

International Nonproprietary Names for Pharmaceutical Substances

In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,¹ notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

Comments on, or formal objections to, the proposed names may be forwarded by any person to the Pharmaceuticals unit of the World Health Organization within four months of the date of their publication in the *WHO Chronicle*, e.g. for List 45 Prop. INN not later than 30 September 1981.

The inclusion of a name in the lists of proposed international nonproprietary names does not imply any recommendation for the use of the substance in medicine or pharmacy.

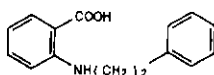
Proposed International Nonproprietary Names (Prop. INN): List 45²

Proposed International
Nonproprietary Name (Latin, English)

Chemical Name or Description, Molecular and Graphic Formulae
Chemical Abstracts Service (CAS) registry number

acidum enfenamicum
enfenamic acid

N-phenethylanthranilic acid
C₁₅H₁₅NO₂ 23049-93-6



Comprehensive information on the INN programme can be found in WHO Technical Report Series, No. 581, 1975 (*Nonproprietary Names for Pharmaceutical Substances* Twentieth Report of the WHO Expert Committee), ISBN 92 4 120581 4 (price: Sw. fr. 6.-); an account of this publication will be found in page 16 of this Supplement (Annex 2). All names from Lists 1-37 of Proposed International Nonproprietary Names, together with a molecular formula index, will be found in: *International Nonproprietary Names for Pharmaceutical Substances. Cumulative list No. 5, 1977*, World Health Organization, Geneva, 1977 (ISBN 92 4 056011 4) (price: Sw. fr. 48.-). This publication consists, in the main, of a computer printout which groups together all the proposed and recommended international nonproprietary names (INN)—in Latin, English, French, Russian, and Spanish—published up to March 1977. The printout also indicates in which of the 37 individual lists of proposed names and 16 lists of recommended names, each INN was originally published, and gives references to national nonproprietary names, pharmacopoeia monographs, and other sources. In addition, the list contains molecular formulae and Chemical Abstracts Service registry numbers. For easy reference, national nonproprietary names that differ from INN, molecular formulae, and Chemical Abstracts Service registry numbers are indexed in a series of annexes. A final annex describes the procedure for selecting recommended INN and outlines the general principles to be followed in devising these names. All the textual material published in this volume appears in both English and French.

These publications may be obtained, direct or through booksellers, from the sales agents listed on the back cover of the *WHO Chronicle*. Orders from countries where sales agents have not yet been appointed may be addressed to: World Health Organization, Distribution and Sales Service, 1211 Geneva 27, Switzerland.

¹ See Annex 1, p. 15.

² Other lists of proposed international nonproprietary 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, 168, 244; 1961, 15, 314; 1962, 16, 385; 1963, 17, 389; 1964, 18, 433; 1965, 19, 446; 1966, 20, 216; 1967, 21, 70, 478, 1968, 22, 112, 407; 1969, 23, 183, 418, 1970, 24,

119, 413; 1971, 25, 123, 415; 1972, 26, 121, 414; 1973, 27, 120, 330; 1974, 28, 133, supplements to *WHO Chronicle*, 1974, Vol. 28, No. 9, 1975, Vol. 29, No. 3, No. 9, 1976, Vol. 30, No. 3, No. 9; 1977, Vol. 31, No. 3, No. 9, 1978, Vol. 32, No. 3, No. 9; 1979, Vol. 33, No. 3, No. 9; 1980, Vol. 34, No. 3, No. 9.

Lists or recommended international nonproprietary names were published

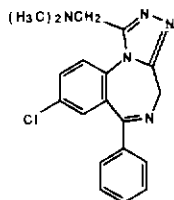
in *Chron. Wld Hlth Org.*, 1955, 9, 185; *WHO Chronicle*, 1959, 13, 106, 463; 1962, 16, 101; 1965, 19, 165, 206, 249; 1966, 20, 421, 1967, 21, 538; 1968, 22, 463; 1969, 23, 490; 1970, 24, 526; 1971, 25, 476; 1972, 26, 476; 1973, 27, 453; supplements to *WHO Chronicle*, 1974, Vol. 28, No. 10; 1975, Vol. 29, No. 10, 1976, Vol. 30, No. 10; 1977, Vol. 31, No. 10; 1978, Vol. 32, No. 10; 1979, Vol. 33, No. 10, 1980, Vol. 34, No. 10.

