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International Non-Proprietary Names for Pharmaceutical Preparations

There is need to avoid the confusion which exists when different non-proprietary names come into use for the same medicinal substance. This multiplicity of names can be the source of difficulties in the daily work of the physician and of the pharmacist, as well as in therapeutic research throughout the world.

In many countries attempts have been made and progress achieved in obtaining the desired uniformity on a national level (examples: "Generic Names" of the Council on Pharmacy and Chemistry of the American Medical Association, "Approved Names" of the General Medical Council in the United Kingdom, "Nordiske Farmakopenaevn" of the Scandinavian Pharmacopoeia Council, "dénominations communes" in France, etc.) The World Health Organization was asked to co-ordinate these efforts at an international level, and special requests were also made to select international non-proprietary names for the drugs liable to produce addiction in order to facilitate their international control.

According to the following Procedure for the Selection of Recommended International Non-Proprietary Names for Pharmaceutical Preparations, WHO receives requests for the establishment of international non-proprietary names for new pharmaceutical preparations which can be used freely in all countries, and publishes lists of proposed international non-proprietary names and of recommended international non-proprietary names.

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NON-PROPRIETARY NAMES FOR PHARMACEUTICAL PREPARATIONS [1]

The following procedure shall be followed by the World Health Organization in the selection of recommended international non-proprietary names for pharmaceutical preparations, in accordance with the World Health Assembly resolution WHA3.11:

1. Proposals for recommended international non-proprietary names shall be submitted to the World Health Organization on the form provided therefor.

2. Such proposals shall be submitted by the Director-General of the World Health Organization to the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations

[1] The amended text reproduced here was adopted by the Executive Board in resolution EB15.R7 and supersedes that adopted by the Board at its twelfth session (see *Official Records* No. 49, Annex 6)

designated for this purpose, for consideration in accordance with the "General principles for guidance in devising International Non-proprietary Names", appended to this procedure. The name used by the person discovering or first developing and marketing a pharmaceutical preparation shall be accepted, unless there are compelling reasons to the contrary.

3. Subsequent to the examination provided for in article 2, the Director-General of the World Health Organization shall give notice that a proposed international non-proprietary name is being considered.

A. Such notice shall be given by publication in the *Chronicle of the World Health Organization* and by letter to Member States and to national pharmacopoeia commissions or other bodies designated by Member States.

(i) Notice may also be sent to specific persons known to be concerned with a name under consideration.

B. Such notice shall:

(i) set forth the name under consideration;

(ii) identify the person who submitted a proposal for naming the substance, if so requested by such person;

(iii) identify the substance for which a name is being considered;

(iv) set forth the time within which comments and objections will be received and the person and place to whom they should be directed;

(v) state the authority under which the World Health Organization is acting and refer to these rules of procedure.

C. In forwarding the notice, the Director-General of the World Health Organization shall request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the proposed name during the period it is under consideration by the World Health Organization.

4. Comments on the proposed name may be forwarded by any person to the World Health Organization within four months of the date of publication, under article 3, of the name in the *Chronicle of the World Health Organization.*

5. A formal objection to a proposed name may be filed by any interested person within four months of the date of publication, under article 3, of the name in the *Chronicle of the World Health Organization.*

A. Such objection shall:

(i) identify the person objecting;
(ii) state his interest in the name;
(iii) set forth the reasons for his objection to the name proposed.

6. Where there is a formal objection under article 5, the World Health Organization may either reconsider the proposed name or use its good offices to attempt to obtain withdrawal of the objection. Without prejudice to the consideration by the World Health Organization of a substitute name or names, a name shall not be selected by the World Health Organization as a recommended international non-proprietary name while there exists a formal objection thereto filed under article 5 which has not been withdrawn

7. Where no objection has been filed under article 5, or all objections previously filed have been withdrawn, the Director-General of the World Health Organization shall give notice in accordance with subsection A of article 3 that the name has been selected by the World Health Organization as a recommended international non-proprietary name.

