

Reprinted from
WHO Chronicle, Vol. 15, No. 8, August 1961, pp. 314-320

**INTERNATIONAL NON-PROPRIETARY NAMES
FOR PHARMACEUTICAL PREPARATIONS**

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 Pharmaceutical unit of the World Health Organization within four months from 1 August 1961.

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 11²

*Proposed International
Non-Proprietary Name*
(Latin, English)

Chemical Name or Description

acetophenazinum	2-acetyl-10-[3-[4-(β-hydroxyethyl)piperazin-1-yl]propyl]phenothiazine
acetophenazine	
acidum xenazoicum	<i>p</i> -(α-ethoxy- <i>p</i> -phenylphenacylamino)benzoic acid
xenazoic acid	
acidum xenyhexenicum	2-(4-biphenyl)hex-4-enoic acid
xenyhexenic acid	
amitriptylinum	5-(3-dimethylaminopropylidene)dibenzo[<i>a, d</i>]-cyclohepta-1,4-diene
amitriptyline	
amphotolidum	<i>N</i> -(5- <i>p</i> -aminophenoxy-pentyl)phthalimide
amphotalide	
aspartocinum	an antibiotic substance obtained from cultures of <i>Streptomyces griseus</i>
aspartocin	var. <i>spiculis</i> or the same substance produced by any other means
bamethanum	2- <i>n</i> -butylamino-1- <i>p</i> -hydroxyphenylethanol
<u>bamethan</u>	
bendroflumethiazidum	3-benzyl-3,4-dihydro-7-sulfamoyl-6-trifluoromethylbenzo-1,2,4-thia-
bendroflumethiazide	diazine 1,1-dioxide
benziodaronum	2-ethyl-3-(4-hydroxy-3,5-diiodobenzoyl)benzofuran
benziodarone	
benzphetaminum	<i>N</i> -benzyl- <i>N</i> ,α-dimethylphenethylamine
benzphetamine	
bephenii hydroxynaphthoas	benzyl-dimethyl(2-phenoxyethyl)ammonium 3-hydroxy-2-naphthoate
bephenium hydroxynaphthoate	

¹ See Annex 1, page 318.

² Other lists of proposed international non-proprietary names can be found in *Chron. Wld Hlth Org.*, 1953, 7, 299; 1954, 8, 216, 313; 1956, 10, 28; 1957, 11, 231; 1958, 12, 102; *WHO Chronicle*, 1959, 13, 105, 152, 1960, 14, 163, 244. Lists of recommended international non-proprietary names were published in *Chron. Wld Hlth Org.*, 1953, 9, 185; *WHO Chronicle*, 1959, 13, 106.

*Proposed International
Non-Proprietary Name
(Latin, English)*

Chemical Name or Description

betamethasonum betamethasone	9 α -fluoro-11 β ,17 α , 21-trihydroxy-16 β -methylpregna-1,4-diene-3,20-dione
carbenzidum carbenzide	ethyl 2-(α -methylbenzyl)-1-hydrazinecarboxylate
carperidinum carperidine	ethyl 1-(2-carbamoylethyl)-4-phenylpiperidine-4-carboxylate
cetohexazinum cetohexazine	2,3-dihydro-4,6-dimethylpyridazin-3-one
chlordiazepoxidum chlordiazepoxide	7-chloro-2-methylamino-5-phenyl-3H-1,4-benzodiazepine 4-oxide
chlormidazolium chlormidazole	1- <i>p</i> -chlorobenzyl-2-methylbenzimidazole
chloroserpidinum chloroserpidine	10-chloro-11-demethoxyreserpine
chlorphenterminum chlorphentermine	<i>p</i> -chloro- α , α -dimethylphenethylamine
cinnarizinium cinnarizine	1- <i>trans</i> -cinnamyl-4-diphenylmethylpiperazine
clonitazenium clonitazene	2-(<i>p</i> -chlorobenzyl)-1-(2-diethylaminoethyl)-5-nitrobenzimidazole
cloquinatum cloquinatę	chloroquine di(8-hydroxy-7-iodoquinoline-5-sulfonate)
crotoniazidium crotoniazide	2-(2-butnylidene)-1-isonicotinoylhydrazide
detrothyroninum detrothyronine	D-3,5-diiodo-4-(3-iodo-4-hydroxyphenoxy)phenylalanine
dexpanthenolum dexpanthenol	D-(+)- α , γ -dihydroxy- <i>N</i> -(3-hydroxypropyl)- β , β -dimethylbutyramide
diisoprominum diisopromine	3,3-diphenylpropyldiisopropylamine
dimeflinum dimefline	8-dimethylaminomethyl-7-methoxy-3-methyl-2-phenylbenzo- γ -pyrone
disulfamidum disulfamide	5-chlorotoluene-2,4-disulfonamide
ethambutolum ethambutol	<i>N,N'</i> -bis(1-hydroxymethylpropyl)ethylenediamine
ethosuximidum ethosuximide	3-ethyl-3-methylpyrrolidine-2,5-dione
etonitazenium etonitazene	2-(<i>p</i> -ethoxybenzyl)-1-(2-diethylaminoethyl)-5-nitrobenzimidazole
fluocinoloni acetonidum fluocinolone acetonide	6 α ,9 α -difluoro-11 β ,21-dihydroxy-16 α ,17 α -isopropylidenedioxypregna-1,4-diene-3,20-dione
guanethidinum guanethidine	<i>N</i> -(2-perhydroazocin-1'-ylethyl)guanidine
haloprogesteronum haloprogesterone	17 α -bromo-6 α -fluoropregn-4-ene-3,20-dione

