



ANNEX I. FENTANYL-RELATED SUBSTANCES^a WITH NO CURRENTLY KNOWN LEGITIMATE USES

No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
1	Unknown	2,2'-Difluorofentanyl	<i>N</i> -(1-(2-fluorophenethyl)piperidin-4-yl)- <i>N</i> -(2-fluorophenyl)propionamide; 2'- <i>ortho</i> -difluorofentanyl; 2'-fluoro <i>ortho</i> -fluorofentanyl				
2	Unknown	2-Fluorobutyryl fentanyl	<i>N</i> -(2-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; <i>N</i> -(2-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-butanamide; <i>ortho</i> -fluoro butyrylfentanyl	2-FBF; 2F-BF; <i>o</i> -FBF	2163847-76-3		
3	No Known Uses	2-Fluorofentanyl	<i>N</i> -(2-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)propionamide; <i>ortho</i> -fluorofentanyl	2-FF; <i>o</i> -FF	910616-29-4		1961/I
4	Unknown	2-Furanylethyl fentanyl	<i>N</i> -[1-[2-(2-furanyl)ethyl]-4-piperidinyl]- <i>N</i> -phenyl-propanamide		802544-02-1	1443-49-8	
5	Unknown	2-Isopropylfuryl fentanyl	2-isopropyl furyl fentanyl; <i>ortho</i> -isopropyl furyl fentanyl; <i>N</i> -(2-isopropylphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)furan-2-carboxamide; 2-Furanylfentanyl <i>ortho</i> -2-isopropylphenyl analogue	2-isopropyl Fu-F			
6	Unknown	2-Methoxy furyl fentanyl	<i>N</i> -(2-methoxyphenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-2-furancarboxamide; 2-Furanylfentanyl <i>ortho</i> -2-methoxyphenyl analogue; <i>ortho</i> -methoxy furyl fentanyl	2-methoxy FuF; 2-Meo-FuF	101343-50-4		
7	Unknown	2-Methyl furyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -(<i>o</i> -tolyl)furan-2-carboxamide; <i>ortho</i> -methyl furyl fentanyl	2-methyl FuF			
8	Unknown	3-allyl fentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-3-(prop-2-en-1-yl)piperidin-4-yl]propanamide		82208-84-2	81988-10-5	
9	Unknown	3-Fluoro butyrylfentanyl	<i>N</i> -(3-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; 3-fluoro butyrylfentanyl; 3-fluoro butyrylfentanyl; <i>meta</i> -fluoro butyrylfentanyl	3-FBF; 3F-BF; <i>m</i> -FBF	23060827-51-8	2306821-51-9	
10	Unknown	3-Fluorofentanyl	<i>N</i> -(3-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)propionamide; <i>N</i> -(3-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]propanamide; <i>meta</i> -fluorofentanyl; <i>m</i> -fluorofentanyl		90736-22-4		
11	Unknown	3-Furyl fentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]furan-3-carboxamide; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylfuran-3-carboxamide		101343-82-2	2306823-47-0 (HCl); 101343-83-3 (oxalate)	
12	Unknown	3-Methyl butyr fentanyl	<i>N</i> -[3-methyl-1-(2-phenylethyl)piperidin-4-yl]- <i>N</i> -phenylbutanamide; 3-methyl butyrylfentanyl	3-MBF	97605-09-9	88641-20-7	
13	No Known Uses	3-Methylfentanyl	<i>N</i> -[3-methyl-1-(2-phenethyl)piperidin-4-yl]- <i>N</i> -phenylpropanamide; mefentanyl; <i>N</i> -(3-methylphenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide	3-MF; F7209	42045-86-3		1961/I,IV
