




ANNEX I. Non-fentanyl opioids^a and related new psychoactive substances* with no known legitimate uses

No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No. ^d	CAS No. ^d (HCl)	Intl. Ctrl. ^e
1	Unknown	(2-[4-(2-methoxyphenyl)piperaziN-1-yl]-1,2-diphenylethanol)	Diphenpipenol isomer				
2	Unknown	2-Fluoro MT-45	1-Cyclohexyl-4-(1-(2-fluorophenyl)-2-phenylethyl)piperazine; GTPL10725; 2-Fluoro I-C6	2F-MT-45			
3	Unknown	2-Fluoro-Viminol	2-[Di(butaN-2-yl)amino]-1-[1-[(2-fluorophenyl)methyl]pyrrol-2-yl]ethanol; 2-(disec-butylamino)-1-[1-[(2-fluorophenyl)methyl]pyrrol-2-yl]ethanol; 2-F viminol; 2F-Viminol		63880-43-3		
4	Unknown	2-Methyl-AP-237	1-[2-methyl-4-[(E)-3-phenylprop-2-enyl]piperaziN-1-yl]butaN-1-one; 1-(4-Cinnamyl-2-methylpiperaziN-1-yl)butaN-1-one; 2-methyl bucinnazine; 2-Methyl-1-(1-oxobutyl)-4-(3-phenyl-2-propenyl)piperazine; N-Butyryl-N'-cinnamyl-2-methylpiperazine; 1-(2-methyl-4-(3-phenyl-2-propenyl)-1-piperazinyl)-1-butanone		98608-61-8	98608-61-8	
5	Unknown	2-Naphthyl U-47700	N-[(1R,2R)-2-(Dimethylamino)cyclohexyl]-N-methylnaphthalene-2-carboxamide; N-methyl-N-[2-(N',N'-dimethylamino)cyclohexyl]-2-naphthamide; trans-N-[2-(N',N'-dimethylamino)cyclohexyl]-N-methyl-2-naphthamide; b-U10; beta-U10				
6	Unknown	3,4-Methylenedioxy U-47700	N-[2-(Dimethylamino)cyclohexyl]-N-methyl-1,3-benzodioxole-5-carboxamide; 3,4-Methylenedioxy-N-[2-(dimethylamino)cyclohexyl]-N-methylbenzamide	MD-U-47700	-	-	
7	Unknown	Acetoxymethylketobemidone	3-(4-Acetyl-1-methylpiperidiN-4-yl)-phenyl acetate; 1-[4-[3-(acetyloxy)phenyl]-1-methyl-4-piperidinyl]-ethanone	O-AMKD		878766-13-3	
8	No Known Use	AH-7921	3,4-Dichloro-N-[[1-(dimethylamino)cyclohexyl]methyl]benzamide; 1-(3,4-dichlorobenzamidomethyl)cyclohexyldimethylamine ; Doxylam	AH-7921	55154-30-8	41804-96-0	1961/I
9	Unknown	AH-8533	2-Chloro-N-[[1-(dimethylamino)cyclohexyl]methyl]-benzamide; N-[[1-(dimethylamino)cyclohexyl]methyl](2-chlorophenyl)carboxamide	AH-8533	759397-79-0	-	
10	Unknown	AP-238	1-[2,6-dimethyl-4-[(E)-3-phenylprop-2-enyl]piperaziN-1-yl]propaN-1-one; 1-(4-cinnamyl-2,6-dimethylpiperaziN-1-yl)propaN-1-one; 1-Propionyl-4-cinnamyl-cis-2,6-dimethylpiperazine; 1-(2,6-dimethyl-4-(3-phenyl-2-propenyl)-1-piperazinyl)-1-propanone		4204-01-7		
11	Unknown	Bromadol	4-(4-bromophenyl)-4-(dimethylamino)-1-(2-phenylethyl)cyclohexanol	BDPC	77239-98-6 (trans);108914-97-0		
12	Unknown	Bromadoline	4-bromo-N-[2-(dimethylamino)cyclohexyl]benzamide; trans-4-bromo-N-2-(dimethylamino)cyclohexyl]-benzamide	U-47931E	67579-24-2		