8. In forwarding a recommended international non-proprietary name to Member States under article 7, the Director-General of the World Health Organization shall:

A. request that it be recognized as the non-proprietary name for the substance; and

B. request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the name, including prohibiting registration of the name as a trade-mark or trade-name.

GENERAL PRINCIPLES FOR GUIDANCE IN DEVISING INTERNATIONAL NON-PROPRIETARY NAMES

1. Names should, preferably, be free from any anatomical, physiological, pathological or therapeutic suggestion.

2. An attempt should first be made to form a name by the combination of syllables in such a way as to indicate the significant chemical groupings of the compound and/or its pharmacological classification. Preference should be given to the following syllables:

Latin	English	French	
inum	ine	ine	for alkaloids and organic bases
inum	in	ine	for glycerides and neutral principles
olum	ol	ol	for alcohols and phenols (-OH group)
alum	al	al	for aldehydes
onum	one	one	for ketones and other substances containing the CO group
enum	ene	ène	for unsaturated hydrocarbons
anum	ane	ane	for saturated hydrocarbons
cainum	caine	caïne	for local anaesthetics
mer	mer	mer	for mercurial compounds
sulfonum	sulfone	sulfone	for sulfone derivatives
quinum	quine	quine	for antimalarial substances containing a quinoline group
crinum	crine	crine	for antimalarial substances containing an acridine group
sulfa	sulfa	sulfa	for derivatives of sulfanilamide
dionum	dione	dione	for anti-epileptics derived from oxazolidinedione
toinum	toin	toïne	for anti-epileptics derived from hydantoin
stigminum	stigmine	stigmine	for anticholinesterases

3. Names should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names already in use.

4. The addition of a terminal capital letter or number should be avoided as far as possible.

5. Names proposed by the person discovering or first developing and marketing a pharmaceutical preparation, or already officially adopted in any country, or used in the national pharmacopoeias, or in works of reference such as " New and Non-official Remedies ", should receive preferential consideration.

* * *

In accordance with article 3 of the Procedure for the Selection of Recommended International Non-Proprietary Names for Pharmaceutical Preparations, notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Non-Proprietary Names.

Comments on, or formal objections to, these proposed names may be forwarded by any person to the World Health Organization within four months from 1 February 1956.

The inclusion of a name in this list does not imply any recommendation for the use of the substance in medicine or pharmacy.

PROPOSED INTERNATIONAL NON-PROPRIETARY NAMES (*Prop. I.N.N.*): LIST 4 [1]

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
acetarsolum acetarsol	3-acetamido-4-hydroxyphenylarsonic acid
acetylcholini chloridum acetylcholine chloride	2-acetoxyethyltrimethylammonium chloride

[1] Other lists of proposed international non-proprietary names will be found in *Chron. Wld Hlth Org.*, 1953, 7, 297; 1954, 8, 216, 313. A list of recommended international non-proprietary names was published in *Chron. Wld Hlth Org.*, 1955, 9, 185.