14	No Known Uses	3-Methylthiofentanyl	<i>N</i> -(3-methyl-1-[2-(thiophen-2-yl)ethyl]piperidin-4-yl)- <i>N</i> -phenylpropanamide; <i>N</i> -[3-methyl-1-[2-(2-thienyl)ethyl]-4-piperidinyl]propionanilide		86052-04-2	742029-96-5 (cis); 131690-45-4 (cis, HCl)	1961/I,IV



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
15	Unknown	3-Phenylpropanoylfentanyl	<i>N</i> ,3-diphenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; 3-Phenylpropanoylfentanyl; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-benzenepropanamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]-3-phenylpropanamide; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> ,3-diphenylpropanamide; <i>θ</i> '-phenyl fentanyl; hydrocinnamoyl fentanyl		79279-02-0		
16	Unknown	4'-Methyl acetylfentanyl	<i>N</i> -[1-[2-(4-methylphenyl)ethyl]-4-piperidinyl]- <i>N</i> -phenyl-acetamide; Acetyl fentanyl 4-methylphenethyl analogue; <i>para</i> -methylphenethylacetylfentanyl		90736-15-5	1071703-95-1	
17	Unknown	4-Chloro furanyl fentanyl	<i>N</i> -(4-chlorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)furan-2-carboxamide; <i>para</i> -chloro furanyl fentanyl; <i>p</i> -chloro furanyl fentanyl	4-chloro FuF			
18	No Known Uses	4-Fluorobutyrfentanyl	<i>N</i> -(4-Fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; <i>N</i> -(4-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide; 4-fluoro butyrylfentanyl; <i>p</i> -fluoro butyrylfentanyl; <i>para</i> -fluoro butyrylfentanyl	4-FBF; 4F-BF; <i>p</i> -FBF	244195-31-1	2306823-23-2	1961/I
19	No Known Uses	4-Fluoroisobutyrfentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)isobutyramide; 4-fluoroisobutyrylfentanyl; <i>para</i> -Fluoroisobutyrylfentanyl	4-FIBF, <i>p</i> FIBF, 4F-iBF	244195-32-2		1961/I
20	Unknown	4'-Methoxy fentanyl	<i>N</i> -(4-Methoxyphenyl)- <i>N</i> -(1-phenethyl-4-piperidyl)propanamide; 4-methoxy fentanyl; <i>p</i> -methoxy fentanyl		1688-41-1	23609-41-8	
21	Unknown	4''-Methoxy fentanyl	<i>N</i> -[1-[2-(4-methoxyphenyl)ethyl]piperidin-4-yl]- <i>N</i> -phenylpropanamide				
22	No Known Uses	4-Methoxybutyrylfentanyl	<i>N</i> -(4-methoxyphenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide; <i>N</i> -(4-methoxyphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; <i>para</i> -methoxybutyrfentanyl; <i>para</i> -methoxybutyrylfentanyl	4-MeO-BF	2088842-68-4	2306825-45-4	
23	Unknown	4-Methoxyfuranyl fentanyl	<i>N</i> -(4-methoxyphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)furan-2-carboxamide; <i>para</i> -methoxy furanyl fentanyl	4-methoxy Fu-F; <i>p</i> -methoxy Fu-F			
24	Unknown	4-Methoxymethyl fentanyl	<i>N</i> -[4-(methoxymethyl)-1-(2-phenylethyl)piperidin-4-yl]- <i>N</i> -phenylpropanamide	R-30490	60618-49-7		
25	Unknown	4-Phenylfentanyl	<i>N</i> -phenyl- <i>N</i> -[4-phenyl-1-(2-phenylethyl)piperidin-4-yl]propanamide		120448-97-7		
26	Unknown	Acetyl carfentanil	Methyl 4-[acetyl(phenyl)amino]-1-(2-phenylethyl)piperidine-4-carboxylate		131821-81-3		
27	No Known Uses	Acetylfentanyl	<i>N</i> -[1-(2-phenylethyl)-4-piperidyl]- <i>N</i> -phenylacetamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]acetamide; desmethyl fentanyl;	AF; MCV4848; NIH10485	3258-84-2	117332-89-5	1961/I,IV
