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International Non-Proprietary Names for Pharmaceutical Preparations

In accordance with paragraph 3 of the Procedure for the Selection of Recommended International Non-Proprietary Names for Pharmaceutical Preparations,[1] 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, the proposed names may be forwarded by any person to the Secretary, Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations, World Health Organization, within four months from 1 June 1960.

The inclusion of a name in the lists of proposed international non-proprietary names 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 10 [2]

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
acidum thyropropicum thyropropic acid	3-[4-(4-hydroxy-3-iodophenoxy)- 3,5-diodophenyl]propionic acid
allylestrenolum allylestrenol	17α-allylestr.-4-en-17-ol
aminoglutethimidum aminoglutethimide	2-(*p*-aminophenyl)-2-ethylglutarimide
amphenidonum amphenidone	1-(*m*-aminophenyl)-2[*1*H] pyridone
amphotericinum B amphotericin B	a polyene antibiotic substance obtained from cultures of *Streptomyces nodosus*, or the same substance produced by any other means
androstanazolum androstanazole	17β-hydroxy-17α-methylandrostano-[3, 2-*c*] pyrazole
anisindionum anisindione	2-*p*-methoxyphenylindane-1,3-dione
benzthiazidum benzthiazide	3-benzylthiomethyl-6-chloro-7-sulfamoybenzo-1,2,4(*4H*)-thiadiazine 1,1-dioxide
biperidenum biperiden	1-(bicyclo[2,2,1] hept-5-en-2-yl)-1-phenyl-3-piperidinopropanol
bretylii tosylas bretylium tosylate	*N*-*o*-bromobenzyl-*N*-ethyl-*N*,*N*-dimethylammonium tosylate (tosylic acid is *p*-toluenesulfonic acid)
bunamiodylum bunamiodyl	3-(3-butyramido-2,4,6-triiodophenyl)-2-ethylacrylate

[1] See Annex 1, page 249.

[2] Other lists of proposed international non-proprietary names can be found in *Chron. Wld Hlth Org.*, 1953, 7, 297; 1954, 8, 216, 313; 1956, 10, 28, 1957, 11, 231, 1958, 12, 102; *WHO Chronicle*, 1959, 13, 105, 152, 1960, 14, 168.