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13	Unknown	Brorphine	3-[1-[1-(4-bromophenyl)ethyl]-4-piperidyl]-1 <i>H</i> -benzimidazol-2-one; 1-(1-(1-(4-bromophenyl)ethyl)piperidin-4-yl)-1,3-dihydro-2 <i>H</i> -benzimidazol-2-one; 1-(1-(1-(4-bromophenyl)ethyl)piperidin-4-yl)-1,3-dihydro-2 <i>H</i> -benzo[<i>d</i>]imidazol-2-one		2244737-98-0		
14	Unknown	Butonitazene	<i>N,N</i> -Diethyl-5-nitro-2-[(4-butoxyphenyl)methyl]-1 <i>H</i> -benzimidazole-1-ethanamine; 2-(2-(4-butoxybenzyl)-5-nitro-1 <i>H</i> -benzimidazol-1-yl)- <i>N,N</i> -diethylethylamine		95810-54-1	118951-34-1	
15	Unknown	Carbonyl-Bromadol	(4-Bromophenyl)-(1-(dimethylamino)-4-hydroxy-4-phenethylcyclohexyl)methanone				
16	Unknown	Desmethylnormamide	4-Morpholino-2,2-diphenyl-1-(pyrrolidin-1-yl)butan-1-one; 4-morpholin-4-yl-2,2-diphenyl-1-pyrrolidin-1-ylbutan-1-one; 1-(4-morpholino-2,2-diphenylbutyl)-pyrrolidine; 4-(4-Oxo-3,3-diphenyl-4-pyrrolidin-1-ylbutyl)morpholine		1767-88-0		
17	Unknown	Dipyanone	Dipyanone pyrrolidinyl; 4,4-Diphenyl-6-(pyrrolidin-1-yl)heptan-3-one; Dipyanone pyrrolidinyl; Dipianone				
18	Unknown	Etodesnitazene	2-[2-[(4-ethoxyphenyl)methyl]benzimidazol-1-yl]- <i>N,N</i> -diethylethylamine; <i>N,N</i> -diethyl-2-[[[4-ethoxyphenyl)methyl]-1 <i>H</i> -benzimidazol-1-yl]-ethan-1-amine; Desnitroetonitazene; Etazone; Ethazen; 2-(2-(4-Ethoxybenzyl)-1 <i>H</i> -benzo[<i>d</i>]imidazol-1-yl)- <i>N,N</i> -diethylethylamine; 2-(2-(4-ethoxybenzyl)-1 <i>H</i> -benzimidazol-1-yl)- <i>N,N</i> -diethylethylamine	Etazene	14030-76-3	1071546-16-1; 2598176-60-2 (HCl)	
19	Unknown	Etonitazepipne	2-(4-Ethoxybenzyl)-5-nitro-1-(2-(piperidin-1-yl)ethyl)-1 <i>H</i> -benzimidazole; 2-(4-ethoxybenzyl)-5-nitro-1-(2-(piperidin-1-yl)ethyl)-1 <i>H</i> -benzo[<i>d</i>]imidazole				
20	Unknown	Etonitazepyne	2-(4-Ethoxybenzyl)-5-nitro-1-(2-(pyrrolidin-1-yl)ethyl)-1 <i>H</i> -benzimidazole; <i>N</i> -Pyrrolidino etonitazene				
21	Unknown	Faxeladol	3-((1 <i>R</i> ,2 <i>R</i>)-2-[(Dimethylamino)methyl]cyclohexyl)phenol	GRTA-9906, GRTA-0009906, EM-906, GCR-9905, GRT-TA300	433265-65-7		
22	Unknown	Fluonitazene	<i>N,N</i> -diethyl-2-[2-[(4-fluorophenyl)methyl]-5-nitro-benzimidazol-1-yl]ethanamine; 1-(2-Diethylaminoethyl)-2-(<i>p</i> -fluorobenzyl)-5-nitro-1 <i>H</i> -benzimidazole; flunitazene; 4-fluoro desethoxyetonitazene		2249-36-7	2728-91-8; 2263-62-9 (sulfate); 856635-64-8 (methanesulfonate)	
23	Unknown	Furanyl UF-17	<i>N-trans</i> -2-(dimethylamino)cyclohexyl)- <i>N</i> -phenylfuran-2-carboxamide				