Proposed International
Nonproprietary Name (Latin, English)

Chemical Name or Description, Molecular and Graphic Formulae
Chemical Abstracts Service (CAS) registry number

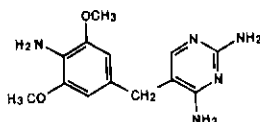
adinazolamum
adinazolam

8-chloro-1-[(dimethylamino)methyl]-6-phenyl-4H-s-triazolo[4,3-a][1,4]benzo-
diazepine
 $C_{19}H_{18}ClN_5$ 37115-32-5



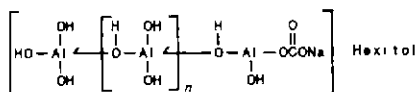
aditerenum
aditeren

2,4-diamino-5-(4-amino-3,5-dimethoxybenzyl)pyrimidine
 $C_{13}H_{17}N_5O_2$ 56066-19-4



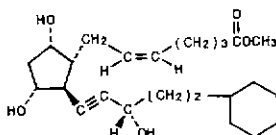
alexitolum natricum
alexitol sodium

sodium polyhydroxyaluminium monocarbonate hexitol complex
where $n = 0$ or an integer, controlled by the preparative conditions
66813-51-2



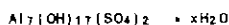
alfaprostolum
alfaprostol

methyl (Z)-7-[(1R,2S,3R,5S)-2-[(3S)-5-cyclohexyl-3-hydroxy-1-pentynyl]-3,5-
dihydroxycyclopentyl]-5-heptenoate
 $C_{24}H_{38}O_5$ 74176-31-1



alusulfum
alusulf

heptaaluminum heptadecahydroxide bis(sulfate) hydrate
 $Al_7H_{17}O_{25}S_2 \cdot xH_2O$ 61115-28-4

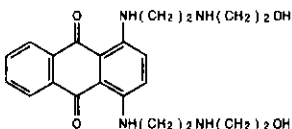


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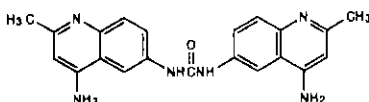
ametantronum
ametantrone

1,4-bis[[2-[(2-hydroxyethyl)amino]ethyl]amino]anthraquinone
 $C_{22}H_{28}N_4O_4$ 64862-96-0



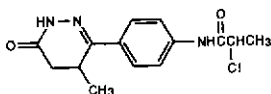
aminoquinuridum
aminoquinuride

1,3-bis(4-amino-2-methyl-6-quinolyl)urea
 $C_{21}H_{20}N_6O$ 3811-56-1



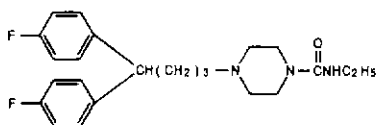
amipizonum
amipizone

2-chloro-4'-(1,4,5,6-tetrahydro-4-methyl-6-oxo-3-pyridazinyl)propionanilide
 $C_{14}H_{16}ClN_3O_2$ 69635-63-8



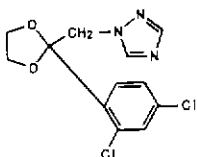
amperozidum
amperozide

4-[4-bis(p-fluorophenyl)butyl]-N-ethyl-1-piperazinecarboxamide
 $C_{23}H_{29}F_2N_3O$ 75558-90-6



azonazolum
azonazole

1-[[2-(2,4-dichlorophenyl)-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole
 $C_{12}H_{11}Cl_2N_3O_2$ 60207-31-0

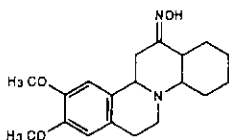


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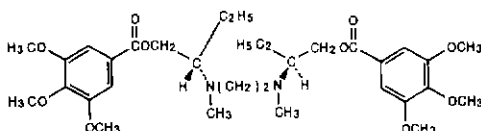
benolizimum
benolizime

