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Pesticides and other agrochemicals — Principles for the selection of common names

Produits phytosanitaires et assimilés — Principes pour le choix des noms communs

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 81, *Common names for pesticides and other agrochemicals*.

This fourth edition cancels and replaces the third edition (ISO 257:2004), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Annex A (Procedure for the establishment of common names for pesticides and other agrochemicals) that was included in previous editions has been removed from this document and incorporated in the Terms of Reference for the Maintenance Agency for ISO 1750.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document contains principles for the construction of common names for pesticides and other agrochemicals. The intention is to create short, distinctive, easily pronounced names, which will be common to all languages, as far as is possible. This document contains recommended names for common ions and radicals, as well as recommended stems for different chemical structures. Therefore, the common name should reflect any relationship with chemicals of a similar structure. However, it is important to avoid confusion between common names and existing names, whether they are other common names, trade names or chemical names. Recommendations on how to name isomers, salts, esters, etc. are also included. Common names are intended to be permanent; they do not expire, and they are not withdrawn when a substance is no longer marketed. These principles are defined for the guidance of proposers of such common names and for the operation of ISO/TC 81 and of the Maintenance Agency for ISO 1750.

Pesticides and other agrochemicals — Principles for the selection of common names

1 Scope

This document gives principles for creating common names for pesticides and other agrochemicals. These principles are defined for the guidance of proposers of such common names. The procedure for the establishment of common names is given in the Terms of Reference of the Maintenance Agency for ISO 1750, *Pesticides and other agrochemicals — Common names*.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
common name
name freely available for common use in identifying a chemical substance without recourse to its systematic chemical name

4 Purpose of common names

4.1 The purpose of a common name is to provide a short, distinctive, easily pronounced name for a substance, the full chemical name of which is too complex for convenient use in science, commerce and official regulations.

4.2 Because a common name has to be freely available for use in describing the substance for which it has been coined, it should not be permitted to become a privately-owned trademark with respect to identical or similar goods.

4.3 In order to achieve the desired goal of creating a common name that is generally acceptable internationally, rejection of any proposed common name by individual ISO Member Bodies should only be based on serious grounds and then only after every possible effort has been made to overcome the impediment to local acceptability.

5 Principles for selection

5.1 General

5.1.1 No substance should be given a common name if its chemical name is reasonably short and distinctive (e.g. metaldehyde, carbon tetrachloride).

5.1.2 The identity of a common name should be maintained in all languages, subject to necessary linguistic variations.

5.1.3 Common names should be as short as is practicable, but should not include single letters and/or numerals except as structural qualifiers.

NOTE While the formation of common names from initials and numerals is no longer acceptable, exceptions (e.g. MCPA, 2,4,5-T) have been made for substances which are so well known by such names that to use other names would cause confusion.

5.1.4 Common names should be distinctive in sound and spelling and should be neither difficult to pronounce nor liable to confusion with existing names (see 5.5.1).

5.1.5 To facilitate international spelling and translation, "f" instead of "ph" should be used in common names; the suffix "-phenyl" in the names of esters, however, should retain its normal spelling. Similarly, "t" should be used instead of "th" with the permitted exceptions "thrin" and "thiuron". Methyl and ethyl esters retain their normal spelling.

5.1.6 Common names must contain character strings that indicate parts of current and/or obsolete chemical names for the substance. The strings may be modified for brevity or to aid pronunciation, for example "sebu" instead of "*sec*-butyl" or "teclo" instead of "tetrachloro". It is not normally appropriate for all parts of the chemical name to be indicated in the common name. Non-chemical strings may be included but should form less than half of the common name.

For some defined groups of substances, there are recommended stems that should be included in common names (see 5.6).

5.2 Salts and esters

5.2.1 Simple salts

The common name for a simple salt should be that of the parent acid, alcohol or base. In the case of an acid or alcohol, the complementary cation may be given as a hyphenated suffix, and in the case of a base, the complementary anion may be stated. A quaternary ammonium or phosphonium salt should be treated as a salt of a base.

EXAMPLES

alloxydim-sodium

bromoxynil-potassium

imazalil nitrate

chlormequat chloride

5.2.2 Simple esters

Similarly, where the substance is a simple ester or other derivative, and the existence of biological activity derives from the parent form, the common name should be that of the parent. This should be taken as the case if other esters or derivatives are known, or are expected, to exhibit similar biological activity. The complementary esterifying radical may be indicated.