*Proposed International
Non-Proprietary Name
(Latin, English)*

Chemical Name or Description

hydromorphinolum hydromorphinol	14-hydroxy-7,8-dihydromorphine
hydroxocobalaminum hydroxocobalamin	α -(5,6-dimethylbenzimidazolyl)hydroxocobamide
iminophenimidum iminophenimide	3-ethyl-3-phenylpiperazine-2,6-dione
isoaminilum isoaminile	4-dimethylamino-2-isopropyl-2-phenylvaleronitrile
isocarboxazidum isocarboxazid	3- <i>N</i> -benzylhydrazinocarbonyl-5-methylisoxazole
isosorbidi dinitras isosorbide dinitrate	1,4,3,6-dianhydrosorbitol 2,5-dinitrate
mepivacainum mepivacaine	($\pm$)-1,2',6'-trimethylpipecolanilide
metaxalonum metaxalone	5-(3,5-xylyloxymethyl)oxazolidin-2-one
methastyridonum methastyridone	2,2-dimethyl-5-styryloxazolidin-4-one
methiomeprazinum methiomeprazine	($\pm$)-10-(3-dimethylamino-2-methylpropyl)-2-methylthiophenothiazine
methoserpidinum methoserpidine	11-demethoxy-10-methoxyreserpine
methoxyflurinum methoxyflurane	2,2-dichloro-1,1-difluoro-1-methoxyethane
methyclothiazidum methyclothiazide	6-chloro-3-chloromethyl-3,4-dihydro-2-methyl-7-sulfamoyl-1,2,4-benzothiadiazine 1,1-dioxide
methysergidum methysergide	<i>N</i> -[1-(hydroxymethyl)propyl]-4-methyl-(+)-lysergamide
metronidazolium metronidazole	1-(2-hydroxyethyl)-2-methyl-5-nitroimidazole
naphthonum naphthone	2-(2-hydroxynaphth-1-yl)cyclohexanone
natrii iopodas sodium iopodate	sodium β -(3-dimethylaminomethylencamino-2,4,6-triiodophenyl)propionate
nealbarbitalum nealbarbital	5-allyl-5-neopentylbarbituric acid
nifuroximum nifuroxime	5-nitro-2-furaldehyde oxime
nitrofurantomum nitrofurantoin	1-(5-nitro-2-furfurylidencamino)hydantoin
oxymetholonum oxymetholone	17-hydroxy-2-hydroxymethylenc-17 α -methylandrostan-3-one
phebutazinum phebutazine	1,4-di(2-phenylbutyryloxyethyl)piperazine
phencyclidinum phencyclidine	1-(1-phenylcyclohexyl)piperidine