1,2,3,4,4a,6,7,11b,12,13a-decahydro-9,10-dimethoxy-13H-dibenzo[a,f]quinolizin-
13-one oxime
 $C_{19}H_{26}N_2O_3$ 61864-30-0



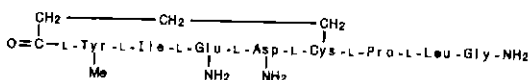
butobendinum
butobendine

(+)-(S,S)-ethylenebis[(methylimino)(2-ethylethylene)] bis(3,4,5-trimethoxyben-
zoate)
 $C_{32}H_{46}N_2O_{10}$ 55769-65-8



carbetocinum
carbetocin

1-butyric acid-2-[3-(p-methoxyphenyl)-L-alanine]oxytocin
 $C_{45}H_{69}N_{11}O_{12}S$ 37025-55-1

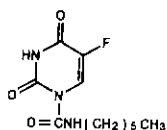


carmellosum
carmellose

polycarboxymethyl ether of cellulose
9000-11-7

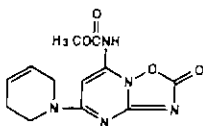
carmofurum
carmofur

5-fluoro-N-hexyl-3,4-dihydro-2,4-dioxo-1(2H)-pyrimidinecarboxamide
 $C_{11}H_{16}FN_3O_3$ 61422-45-5



carprazidilum
carprazidil

methyl 5-{3,6-dihydro-1(2H)-pyridyl}-2-oxo-2H-[1,2,4]oxadiazolo[2,3-a]pyrimi-
dine-7-carbamate
 $C_{12}H_{13}N_5O_4$ 68020-77-9

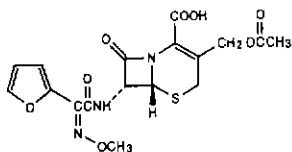


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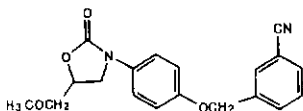
cefuracetimum
cefuracetime

(6*R*,7*R*)-7-[2-(2-furyl)glyoxylamido]-3-(hydroxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid 7²-(*Z*)-(O-methyloxime), acetate (ester)
C₁₇H₁₇N₃O₆S 39685-31-9



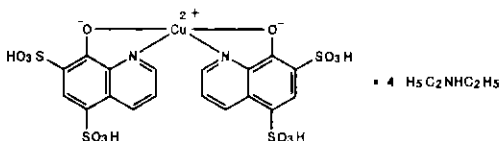
cimoxatonum
cimoxatone

α -[*p*-[5-(methoxymethyl)-2-oxo-3-oxazolidinyl]phenoxy]-*m*-tolunitrile
C₁₉H₁₈N₂O₄ 73815-11-9



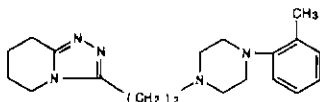
cuproxolinum
cuproxoline

bis(dihydrogen 8-hydroxy-5,7-quinolinedisulfonato)copper, compound with diethylamine (1 : 4)
C₁₈H₁₂CuN₂O₁₄S₄ · 4C₄H₁₁N or C₃₄H₅₆CuN₆O₁₄S₄ 13007-93-7



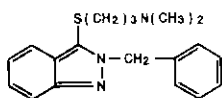
dapiprazolum
dapiprazole

5,6,7,8-tetrahydro-3-[2-(4-*o*-tolyl)-1-piperazinyl]ethyl]-*s*-triazolo[4,3-*a*]pyridine
C₁₉H₂₇N₅ 72822-12-9



