

Directive 2009/3/EC of the European Parliament and of the Council of 11 March 2009 amending Council Directive 80/181/EEC on the approximation of the laws of the Member States relating to units of measurement (Text with EEA relevance)

DIRECTIVE 2009/3/EC OF THE EUROPEAN  
PARLIAMENT AND OF THE COUNCIL

of 11 March 2009

amending Council Directive 80/181/EEC on the approximation  
of the laws of the Member States relating to units of measurement

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee<sup>(1)</sup>,

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>(2)</sup>,

Whereas:

- (1) Council Directive 80/181/EEC<sup>(3)</sup> requires the United Kingdom and Ireland to fix a date for ending the exemptions, where they are still being applied, in respect of the units of measurement known as 'pint' for milk in returnable bottles and beer and cider on draught, 'mile' for road signs and speed indications, and 'troy ounce' for transactions in precious metals. However, experience has shown that, given the local character of those exemptions and the limited number of products concerned, maintaining the exemptions would not result in a non-tariff barrier to trade and, as a consequence, there is no longer a need to put an end to those exemptions.
- (2) It is appropriate to clarify that the scope of Directive 80/181/EEC is consistent with the objectives referred to in Article 95 of the Treaty and that it is not limited to any specific Community fields of action.
- (3) Directive 80/181/EEC authorises the use of supplementary indications in addition to the legal units laid down in Chapter I of the Annex to that Directive until 31 December 2009. However, in order to avoid creating obstacles for Community undertakings exporting to certain third countries that require products to be marked in other units than those laid down in Chapter I, it is appropriate to maintain the authorisation to use supplementary indications.
- (4) Directive 80/181/EEC supports the smooth functioning of the internal market through the level of harmonisation of units of measurement it prescribes. In this context, it is appropriate that the Commission monitor market developments relating to that

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Directive and its implementation, notably as concerns possible obstacles to the functioning of the internal market and any further harmonisation required to overcome those obstacles.

- (5) It is appropriate that the Commission continue to strongly pursue, in the context of its third country trade relations, including the Transatlantic Economic Council, the acceptance in third country markets of products labelled only in the units of the International System of Units (SI).
- (6) Supplementary indications could also allow the gradual and smooth introduction of new metric units which may be developed at the international level.
- (7) In 1995, the General Conference on Weights and Measures decided to eliminate the class of SI supplementary units as a separate class in the SI and to interpret the units 'radian' and 'steradian' as dimensionless SI derived units, the names and symbols of which may, but need not, be used in expressions for other SI derived units, as is convenient.
- (8) In 1999, the General Conference on Weights and Measures adopted, within the framework of the SI, the 'katal', the symbol of which is 'kat', as the SI unit for catalytic activity. This new harmonised SI unit was intended to ensure a coherent and uniform indication of units of measurement in the fields of medicine and biochemistry and, as a consequence, to eliminate any risk of misunderstanding arising from the use of non-harmonised units.
- (9) In 2007, in order to eliminate one of the major sources of the observed variability between different realisations of the water triple point, the General Conference on Weights and Measures adopted a note on the definition of the 'kelvin'. The 'kelvin' is defined as a fraction of the thermodynamic temperature of the triple point of water. The note refers to water of a specific isotopic composition.
- (10) Since the acre is no longer in use for land registration purposes in the United Kingdom and Ireland, there is no longer any need to provide for an exemption in that respect.
- (11) In accordance with point 34 of the Interinstitutional Agreement on better law-making<sup>(4)</sup>, Member States are encouraged to draw up, for themselves and in the interests of the Community, their own tables illustrating, as far as possible, the correlation between this Directive and the transposition measures, and to make them public.
- (12) Directive 80/181/EEC should therefore be amended accordingly,

HAVE ADOPTED THIS DIRECTIVE:

#### *Article 1*

#### **Amendments**

Directive 80/181/EEC is hereby amended as follows:

- (1) Article 1(b) shall be replaced by the following:

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- (b) those listed in Chapter II of the Annex only in those Member States where they were authorised on 21 April 1973.;
- (2) Article 2(a) shall be replaced by the following:
  - (a) The obligations arising under Article 1 relate to measuring instruments used, measurements made and indications of quantity expressed in units of measurement.;
- (3) Article 3(2) shall be replaced by the following:
  - 2. The use of supplementary indications shall be authorised.;
- (4) the following Article shall be inserted:

*Article 6b*

The Commission shall monitor market developments relating to this Directive and its implementation with regard to the smooth functioning of the internal market and international trade and shall submit a report on those developments, accompanied by proposals where appropriate, to the European Parliament and to the Council by 31 December 2019.;

- (5) the Annex shall be amended as follows:
  - (a) in Chapter I, point 1.1, the paragraph entitled ‘Unit of thermodynamic temperature’ shall be replaced by the following:

Unit of thermodynamic temperature

The kelvin, unit of thermodynamic temperature, is the fraction  $1/273,16$  of the thermodynamic temperature of the triple point of water.

This definition refers to water having the isotopic composition defined by the following amount-of-substance ratios: 0,00015576 mole of  $^2\text{H}$  per mole of  $^1\text{H}$ , 0,0003799 mole of  $^{17}\text{O}$  per mole of  $^{16}\text{O}$  and 0,0020052 mole of  $^{18}\text{O}$  per mole of  $^{16}\text{O}$ .