EXAMPLES

mecoprop-methyl

dinoseb acetate

5.2.3 Complex esters and salts

If neither moiety of an ester or salt is simple, the common name should be that of the whole molecule.

EXAMPLES

bupirimate

decafentin

5.2.4 Recommended names for ions and radicals

Recommended names have been developed for some of the more commonly occurring ions and radicals. These are listed in Table 1 and should be used in place of the chemical names.

Table 1 — Names for ions and radicals

Recommended name	Chemical name
albesilate	alkylbenzenesulfonate
biproamine	bis(3-aminopropyl)methylammonium
butometyl	2-butoxy-1-methylethyl
butotyl	2-butoxyethyl
diclexine	dicyclohexylammonium
dimolamine	(2-hydroxyethyl)dimethylammonium
diolamine	bis(2-hydroxyethyl)ammonium
doboxyl	2-butoxypropyl
etexyl	2-ethylhexyl
ethadyl	ethylene (ethane-1,2-diyl)
etotyl	2-ethoxyethyl
isoctyl	“isooctyl” (mixed C-8 alkyl radical)
meptyl	1-methylheptyl
metilsulfate	methylsulfate
mexyl	1-methylhexyl
olamine	2-hydroxyethylammonium
tefuryl	tetrahydrofurfuryl
terboxyl	3-butoxypropyl
trimesium	trimethylsulfonium
tripromine	tris(2-hydroxypropyl)ammonium
trolamine	tris(2-hydroxyethyl)ammonium

Traditional names for radicals, as retained in Reference [2] or older editions, should be used in place of systematic or semi-systematic names, particularly when this avoids the use of locants.

EXAMPLES

butyrate

dimethylammonium

fumarate

isobutyl

isopropyl

isopropylammonium

methylammonium

propargyl

triethylammonium

5.2.5 Multiplying affixes

Multiplying affixes should be used when the parent is a dibasic (or higher) acid, alcohol or base and more than one possible derivative could be produced. Affixes should also be used in any other case where there is a need to avoid ambiguity.

EXAMPLES

chlorthal-dimethyl

chlorthal-monomethyl

diquat dibromide

iminoctadine triacetate

streptomycin sesquisulfate

thiosultap-disodium

It is not normally necessary to use multiplying affixes with the parent substance.

EXAMPLES

dalapon-magnesium [2:1 ratio]

fosetyl-aluminium [3:1 ratio]

oxpoconazole fumarate [2:1 ratio]

5.3 Purity of chemicals

Although common names should be given to chemical entities of known structure, in exceptional cases they may be given to mixtures whose composition is constant for all practical purposes and whose concentrations of active components can be specified.

Such exceptional cases may include:

a) a reaction product mixture, provided that the concentrations of the main active components fall within acceptable limits about specified proportions;

b) a polymeric reaction product mixture, provided that the concentrations of the main active component polymers (the repeating units of which are specified) in the reaction product mixture are known and are constant to within acceptable limits;

c) an extract or derivative of a natural product (from animal, plant, fungal or bacterial sources), the composition of which is constant within acceptable limits.

The ratio of the components should be specified in the definition of a common name. The range of ratios should not be more precise than is appropriate, in order to allow for future variations in manufacturing, for example specify 40–60% and 60–40% rather than 50:50, and specify 75–100% and 25–0% instead of 80% and 20%. The range of ratios should not be so broad as to encompass significant changes in biological activity.

5.4 Isomers and isomeric mixtures

5.4.1 The following special considerations should be taken into account when coining names for mixtures of isomers.

5.4.2 The common name for a substance that can exist in enantiomeric (optically isomeric) forms owing to a single asymmetric centre should be assigned, without affixes, either to the racemate or to one of the enantiomers, depending on the form for which the common name is first required. If a common name is required subsequently for another stereochemical variant, it should be the original common name with the appended suffix "-MP", "-M" or "-P", for the racemate, the (−)-isomer or the (+)-isomer, respectively.

If the rotation of polarised light cannot be determined, then the suffixes "-RS" for the racemate, "-R" for the (*R*)-isomer or "-S" for the (*S*)-isomer may be used.