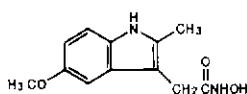
dazidaminum
dazidamine

2-benzyl-3-[[3-(dimethylamino)propyl]thio]-2*H*-indazole
C₁₉H₂₃N₃S 75522-73-5



deboxametum
deboxamet

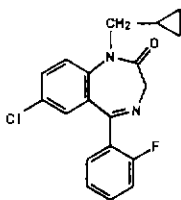
5-methoxy-2-methylindole-3-acetohydroxamic acid
C₁₂H₁₄N₂O₃ 34024-41-4



$$\text{H}_3\text{C}(\text{CH}_2)_9\text{OCH}_2\underset{\text{OH}}{\text{CH}}\text{CH}_2\text{NH}_2$$
CN1CCCC1[C@H]2C[C@@H](C)[C@H]3C=C[C@@H](O)C=C3C1CCNCC1CNCC(=O)N2CCCCC2

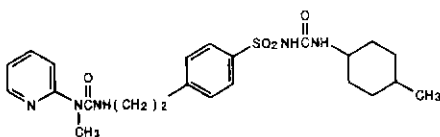
flutoprazepamum
flutoprazepam

7-chloro-1-(cyclopropylmethyl)-5-(*o*-fluorophenyl)-1,3-dihydro-2*H*-1,4-benzodiazepin-2-one
C₁₉H₁₅ClFN₂O 25967-29-7



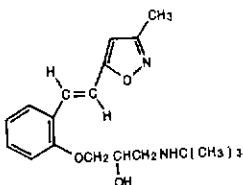
glisamuridum
glisamuride

1-methyl-3-[*p*-[[3-(4-methylcyclohexyl)ureido]sulfonyl]phenethyl]-1-(2-pyridyl)-urea
C₂₃H₃₁N₅O₄S 52430-65-6



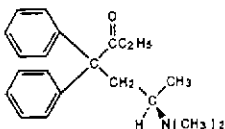
isoxaprololum
isoxaprolol

(±)-(E)-1-(*tert*-butylamino)-3-[*o*-[2-(3-methyl-5-isoxazolyl)vinyl]phenoxy]-2-propanol
C₁₉H₂₈N₂O₃ 75949-60-9



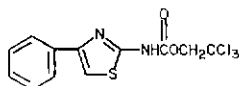
levomethadonum
levomethadone

(-)-(R)-6-(dimethylamino)-4,4-diphenyl-3-heptanone
C₂₁H₂₇NO 125-58-6



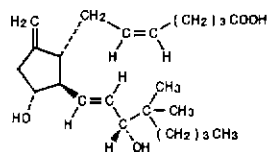
lotifazolum
lotifazole

2,2,2-trichloroethyl 4-phenyl-2-thiazolecarbamate
 $C_{12}H_9Cl_3N_2O_2S$ 71119-10-3



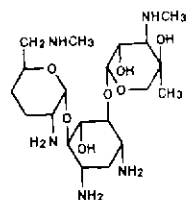
meteneprostum
meteneprost

(Z)-7-[(1*R*,2*R*,3*R*)-3-hydroxy-2-[(*E*)-(3*R*)-3-hydroxy-4,4-dimethyl-1-octenyl]-5-methylenecyclopentyl]-5-heptenoic acid
 $C_{23}H_{38}O_4$ 61263-35-2



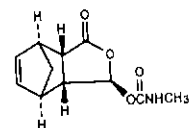
micronomicinum
micronomicin

O-2-amino-2,3,4,6-tetradecoxy-6-(methylamino)- α -D-*erythro*-hexopyranosyl-(1 \rightarrow 4)-*O*-[3-deoxy-4-*C*-methyl-3-(methylamino)- β -L-arabinopyranosyl-(1 \rightarrow 6)]-2-deoxy-D-streptamine
 $C_{26}H_{41}N_5O_7$ 52093-21-7



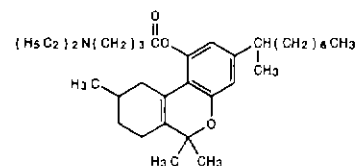
moxadolum
moxadolen

methylcarbamic acid, ester with (3*R**,3*aR**,4*S**,7*R**,7*aS**)-3*a*,4,7,7*a*-tetrahydro-3-hydroxy-4,7-methanoisobenzofuran-1(3*H*)-one
 $C_{11}H_{13}NO_4$ 75992-53-9



naboctatum
naboctate

7,8,9,10-tetrahydro-6,6,9-trimethyl-3-(1-methyloctyl)-6*H*-dibenzo[*b,d*]pyran-1-yl 4-(diethylamino)butyrate
 $C_{33}H_{53}NO_3$ 74912-19-9