(Thirteenth CGPM (1967), resolution 4 and Twenty-third CGPM (2007), resolution 10);
  - (b) in Chapter I, point 1.1.1, the title shall be replaced by the following:

Special name and symbol of the SI derived unit of temperature for expressing Celsius temperature;
  - (c) in Chapter I, point 1.2, the title shall be replaced by the following:

1.2.SI derived units;
  - (d) in Chapter I, point 1.2.1 shall be deleted;
  - (e) in Chapter I, points 1.2.2 and 1.2.3 shall be replaced by the following:
    - 1.2.2. General rule for SI derived units
    - Units derived coherently from SI base units are given as algebraic expressions in the form of products of powers of the SI base units with a numerical factor equal to 1.
    - 1.2.3. SI derived units with special names and symbols

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Quantity	Unit		Expression	
	Name	Symbol	In terms of other SI units	In terms of SI base units
Plane angle	radian	rad		$m \cdot m^{-1}$
Solid angle	steradian	sr		$m^2 \cdot m^{-2}$
Frequency	hertz	Hz		$s^{-1}$
Force	newton	N		$m \cdot kg \cdot s^{-2}$
Pressure, stress	pascal	Pa	$N \cdot m^{-2}$	$m^{-1} \cdot kg \cdot s^{-2}$
Energy, work; quantity of heat	joule	J	$N \cdot m$	$m^2 \cdot kg \cdot s^{-2}$
Power <sup>a</sup> , radiant flux	watt	W	$J \cdot s^{-1}$	$m^2 \cdot kg \cdot s^{-3}$
Quantity of electricity, electric charge	coulomb	C		$s \cdot A$
Electric potential, potential difference, electromotive force	volt	V	$W \cdot A^{-1}$	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-1}$
Electric resistance	ohm	$\Omega$	$V \cdot A^{-1}$	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-2}$
Conductance	siemens	S	$A \cdot V^{-1}$	$m^{-2} \cdot kg^{-1} \cdot s^3 \cdot A^2$
Capacitance	farad	F	$C \cdot V^{-1}$	$m^{-2} \cdot kg^{-1} \cdot s^4 \cdot A^2$
Magnetic flux	weber	Wb	$V \cdot s$	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-1}$
Magnetic flux density	tesla	T	$Wb \cdot m^{-2}$	$kg \cdot s^{-2} \cdot A^{-1}$
Inductance	henry	H	$Wb \cdot A^{-1}$	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-2}$
Luminous flux	lumen	lm	$cd \cdot sr$	cd

<sup>a</sup> Special names for the unit of power: the name volt-ampere (symbol “VA”) when it is used to express the apparent power of alternating electric current, and var (symbol “var”) when it is used to express reactive electric power. The “var” is not included in GCPM resolutions.

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Illuminance	lux	lx	$\text{lm} \cdot \text{m}^{-2}$	$\text{m}^{-2} \cdot \text{cd}$
Activity (of a radionuclide)	becquerel	Bq		$\text{s}^{-1}$
Absorbed dose, specific energy imparted, kerma, absorbed dose index	gray	Gy	$\text{J} \cdot \text{kg}^{-1}$	$\text{m}^2 \cdot \text{s}^{-2}$
Dose equivalent	sievert	Sv	$\text{J} \cdot \text{kg}^{-1}$	$\text{m}^2 \cdot \text{s}^{-2}$
Catalytic activity	katal	kat		$\text{mol} \cdot \text{s}^{-1}$

**a** Special names for the unit of power: the name volt-ampere (symbol “VA”) when it is used to express the apparent power of alternating electric current, and var (symbol “var”) when it is used to express reactive electric power. The “var” is not included in GCPM resolutions.

Units derived from SI base units may be expressed in terms of the units listed in Chapter I.

In particular, derived SI units may be expressed by the special names and symbols given in the above table; for example, the SI unit of dynamic viscosity may be expressed as  $\text{m}^{-1} \cdot \text{kg} \cdot \text{s}^{-1}$  or  $\text{N} \cdot \text{s} \cdot \text{m}^{-2}$  or  $\text{Pa} \cdot \text{s}$ ;

- (f) in Chapter II, the following row shall be deleted from the table:

Land registration	acre	$1 \text{ ac} = 4\,047 \text{ m}^2$	ac
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- (g) in Chapter II, the final sentence shall be replaced by the following: ‘The units listed in this Chapter may be combined with each other or with those in Chapter I to form compound units.’

## Article 2

### Transposition

1 Member States shall adopt and publish, no later than 31 December 2009, the laws, regulations and administrative provisions necessary to comply with this Directive. They shall forthwith communicate to the Commission the text of those measures.

They shall apply those measures from 1 January 2010.

When they are adopted by Member States, those measures shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2 Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

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*Article 3*

**Entry into force**

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

*Article 4*

**Addressees**

This Directive is addressed to the Member States.

Done at Strasbourg, 11 March 2009.

*For the European Parliament*

*The President*

H.-G. PÖTTERING

*For the Council*

*The President*

A. VONDRA

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- (1) [OJ C 120, 16.5.2008, p. 14.](#)
- (2) Legislative Resolution of the European Parliament of 29 November 2007 ([OJ C 297 E, 20.11.2008, p. 105](#)), Council Common Position of 18 November 2008 ([OJ C 330 E, 30.12.2008, p. 1](#)) and Position of the European Parliament of 16 December 2008 (not yet published in the Official Journal).
- (3) [OJ L 39, 15.2.1980, p. 40.](#)
- (4) [OJ C 321, 31.12.2003, p. 1.](#)