*Proposed International
Non-Proprietary Name
(Latin, English)*

Chemical Name or Description

phendimetrazinum phenimetrazine	(+)-3,4-dimethyl-2-phenylmorpholine
phenethicillinum phenethicillin	(α -phenoxyethyl)penicillin
pheniprazinum pheniprazine	<i>N</i> , α -methylphenethylhydrazine
phenoperidinum phenoperidine	ethyl 1-(3-hydroxy-3-phenylpropyl)-4-phenylpiperidine-4-carboxylate
phenprocoumonum phenprocoumon	4-hydroxy-3-(1-phenylpropyl)2 <i>H</i> -chromen-2-one
phenterminum phentermine	α , α -dimethylphenethylamine
piperacetazinum piperacetazine	2-acetyl-10-[3-[4-(β -hydroxyethyl)piperidino]propyl]phenothiazine
piperylonum piperylone	4-ethyl-1-(1-methylpiperid-4-yl)-3-phenylpyrazol-5-one
piprocurarii iodium piprocurarium iodide	2-(2-diethylaminoethoxy)ethyl α -phenyl- α -piperidinoacetate dimethiodide
prampinum prampine	<i>O</i> -propionylatropine
pseudoephedrinum pseudoephedrine	(+)-2-methylamino-1-phenylpropan-1-ol
pyrophendatum pyrophendane	1-(1-methylpyrrolidin-3-ylmethyl)-3-phenylindane
pyroxaminum pyroxamine	3-(<i>p</i> -chlorodiphenylmethoxy)-1-methylpyrrolidine
quinethazonum quinethazone	7-chloro-2-ethyl-1,2,3,4-tetrahydro-6-sulfamoylquinazolin-4-one
rolitetetracyclinum rolitetetracycline	<i>N</i> -(pyrrolidin-1-ylmethyl)tetracycline
rotoxamini tartaras rotoxamine tartrate	(+)-, (–)-2-[<i>p</i> -chloro- α -(2-dimethylaminoethoxy)benzyl]pyridine <i>D</i> -tartrate
salazosulfadimidinum salazosulfadimidine	4'-(4,6-dimethylpyrimid-2-ylsulfamoyl)-4-hydroxyazobenzene-3-carboxylic acid
spironolactonum spironolactone	3-(7 α -acetylthio-17 β -hydroxy-3-oxo-4-androsten-17 α -yl)propionic acid γ -lactone
sulfamonomethoxinum sulfamonomethoxine	<i>N</i> ¹ -(6-methoxypyrimidin-4-yl)sulfanilamide
tetrabenazinum tetrabenazine	1,2,3,4,6,7-hexahydro-3-isobutyl-9,10-dimethoxy-2-oxo-11 <i>bH</i> -benzo [α]quinolizine
thiethylperazinum thiethylperazine	2-ethylthio-10-[3-(4-methylpiperazin-1-yl)propyl]phenothiazine
thiofuradenum thiofuradene	1-(5-nitrofurfurylideneamino)imidazolidine-2-thione
thiramum thiram	di(dimethylaminothiocarbamoyl)disulfide

*Proposed International
Non-Proprietary Name
(Latin, English)*

Chemical Name or Description

tranlycyprominum tranlycypromine	(±)- <i>trans</i> -2-phenylcyclopropylamine
trichlormethiazidum trichlormethiazide	6-chloro-3-dichloromethyl-3,4-dihydro-7-sulfamoylbenzo-1,2,4-thiadiazine 1,1-dioxide
trichlormethinum trichlormethine	tri(2-chloroethyl)amine
trimecainum trimecaine	<i>N</i> -(<i>α</i> -diethylaminoacetyl)-2,4,6-trimethylaniline
trimethoprimum trimethoprim	2,4-diamino-5-(3,4,5-trimethoxybenzyl)pyrimidine
triparanolum triparanol	2- <i>p</i> -chlorophenyl-1-[<i>p</i> -(2-diethylaminoethoxy)phenyl]-1- <i>p</i> -tolylethanol
tropenzilini bromidum tropenziline bromide	<i>O</i> -benzoyl-7-methoxy- <i>N</i> -methyltropinium bromide
tropicamidum tropicamide	<i>N</i> -ethyl- <i>N</i> -pyrid-4-yl-methyltropamide
valnoctamidum valnoctamide	2-ethyl-3-methylvaleramide
xenthioratum xenthiorate	2-diethylaminoethyl 2-(4-biphenyl)thiolobutyrate
xenygloxalum xenygloxal	biphenylenebisglyoxal

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 320.

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:

<i>Latin</i>	<i>English</i>	<i>French</i>	
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
stiginum	stigmine	stigmme	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.