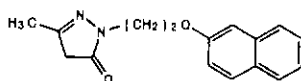


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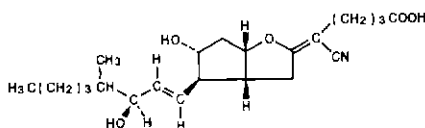
nafazatromum
nafazatrom

3-methyl-1-[2-(2-naphthoxy)ethyl]-2-pyrazolin-5-one
C₁₆H₁₆N₂O₂ 59040-30-1



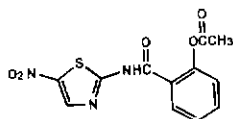
nilprostum
nilprost

(*E*)-(3*aR*,4*R*,5*R*,6*aS*)- δ -cyano-3,3*a*,4,5,6,6*a*-hexahydro-5-hydroxy-4-[(*E*)-(3*S*,4*RS*)-3-hydroxy-4-methyl-1-octenyl]-2*H*-cyclopenta[*b*]furan- Δ^2 -valeric acid
C₂₂H₃₃NO₅ 71097-83-1



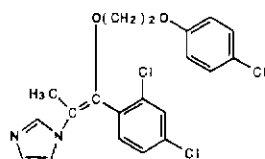
nitazoxanidum
nitazoxanide

N-(5-nitro-2-thiazolyl)salicylamide acetate (ester)
C₁₂H₉N₃O₅S 55981-09-4



omoconazolum
omoconazole

(*E*)-1-[2,4-dichloro- β -[2-(*p*-chlorophenoxy)ethoxy]- α -methylstyryl]imidazole
C₂₀H₁₇Cl₃N₂O₂ 74512-12-2

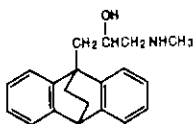


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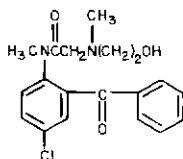
oxaprotilinum
oxaprotiline

α -[(methylamino)methyl]-9,10-ethanoanthracene-9(10H)-ethanol
 $C_{20}H_{23}NO$ 56433-44-4



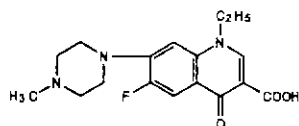
oxazafonum
oxazafone

2'-benzoyl-4'-chloro-2-[(2-hydroxyethyl)methylamino]-N-methylacetanilide
 $C_{19}H_{21}ClN_2O_3$ 70541-17-2



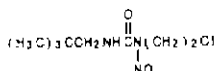
pefloxacinum
pefloxacin

1-ethyl-6-fluoro-1,4-dihydro-7-(4-methyl-1-piperazinyl)-4-oxo-3-quinolinecarboxylic acid
 $C_{17}H_{20}FN_3O_3$ 70458-92-3



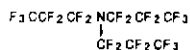
pentamustinum
pentamustine

1-(2-chloroethyl)-3-neopentyl-1-nitrosourea
 $C_8H_{15}ClN_3O_2$ 73105-03-0



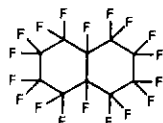
perfluoraminum
perfluamine

heneicosafluorotripropylamine
 $C_9F_{21}N$ 338-83-0



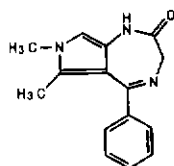
perflunafenum
perflunafene

octadecafluorodecahydronaphthalene
 $C_{10}F_{18}$ 306-94-5



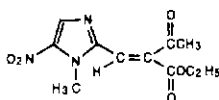
premazepamum
premazepam

3,7-dihydro-6,7-dimethyl-5-phenylpyrrolo[3,4-*e*]-1,4-diazepin-2(1*H*)-one
 $C_{15}H_{15}N_3O$ 57435-86-6