28*	Unknown	Acetylnorfentanyl	<i>N</i> -phenyl- <i>N</i> -(piperidin-4-yl)acetamide		1607-68-7	22352-82-5	
29	No Known Uses	Acetyl- <i>alpha</i> -methylfentanyl	α -methylacetylfentanyl; <i>N</i> -phenyl- <i>N</i> -[1-(1-phenylpropan-2-yl)piperidin-4-yl]acetamide; <i>N</i> -[1-(α -methylphenethyl)-4-piperidyl]acetanilide; <i>alpha</i> -methyl acetyl fentanyl		101860-00-8		1961/I,IV
30	No Known Uses	Acrylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide; acryloylfentanyl		82003-75-6	79279-03-1	1961/I
31	Unknown	<i>alpha</i> -Methylbutyryl fentanyl	<i>N</i> -[1-(1-methyl-2-phenylethyl)-4-piperidinyl]- <i>N</i> -phenyl-butanamide; <i>alpha</i> -methyl fentanyl butanamide analogue		244195-36-6		



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
32	No Known Uses	<i>alpha</i> -Methylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(1-phenylpropan-2-yl)piperidin-4-yl]propanamide; <i>N</i> -[1-(α -methylphenethyl)-4-piperidyl]propionanilide; α -methylfentanyl		79704-88-4	1443-44-3	1961/ I,IV
33	No Known Uses	<i>alpha</i> -Methylthiofentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(1-(thiophen-2-yl)propan-2-yl)piperidin-4-yl]propanamide; <i>N</i> -[1-[1-methyl-2-(2-thienyl)ethyl]-4-piperidyl]propionanilide		103963-66-2	117332-94-2	1961/ I,IV
34	Unknown	Benzodioxole fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbenzo[<i>d</i>][1,3]dioxole-5-carboxamide	benzodioxole-F, BZD-F			
35	Unknown	Benzoyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbenzamide; phenylfentanyl				
36*	Unknown	Benzoylbenzyl fentanyl	<i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -phenylbenzamide		95869-86-6		
37*	Unknown	Benzylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(phenylmethyl)-4-piperidinyl]-propanamide; <i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -phenylpropionamide; 1-Benzyl-4-(<i>N</i> -phenylpropion-amido)piperidine	R-4129	1474-02-8	5156-58-1	
38*	Unknown	Benzylfuranyl fentanyl	<i>N</i> -(1-benzyl-4-piperidyl)- <i>N</i> -phenyl-furan-2-carboxamide	Benzyl FuF	497240-21-8		
39	No Known Uses	<i>beta</i> -Hydroxy-3-methylfentanyl	<i>N</i> -[1-(2-hydroxy-2-phenethyl)-3-methylpiperidin-4-yl]- <i>N</i> -phenylpropanamide; Ohmefentanyl		78995-14-9	135159-44-3	1961/ I,IV
40	No Known Uses	<i>beta</i> -Hydroxyfentanyl	<i>N</i> -[1-(2-hydroxy-2-phenethyl)piperidin-4-yl]- <i>N</i> -phenylpropanamide; <i>N</i> -[1-(β -hydroxyphenethyl)-4-piperidyl]propionanilide		78995-10-5	1473-95-6	1961/ I,IV
41	Unknown	<i>beta</i> -Methyl fentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylpropyl)-4-piperidinyl]-propanamide			1443-43-2	
42	Unknown	Brifentanil	<i>N</i> -[(3 <i>R</i> ,4 <i>S</i>)-1-[2-(4-ethyl-5-oxotetrazol-1-yl)ethyl]-3-methylpiperidin-4-yl]- <i>N</i> -(2-fluorophenyl)-2-methoxyacetamide; <i>N</i> -[1-(2-(4-ethyl-4,5-dihydro-5-oxo-1 <i>H</i> -tetrazol-1-yl)ethyl)-3-methyl-4-piperidinyl]- <i>N</i> -(2-fluorophenyl)-2-methoxyacetamide; rel- <i>N</i> -[(3 <i>R</i> ,4 <i>S</i>)-1-[2-(4-ethyl-5-oxo-4,5-dihydro-1 <i>H</i> -tetrazol-1-yl)ethyl]-3-methylpiperidin-4-yl]- <i>N</i> -(2-fluorophenyl)-2-methoxyacetamide	A-3331	101345-71-5		