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24	Unknown	Isopropyl-U-47700	3,4-Dichloro- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -isopropyl-benzamide	Isopropyl-U47; IP-U47	-	-	
25	No Known Use	Isotonitazene	<i>N,N</i> -diethyl-2-(2-(4-isopropoxybenzyl)-5-nitro-1 <i>H</i> -benzo[d]imidazol-1-yl)etha <i>N</i> -1-amine; <i>N,N</i> -diethyl-2-[5-nitro-2-[(4-propa <i>N</i> -2-yloxyphenyl)methyl]benzimidazol-1-yl]ethanamine; <i>N,N</i> -diethyl-2-(2-(4 isopropoxybenzyl)-5-nitro-1 <i>H</i> -benzimidazol-1-yl)etha <i>N</i> -1-amine		14188-81-9	119276-00-5	1961/1
26	Unknown	Metodesnitazene	<i>N,N</i> -diethyl-2-[2-[(4-methoxyphenyl)methyl]benzimidazol-1-yl]ethanamine; 1-(2-Diethylaminoethyl)-2-(<i>p</i> -methoxybenzyl)benzimidazole; NSC659139		14030-77-4	1071546-40-1	
27	Unknown	Metonitazene	<i>N,N</i> -diethyl-2-[2-[(4-methoxyphenyl)methyl]-5-nitro-benzimidazol-1-yl]ethanamine; 1-(2-Diethylaminoethyl)-2-(<i>p</i> -methoxybenzyl)-5-nitro-1 <i>H</i> -benzimidazole; <i>N,N</i> -diethyl-2-(2-(4-methoxybenzyl)-5-nitro-1 <i>H</i> -benzimidazol-1-yl)etha <i>N</i> -1-amine		14680-51-4		
28	No Known Use	MT-45	1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine; IC-6	MT-45	52964-55-0	57314-55-3 (2HCl)	1961/1
29	Unknown	<i>N</i> -Desethyl isotonitazene	<i>N</i> -ethyl-2-(2-(4-isopropoxybenzyl)-5-nitro-1 <i>H</i> -benzo[d]imidazol-1-yl)etha <i>N</i> -1-amine				
30	Unknown	Nortilidine	ethyl (1 <i>R</i> ,2 <i>S</i>)-2-(methylamino)-1-phenylcyclohex-3-ene-1-carboxylate; ethyl (1 <i>R</i> ,6 <i>S</i>)-6-(methylamino)-3,6-dihydro[1,1'-biphenyl]-1(2 <i>H</i>)-carboxylate		38677-94-0		
31	Unknown	<i>O</i> -Desmethyltramadol	3-[2-[(Dimethylamino)methyl]-1-hydroxycyclohexyl]phenol; 3-[2-(1-Amino-1-methylethyl)-1-hydroxycyclohexyl]phenol; Desmetramadol	<i>O</i> -DSMT	73986-53-5; 80456-81-1 (R)	16412-54-7; 185453-02-5 (R)	
32	Unknown	<i>Para</i> -methyl-AP-237	 1-[4-[(<i>E</i>)-3-(<i>p</i> -tolyl)allyl]piperazi <i>N</i> -1-yl]buta <i>N</i> -1-one; <i>para</i> -Methyl bucinnazine; 1-(4-		-	-	
33	Unknown	Piperidylthiambutene	1-[4,4-di(thiophe <i>N</i> -2-yl)but-3- <i>eN</i> -2-yl]piperidine; 1-[1-methyl-3,3-bis(2-thienyl)prop		54160-31-5	64037-51-0	
34	Unknown	Protonitazene	<i>N,N</i> -Diethyl-5-nitro-2-[(4-propoxyphenyl)methyl]-1 <i>H</i> -benzimidazole-1-ethanamine; Pronitazene; Propoxynitazene		95958-84-2	119276-01-6	
35	Unknown	Spiradoline	2-(3,4-dichlorophenyl)- <i>N</i> -methyl- <i>N</i> -[(5 <i>S</i> ,7 <i>S</i> ,8 <i>S</i>)-7-pyrrolidin-1-yl-1-oxaspiro[4.5]deca <i>N</i> -8-yl]acetamide; 3,4-Dichloro- <i>N</i> -methyl- <i>N</i> -[(5 <i>S</i>)-7alpha-(1-pyrrolidinyl)-1-oxaspiro[4.5]deca <i>N</i> -8beta-yl]benzeneacetamide; U-62,066; U62	U-62066		87173-97-5 (mesylate)	
36	Unknown	Thiobromadol	4-(4-bromophenyl)-4-(dimethylamino)-1-(2-thienylethyl)cyclohexanol; <i>trans</i> -4-(4-Bromophenyl)-4-(dimethylamino)-1-[2-(2-thienyl)ethyl]cyclohexanol	C-8813	616898-54-5 (<i>trans</i>)		
37	Unknown	U04	<i>N</i> -[(1 <i>R</i> ,2 <i>R</i>)-2-(dimethylamino)cyclohexyl]-4-trifluoromethyl- <i>N</i> -methylbenzamide; U-04; 4-TFM U-47700; 4-(Trifluoromethyl) U-47700		67579-38-8		