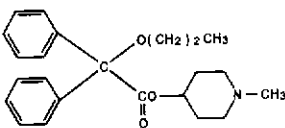
propenidazolium
propenidazole

ethyl *trans*- α -acetyl-1-methyl-5-nitroimidazole-2-acrylate
 $C_{17}H_{13}N_3O_5$ 76448-31-2



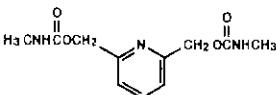
propiverinum
propiverine

1-methyl-4-piperidyl diphenylpropoxyacetate
 $C_{23}H_{29}NO_3$ 60569-19-9



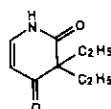
pyricarbatum
pyricarbate

2,6-pyridinediyl dimethylene bis(methylcarbamate)
 $C_{11}H_{15}N_3O_4$ 1882-26-4



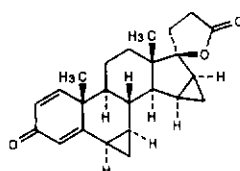
pyrithyldionum
pyrithyldione

3,3-diethyl-2,4(1*H*,3*H*)-pyridinedione
C₉H₁₃NO₂ 77-04-3



spirorenonum
spirorenone

(6*R*,7*R*,8*R*,9*S*,10*R*,13*S*,14*R*,15*S*,16*S*,17*S*)-3',4',6,7,8,9,11,12,13,14,15,16,20,21-tetradecahydro-10,13-dimethylspiro[17*H*-dicyclopropa[6,7:15,16]cyclopenta[*a*]phenanthrene-17,2'(5'*H*)-furan]-3(10*H*),5'-dione or 17-hydroxy-6β,7β:15β,16β-dimethylene-3-oxo-17α-pregna-1,4-diene-21-carboxylic acid, γ-lactone
C₂₄H₂₈O₃ 74220-07-8

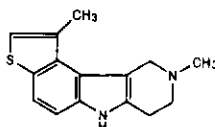


thymostimulinum
thymostimulin

polypeptide immunostimulant factor extracted from thymus of mammalian species. The source of the product should be indicated, e.g. thymostimulin (calf)

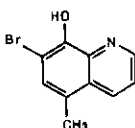
tienocarinum
tienocarbine

7,8,9,10-tetrahydro-1,9-dimethyl-6*H*-pyrido[4,3-*b*]thieno[3,2-*e*]indole
C₁₅H₁₆N₂S 75458-65-0



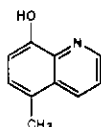
tilbroquinolum
tilbroquinol

7-bromo-5-methyl-8-quinolinol
C₁₀H₈BrNO 7175-09-9



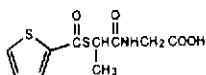
tiliquinolum
tiliquinol

5-methyl-8-quinolinol
C₁₀H₉NO 5541-67-3



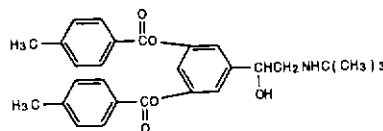
tiofacicum
tiofacic

N-(2-mercaptopropionyl)glycine 2-thiophenecarboxylate (ester)
C₁₀H₁₁NO₄S₂ 72324-18-6



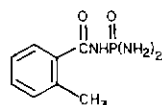
tobuterolum
tobuterol

(±)-5-[2-(*tert*-butylamino)-1-hydroxyethyl]-*m*-phenylene di-*p*-toluate
C₂₈H₃₁NO₅ 75626-99-2



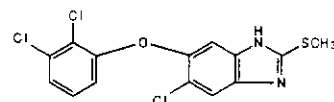
tolfamidum
tolfamide

N-(diaminophosphinyl)-*o*-toluamide
C₈H₁₂N₃O₂P 70788-29-3



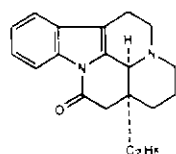
triclabendazolum
abendazole

5-chloro-6-(2,3-dichlorophenoxy)-2-(methylthio)benzimidazole
C₁₄H₉Cl₃N₂OS 68786-66-3



vinburninum
vinburnine

3α,16α-eburnamonine
C₁₉H₂₂N₂O 4880-88-0



AMENDMENTS TO PREVIOUS LISTS

Cumulative List No. 5, 1977

International Nonproprietary Names (INN) for Pharmaceutical Substances:

p. 116	<i>delete</i>	<i>insert</i>
	levarterenolum levarterenol	norepinephrinum norepinephrine

