> .	Renumbered	88
		12.1. Packaging Variations.	Amended	88
	12.2. Magnitude of Permitted Variations.	Amended	89	
	PAL-2	11.8. Packaged Commodities with Labeling Requirements Specified in Federal Laws <b>and Regulations</b> .	Amended	84
		Appendix C: Reference Information for Packaged Commodities with Labeling Specifications in Federal Law and Regulation	Added	97
		1.8. Base Gasoline.	Deleted	185
<del>1.98</del> . Biodiesel		Amended & Renumbered	185	
<del>1.109</del> . Biodiesel Blend.		Amended & Renumbered	185	

## NIST Handbook 130 Editorial Changes to the Uniform Package and Labeling Regulation for the 2019 Edition

Law or Regulation	Section	Action	HB 130 Page
<b>IV. Uniform Regulations</b>			
<b>A. Uniform Packaging and Labeling Regulations</b>	Table 6.5. SI Units: Mass, Measure	Correction (3) <del>malt (beer) beverages or a commodity</del> that must be maintained ...	65
		Correction/omission from previous update (4) <u>refrigerated food (e.g., milk, dairy products labeled “keep refrigerated”) for which the declaration shall express the volume at 4 °C.</u>	
		<u>*Other liquids and wine (e.g., for immediate consumption that do not require, but may be refrigerated [shelf stable] such as soft drinks, bottled water) at 20 °C.</u>	

### NIST HB 133 Amendments for the 2019 Edition

The following table indicates the items amended by the 103<sup>rd</sup> (2018) National Conference on Weights and Measures (NCWM). As appropriate, the text on the cited pages indicates the changes to a Handbook 133 section, or paragraph as “Added 2017” or “Amended 2018.” Unless otherwise noted, the effective date of the regulations added or amended in 2018 is January 1, 2019.

Chapter	L&R Committee Item No.	Section	Action	HB-133 Page
Chapter 1. General Information	NET-1	1.2.2. Average Requirements	Amended	7
		1.4.1. Net Quantity of Contents Requirements for Pesticides Labeled with Minimum Net Quantity of Contents Declarations	Added	10
Chapter 2. Test Procedures for Packages Labeled by Weight – Gravimetric Testing	NET-1	2.3.7.2. Average Requirement	Amended	25
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	MOS-8	4.5.2.a. Test Procedure for Polyethylene Sheeting	Amended	125
Appendix A. Tables	NET-1	Table 1-1. Agencies Responsible for Package Regulations and Applicable Requirements (Pesticides)	Amended	142
	NET-5	Table 1-1. Agencies Responsible for Package Regulations and Applicable Requirements (Meat and Poultry)	Amended	141

## NIST HB 133 Amendments for the 2019 Edition

The following table indicates the items amended by the 103<sup>rd</sup> (2018) National Conference on Weights and Measures (NCWM). As appropriate, the text on the cited pages indicates the changes to a Handbook 133 section, or paragraph as “Added 2017” or “Amended 2018.” Unless otherwise noted, the effective date of the regulations added or amended in 2018 is January 1, 2019.

Chapter	L&R Committee Item No.	Section	Action	HB-133 Page
Appendix A. Tables	NET-5	Table 2-9. U.S. Department of Agriculture, Meat, Poultry and Siluriformes Groups and Lower Limits for Individual Packages (Maximum Allowable Variations [MAVs])	Title Amended	155

## NIST Handbook 133 Editorial Changes for the 2019 Current Edition

The following items were deemed editorial in nature based on the following criteria: 1) the modified text did not change the meaning or procedure outlined, 2) modified text corrected an omission or clarified how the text was written, or 3) the item itself was reformatted and relocated in the text to make the organization of the content more meaningful.

**Note:** For the purposes of this table, the **bold**, underscored text indicates new language added and **bold**, ~~strikeout~~ text indicates deleted text.

Chapter	Section	Action	HB-133 Page
Chapter 3. Test Procedures – For Packages Labeled by Volume	3.9.2.2. Test Procedure	Clarified the instruction to read 2. Open each package <del>in turn, remove</del> and pour the contents <b>from a height of 2 ft, and pass them</b> through the . . .	69
	3.11.2. Test Procedure	Corrected the instruction in 11. <i>Product Density = (<del>gross weight in Step 5</del> <b>product net weight in Step 10</b>) ÷ (the total water volume in Step 7 = <b>volume of tare material in Step 8</b>)</i>	74
	3.13.2. Test Procedure b. Test Procedure for Cylinders Labeled by Volume	5. Updated the reference to NIST Standard Reference Data Base 23 “Reference Fluid Thermodynamic and Transport Properties Database” (REFPROP)	81
	<b><u>3.14.3. Field Audit Procedure – Bundled and Bagged Firewood</u></b>	3.14.3. Evaluation Results was broken into two sections. “Field Audit Procedure” is now “3.14.3.	94
	<del>3.14.3.</del> <b><u>3.14.4.</u></b> Evaluation of Results	This item was renumbered.	96
	3.15.1. Test Equipment	Corrected referenced table number.	100
	3.15.2. Test Procedure	Corrected note in “5. Volume Determination.”	105
Chapter 3. Test Procedures – For Packages Labeled by Volume	3.15.2. Test Procedure.	3.15.2. Test Procedure was broken into two sections. Line 7 was renumbered to “3.15.3. Evaluation of the Test Results and Determination of Pass or Fail” and the following information renumbered and	105

## NIST Handbook 133 Editorial Changes for the 2019 Current Edition

The following items were deemed editorial in nature based on the following criteria: 1) the modified text did not change the meaning or procedure outlined, 2) modified text corrected an omission or clarified how the text was written, or 3) the item itself was reformatted and relocated in the text to make the organization of the content more meaningful.

**Note:** For the purposes of this table, the **bold, underscoring** text indicates new language added and **bold, ~~strikeout~~** text indicates deleted text.

Chapter	Section	Action	HB-133 Page
		formatted.	
	<b><u>3.15.3. Evaluation of the Test Results and Determination of Pass or Fail</u></b>	This section was split from 3.15.2. Test Procedure.	115
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	4.3.1. Test Equipment	Corrected omission of “ <u>1/16</u> ” in divisions...	122
	4.4. Special Test Requirements for Packages Labeled by Linear or Square Measure (Area)	Updated ASTM Reference	124
	4.5.2. Test Procedures (a) Test Procedure for Polyethylene Sheeting	Made an editorial change to harmonize the content with the NIST Handbook 130 changes.	125
Appendix A. Tables	Table 2-10. Exceptions to the Maximum Allowable Variations for Textiles, Polyethylene Sheeting and Film, Mulch and Soil Labeled by Volume, Packaged Firewood <b><u>and Stove Wood Labeled by Volume</u></b> , and Packages Labeled by Count with 50 Items or Fewer, and Specific Agricultural Seeds Labeled by Count.	Title Correction omitted during the 2016 updates.	157
Appendix E. General Tables of Units of Measurement	Avoirdupois Units of Mass	Added parentheses around “or long”: 20 gross (or long) hundredweights = 1 gross (or long) ton	200