If more than one chiral centre is present, it may be necessary to adopt special measures, such as a system based on appropriate modification of the original common name, for example that developed for the synthetic pyrethroids (see Annex A).

5.4.3 The common name of a substance which consists of complementary geometrical isomers should indicate the essential familial features (see 5.6). A specific isomer or subgroup of isomers of such a substance may be assigned a common name [which may include a syllable or letter(s) implying a *cis*-, *trans*-, (*E*)- or (*Z*)- form] only if the substance is produced commercially in a substantially pure form.

The ratio of the isomers should be specified in the definition of a common name. The range of ratios should not be more precise than is appropriate, in order to allow for future variations in manufacturing, for example specify 40–60% and 60–40% rather than 50:50, and specify 75–100% and 25–0% instead of 80% and 20%. The range of ratios should not be so broad as to encompass significant changes in biological activity.

5.4.4 The common name for a substance that consists of a mixture of optical and geometric isomers should be one that is appropriate to the mixture and may be modified by qualifiers to specify subgroups or individual isomers.

5.4.5 If a substance consists of a mixture of structural isomers, only one of which has the stated biological activity, the common name should be assigned only to the active isomer. However, if the substance consists of a mixture of pesticidally-active isomers, and if the isomerism consists of variations in chain branching or position of substituents, the common name should be assigned to the mixture, which should be defined as an isomeric reaction product mixture of A + B.... The ratio of the isomers should be specified in the definition of a common name. The range of ratios should not be more precise than is appropriate, in order to allow for future variations in manufacturing, for example specify 40–60% and 60–40% rather than 50:50, and specify 75–100% and 25–0% instead of 80% and 20%. The range of ratios should not be so broad as to encompass significant changes in biological activity. If necessary, names for individual isomers may be derived by modifying the common name applied to the mixture.

5.5 Additional requirements

5.5.1 A common name should not be liable to confusion with

a) established chemical names, or

b) common names already either officially authorized or in well-recognized use for other pharmaceutical, pesticidal or related substances, or

c) trademarks enjoying protection with respect to pharmaceutical, pesticidal or related substances, unless the prior consent of the trademark owner has been secured in writing.

5.5.2 In accordance with its definition and purpose (Clauses 3 and 4), a common name cannot be a proprietary name with respect to goods broadly of the same category. However, in some cases, circumstances may exist during an interim period which make it desirable for proprietary rights to be maintained as, for example, where the proposer has agreed to surrender his proprietary rights subject to acceptance of the name as an official common name. In such cases, the proprietor should first agree in writing to discontinue the use of the name as a trademark and to withdraw existing trademark applications and/or registrations for the name as soon as official recognition as a common name is given by ISO, and thus

a) to permit the use of the name as the approved common name by any party whatsoever who is properly using it, and

b) to surrender all proprietary rights as soon as the special circumstances justifying their retention have ceased to exist.

5.5.3 If a common name is proposed for a substance that is closely related both chemically and in biological properties to an already-named compound, then the proposal should reflect the similarity by using a common root (which may or may not be a recommended stem; see 5.6) in conjunction with syllables suggestive of the variation.

EXAMPLES

ethirimol	dimethirimol
chlorotoluron	chloreturon
carbofuran	decarbofuran
formetanate	formparanate
permethrin	cypermethrin

5.5.4 If a WHO International Nonproprietary Name (INN) exists for a substance that is submitted to ISO, then the INN should be adopted by ISO.

5.6 Recommended stems

5.6.1 A common name should, if appropriate, include a stem indicative of the types of compound listed in Table 2.

The recommended stem should be used in the name at the position specified. Judicious use of other nonchemical rather than chemical stems in a common name provides greater flexibility and reduces the possibility of conflict with existing names.

It is emphasized that there is no intention of applying this recommendation retrospectively.

Recommended stems should not be used when they are not appropriate. The use of stems that could be confused with recommended stems should be avoided.

If more than one recommended stem is appropriate for a substance, then preference should be given to the stem that is used for other substances with similar activity or mode of action.

5.6.2 Other stems have previously been recommended for use in common names (see Table 3). These stems, whilst obsolescent, should still be restricted to use in names for the type of compound indicated.

5.6.3 The use of stems with misleading chemical significance should be avoided. For example, a name ending in "-ol" is not acceptable for a compound that is not an alcohol (or phenol), a name ending in

"-one" is not acceptable for a compound that is not a ketone, and a name ending in "-amid" or "-amide" is not acceptable for a compound that is not an amide.

