

Thanks for the question. I assume that you are trying to determine the uncertainty of your melt flow test, and I will base my answer on that assumption. Melt index is not a fundamental physical property. The test result obtained is dependent on the metrological specifications and the method of testing contained in the test method followed. Tinius Olsen's Quality System is based on ISO Guide 17025. Note 2 under paragraph 5.4.6.2 of ISO 17025 states, "In those cases where a well-recognized test method specifies limits to the values of the major sources of uncertainty of measurement and specifies the form of presentation of calculated results, the laboratory is considered to have satisfied this clause by following the test method and reporting instructions (see 5.10)." ASTM and ISO Test methods are written so that the variability in test results within and between laboratories is controlled. By having your machine calibrated to ensure that it meets metrological requirements of ASTM D1238 and testing and reporting in accordance with ASTM D1238, we believe you fulfill and meet the intent of ISO 17025 paragraph 5.4.6.2 and Note 2. As stated earlier, Tinius Olsen operates in accordance with ISO 17025. Because we provide a calibration service, we are required to determine the uncertainty of our individual measurements (see ISO 17025 paragraph 5.4.6.1). We include them on our certificates because some of our customers have asked for them. However, there is no recognized way to translate the uncertainties given on our calibration certificate to the uncertainty of a melt index test. While you probably cannot determine the uncertainty of your melt index tests, we believe it can be beneficial to do control tests on a material to determine your repeatability over time and with your various operators. Proficiency testing with other laboratories can also be useful to assess your reproducibility. You can refer to the back of ASTM D1238 for a troubleshooting guide which may give you an idea where to look for a source of variation in your test results. Hope this helps!