

L.N. 190 of 2020

METROLOGY ACT
(CAP. 454)

Metrology Act (First Schedule Amendment) Regulations, 2020

IN EXERCISE of the powers conferred by article 19(2) of the Metrology Act, the Minister responsible for the Malta Competition and Consumer Affairs Authority, on the advice of the Malta Competition and Consumer Affairs Authority, has made the following regulations:-

Citation. **1.** The title of these regulations is the Metrology Act (First Schedule Amendment) Regulations, 2020 and these regulations shall be read and construed as one with the First Schedule to the Metrology Act, hereinafter referred to as "the First Schedule".

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Scope. **2.** These regulations implement the provisions of Commission Directive 2019/1258/EU of 23rd July 2019, amending, for the purpose of its adaptation to technical progress, the Annex to Council Directive 80/181/EEC as regards the definitions of SI base units.

Amends Part 1
of the First
Schedule to the
Metrology Act.

3. Part 1 of the First Schedule to the Metrology Act shall be amended as follows:

(a) item 1.1 thereof shall be substituted by the following:

"1.1 SI base units

QUANTITY	UNIT	
	Name	Symbol
Time	second	s
Length	metre	m
Mass	kilogram	kg
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Amount of substance	mole	mol
Luminous intensity	candela	cd

Definitions of SI base units:

Unit of time

The second, symbol **s**, is the SI unit of time. It is defined by taking the fixed numerical value of the caesium frequency $\Delta\nu_{Cs}$, the unperturbed ground-state hyperfine transition frequency of the caesium 133 atom, to be 9 192 631 770 when expressed in the unit **Hz**, which is equal to s^{-1} .

Unit of length

The metre, symbol **m**, is the SI unit of length. It is defined by taking the fixed numerical value of the speed of light in vacuum **c** to be 299 792 458 when expressed in the unit **m/s**, where the second is defined in terms of $\Delta\nu_{Cs}$.

Unit of mass

The kilogram, symbol **kg**, is the SI unit of mass. It is defined by taking the fixed numerical value of the Planck constant **h** to be $6.626\,070\,15 \times 10^{-34}$ when expressed in the unit **J s**, which is equal to $kg\,m^2\,s^{-1}$, where the metre and the second are defined in terms of **c** and $\Delta\nu_{Cs}$.

Unit of electric current

The ampere, symbol **A**, is the SI unit of electric current. It is defined by taking the fixed numerical value of the elementary charge **e** to be $1.602\,176\,634 \times 10^{-19}$ when expressed in the unit **C**, which is equal to **A s**, where the second is defined in terms of $\Delta\nu_{Cs}$.

Unit of thermodynamic temperature

The kelvin, symbol **K**, is the SI unit of thermodynamic temperature. It is defined by taking the fixed numerical value of the Boltzmann constant **k** to be $1.380\,649 \times 10^{-23}$ when expressed in the unit **J K⁻¹**, which is equal to $kg\,m^2\,s^{-2}\,K^{-1}$, where the kilogram, metre and second are defined in terms of **h**, **c** and $\Delta\nu_{Cs}$.

Unit of amount of substance

The mole, symbol **mol**, is the SI unit of amount of substance. One mole contains exactly $6.022\,140\,76 \times 10^{23}$ elementary entities. This number is the fixed numerical

value of the Avogadro constant, N_A , when expressed in the unit mol^{-1} and is called the Avogadro number.

The amount of substance, symbol n , of a system is a measure of the number of specified elementary entities. An elementary entity may be an atom, a molecule, an ion, an electron, any other particle or specified group of particles.

Unit of luminous intensity

The candela, symbol cd , is the SI unit of luminous intensity in a given direction. It is defined by taking the fixed numerical value of the luminous efficacy of monochromatic radiation of frequency $540 \times 10^{12} \text{ Hz}$, K_{cd} , to be 683 when expressed in the unit lm W^{-1} , which is equal to cd sr W^{-1} , or $\text{cd sr kg}^{-1} \text{ m}^{-2} \text{ s}^3$, where the kilogram, metre and second are defined in terms of h, c and $\Delta\nu_{\text{Cs}}$;

(b) item 1.1.1 thereof shall be substituted by the following:

"1.1.1. Special name and symbol of the SI derived unit of temperature for expressing Celsius temperature

QUANTITY	UNIT	
	Name	Symbol
Celsius temperature	degree Celsius	$^{\circ}\text{C}$

Celsius temperature t is defined as the difference $t = T - T_0$ between the two thermodynamic temperatures T and T_0 where $T_0 = 273.15 \text{ K}$. An interval or difference of temperature may be expressed either in kelvins or in degrees Celsius. The unit "degree Celsius" is equal to the unit "kelvin".