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
butadiazamidum butadiazamide	*N*-(5-butyl-1,3,4-thiadiazol-2-yl)-*p*-chlorobenzenesulfonamide
calcii benzamidosalicylas calcium benzamidosalicylate	calcium 4-benzamido-2-hydroxybenzoate
calcii carbimidum calcium carbimide	calcium cyanamide
carisoprodolum carisoprodol	2-carbamoyloxymethyl-2-isopropylcarbamoyloxymethylpentane
chlorphenoxaminum chlorphenoxamine	2-(1-*p*-chlorophenyl-1-phenylethoxy) ethyldimethylamine
chlorprothixenum chlorprothixene	*trans*-2-chloro-9-(3-dimethylaminopropylidene) thiaxanthen
chlorthenoxazinum chlorthenoxazine	2-(2-chloroethyl)-2,3-dihydro-4-oxobenz-1,3-oxazine
chymotrypsinum chymotrypsin	an enzyme, α-chymotrypsin, obtained in crystalline form from mammalian pancreas by aqueous acid extraction of its proenzyme, chymotrypsinogen, and subsequent conversion with trypsin to chymotrypsin
cinnamaverinum cinnamaverine	2-diethylaminoethyl 2-phenylcinnamate
colistinum colistin	an antibiotic substance obtained from cultures of *Aerobacillus colistinus*, or the same substance produced by any other means
cyclophosphamidum cyclophosphamide	*N*,*N*-bis(2-chloroethyl)-*N'*-(3-hydroxypropyl) phosphordiamidic acid cyclic ester
cyproheptadinum cyproheptadine	4-(5-dibenzo[*a*-*e*]cycloheptatrienylidene)-1-methylpiperidine
demecarii bromidum demecarium bromide	*N*,*N'*-decamethylenebis-{trimethyl(3-*N*-methylcarbamoyloxyphenyl) ammonium bromide}
demethylchlortetracyclinum demethylchlortetracycline	7-chloro-4-dimethylamino-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12, 12a-pentahydroxy-1,11-dioxo-2-naphthacenecarboxamide
dexbrompheniraminum dexbrompheniramine	(+)-(3-*p*-bromophenyl-3-pyrid-2'-ylpropyl) dimethylamine
dexchlorpheniraminum dexchlorpheniramine	(+)-(3-*p*-chlorophenyl-3-pyrid-2'-ylpropyl) dimethylamine
diampromidum diampromide	*N*-{2-[(methyl)phenethylamino]-propyl}propionanilide
dichlorisonum dichlorisone	9α-11β-dichloro-17α-hydroxypregna-1,4-diene-3,20-dione
dieldrinum dieldrin	product containing 85 per cent. of 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-*exo*-1,4-*endo*-5,8-dimethanonaphthalene
dimeprozanum dimeprozane	9-(3-dimethylaminopropylidene)-2-methoxyxanthene
dimethizolinum dimethizoline	1-(2-methoxyphenyl)-4-(3-methoxypropyl) piperazine
diphenoxylatum diphenoxylate	1-(3-cyano-3, 3-diphenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
dipiproverinum dipiproverine	2-piperidinoethyl α-phenyl-α-piperidinoacetate
ditophalum ditophal	diethyl dithioisophthalate
emylcamatum emylcamate	1-ethyl-1-methylpropyl carbamate
ethenzamidum ethenzamide	*o*-ethoxybenzamide
ethionamidum ethionamide	2-ethylpyridine-4-carbothionamide
ferrocholinatum ferrocholinate	a chelate prepared by reacting equimolar quantities of freshly precipitated ferric hydroxide with choline dihydrogen citrate
fibrinolysinym (humanum) fibrinolysin (human)	an enzyme obtained from human plasma by conversion of profibrinolysin with streptokinase to fibrinolysin
flumethiazidum flumethiazide	6-trifluoromethyl-7-sulfamoylbenzo-1,2,4(*4H*)-thiadiazine 1,1-dioxide
fluphenazinum fluphenazine	10-{3-[4-(2-hydroxyethyl)piperazin-1-yl]propyl}-2-trifluoromethylphenothiazine
glucagonum glucagon	polypeptide consisting of 29 amino acid residues which would possess a minimum molecular weight of 3482
griseofulvinum griseofulvin	7-chloro-4,6-dimethoxycoumaran-3-one-2-spiro-1′-(2′-methoxy-6′-methylcyclohex-2′-en-4′-one)
halopenii chloridum halopenium chloride	4-bromobenzyl-3-(4-chloro-5-methyl-2-isopropyl-phenoxy)propyldimethylammonium chloride
haloperidolum haloperidol	4-(*p*-chlorophenyl)-1-[3-(*p*-fluorobenzoyl)propyl]piperidin-4-ol
hexapropymatum hexapropymate	1-prop-2′-ynylcyclohex-1-yl carbamate
hexcarbacholini bromidum hexcarbacholine bromide	*N N′*-hexamethylenebis[(2-carbamoyloxyethyl)trimethylammonium bromide]
homochlorcyclizinum homochlorcyclizine	1-(*p*-chlorodiphenylmethyl)-4-methyl-1,4-diazacycloheptane
hydrargaphenum hydrargaphen	phenylmercuric methylenebis (2-naphthyl-3-sulfonate)
hydrochlorothiazidum hydrochlorothiazide	6-chloro-3,4-dihydro-7-sulfamoylbenzo-1,2,4-thiadiazine dioxide-1,1
hydroflumethiazidum hydroflumethiazide	3,4-dihydro-6-trifluoromethyl-7-sulfamoylbenzo-1,2,4-thiadiazine 1,1 dioxide
hydroxindasatum hydroxindasate	5-acetoxy-3-(2-aminoethyl)-1-(*p*-methoxybenzyl)-2-methylindole
hydroxystenozolum hydroxystenozole	17 β-hydroxy-17α-methylandrost-4 eno-[3,2-*c*]pyrazole
kanamycinum kanamycin	an antibiotic substance obtained from cultures of *Streptomycis kanamyceticus* or the same substance produced by any other means
levisoprenalinum levisoprenaline	1-(3,4-dihydroxyphenyl)-2-isopropylaminoethanol