43	No Known Uses	Butyrfentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbutyramide; fentanyl butanamide analogue; butyrylfentanyl	BF; NIH-10486	1169-70-6	1443-52-3	1961/I
44*	Unknown	Butyryl norfentanyl	<i>N</i> -phenyl- <i>N</i> -4-piperidinyl-butanamide; Butyr norfentanyl		1432-03-7		
45*	Unknown	Butyryl-F-fentanyl <i>N</i> -benzyl analogue	<i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -(4-fluorophenyl)butyramide; benzyl <i>para</i> -fluoro butyryl fentanyl		1048466-07-4		
46	Unknown	Crotonyl fentanyl	(2 <i>E</i>)- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-2-butanamide; (<i>E</i>)- <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbut-2-enamide		760930-59-4	223500-23-0	1961/I
47	Unknown	Cyclohexyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylcyclohexanecarboxamide				
48	No Known Uses	Cyclopentyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylcyclopentanecarboxamide; cyclopentanoyl fentanyl	CP-F	2088918-01-6		
49	No Known Uses	Cyclopropyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylcyclopropanecarboxamide		1169-68-2		1961/I
50*	Unknown	Despropionyl-2-fluorofentanyl	<i>N</i> -(2-fluorophenyl)-1-phenethylpiperidin-4-amine; despropionyl <i>ortho</i> -fluorofentanyl	2F-ANPP; <i>o</i> -F-ANPP	864422-91-3		



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
51*	Unknown	Despropionyl 3-Methylfentanyl	3-methyl- <i>N</i> -phenyl-1-(2-phenylethyl)piperidin-4-amine; <i>N</i> -(3-methylphenyl)-1-(2-phenylethyl)piperidin-4-amine	3-Methyl 4-ANPP	144480-31-9		
52*	Unknown	Despropionyl <i>ortho</i> -Methylfentanyl	<i>N</i> -(<i>o</i> -tolyl)-1-(2-phenylethyl)piperidin-4-amine; despropionyl <i>o</i> -methylfentanyl; despropionyl 2-methylfentanyl; <i>ortho</i> -methyl 4-ANPP	<i>o</i> -Methyl-ANPP	28456-18-0	28456-19-1	
53	Unknown	Fentanyl 4- <i>N</i> -propyl analogue	<i>N</i> -(1-propyl-4-piperidinyl)propionanilide; <i>N</i> -(1-propyl-4-piperidinyl)- <i>N</i> -phenylpropanamide		1060694-93-0		
54	Unknown	Fentanyl isothiocyanate	<i>N</i> -(1-[2-(4-isothiocyanatophenyl)ethyl]piperidin-4-yl)- <i>N</i> -phenylpropanamide		85951-63-9		
55	Unknown	<i>meta</i> -Methyl acetylfentanyl	<i>N</i> -(3-methylphenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-acetamide; fentanyl <i>meta</i> -tolyl acetyl analogue; 3-methyl acetylfentanyl		1640-10-4	1443-51-2	
56	Unknown	<i>meta</i> -Methylfentanyl	<i>N</i> -(3-methylphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)propanamide; <i>N</i> -(3-Methylphenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]propanamide; fentanyl <i>meta</i> -tolyl analogue; 3-methylfentanyl		47480-47-7	1465-22-1	
57	Unknown	Fentanyl <i>N</i> -oxide	<i>N</i> -[1-oxido-1-(2-phenylethyl)piperidin-4-yl]- <i>N</i> -phenylpropanamide	Fentanyl impurity A		85893-37-4	