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
acidum ascorbicum ascorbic acid	3-oxo-L-gulofuranolactone (enolic form)
acidum folicum folic acid	*N*-[4′-({[2-amino-4-hydroxy-6-pteridyl]methyl}amino) benzoyl]-L (+)glutamic acid
acidum iophenoicum iophenoic acid	α-(3-hydroxy-2,4,6-triiodobenzyl)-butyric acid
acidum nicotinicum nicotinic acid	pyridine-3-carboxylic acid
adipiodonum adipiodone	adipic acid bis-(2,4,6-triiodo-3-carboxyanilide)
aethisteronum ethisterone	17α-ethynyl-17β-hydroxy-3-oxoandrostene-4
aethylis biscoumacetas ethyl biscoumacetate	ethyl 4,4′-dihydroxy-3,3′-dicoumarinylacetate
amidopyrinum amidopyrine	2,3-dimethyl-4-dimethylamino-1-phenyl-5-pyrazolone
aminitrozolum aminitrozole	2-acetamido-5-nitrothiazole
aminophyllinum aminophylline	mixture of theophylline and ethylenediamine
aminopterinum natricum aminopterin sodium	sodium 4-aminofolate
amphetaminum amphetamine	(±) 2-amino-1-phenylpropane
androstanolonum androstanolone	3α-hydroxy-17-oxoandrostane
arsthinolum arsthinol	2-(3′-acetamido-4′-hydroxyphenyl)-1,3-dithia-2-arsa-4-*cyclo*pentyl-methanol
atropini methonitras atropine methonitrate	(±) 8-methyl-3-tropoyloxytropane nitrate
barbitalum barbital	5,5-diethylbarbituric acid
barbitalum natricum barbital sodium	sodium salt of 5,5-diethylbarbituric acid
benzatropini methanesulfonas benzatropine methanesulfonate	tropine benzhydryl ether methanesulfonate
bromazinum bromazine	2-(4-bromophenyl-phenylmethoxy)-ethyldimethylamine
buclizinum buclizine	1-(4-chlorobenzhydryl)-4-(4-*tert* butylbenzyl)-piperazine
butacainum butacaine	3-dibutylaminopropyl *p*-aminobenzoate
butalbitalum butalbital	5-allyl-5-*iso*butylbarbituric acid

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
calciferolum calciferol	
calcii saccharas calcium saccharate	calcium D-glucarate
carbacholum carbachol	carbamoylcholine chloride
carbarsonum carbarsone	4-ureidophenylarsonic acid
carbimazolum carbimazole	2-ethoxycarbonylthio-1-methylimidazole
carbinoxaminum carbinoxamine	2-dimethylaminoethoxy-2-pyridyl-4-chlorophenylmethane
carzenidum carzenide	4-carboxybenzenesulfonamide
cetomacrogolum 1000 cetomacrogol 1000	polyethylene glycol 1000 monocetyl ether
chiniofonum chiniofon	mixture of four parts by weight of 7-iodo-8-hydroxyquinoline 5-sulfonic acid and one part of sodium bicarbonate
chlorbetamidum chlorbetamide	*N*-(2,4-dichlorobenzyl)-*N*-(dichloroacetyl)-ethanolamine
chlormerodrinum chlormerodrine	(3-chloromercuri-2-methoxypropyl)-urea
chlorobutanolum chlorobutanol	1,1,1-trichloro-2-methylpropanol-2
chlorocresolum chlorocresol	6-chloro-3-hydroxytoluene
chloroquinum chloroquin	7-chloro-4-(4′-diethylamino-1′-methylbutylamino)-quinoline
chlorphenaminum chlorphenamine	1-(*p*-chlorophenyl)-1-(2-pyridyl)-3-dimethylaminopropane
chlortetracyclinum chlortetracycline	10-chloro-1-dimethylamino-1,4,6,11,12,13,14,18-octahydro-2,5,7,11,14-pentahydroxy-4,6-dioxo-11-methylnaphthacene-3-carbonamide
cholini chloridum choline chloride	2-hydroxyethyltrimethylammonium chloride
conessinum conessine	an alkaloid obtained from the seeds of *Holarrhena antidysenterica* L.
cycriminum cycrimine	1-phenyl-1-*cyclo*pentyl-3-piperidino-1-propanol
desoxycortonum desoxycortone	21-hydroxy-3,20-dioxopregnene-4
dibrompropamidinum dibrompropamidine	1,3-bis-(4-amidino-2-bromophenoxy)-propane
dichloroxylenolum dichloroxylenol	2,4-dichloro-3,5-dimethylphenol