5.6.4 Suffixes that are commonly used for WHO International Nonproprietary Names (INNs) should be avoided for substances for which they are not appropriate.

Table 2 — Recommended stems

Stem[a]	Position in name	Type of compound	Example
-alin	suffix	2,6-Dinitroanilines	trifluralin
-azine	suffix	1,3,5-Triazines, chloro-substituted	atrazine
-azon	suffix	Cyclic acylhydrazides	chloridazon
-azone	suffix	*N*-Acyl or *N*-phenyl triazolones	sulfentrazone
carb- or -carb- or -carb	any position	Carbamates and thiocarbamates	carbofuran
-conazole	suffix	Fungicides and plant growth regulators based on imidazole or 1,2,4-triazole and containing a halogenated phenyl group	penconazole
coum- or -coum	prefix or suffix	Coumarins	coumatetralyl
-fop	suffix	2-(4-Aryloxyphenoxy)propionic acids	fluazifop
-fop-	infix	2-(4-Aryloxyphenoxy)propionic acid derivatives other than salts and esters	trifopsime
fos- or -fos- or -fos	any position	Organophosphorus compounds	quintiofos
imaz-	prefix	Imidazolinones (HRAC group B)	imazapyr
-lure	suffix	Pheromone attractants or synthetic analogues thereof	rescalure
-mectin	suffix	Analogues of avermectin	abamectin
-meton	suffix	1,3,5-Triazines, methoxy-substituted	secbumeton
-oxydim	suffix	Alkyl 2-hydroxy-6-oxocyclohexenyl ketone oximes	cloproxydim
-ozide	suffix	1,2-Diacyl-1-alkylhydrazine insect growth regulators	tebufenozide
-prole	suffix	*N*-Arylpyrazoles	vaniliprole
-quat	suffix	Quaternary nitrogen compounds	paraquat
-strobin	suffix	Analogues of strobilurin	azoxystrobin
-sulam	suffix	Aminosulfonyltriazolopyrimidines	diclosulam
-sulfuron	suffix	Sulfonylureas	bensulfuron
-thiuron	suffix	Thioureas	chloromethiuron
-thrin	suffix	Esters of cyclopropanecarboxylic acids (pyrethroids)	permethrin
-tryn[b]	suffix	1,3,5-Triazines, methylthio-substituted	simetryn
-uron	suffix	Acyclic ureas and ureas in which one or both nitrogen atoms form part of a saturated ring system	linuron

[a] The recommendations are based on the chemical structures of the compounds.

[b] In English, the ending "-tryne" was originally recommended, but was abandoned because the ending might be thought to indicate the presence of a C≡C grouping (see 5.6.3).

Table 3 — Obsolescent stems

Stem	Position in name	Type of compound	Example
din-	prefix	Dinitrophenols	dinoterb
-eb	suffix	Ethylenebisdithiocarbamates	maneb
-nil	suffix	Nitriles	chlorothalonil
-rim	suffix	Pyrimidines	fenoxacrim

6 Style of writing or printing common names and definitions

6.1 Common names

Common names shall be treated as common nouns and should not, therefore, be capitalized except where required by national usage.

Some common names, which were coined before these principles were elaborated, consist of initials and/or numerals. If such names consist only of initials, they should be written in capitals without intervening full stops (e.g. MCPA). If numerals and letters both occur, the numerals should be separated from one another by commas and from letters by a hyphen (e.g. 2,4,5-T).

6.2 Percentages

When percent signs are used in the definition of common names, they shall be used with no space before them (e.g. 25%).

When a range of percentages is specified, the numbers shall be separated by an en dash, only one percent sign shall be used and there shall be no space before it (e.g. 40–60%).

7 Information required from sponsors

To assist the Maintenance Agency in ensuring that the above principles are followed when considering applications for new common names, the following information is required to accompany a proposal.

7.1 Common name

The proposed common name, alternatives being allowed.

7.2 Systematic chemical names

The systematic chemical names for the compound to which the common name is to be applied, including:

1) stereochemical identifiers, in the case of compounds that exist in different stereochemical forms, and, if appropriate, the proportions of the various isomers, and;

2) in the case of compounds of uncertain composition, as much information on the chemical constitution as possible.