58	Unknown	<i>ortho</i> -Methyl acetylfentanyl	1-(2-phenylethyl)-4-(2-methyl- <i>N</i> -acetanilido)piperidine; <i>N</i> -(2-methylphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)acetamide; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -(<i>o</i> -tolyl)acetamide; 2-methyl acetyl fentanyl; <i>o</i> -methyl acetyl fentanyl		90736-11-1		
59	Unknown	Fentanyl propyl acetyl analogue	<i>N</i> -phenyl- <i>N</i> -[1-(3-phenylpropyl)piperidin-4-yl]acetamide		90736-10-0	1089709-79-4	
60	Unknown	Fentanyl propyl analogue	<i>N</i> -Phenyl- <i>N</i> -[1-(3-phenylpropyl)-4-piperidinyl]propanamide		59708-54-2	117332-88-4	
61	No Known Uses	Furanylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]furan-2-carboxamide; 2-Furanyl fentanyl; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-2-furancarboxamide	FU-F	101345-66-8	101365-56-4	1961/I
62	Unknown	Furanyl norfentanyl	<i>N</i> -phenyl- <i>N</i> -4-piperidinyl-2-furancarboxamide; <i>N</i> -Phenyl- <i>N</i> -(4-piperidinyl)-2-furamide		1047187-49-4		
63	No Known Uses	Isobutyrylfentanyl	2-methyl- <i>N</i> -phenyl- <i>N</i> -[1-(1-phenylpropan-2-yl)piperidin-4-yl]propanamide; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylisobutyramide; isobutyrylfentanyl		119618-70-1	117332-90-8	
64	Unknown	Isobutyryl-F-fentanyl <i>N</i> -benzyl analogue	<i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -(4-fluorophenyl)isobutyramide; 2-methyl- <i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -(4-fluorophenyl)propanamide; benzyl <i>para</i> -fluoro isobutyryl fentanyl		959295-10-4		
65	Unknown	Lofentanil	3-methyl carfentanil; methyl rel-(-)-(3 <i>R</i> ,4 <i>S</i>)-3-methyl-1-(2-phenylethyl)-4-[phenyl(propanoyl)amino]piperidine-4-carboxylate		61380-40-3		
66	No Known Uses	Methoxyacetylfentanyl	2-methoxy- <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylacetamide; 2-methoxy- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-acetamide			101365-54-2	1961/I
67	Unknown	Mirfentanil	<i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]- <i>N</i> -(pyrazin-2-yl)furan-2-carboxamide		117523-47-4		



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
68	Unknown	<i>N</i> -Ethyl carfentanil	1-ethyl-4-[(1-oxopropyl)phenylamino]-4-piperidinecarboxylic acid, methyl ester; <i>N</i> -ethyl norcarfentanil; <i>N</i> -ethyl remifentanil; <i>N</i> -ethyl <i>nor</i> -remifentanil				
69	Unknown	Hexanoyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylhexanamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]hexanamide				
70	Unknown	<i>N</i> -Isopropyl carfentanil	1-isopropyl-4-[(1-oxopropyl)phenylamino]-4-piperidinecarboxylic acid, methyl ester; <i>N</i> -isopropyl norcarfentanil; <i>N</i> -isopropyl remifentanil; <i>N</i> -isopropyl norremifentanil				
71	Unknown	<i>N</i> -Methyl carfentanil	1-methyl-4-[(1-oxopropyl)phenylamino]-4-piperidinecarboxylic acid, methyl ester; <i>N</i> -methyl norcarfentanil; <i>N</i> -methyl remifentanil; <i>N</i> -methyl norremifentanil	R-32395	59708-50-8		