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
diethylstilboestrolum diethylstilboestrol	*trans*-3,4-bis-(4-hydroxyphenyl)-hexene-3
digoxinum digoxin	glycoside obtained from the leaves of *Digitalis lanata* Ehrh.
dihexyverinum dihexyverine	2-piperidinoethyl 1-*cyclo*hexyl*cyclo*hexanecarboxylate
dihydralazinum dihydralazine	1,4-dihydrazinophthalazine
dimazolum dimazole	2-dimethylamino-6-(2-diethylaminoethoxy)-benzothiazole
diphemanili methylsulfas diphemanil methylsulfate	*N,N*-dimethyl-4-piperidylidene-diphenylmethane methylsulfate
dithranolum dithranol	1,8,9-anthratriol
ectylurea ectylurea	2-ethylcrotonylurea
edrophonii chloridum edrophonium chloride	ethyldimethyl-3-hydroxyphenylammonium chloride
ergometrinum ergometrine	an alkaloid obtained from ergot
ergotaminum ergotamine	an alkaloid obtained from ergot
erythromycinum erythromycin	an antibiotic produced by a strain of *Streptomyces erythreus*
ethaverinum ethaverine	6,7-diethoxy-1-(3′,4′-diethoxybenzyl)-isoquinoline
gitalinum amorphum gitalin amorphous	a glycosidal principle of *Digitalis purpurea* L.
glycerolum glycerol	propanetriol
heparinum heparin	sodium salt of a complex organic acid having the characteristic property of delaying the clotting of blood
hexylcainum hexylcaine	1-*cyclo*hexylamino-2-propyl benzoate
hydroxystilbamidinum hydroxystilbamidine	1-(4-amidino-2-hydroxyphenyl)-2-(4-amidinophenyl)-ethene
isophanum insulinum isophane insulin	a sterile suspension of insulin with the isophanic equivalent of protamine and zinc chloride
lanatosidum C lanatoside C	glycoside obtained from the leaves of *Digitalis lanata* Ehrh.
laudexii methylsulfas laudexium methylsulfate	decamethylene-ω-bis-[1-(3′,4′-dimethoxybenzyl)-1,2,3,4-tetrahydro-6,7-dimethoxy-2,2-dimethylisoquinolinium sulfate]

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
levorphanolum* levorphanol	(-) 3-hydroxy-*N*-methylmorphinan
levothyroxinum natricum levothyroxine sodium	L-β-[(4-hydroxy-3,5-diiodophenoxy)-3,5-diiodophenyl]-alanine
lobelinum lobeline	L-2-(2-hydroxy-2-phenylethyl)-1-methyl-6-phenacylpiperidine
lucanthonum lucanthone	1-(2-diethylaminoethylamino)-4-methylthiaxanthone
macrogolum 400 macrogol 400	polyethylene glycol 400
macrogolum 1000 macrogol 1000	polyethylene glycol 1000
macrogolum 4000 macrogol 4000	polyethylene glycol 4000
macrogoli lauras 600 macrogol laurate 600	mono ester of lauric acid and polyethylene glycol 600
macrogoli oleas 600 macrogol oleate 600	mono ester of oleic acid and polyethylene glycol 600
macrogoli stearas 600 macrogol stearate 600	mono ester of stearic acid and polyethylene glycol 600
macrogoli stearas 1000 macrogol stearate 1000	mono ester of stearic acid and polyethylene glycol 1000
meclozinum meclozine	1-(4-chlorobenzhydryl)-4-(3-methylbenzyl)-piperazine
melarsoprolum melarsoprol	2-[4-(4,6-diamino-2-*s*-triazinylamino)-phenyl]-4-hydroxymethyl-1,3,2-dithiaarsenolidine
mepacrinum mepacrine	3-chloro-9-(4′-diethylamino-1′-methylbutylamino)-7-methoxy-acridine
meprylcainum meprylcaine	2-methyl-2-propylamino-propyl benzoate
mercumatilinum natricum mercumatilin sodium	sodium 8-(2′-methoxy-3′-hydroxymercuripropyl)-coumarin-3-carboxylate (sodium mercumallylate) and theophylline
mersalylum mersalyl	sodium salt of 2-[(3-hydroxymercuri-2-methoxy-propyl)-carbamoyl]-phenoxyacetic acid
methioninum methionine	(±) 2-amino-4-methylthio-butyric acid
methoxaminum methoxamine	2-amino-1-(2,5-dimethoxyphenyl)-propanol-1
methylcellulosum methylcellulose	cellulose methyl ether containing about 30 per cent. w/w of methoxyl
methylpentynolum methylpentynol	3-methylpentyn-1-ol-3