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
mebhydrolinum mebhydrolin	5-benzyl-1,2,3,4-tetrahydro-2-methylpyrid[4,3-*b*] indole
medroxyprogesteroni acetas medroxyprogesterone acetate	17 α-acetoxy-6α-methylpregn-4-ene-3,20-dione
mepenzolate bromidum mepenzolate bromide	1-methyl-3-piperidyl benzilate methylbromide
mephenoxalonum mephenoxalone	5-(*o*-methoxyphenoxymethyl)-2-oxazolidinone
mestanolonum mestanolone	17 β-hydroxy-17-methyl-5α-androstan-3-one
metahexamidum metahexamide	*N*-(*m*-amino-*p*-methylbenzenesulfonyl)-*N'*-cyclohexylurea
methaqualonum methaqualone	2-methyl-3-*o*-tolyl-4-quinazolone
methazolamidum methazolamide	5-acetylimino-4-methyl-1,3,4-thiadiazoline-2-sulfonamide
methdilazinum methdilazine	10-(1-methyl-3-pyrrolidinylmethyl)phenothiazine
methotrexatum methotrexate	4-amino-10-methylpteroylglutamic acid
methylchromonum methylchromone	3-methylchromone
natrii carbazochromi sulfonas carbazochrome sodium sulfonate	sodium 2,3,5,6-tetrahydro-1-methyl-6-oxo-5-semicarbazonoindole-3-sulfonate
natrii hexacyclonas sodium hexacyclonate	sodium 1-hydroxymethylcyclohexylacetate
nialamidum nialamide	*N*-isonicotinoyl-*N'*-(β-*N*-benzylcarboxamidoethyl) hydrazine
nicothiazonum nicothiazone	nicotinaldehyde thiosemicarbazone
nifurethazonum nifurethazone	5-nitrofuraldehyde 2-(2-dimethylaminoethyl) semicarbazone
nihydrazonum nihydrazone	5-nitro-2-furaldehyde acetylhydrazone
norvinisteronum norvinisterone	17 β-hydroxy-17α-vinylestr-4-en-3-one
octatropini methylbromidum octatropine methylbromide	*N*-methyl-0-(2-propylpentanoyl) tropinium bromide
oxyphencycliminum oxyphencyclimine	(1,4,5,6-tetrahydro-1-methyl-2-pyrimidinyl)methyl α-cyclohexyl-α-phenylglycolate
palmidrolum palmidrol	*N*-(2-hydroxyethyl)palmitamide
paronomycinum paronomycin	an antibiotic substance obtained from cultures of certain *streptomyces* species, one of which is *streptomyces rimosus*, or the same substance produced by any other means
penicillinasum penicillinase	an enzyme obtained by fermentation from cultures of *B. Cereus*

Proposed International Non-Proprietary Name (Latin, English)	*Chemical Name or Description*
pentapiperidum pentapiperide	1-methylpiperid-4-yl 3-methyl-2-phenylvalerate
phanquinonum phanquinone	4,7-phenanthroline-5,6-quinone
phenampromidum phenampromide	*N*-{2-(1-methylpiperid-2-yl)ethyl}propionanilide
phenelzinum phenelzine	β-phenethylhydrazine
phenforminum phenformin	N^1 phenethylbiguanide
phenglutarimidum phenglutarimide	α-2-diethylaminoethyl-α-phenylglutarimide
phenprobamatum phenprobamate	3-phenylpropyl carbamate
phetharbitalum phetharbital	5,5-diethyl-1-phenylbarbituric acid
phytonadioli natrii diphosphas phytonadiol sodium diphosphate	2-methyl-3-phytyl-1,4-naphtalene di(sodium hydrogen phosphate)
pipamazinum pipamazine	10-[3-(4-carbamoylpiperidino)propyl]-2-chlorophenothiazine
pipethanatum pipethanate	2-piperidinoethyl benzilate
polycarbophilum polycarbophil	a synthetic, loosely crosslinked, hydrophilic resin of the polycarboxylic type
pralidoximi methiodidum pralidoxime methiodide	2-pyridine aldoxime methiodide
procainum procaine	β-diethylaminoethyl 4-aminobenzoate
promethazini theoclas promethazine theoclate	10-(2-dimethylaminopropyl)phenothiazine salt of 8-chlorotheophylline
propyli docetrizoas propyl docetrizoate	propyl 3-diacetylamino-2,4,6-triiodobenzoate
prothixenum prothixene	9-(3-dimethylaminopropylidene)thiaxanthen
protokylolum protokylol	1-(3,4-dihydroxyphenyl)-2-(α-methyl-3,4-methylenedioxyphenethyl-amino)ethanol
proxyphyllinum proxyphylline	7-2′-hydroxypropyltheophylline
styramatum styramate	2-hydroxyphenethyl carbamate
sulfachlorpyridazinum sulfachlorpyridazine	6-chloro-3-sulfanilamido pyridazine
sulfadimethoxinum sulfadimethoxine	2,4-dimethoxy-6-sulfanilamido pyrimidine
sulfaphenazolum sulfaphenazol	1-phenyl-5 sulfanilamido pyrazole

