

NIST HB130 MOS for Section 2.21. Liquefied Petroleum Gas (LPG) Comments and Proposal

The Office of Weights and Measures has reviewed Publication 15 (2021) Laws and Regulation Item MOS-20.5. and submits the following comments and suggested revisions to membership for review and consideration.

- Although the existing language references a value of “15.6 °C” for temperature determinations in metric units, according to the current industry practice for sales of petroleum products, the reference temperature for sales in metric are based on 15 °C rather than the exact conversion from 60 °F (which is 15.6 °C). Thus, the temperature reference in metric should be 15 °C.
- The current method of sale for LPG requires sales based on a specified reference temperature because of the significant effects of temperature on the volume of LPG. This helps ensure equity for buyer and seller; facilitate value comparisons among competing applications; and deter those who would take advantage of the effects of temperature on volume from using these effects to their advantage during sales under given temperature conditions.
- There is some concern that including effective dates as shown in the Item Under Consideration does have the effect of rescinding the original requirement for certain categories of sales. Additionally, specifying such dates may possibly lead to future extensions of these date or permanent exceptions. However, if this proposal will allow the community to progress toward more uniform implementation of temperature compensation in the commercial measurement of LPG, this approach may prove to be a valuable tool for accomplishing this goal and improve understanding and consistent application of the requirements, and we believe the submitter is to be commended for striving to achieve this clarity and uniformity in application.
- The second clause of the current Item Under Consideration addresses equipment put into service as of January 1, 2023. The generic reference to “equipment placed into service” implies that only newly installed equipment with flow rates of 20 gpm or less needs to include automatic temperature compensation capabilities. This could be misconstrued as negating the first clause in the proposal. We believe the intent of the submitter was to simply expand the requirement for “automatic” temperature compensation capability for metering systems above 20 gpm to include those systems below this flow rate point. Thus, a recommended alternative is included in the suggested changes.
- Formatting Changes:
 - By formatting the language into subsections we believe it makes the MOS requirement easier to follow and apply and facilitates consideration of the Item Under Consideration.
 - For the next released edition of NIST Handbook 130, we will be reformatting the references to “Notes” and their associated page numbers and replacing these with notes formatted as “Section ##. Note.”

NIST/OWM Recommendations for Consideration to MOS Section 2.21.

2.21. Liquefied Petroleum Gas.

2.21.1 Method of Sale. – All liquefied petroleum gas, including, but not limited to propane, butane, and mixtures thereof, shall be kept, offered, exposed for sale, or sold by the **following methods of sale. If kept, offered, exposed for sale, or sold by:**

- (a) Weight:** by the **kilogram** or pound; or by,
- (b) Gaseous Volume:** **by the metered cubic meter of vapor (defined as 1 m³ at 15 °C)**; or metered cubic foot of vapor (defined as 1 ft³ at 60 °F) [**See Section 2.21. Note ^{7, page 131} below**]; or by,
- (c) Liquid:** **by the liter (defined as 1 liter at 15 °C) or** the gallon (defined as 231 in³ at 60 °F). **All metered sales by the or gallon, except those using meters with a maximum rated capacity of (20 gal)/min or**

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~~less, shall be accomplished by use of a meter and device that automatically compensates for temperature.~~

2.21.2. Metered Sales by Liquid Volume. – All metered sales by liquid volume shall be accomplished using metering systems as follows:

- (a) **Sales using metering systems with a maximum rated capacity greater than or equal to 20 gal/min shall be accomplished by the use of a meter and device that automatically compensates for the effects of temperature.**
- (b) **Sales using metering systems with a maximum rated capacity less than 20 gal/min that were placed into service after January 1, 2023 shall be accomplished by use of a meter and device that automatically compensates for the effects of temperature.**
- (c) **Effective January 1, 2030, all metered sales (through all capacities of metering devices, regardless of installation and service date) shall be accomplished by use of a meter and device that automatically compensates for temperature.**

Section 2.21. NOTE 8: Sources: ~~American National Standards Institute, Inc., ANSI B109.1 (20082000), "American National Standard For Diaphragm-Type Gas Displacement Meters (14.16 Cubic Meters [Under 500 Cubic Feet] Per Hour Capacity and Under),"~~ and NIST Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices."

(Added 1986, **Amended 20XX**)

Our office staff will be in attendance at the L&R Interim Meeting Open Hearing sessions to answer any questions regarding the method of sale or address concerns or conflicts that have been mentioned at the regional meetings pertaining to NIST Handbook 44.

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NCWM L&R Committee
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