INTERNATIONAL STANDARD

ISO 4226

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Air quality — General aspects — Units of measurement

Qualité de l'air — Aspects généraux — Unités de mesurage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4226 was prepared by Technical Committee ISO/TC 146, *Air quality*, Sub-Committee SC 4, *General aspects*.

This second edition cancels and replaces the first edition (ISO 4226:1980), of which it constitutes a technical revision.

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Introduction

The series of International Standards on air quality includes the standardization of methods for the measurement of gases, vapours and particles. In order to enable results to be compared either within or between countries, it is essential to use agreed units of measurement to report the results and other relevant information so that sound conclusions may be drawn. It is also desirable to keep the number of units of measurement to a minimum.

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Air quality — General aspects — Units of measurement

1 Scope

This International Standard lays down the units and symbols to be used when reporting results of air quality measurements. For general guidance on the International System of Units, reference should be made to ISO 1000:1992, *SI units and recommendations for the use of their multiples and of certain other units.*

2 Units

See table 1.

Table 1

No.	Quantity	Unit	Symbol
2.1	**Units for substances**		
2.1.1	**Gases and vapours**		
2.1.1.1	Volume or mass fraction of main constituents (for example nitrogen, oxygen, carbon dioxide in air)	percent (by volume) percent (by mass)	% %
2.1.1.2	Volume fraction of gaseous pollutants	part per million (10^{-6})	ppm
2.1.1.3	Mass concentration of gaseous pollutants[1)]	milligram per cubic metre microgram per cubic metre nanogram per cubic metre picogram per cubic metre	mg/m^3 $\mu g/m^3$ ng/m^3 pg/m^3
2.1.2	**Particles**		
2.1.2.1	Mass concentration of suspended matter	milligram per cubic metre microgram per cubic metre nanogram per cubic metre picogram per cubic metre	mg/m^3 $\mu g/m^3$ ng/m^3 pg/m^3
2.1.2.2	Size of particles	micrometre	µm
2.1.2.3	Atmospheric dustfall[2)] (deposit gauges)	gram per square metre-day milligram per square metre-day	$g/(m^2 \cdot d)$ $mg/(m^2 \cdot d)$
2.1.2.4	Biological, microbiological and other suspended matter (for example pollen, spores, microorganisms)	reciprocal cubic metre reciprocal cubic decimetre	m^{-3} dm^{-3}

No.	Quantity	Unit	Symbol
2.2	**Units for specifying the state of gas**		
2.2.1	Thermodynamic temperature	kelvin	K
2.2.2	Celsius temperature	degree Celsius	°C
2.2.3	Pressure	pascal kilopascal	Pa kPa
2.2.4	Relative humidity	percent	%
2.3	**Meteorological quantities**		
2.3.1	Wind speed	metre per second	m/s
2.3.2	Wind direction[3]	degree	°
2.3.3	Precipitation intensity	millimetre per day millimetre per hour	mm/d mm/h
2.3.4	Irradiance	watt per square metre	W/m^2
2.3.5	Atmospheric pressure	kilopascal	kPa
2.4	**Time**		
2.4.1	Time	second minute hour day	s min h d
2.5	**Miscellaneous**		
2.5.1	Geographical location [northern (N) or southern (S) latitude] [eastern (E) or western (W) longitude][4]	degree minute second	° ′ ″
2.5.2	Altitude	metre	m

1) If concentrations are expressed in terms of mass per unit volume, temperature and pressure (as well as humidity) are required. Gaseous pollutants have often been expressed on a milligram per litre (mg/l) basis.

2) When deposit gauges are used, no account is taken of the volume of air from which the atmospheric dustfall is deposited; the duration of collection of the atmospheric dustfall should also be reported.

3) Wind direction is conventionally reported as an angle, in degrees, measured clockwise over 360° for the full circle starting from north as 0°.

4) Northern latitude can also be indicated by +, southern latitude by − in front of the numbers of the degrees. Longitude can also be indicated with respect to the longitude of Greenwich, by using + for western longitude and − for eastern longitude.

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Descriptors: air, quality, measurement, units of measurement, quantities, symbols.

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