* This name is to replace "levorphanum" ("levorphan"), which had been proposed for the same substance (see *Chron. Wld Hlth Org.*, 7, 311)

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
methyltestosteronum methyltestosterone	17β-hydroxy-17α-methyl-3-oxoandrostene-4
natrii acetrizoas sodium acetrizoate	sodium 3-acetamido-2,4,6-triiodobenzoate
natrii amidotrizoas sodium amidotrizoate	sodium 3,5-diacetamido-2,4,6-triiodobenzoate
neoarsphenaminum neoarsphenamine	sodium 3,3′-diamino-4,4′-dihydroxyarsenobenzene-*N*-methylene-sulfoxylate
neostigmini bromidum neostigmine bromide	dimethylcarbamic ester of 3-hydroxy-phenyltrimethylammonium bromide
nicethamidum nikethamide	pyridine-3-carboxylic acid diethylamide
nicotinamidum nicotinamide	pyridine-3-carboxylic acid amide
nortestosteroni cypionas nortestosterone cypionate	17β-(3-*cyclo*pentylpropionoxy)-3-oxoestrene-4
oestradioli benzoas oestradiol benzoate	3-benzoyloxy-17β-hydroxyoestratriene-1,3,5 (10)
oestradiolum oestradiol	3,17β-dihydroxyoestratriene-1,3,5 (10)
oestronum oestrone	3-hydroxy-17-oxoestratriene-1,3,5 (10)
pamaquinum pamaquin	8-(4-diethylamino-1-methylbutylamino)-6-methoxyquinoline salt of 2,2′-dihydroxy-1,1′-dinaphthylmethane-3,3′-dicarboxylic acid
pentaquinum pentaquin	8-(5-*iso*propylamino-pentylamino)-6-methoxyquinoline
pentetrazolum pentetrazol	pentamethylene-1,5-tetrazole
pentolonium pentolonium	1,5-(1,1′-dimethyl-2,2′-dipyrrolidyl)-pentane
pethidinum pethidine	ethyl 1-methyl-4-phenyl-piperidyl-4-carboxylate
phenacainum phenacaine	N^1,N^2-bis-(4-ethoxyphenyl)-acetamidine
phenacetinum phenacetin	acetyl-4-phenetidine
phenazonum phenazone	2,3-dimethyl-1-phenyl-5-pyrazolone
phenazopyridinum phenazopyridine	2,6-diamino-3-phenylazopyridine
phenobarbitalum phenobarbital	5-ethyl-5-phenyl-barbituric acid
phenobarbitalum natricum phenobarbital sodium	sodium salt of 5-ethyl-5-phenyl-barbituric acid
phenylhydrargyri boras phenylmercuric borate	equimolecular compound of phenylmercuric borate and phenylmercuric hydroxide