72*	Unknown	<i>N</i> -Methyl norfentanyl	<i>N</i> -(1-methyl-4-piperidyl)- <i>N</i> -phenyl-propanamide; <i>N</i> -(1-methyl-4-piperidinyl)- <i>N</i> -phenyl-propanamide; <i>N</i> -methylfentanyl; methyl 1-methyl-4-[phenyl(propanoyl)amino]piperidine-4-carboxylate		22261-99-0	24775-71-1	
73*	Unknown	Norcarfentanil	4-[(1-oxopropyl)phenylamino]-4-piperidinecarboxylic acid, methyl ester		72996-78-2	61085-87-8	
74*	Unknown	Norfentanyl	<i>N</i> -phenyl- <i>N</i> -4-piperidinyl-propanamide	NSC89293	1609-66-1	22352-81-4	
75*	Unknown	Norsufentanil	<i>N</i> -[4-(methoxymethyl)-4-piperidinyl]- <i>N</i> -phenyl-propanamide	R30451	61086-18-8	84196-16-7	
76	Unknown	<i>N</i> -Propyl carfentanil	1-propyl-4-[(1-oxopropyl)phenylamino]-4-piperidinecarboxylic acid, methyl ester; <i>N</i> -propyl norcarfentanil; <i>N</i> -propyl remifentanil; <i>N</i> -propyl norremifentanil		61086-29-1		
77	No Known Uses	Ocfentanil	Ocfentanil; <i>N</i> -(2-Fluorophenyl)-2-methoxy- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]acetamide		101343-69-5	112964-97-3	1961/I
78	Unknown	<i>ortho</i> -Methyl acryl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -(<i>o</i> -tolyl)acrylamide; 2-methyl acrylfentanyl; <i>o</i> -methyl acryloylfentanyl				
79	no Known Uses	<i>ortho</i> -Methyl methoxyacetyl fentanyl	2-methoxy- <i>N</i> -(<i>o</i> -tolyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-acetamide; <i>o</i> -methyl methoxyacetylfentanyl; 2-Methyl Methoxyacetylfentanyl	<i>ortho</i> -Me-MeO-Ace-Fentanyl			
80	no Known Uses	<i>para</i> -Chloroisobutyrylfentanyl	<i>N</i> -(4-chlorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)isobutyramide; <i>N</i> -(4-chlorophenyl)-2-methyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidyl]propanamide; 4-Chloroisobutyrylfentanyl; <i>para</i> -chloroisobutyrylfentanyl	4-Cl-iBF, 4Cl-iBF	244195-34-4		
81	no Known Uses	<i>para</i> -Fluorofentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; 4'-fluoro- <i>N</i> -(1-phenethyl-4-piperidyl)propionanilide; 4-fluoro fentanyl	4-FF; p-FF; NIH10491	90736-23-5	117332-92-0	1961/I,IV
82	no Known Uses	Tetrahydrofuranylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]tetrahydrofuran-2-carboxamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]oxolane-2-carboxamide	THF-F	2142571-01-3		1961/I
83	Unknown	Tetramethylcyclopropanefentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]-2,2,3,3-tetramethylcyclopropane-1-carboxamide; Tetramethylcyclopropane-F	TMCP-fentanyl, TMCP-F			



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
84	Unknown	Thienyl fentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(thiophen-2-ylmethyl)piperidin-4-yl]propanamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-thienylmethyl)-4-piperidinyl]-propanamide		122861-39-6	117332-93-1	
85	Unknown	2-Thiofuranyl fentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylthiophene-2-carboxamide; thiofuranyl fentanyl; 2-thiophenoyl fentanyl; thiophene fentanyl				
86	no Known uses	Thiofentanyl	<i>N</i> -phenyl- <i>N</i> -(1-[2-(thiophen-2-yl)ethyl]piperidin-4-yl)propanamide; <i>N</i> -[1-[2-(2-thienyl)ethyl]-4-piperidyl]propionanilide		1165-22-6	79278-88-9	1961/ I,IV