Proposed International Non-Proprietary Name (Latin, English)	Chemical Name or Description
sulfasomizolum sulfasomizol	3-methyl-5-sulfanilamido isothiazole
sulfatolamidum sulfatolamide	1-sulfanilylthiourea salt of *p*-sulfamoylbenzylamine
syrosingopinum syrosingopine	4-ethoxycarbonyl-3,5-dimethoxybenzoic acid ester of methyl reserpate
thiamphenicolum thiamphenicol	D(+)*threo*-2-dichloracetamido-1-(*p*-methylsulfonylphenyl)propane-1.3-diol
thihexinoli methylbromidum thihexinol methylbromide	*trans*-α,α-(dithien-2-yl)-(4-dimethylaminocyclohexyl) carbinol methylbromide
thioproperazinum thioproperazine	*N.N*-dimethyl-10-[3-(4-methylpiperazin-1-yl)propyl]-2-phenothiazine-sulfonamide
thiotepa thiotepa	*N′,N″,N‴*-triethylenethiophosphoramide
toloxychlorinolum toloxychlorinol	1,1′-[(3-*o*-tolyloxypropylene)dioxy]bis(2,2,2,-trichloroethanol)
triclazatum triclazate	1-methyl-3-pyrrolidinylmethyl benzilate
triclobisonii chloridum triclobisonium chloride	hexamethylenebis[dimethyl{1-methyl-3-(2,2,6-trimethylcyclohexyl) propyl}ammonium chloride] hemihydrate
trifluoperazinum trifluoperazine	2-trifluomethyl-10-[3-(1-methyl-4 piperazinyl) propyl]phenothiazine
triflupromazinum triflupromazine	2-trifluoromethyl-10-(3-dimethylaminopropyl) phenothiazine
trimethobenzamidum trimethobenzamide	*N*-(*p*-2-dimethylaminoethoxybenzyl)-3,4,5-trimethoxybenzamide
trolnitratum trolnitrate	triethanolamine trinitrate

Annex 1

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NON-PROPRIETARY NAMES FOR PHARMACEUTICAL PREPARATIONS *

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 designated for this purpose, for consideration in accordance with the " General principles for guidance in devising International Non-proprietary Names ", appended to this procedure.[1] 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.

* Text adopted by the Executive Board in resolution EB15 R7 (*Off. Rec. Wld Hlth Org.*, 1955, 60, 3)

[1] See Annex 2, page 251.

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 *WHO Chronicle* 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 *WHO Chronicle*.

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 *WHO Chronicle*.

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.

Annex 2

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
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 of the procaine type
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 having an antibacterial action
dionum	dione	dione	for anti-epileptics derived from oxazolidinedione
toinum	toin	toïne	for anti-epileptics derived from hydantoin
stigminum	stigmine	stigmine	for anticholinesterases of the physostigmine (eserine) type.

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 national pharmacopoeias, or in works of reference such as " New and Non-official Drugs ", should receive preferential consideration.

6. Cognizance should be taken of the names of closely related substances and, where desirable, the name should show this relationship.