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38	Unknown	U10	<i>N</i> -[(1 <i>R</i> ,2 <i>R</i>)-2-(dimethylamino)cyclohexyl]- <i>N</i> -methyl-1-naphthylcarboxamide; <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methyl-naphthalene-1-carboxamide; 1-Naphthyl U-47700; U-10; <i>trans</i> - <i>N</i> -2-(dimethylamino)cyclohexyl]- <i>N</i> -methyl-1-naphthylcarboxamide; a-U10; <i>alpha</i> -U10				
39	No Known Use	U-47700	3,4-Dichloro- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methylbenzamide; 3,4-dichloro- <i>N</i> -[(1 <i>R</i> ,2 <i>R</i>)-2-(dimethylamino)cyclohexyl]- <i>N</i> -methylbenzamide	U-47700	82657-23-6 (<i>trans</i>)		1961/I
40	Unknown	U-48800	2-(2,4-Dichlorophenyl)- <i>N</i> -[(1 <i>S</i> ,2 <i>S</i>)-2-(dimethylamino) cyclohexyl]- <i>N</i> -methylacetamide; <i>trans</i> -2-(2,4-dichlorophenyl)- <i>N</i> -2-(dimethylamino)cyclohexyl]- <i>N</i> -methylacetamide	U48	2370977-17-4 (<i>trans</i>)		
41	Unknown	U-49900	3,4-Dichloro- <i>N</i> -[2-(diethylamino)cyclohexyl]- <i>N</i> -methylbenzamide; <i>trans</i> -3,4-dichloro- <i>N</i> -[2-(diethylamino)cyclohexyl]- <i>N</i> -methyl-benzamide		67579-76-4 (<i>trans</i>)		
42	Unknown	U-50488	3,4-dichloro- <i>N</i> -methyl- <i>N</i> -[(1 <i>R</i> ,2 <i>R</i>)-2-(1-pyrrolidinyl) cyclohexyl]-benzeneacetamide; <i>trans</i> -3,4-Dichloro- <i>N</i> -methyl- <i>N</i> -[2-(1-pyrrolidinyl)cyclohexyl]-benzeneacetamide		67198-13-4 (<i>trans</i>)	67197-96-0	
43	Unknown	U-51754	2-(3,4-dichlorophenyl)- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methylacetamide; <i>trans</i> -3,4-dichloro- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methylbenzenacetamide; 2-(3,4-Dichlorophenyl)- <i>N</i> -[(1 <i>S</i> ,2 <i>S</i>)-2-(dimethylamino)cyclohexyl]- <i>N</i> -methylacetamide	Methylene-U-47700			
44	Unknown	U-69593	<i>N</i> -methyl-2-phenyl- <i>N</i> -[7-(pyrrolidin-1-yl)-1-oxaspiro[4.5]deca <i>N</i> -8-yl]acetamide; <i>N</i> -methyl-2-phenyl- <i>N</i> -[(5 <i>S</i> ,7 <i>S</i> ,8 <i>S</i>)-7-pyrrolidin-1-yl-1-oxaspiro[4.5]deca <i>N</i> -8-yl]acetamide; (+)-(5 <i>α</i> ,7 <i>α</i> ,8 <i>β</i>)- <i>N</i> -Methyl- <i>N</i> -[7-(1-pyrrolidinyl)-1-oxaspiro[4.5]deca-8-yl]-benzeneacetamide		96744-75-1		
45	Unknown	UF-17	<i>N</i> - <i>trans</i> -2-(dimethylamino)cyclohexyl]- <i>N</i> -phenylpropionamide; <i>N</i> -[(1 <i>S</i> ,2 <i>S</i>)-2-(dimethylamino)cyclohexyl]- <i>N</i> -phenylpropanamide				
46	Unknown	W-15	4-chloro- <i>N</i> -[1-(2-phenylethyl)-2-piperidinylidene]-benzenesulfonamide; 4-Chloro- <i>N</i> -(1-phenethylpiperidin-2-ylidene)benzenesulfonamide; 1-Phenylethylpiperidylidene-2-(4-chlorophenyl)sulfonamide		93100-99-3		
47	Unknown	W-18	(<i>Z</i>)-4-Chloro- <i>N</i> -(1-(4-nitrophenethyl)piperidin-2-ylidene)benzenesulfonamide; 4-chloro- <i>N</i> -[1-[2-(4-nitrophenyl)ethyl]-2-piperidinylidene]-benzenesulfonamide; 1-(4-Nitrophenylethyl) piperidylidene-2-(4-chlorophenyl)sulfonamide	W-18	93101-02-1		
48	Unknown	W-19	(<i>Z</i>)- <i>N</i> -(1-(4-aminophenethyl)piperidin-2-ylidene)-4-chlorobenzenesulfonamide; <i>N</i> -(1-(4-aminophenethyl)piperidin-2-ylidene)-4-chlorobenzenesulfonamide	W-18 metabolite			