Supplement to Vol. 29, No. 3

International Nonproprietary Names (Prop. INN): List 33

p. 2	<i>delete</i>	<i>insert</i>
	acidum etodolicum etodolic acid	etodolacum etodolac

Supplement to Vol 33, No. 9

International Nonproprietary Names (Prop. INN): List 42

p. 17	<i>delete</i>	<i>insert</i>
	sulerginum sulergine	disulerginum disulergine

Supplement to Vol. 34, No. 3

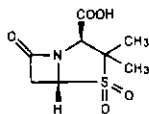
International Nonproprietary Names (Prop. INN): List 43

p. 17	<i>delete</i>	<i>insert</i>
	triaconazolum triaconazole	terconazolum terconazole

Supplement to Vol. 34, No. 9

International Nonproprietary Names (Prop. INN): List 44

p. 3	<i>delete</i>	<i>insert</i>
	alisactidum alisactide	alsactidum alsactide
p. 10	enilconazolum enilconazole	replace CAS registry number by: 35554-44-0
p. 21	sulbactamum sulbactam	insert the following graphic formula:



p. 25	<i>delete</i>	<i>insert</i>
	vintenatum vintenate	vincatenatum vincatenate
p. 27	aclatonii napadisilas aclatonium napadisilate	cancel amendment and retain graphic formula in List 43 prop INN

Annex 1

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES *

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

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

2. Such proposals shall be submitted to 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 Nonproprietary Names" appended to this procedure. The name used by the person discovering or first developing and marketing a pharmaceutical substance 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 nonproprietary name is being considered.

A. Such notice shall be given by publication in the *Chronicle of the World Health Organization*¹ 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*.¹

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*.¹

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 nonproprietary 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 nonproprietary name.

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

A. request that it be recognized as the nonproprietary 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.

* Text adopted by the Executive Board of WHO in resolution EB15.R7 (Off. Rec. Wild Hlth Org., 1955, 60, 3) and amended by the Board in resolution EB43.R9 (Off. Rec. Wild Hlth Org., 1969, 173, 10).

¹ The title of this publication was changed to *WHO Chronicle* in January 1959.

GENERAL PRINCIPLES FOR GUIDANCE IN DEVISING INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES

1. International Nonproprietary Names (INN) should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names in common use.

2. The INN for a substance belonging to a group of pharmacologically related substances should, where appropriate, show this relationship. Names that are likely to convey to a patient an anatomical, physiological,

pathological or therapeutic suggestion should be avoided.

These primary principles are to be implemented by using the following secondary principles

3. In devising the INN of the first substance in a new pharmacological group, consideration should be given to the possibility of devising suitable INN for related substances, belonging to the new group.

4. In devising INN for acids, one-word names are preferred; their salts should be named without modifying the acid name, e.g. "oxacillin" and "oxacillin sodium", "ibufenac" and "ibufenac sodium".

5. INN for substances which are used as salts should in general apply to the active base or the active acid. Names for different salts or esters of the same active substance should differ

only in respect of the name of the inactive acid or the inactive base.

For quaternary ammonium substances, the cation and anion should be named appropriately as separate components of a quaternary substance and not in the amine-salt style.

6. The use of an isolated letter or number should be avoided; hyphenated construction is also undesirable.

7. To facilitate the translation and pronunciation of INN, "f" should be

used instead of "ph", "t" instead of "th", "e" instead of "ae" or "oe", and "i" instead of "y"; the use of the letters "h" and "k" should be avoided.

8. Provided that the names suggested are in accordance with these principles, names proposed by the person discovering or first developing and marketing a pharmaceutical preparation, or names already officially in use in any country, should receive preferential consideration.

