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How Many?

A Dictionary of Units of Measurement

For information on a specific unit, click on the first letter of its name:

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Answers to the three most frequently asked questions:

How many micrograms (µg, ug or mcg) in a milligram (mg)?
1000 micrograms = 1 milligram, and 1000 milligrams = 1 gram.

How can I convert from international units (IU) to milligrams or micrograms?
Generally speaking, you can't. IU's measure the potency of a drug, not its mass or weight.

What countries besides the U.S. have not adopted the metric system?
Many U.S. teachers think the answer is "Liberia and Burma" (make that Myanmar). Let's give Liberia and Myanmar a break! *All* countries have adopted the metric system, including the U.S., and most countries (but not the U.S.) have taken steps to eliminate most uses of traditional measurements. However, in nearly all countries people still use traditional units sometimes, at least in colloquial expressions. Becoming metric is not a one-time event that has either happened or not. It is a process that happens over time. Every country is somewhere in this process of going metric, some much further along than others.

Commentary and Explanation

- [Using the Dictionary](#)
 - [Using Numbers and Units](#)
 - [Roman and Arabic Numerals](#)
 - [Names of Large Numbers](#)
 - [Symbols and Abbreviations](#)
 - [The International System \(SI\)](#)

What's New

- the [kilowatt year](#), an energy unit
- [Dvorak T-numbers](#) to measure tropical cyclones
- the [ream](#) as an area measure for film or paperboard


Logo

URL

<https://www.unc.edu/~rowlett/units/>

Subject

Units of measurement - Dictionaries

Accessibility

Free

Language

English

Publisher

Russ Rowlett, Director, Center for Mathematics and Science Education, University of North Carolina.

Brief History

This dictionary began as a collection of notes describing the relationship between various English and metric units. It gradually grew until it finally became too large a word-processing document. So turned it into a folder of html documents and added it to owner's Internet site. For many months, no one looked at the site except owner and his students. Then, gradually, the dictionary began to attract users from around the world. Many users were kind enough to point out errors; others suggested additions and improvements. Questions about units began to

appear in the owner's email inbox. Sometimes he could answer the questions, sometimes not. Slowly this dictionary grew in stature. Copyright date of this dictionary is available i.e. 2005.

Scope and Coverage

This dictionary includes all units of the International System (SIPM), many other units of the metric system, and those English Customary Weights and Measures (British and American) that are accurately defined. It does not include obsolete units. It provides symbols and abbreviations. A brief overview and history for each measurement system explains the standard for the units of measurement.

Kind of Information

The meaning, definitions and short notes on units are present here. The name of inventor and year of invention are also included with some units. Many terms are cross referenced to other units. List of abbreviations or symbols are also present. Index of different tables and scales has also been represented here.

Some examples are given below for clear understanding.

byte (B)

a unit of information used in computer engineering. Technically the byte is a unit of addressable memory, and its size can vary depending on the machine or the computing language. However, in most contexts the byte is equal to 8 bits (or 1 **octet**). This means that a byte has $2^8 = 256$ possible states. **The unit was named by IBM engineer Werner Buchholz in 1956**, and the 8-bit size was popularized starting in 1964 by IBM's System 360, a top-selling mainframe computer. The spelling "byte" is used instead of "bite" in order to avoid confusion with the bit.

kelvin (K)

the SI base unit of temperature, previously called the degree Kelvin ($^{\circ}\text{K}$). One kelvin represents the same temperature difference as one degree Celsius. In 1967 the General Conference on Weights and Measures defined the temperature of the triple point of water (the temperature at which water exists simultaneously in the gaseous, liquid, and solid states) to be exactly 273.16 kelvins. Since this temperature is also equal to 0.01°C , the temperature in kelvins is always equal to 273.15 plus the temperature in degrees Celsius. The kelvin equals exactly 1.8 degrees Fahrenheit. **The unit is named for the British mathematician and physicist William Thomson (1824-1907)**, later known as Lord Kelvin after he was named Baron Kelvin of Largs. He is best remembered for his pioneering work on the physics of heat, but he was also a strong advocate of the metric system; his support helped establish the now-familiar electrical units such as the ohm, volt, and farad.

The above examples have shown interlinked terms (which are underlined) and name of the inventor (which is bold) for each term is mentioned.

Here some examples of different tables and scales regarding different

units of various topics like “Apgar scoring (newborns)”, “Beaufort scales (wind velocity)”, “Bushel weights (U.S.)”, “Cotton bale weights”, “Danjon scale (lunar eclipse brightness)”, “paper sheet size (traditional)” etc. have been pointed out. For clear understanding the following print screen of “paper sheet size (traditional)” has been given.

| | Dimensions (inches) |
|-------------------------|---------------------|
| Executive | 7.25 x 10.5 |
| Quarto | 8 x 10 |
| Letter | 8.5 x 11 |
| Legal | 8.5 x 14 |
| Ledger (Tabloid) | 11 x 17 |
| Foolscap | 13.5 x 17 |
| Foolscap, oblong double | 13.5 x 34 |
| Pinched post | 14.5 x 18.5 |
| Crown (Post) | 15 x 20 |
| Post | 15.25 x 19 |
| Large post | 16.5 x 21 |
| Foolscap, double | 17 x 27 |
| Demy | 17.5 x 22.5 |
| Medium | 18 x 23 |
| Post, double | 19 x 30.5 |
| Royal | 20 x 25 |

Special Features

- ❖ List of new word/unit is present.
- ❖ List of country codes according to the International Organization for Standardization (ISO) under its standard ISO 3166 has established two-letter (2-alpha) and three-letter (3-alpha) codes for the various countries of the world, including independent states, dependent areas, and certain areas of contested jurisdiction or special status.
- ❖ The United Nations maintains a list of Distinguishing Signs of Vehicles in International Traffic, which is also present here.
- ❖ Codes of the International Telecommunications Union and the International Olympic Committees are also found.
- ❖ Links to different associations and organizations are also found here.

Arrangement Pattern

Terms are arranged alphabetically. Various tables and scales are arranged in alphabetic order under the heading “Index of Tables and Scales” in the home page.

Remarks

Today the dictionary has become a kind of interactive resource. It grows slowly and steadily, mostly through suggestions from readers and his

efforts to answer questions posed by readers. Anyone can participate in this process. This openness adds a special flavour to this dictionary.

Comparable Tools

- Dictionary of units. (<http://www.cleavebooks.co.uk/dictunit/>)
- A Dictionary of Units by Frank Tapson (<http://snark.math.rpi.edu/doc/dictunit.html>)

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