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49	Unknown	5-Aminoisotonitazene	1-(2-(diethylamino)ethyl)-2-(4-isopropoxybenzyl)-1 <i>H</i> -benzo[<i>d</i>]imidazol-5-amine; <i>N,N</i> -diethyl-2-(2-(4-isopropoxybenzyl)-5-amino-1 <i>H</i> -benzo[<i>d</i>]imidazol-1-yl)etha <i>N</i> -1-amine; <i>N,N</i> -diethyl-2-[5-nitro-2-[(4-propa <i>N</i> -2-yloxyphenyl)methyl]benzimidazol-1-yl]ethanamine	Isotonitazene metabolite			
50	Unknown	3,4-Difluoro U-47700	<i>N</i> -[2-(dimethylamino)cyclohexyl]-3,4-difluoro- <i>N</i> -methylbenzamide; <i>trans-N</i> -[2-(dimethylamino)cyclohexyl]-3,4-difluoro- <i>N</i> -methylbenzamide	Difluoro U-47700			
51	Unknown	<i>N</i> -Methyl U-47931E	4-bromo- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methyl-benzamide; <i>N</i> -Methyl bromadoline; <i>trans</i> -4-bromo- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -methylbenzamide		75570-38-6 (trans)		
52	Unknown	<i>N</i> -Ethyl-U-47700	3,4-dichloro- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -ethyl-benzamide; <i>trans</i> -3,4-dichloro- <i>N</i> -[2-(dimethylamino)cyclohexyl]- <i>N</i> -ethylbenzamide; 3,4-dichloro- <i>N</i> -[(1 <i>R</i> ,2 <i>R</i>)-2-(dimethylamino)cyclohexyl]- <i>N</i> -ethylbenzamide	Ethyl U-47700			
53	Unknown	Diphenpipenol	3-[2-[4-(2-methoxyphenyl)piperazi <i>N</i> -1-yl]-2-phenylethyl]phenol; 3-[2-[4-(2-methoxyphenyl)-1-piperaziny]-2-phenylethyl]phenol		83374-54-3		
54	Unknown	Cyclopropyl U-47700	3,4-dichloro- <i>N</i> -2-(dimethylamino)cyclohexyl)- <i>N</i> -cyclopropylbenzamide; <i>trans</i> -3,4-dichloro- <i>N</i> -2-(dimethylamino)cyclohexyl)- <i>N</i> -cyclopropylbenzamide				
55	Unknown	Methoxy U-47700	3,4-dichloro- <i>N</i> -2-(dimethylamino)cyclohexyl)- <i>N</i> -methoxybenzamide; <i>trans</i> -3,4-dichloro- <i>N</i> -2-(dimethylamino)cyclohexyl)- <i>N</i> -methoxybenzamide				

* Denotes substance with no established opioid-like effects but marketed as such, while having no known legitimate uses.

a - Synthetic substances that are not structurally related to fentanyl which interact with opioid receptors.

b - No known uses is defined as one or more Governments or regional or international organizations having had reviewed the substance and found no legitimate use. Unknown refers to substances for which the Board is unaware of any Governments or regional or international organizations having reviewed or identified any legitimate use for the substance.

c - Different chemicals names are separated by a semi-colon (;).

d - Chemical Abstract Services (CAS) registry numbers may not currently be available for all substances. CAS numbers are unique for every form of a substance (e.g., salts and isomers). Therefore, there may be more than one CAS number.

e - International control refers to the appropriate United Nations Conventions and schedule which the substance is listed. Not all substances under international control have legitimate uses.