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
phenytoinum phenytoin	5,5-diphenylhydantoin
pramocainum pramocaine	1-[3-(4-morpholino)-propoxy]-4-butoxybenzene
primidonum primidone	5-ethyl-5-phenyl-4,6-dioxo-hexahydropyrimidine
progesteronum progesterone	3,20-dioxopregnene-4
proguanilum proguanil	N^1-4-chlorophenyl-N^5-*iso*propylbiguanide
propoxycainum propoxycaine	2-diethylaminoethyl 4-amino-2-propoxybenzoate
quinisocainum quinisocaine	1-(2-dimethylaminoethoxy)-3-butyl*iso*quinoline
reserpinum reserpine	alkaloid from the roots of various species of *Rauwolfia*
riboflavinum riboflavine	6,7-dimethyl-9-(D-1′-ribityl)*iso*-alloxazine
secobarbitalum secobarbital	5-allyl-5-(1-methylbutyl)-barbituric acid
solasulfonum solasulfone	tetrasodium salt of 4,4′-bis-(3-phenyl-1,3-disulfopropylamino)-diphenylsulfone
sorbimacrogoli oleas 100 sorbimacrogol oleate 100	mono ester of oleic acid and tripolyethyleneglycol 100-sorbitan ether
sorbimacrogoli oleas 300 sorbimacrogol oleate 300	mono ester of oleic acid and tripolyethyleneglycol 300-sorbitan ether
stilbamidini isethionas stilbamidine isethionate	1,2-bis-(4-amidinophenyl)-ethene di-(2-hydroxyethane)-sulfonate
succinylsulfathiazolum succinylsulfathiazole	2-(N^4-3-carboxypropionyl-sulfanilamido)-thiazole
sulfadiazinum sulfadiazine	2-sulfanilamidopyrimidine
sulfadiazinum natricum sulfadiazine sodium	sodium derivative of 2-sulfanilamidopyrimidine
sulfadicramidum sulfadicramide	N^1-(3,3-dimethylacroyl)-sulfanilamide
sulfaguanidinum sulfaguanidine	N^1-amidinosulfanilamide
sulfamerazinum sulfamerazine	2-sulfanilamido-4-methylpyrimidine
sulfamerazinum natricum sulfamerazine sodium	sodium derivative of 2-sulfanilamido-4-methylpyrimidine
sulfanilamidum sulfanilamide	4-aminobenzenesulfonamide
sulfaproxylinum sulfaproxyline	N^1-(4-*iso*propoxybenzoyl)-sulfanilamide

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
sulfarsphenaminum sulfarsphenamine	disodium 3,3′-diamino-4,4′-dihydroxyarsenobenzene-*N*,*N*′-bis-methylenebisulfite
sulfathiazolum sulfathiazole	2-sulfanilamidothiazole
suspensio insulini cum zinco (amorphum) insulin zinc suspension (amorphous)	a sterile buffered suspension of the amorphous form of insulin with zinc chloride
suspensio insulini cum zinco (crystallisatum) insulin zinc suspension (crystalline)	a sterile buffered suspension of the crystalline form of insulin with zinc chloride
testosteronum testosterone	17β-hydroxy-3-oxoandrostene
tetrabarbitalum tetrabarbital	5-ethyl-5-(1-ethylbutyl)-barbituric acid
tetracainum tetracaine	2-dimethylaminoethyl 4-butylaminobenzoate
tetracyclinum tetracycline	1-dimethylamino-1,4,6,11,12,13,14,18-octahydro-2,5,7,11,14-pentahydroxy-4,6-dioxo-11-methylnaphthacene-3-carbonamide
thialbarbitalum thialbarbital	5-allyl-5-(2-*cyclo*hexenyl)-2-thiobarbituric acid
thiaminum thiamine	3-(4-amino-2-methyl-5-pyrimidinylmethyl)-4-methyl-5-(2-hydroxyethyl)-thiazolium chloride
thiopentalum natricum thiopental sodium	mono-sodium salt of 5-ethyl-5-(1-methylbutyl)-2-thiobarbituric acid
thiotetrabarbitalum thiotetrabarbital	5-ethyl-5-(1-ethylbutyl)-2-thiobarbituric acid
tolonii chloridum tolonium chloride	3-amino-7-dimethylamino-2-methyl-phenazathionium chloride
tosylchloramidum natricum tosylchloramide sodium	sodium toluene-4-sulfonylchloramide
tretamunum tretamine	2,4,6-tri-(ethyleneimino)-*s*-triazine
tricyclamoli chloridum tricyclamol chloride	(±) 1-(3-*cyclo*hexyl-3-hydroxy-3-phenylpropyl)-1-methylpyrrolidinium chloride
tryparsamidum tryparsamide	sodium *N*-phenylglycylamide-4-arsonate
viomycinum viomycin	an antibiotic obtained from certain strains of *Streptomyces puniceus* or *Streptomyces floridae*