Are You Leaving Money on the Table?
Legal Metrology Rules May Be Insufficient

Do you need to follow legal metrology rules? Do you know that these might not satisfy your own accuracy needs? Find out how to prevent unnoticed waste and financial loss by applying both legal metrology rules and accuracy requirements.

Following "Legal for Trade" (or legal metrology) in the jewelry industry is mandatory. But applying these rules carries some possible pitfalls – even when using legal metrology approved balances, which METTLER TOLEDO offers. Find out about the main pitfall on the back.

When you are weighing small amounts of precious samples, it is crucial to protect your accuracy. Understanding your specific accuracy requirements protects your profits.

METTLER TOLEDO ensures you select a balance with performance to match both the legal metrology rules and your own accuracy requirements.
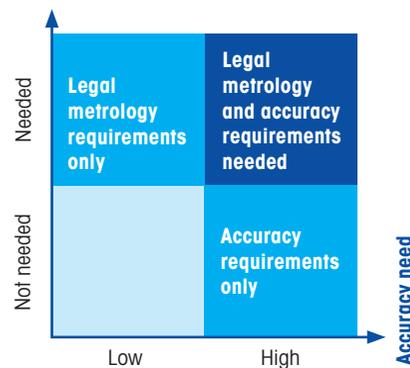

Legal metrology need

	Needed	Legal metrology requirements only	Legal metrology and accuracy requirements needed
	Not needed		Accuracy requirements only
		Low	High

Accuracy need

According to OIML R76-1 and US NIST Handbook 44.

Find the right jewelry balance at:
▶ **www.mt.com/LFT-Jewelry**
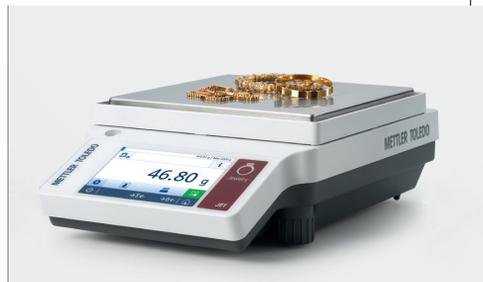
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Why Legal Metrology Rules Are Not Enough

If you need to follow "Legal for Trade" (or legal metrology) rules, it is important to know it applies strict accuracy requirements in the higher weighing ranges of a balance. It does not, however, apply similar strict quality criteria in the lower range. This can result in weighing errors of 2.5% or even higher, leading to a high risk of unnoticed financial loss (as summarized in figure 1 and 2).

Conclusion

If you are weighing in the lower ranges of your balance's capacity, verifying accuracy requirements with our Good Weighing Practice™ (GWP®) program in addition to your legal metrology requirements is essential. This helps to save costs while achieving compliance.

Contact your local METTLER TOLEDO representative for more details.

Read the full white paper at:
▶ **www.mt.com/LFT-WhitePaper**

Example of a Class II Balance

With its relative maximum permissible error (MPE):

Permissible e values	Minimum capacity	MPE$_{rel}$ [%] at minimum capacity	Potential loss on USD 100k trading volume
1 mg – 50 mg	20 e	2.5%	2500 USD
100 mg and higher	50 e	1%	1000 USD

Figure 1: Relative MPEs of a class II balance at minimum capacity and their impact on potential trading loss
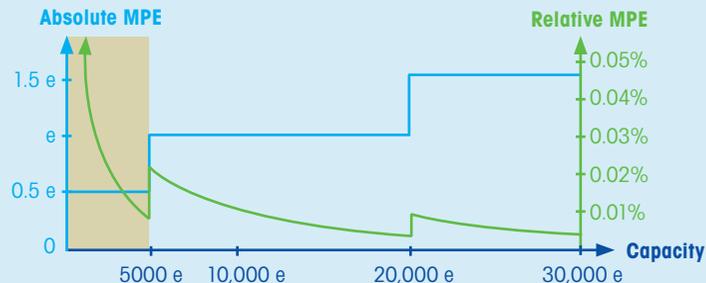

Figure 2: Relative MPE (in green) versus absolute MPE (in blue) across a class II balance with 10 mg readability for an initial / subsequent verification. The accuracy issues are predominant in the orange area, where the relative MPE [%] is getting quickly unacceptable high.

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