9. Group relationship in INN (see Guiding Principle 2) should if possible be shown by using a stem from the following list. The stem should only be used for substances of the appropriate group. Where a stem is shown without any hyphens it may be used anywhere in the name.

Subsidiary group relationships should be shown by devising INN which show similarities to and are analogous with a previously named substance.

Latin	English	French
-actidum	-actide	-actide
andr	andr	andr
-arolum	-arol	-arol
-azepamum	-azepam	-azépam
bol	bol	bol
-buzonium	-buzone	-buzone
-cainum	-caine	-caine
cef-	cef-	céf-
-cillinum	-cillin	-cilline
cort	cort	cort
-cyclinum	-cycline	-cycline
estr	estr	estr
-fibratum	-fibrate	-fibrate
-forminum	-formin	-formine
gest	gest	gest
gli-	gli-	gli-
io-	io-	io-
-ium	-ium	-ium
-metacinum	-metacin	-métacine
-mycinum	-mycin	-mycine
-nidazolum	-nidazole	-nidazole
-ololum	-olol	-olol
-onidum	-onide	-onide
-orexum	-orex	-orex
-praminum	-pramine	-pramine
-profenum	-profen	-profène
prost	prost	prost
-relinum	-relin	-réline
sulfa-	sulfa-	sulfa-
-terolum	-terol	-térol
-tizidum	-tizide	-tizide
-verinum	-verine	-vérine

synthetic polypeptides with a corticotrophin-like action
steroids, androgens
anticoagulants of the dicoumarol group
substances of the diazepam group
steroids, anabolic
anti-inflammatory analgesics of the phenylbutazone group
local anaesthetics
antibiotics, derivatives of cephalosporanic acid
antibiotics, derivatives of 6-aminopenicillanic acid
corticosteroids, except those of the prednisolone group
antibiotics of the tetracycline group
estrogenic substances
substances of the clofibrate group
hypoglycemics of the phenformin group
steroids, progestogens
sulfonamide hypoglycemics
iodine-containing contrast media
quaternary ammonium compounds
anti-inflammatory substances of the indometacin group
antibiotics, produced by *Streptomyces* strains
antiprotozoal substances of the metronidazole group
 β -adrenergic blocking agents of the propranolol group
steroids for topical use, containing an acetal group
anorexigenic agents, phenethylamine derivatives
substances of the imipramine group
anti-inflammatory substances of the ibuprofen group
prostaglandins
hypophyseal hormone release-stimulating peptides
sulfonamides, anti-infective
bronchodilators, phenethylamine derivatives
diuretics of the chlorothiazide group
spasmolytics with a papaverine-like action

Annex 2

NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES: TWENTIETH REPORT OF THE WHO EXPERT COMMITTEE

In its twentieth report¹ the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances reviewed the general principles for devising, and the procedures for selecting, international nonproprietary names (INN) in the light of developments in pharmaceutical compounds in recent years. The most significant recent change has been the extension to the naming of synthetic chemical substances of the practice previously used for substances originating in or derived from

natural products. This practice involves employing a characteristic "stem" indicative of a common property of the members of a group. The reasons for, and the implications of, the change are fully discussed. Also reported is the intention to change the practice with regard to the nomenclature of individual members of polymeric series.

Other sections of the report concern instructions to be followed by bodies making application for international nonproprietary names, the

availability of computer-printed cumulative lists of international nonproprietary names, information supplied by WHO Member States concerning their official use of national or international names for pharmaceutical products, and proposals relative to the withdrawal of international nonproprietary names allocated to substances that are no longer in use.

The official texts relating to the procedures for selecting, and general guidance for devising, international nonproprietary names are reproduced

in two annexes to the report. Other annexes give examples of international nonproprietary names that incorporate selected stems, the most frequently used initial groups of letters in international nonproprietary

names, a historical review of the programme of selecting international nonproprietary names, some useful literature references, and a model of the form to be used in all applications for international nonproprietary names.

¹ WHO Technical Report Series, No. 581, 1975 (*Nonproprietary Names for Pharmaceutical Substances*. Twentieth Report of the WHO Expert Committee), ISBN 92 4 120581 4. Price. Sw fr 8.-