87	Unknown	Trefentanil	<i>N</i> -(1-[2-(4-ethyl-5-oxo-4,5-dihydro-1 <i>H</i> -tetrazol-1-yl)ethyl]-4-phenylpiperidin-4-yl)- <i>N</i> -(2-fluorophenyl)propanamide	A-3665	120656-74-8	120656-93-1	
88	Unknown	Valeryl fentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-pentanamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]pentanamide; pentanoyl fentanyl	VF	122882-90-0	117332-91-9	1961/I
89	No Known Uses	<i>beta</i> -Hydroxythiofentanyl	<i>N</i> -(1-(2-hydroxy-2-(thiophen-2-yl)ethyl)piperidin-4-yl)- <i>N</i> -phenylpropionamide; β -hydroxythiofentanyl		1474-34-6		
90	Unknown	<i>omega</i> -hydroxyfentanyl	3-hydroxy- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; ω -hydroxyfentanyl		83708-11-6		
91	Unknown	<i>ortho</i> -Methylfentanyl	<i>N</i> -[2-methyl-1-(2-phenethyl)piperidin-4-yl]- <i>N</i> -phenylpropanamide; 2-methylfentanyl; <i>o</i> -methylfentanyl		2141-47-1	1443-53-4	
92	Unknown	<i>para</i> -Fluorocyclopropylbenzylfentanyl	<i>N</i> -(1-benzyl-4-piperidyl)- <i>N</i> -(4-fluorophenyl)cyclopropanecarboxamide; <i>N</i> -benzyl <i>para</i> -fluoro Cyclopropyl norfentanyl				
93	Unknown	2-Fluoroisobutyrylfentanyl	<i>N</i> -(2-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)isobutyramide; <i>N</i> -(2-fluorophenyl)-2-methyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; 2-fluoro isobutyrylfentanyl; <i>o</i> -fluoroisobutyrylfentanyl; <i>ortho</i> -Fluoroisobutyrfentanyl	2-FIBF; <i>o</i> -FIBF	2351142-33-9		
94	Unknown	3,4-Dimethoxyfentanyl	<i>N</i> -(1-(3,4-dimethoxyphenethyl)piperidin-4-yl)- <i>N</i> -phenylpropionamide; 3,4-dimethoxyfentanyl				
95	Unknown	3-Methylcrotonylfentanyl	3-methyl- <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbut-2-enamide; <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-3-methylbut-2-enamide; Seneciolyfentanyl; <i>beta</i> '-methyl crotonyl fentanyl				
96	Unknown	4-Hydroxybutyrfentanyl	<i>N</i> -(4-hydroxyphenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-butanamide; <i>N</i> -(4-hydroxyphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; 4-hydroxybutyrylfentanyl; <i>p</i> -hydroxybutyrylfentanyl; <i>para</i> -hydroxybutyrfentanyl	4-HO-BF			
97	Unknown	Acetylbenzylfentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(phenylmethyl)-4-piperidinyl]-acetamide; <i>N</i> -(1-benzyl-4-piperidyl)- <i>N</i> -phenylacetamide		1237-52-1	1082674-73-4	
98*	Unknown	Despropionyl 4-fluorofentanyl	<i>N</i> -(4-fluorophenyl)-1-phenethylpiperidin-4-amine; <i>N</i> -(4-fluorophenyl)-1-(2-phenylethyl)-4-piperidinamine; despropionyl 4-FF; despropionyl <i>p</i> -FF; despropionyl <i>para</i> -fluorofentanyl; despropionyl <i>p</i> -fluorofentanyl; <i>para</i> -fluoro 4-ANPP	4F-4-ANPP	122861-41-0		
99	Unknown	<i>ortho</i> -Methylcyclopropylfentanyl	<i>N</i> -(2-methylphenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]cyclopropanecarboxamide; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -(<i>ortho</i> ly)cyclopropanecarboxamide; 2-methylcyclopropylfentanyl				



