Liter unit symbol

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As of August 16, 2023 the physics.nist.gov historic SI Units site has permanently retired. This page and complete Metric (SI) Program contains current SI information. Contact TheSI [at] nist.gov (TheSI[at]nist[dot]gov) with comments, questions or concerns.

NIST guides use American English spelling practice in accordance with theUnited States Government Printing Office Style Manual, found inWebster"s Third New International Dictionary. All units and prefixes should be spelled as shown in this guide. Examples: meter, liter, and deka, NOT metre, litre, and deca.

When a metric value is used as a one-thought modifier before a noun, hyphenating the quantity is not necessary. However, if a hyphen is used, write out the name of the metric quantity with the hyphen between the numeral and the quantity. For example:

Some of the metric units listed above include prefixes such as kilo, centi, and milli. Prefixes, added to a unit name, create larger or smaller units by factors that are powers of 10. For example, add the prefix kilo, which means a thousand, to the unit gram to indicate 1000 g; thus 1000 g become 1 kg. Compound prefix names or symbols are not permitted. Example: nm (nanometer), NOT mmm (millimicrometer).

Prefix symbols may be used with the unit symbol ?C and prefix names may be used with the unitname "degree Celsius." For example, 12 m?C (12 millidegrees Celsius) is acceptable. However, to avoidconfusion, prefix symbols (and prefix names) are not used with the time-related unit symbols (names) min(minute), h (hour), d (day); nor with the angle-related symbols (names) ? (degree), " (minute), and" (second).

For historical reasons, the name "kilogram" for the SI base unit of mass contains the name "kilo," the SI prefix for 103. Thus, because compound prefixes are unacceptable, symbols for decimal multiples and submultiples of the unit of mass are formed by attaching SI prefix symbols to g (gram). The names of such multiples and submultiples are formed by attaching SI prefix names to the name "gram." Example: 1 mg, NOT 1 mkg (1 microkilogram).

The prefix "kilo" stands for one thousand of the named unit. It is not a stand-alone term in the metric system. The most common misuse of this is the use of "kilo" for a "kilogram" of something. The word "micron" is an obsolete term for the quantity "micrometer." Also "degree centigrade" is no longer the correct unit term for temperature in the metric system; it has been replaced by degree Celsius. Use the name "metric ton," not "tonne."

The pronunciation of common metric units is well known, except for pascal, which rhymes with rascal, and hectare, which rhymes with bare. The first syllable of every prefix is accented, not the second syllable. Example: KILL-oh-meter, NOT kil-LOM-meter. Additional pronunciation information is available online.

Conversions should follow a rule of reason: do not use more significant digits than justified by the precision of the original data. For example, 36 in should be converted to 91 cm, not 91.44 cm (36 in x 2.54 cm per in = 91.44 cm), and 40.1 in converts to 101.9 cm, not 101.854 cm.

The SI unit of time (actually time interval) is the second (s) and should be used in all technical calculations. When time relates to calendar cycles, the minute (min), hour (h), and day (d) might be necessary. For example, the kilometer per hour (km/h) is the usual unit for expressing vehicular speeds.

The International System of Units (SI) is about measuring the weight or dimensions of objects, not changing their sizes. The U.S. paper industry uses several customary paper formats that all have metric dimensions. Any object weighed or measured using the SI has a metric size (e.g., a typical page of office paper is 215 mm by 280 mm), just as the same object measured using customary units has a size (8.5 in by 11 in). While the standardization of sizes provides some benefits by simplifying things, the process of standardization is independent of the system of measurement.

For More Detail: Detailed metric information and precise conversions are available in NIST SP 811 and SP 1038PDF. SP 811 also provides an editorial checklist for reviewing manuscripts conformity with SI and the basic principles of physical quantities and units.