Three systematic chemical names should be provided, namely those corresponding to the English IUPAC PIN rules, the English IUPAC general nomenclature rules, and the rules used by Chemical Abstracts.

7.3 CAS Registry Number

The Chemical Abstracts Service Registry Number® or Numbers, as appropriate, for the substance to which the common name is to be applied.

7.4 Molecular formula

The molecular formula(e) for the substance(s) to which the common name is to be applied.

7.5 Structural formula

The structural formula(e) for the substance(s) to which the common name is to be applied.

7.6 Active component

Where the substance is a simple ester, salt or other derivative, an indication as to whether the biological activity derives from the parent form.

7.7 Use

Use(s) of the product. The uses and abbreviations (in parentheses) that have been established are as follows:

acaricide	(A)	mammal repellent	(MR)
algicide	(AL)	mating disruptant	(D)
attractant	(AT)	molluscicide	(M)
avicide	(V)	nematicide	(N)
bactericide	(B)	nitrification inhibitor	(NI)
bird repellent	(VR)	plant activator	(PA)
fungicide	(F)	plant growth regulator	(P)
herbicide	(H)	rodenticide	(R)
insect growth regulator	(IGR)	safener	(S)
insecticide	(I)	synergist	(Y)
insect repellent	(IR)	miscellaneous	(Z)

7.8 Other names

Any proprietary names, including trademarks, for the product, and any other trivial names, code numbers or abbreviations for the compound.

7.9 Search reports for trademarks and common names

7.9.1 General

It is a principle [see 5.5.1 b) and c)] that common names shall not be liable to confusion either with common names that are officially authorized or in well-recognized use for other pharmaceutical, pesticidal or related substances, or with trademarks. To check this as far as is practicable, sponsors of common names are required to obtain, pay for and submit to the Maintenance Agency reports of common names and trademarks that are potentially barriers to the adoption of a common name.

These reports should be provided when a name is first submitted. If this is not possible, then reports shall be provided as soon as possible after the sponsor has been notified that there are no objections to the proposed common name(s) from the Maintenance Agency. Common names cannot be approved until reports have been received and checked. It should be noted that if a proposed common name is found unacceptable at any stage and a replacement is considered, it is usually necessary for further reports to be submitted.

Reports are not required for common name proposals formed by attaching affixes or suffixes to common names for which reports have previously been submitted.

7.9.2 Searches required

The common name search should cover proposed and recommended International Nonproprietary Names (INNs) and ISO common names.

The trademark search should be conducted on all identical and confusingly-similar registered and pending trademarks in International Classes 1 and 5 in the following registers:

a) United Kingdom;

b) European Union Trademarks;

c) United States of America (Federal Register);

d) Madrid Union (as administered by the World Intellectual Property Organization (WIPO));

e) sponsor's country.

7.9.3 Presentation of reports

The common name report should be a list of all potentially confusable and similar INNs and ISO common names (see 7.9.4).

The trademark search report should include:

a) a list of potentially confusable, similar and identical marks with their numbers (see 7.9.4);

b) copies of the official entries and/or database extracts from search-provider databases showing their status, the owner, the classes, the list of goods and any consequential amendments, for example renewals (and an English translation, if necessary);

c) a note stating whether, to the knowledge of the sponsor, any of the listed marks is, or was recently, in use, and for what purpose;

d) a note giving details of any agreement that the sponsor has made with a third party to overcome problems; and

e) the name of the sponsor and the date(s) of search.

7.9.4 Example of the required lists of common names and trademarks submitted by a sponsor

Proposed common name: benazamacril

Register	Trademark / common name / INN	Reg. / App. No.	Classes	Status
UK	BENZELHIN	1146214	5	Registered
	BENZAGEL	1219277	1, 5	Application
European Union Trademarks	BENZAGEL	12555151	1, 5	Application
United States	BENZAGEL	995775	1	Registration
	BENZAGEL	982461	5	Registered
	BENZAHYCIN	1226427	5	Registered
WIPO	BENZACYL	262783	1	Application
	BENTOCRYL	478323	1, 5	Registered
ISO common names	BENZAMIZOLE			
	BENZAMORF			
INNs	BENZESTROL			
	BENZHEXOL			

7.10 Sponsor

The name and address of the sponsor.