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
100	Unknown	<i>para</i> -Fluorofuranylfentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidyl]furan-2-carboxamide; <i>N</i> -(4-Fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-2-furamide; 4-fluoro furanylfentanyl		1802489-71-9		
101	Unknown	<i>para</i> -Methylfentanyl	<i>N</i> -(4-methylphenyl)- <i>N</i> -[1-(2-Phenylethyl)-4-piperidinyl]-propanamide; 4-methylfentanyl; <i>para</i> -Tolyfentanyl		1838-67-1	1807-12-1	
102	Unknown	<i>para</i> -Methylcyclopropylfentanyl	<i>N</i> -(4-Methylphenyl)- <i>N</i> -(1-(2-phenylethyl)piperidin-4-yl)cyclopropanecarboxamide; 4-methyl-cyclopropylfentanyl; 4'-methyl-cyclopropylfentanyl; <i>p</i> -methylcyclopropylfentanyl				
103*	Unknown	<i>para</i> -Fluorobenzylfentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -[1-(phenylmethyl)-4-piperidinyl]-propanamide; <i>N</i> -[1-(benzyl)-4-piperidyl]- <i>N</i> -(4-fluorophenyl)propionamide; <i>N</i> -benzyl-4-F-norfentanyl; <i>p</i> -fluorobenzylnorfentanyl		202859-28-7		
104*	Unknown	<i>N</i> -Methyl Cyclopropyl norfentanyl	<i>N</i> -(1-methylpiperidin-4-yl)- <i>N</i> -phenylcyclopropanecarboxamide; <i>N</i> -methyl norcyclopropyl fentanyl				
105*	Unknown	Benzylacrylfentanyl	<i>N</i> -(1-benzylpiperidin-4-yl)- <i>N</i> -phenylprop-2-enamide			1956368-29-8	
106	Unknown	<i>para</i> -Fluoro crotonylfentanyl	(<i>E</i>)- <i>N</i> -(4-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)but-2-enamide; 4-fluoro Crotonyl fentanyl; <i>p</i> -fluoro Crotonyl fentanyl				
107	Unknown	<i>para</i> -Methyl cyclopentylfentanyl	<i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -(<i>p</i> -tolyl)cyclopentanecarboxamide; 4-methyl Cyclopentyl fentanyl; <i>p</i> -methyl Cyclopentyl fentanyl				
108*	Unknown	Despropionyl 2,2'-difluorofentanyl	1-(2-fluorophenethyl)- <i>N</i> -(2-fluorophenyl)piperidin-4-amine; 2'-fluoro <i>ortho</i> -fluoro ANPP; Despropionyl 2'-fluoro 2-FF; Despropionyl 2'-fluoro- <i>ortho</i> -Fluorofentanyl				
109	Unknown	Tetrahydrofuranfentanyl 3-tetrahydrofurancarboxamide	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]oxolane-3-carboxamide; 3-THF fentanyl; <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenyltetrahydrofuran-3-carboxamide; Tetrahydro-3-furanylfentanyl; Tetrahydrofuranylfentanyl 3-THF;				
110	Unknown	w-1-HydroxyFentanyl	<i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-2-hydroxypropanamide; 2-Hydroxy- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]propanamide; <i>omega</i> -1-HydroxyFentanyl		99624-68-7 (base)		
111	Unknown	3-Fluoromethoxyacetylfentanyl	<i>N</i> -(3-fluorophenyl)-2-methoxy- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]acetamide; <i>meta</i> -fluoro methoxyacetylfentanyl				
112*	Unknown	4-Anilino-1-benzylpiperidine	<i>N</i> -phenyl-1-(phenylmethyl)-4-piperidinamine; 1-benzyl-4-(phenylamino)piperidine; 1-benzyl-4-anilinopiperidine; USP Fentanyl Related Compound D	4-ANBP; NSC 76613	1155-56-2		
113*	Unknown	3-Methyl-4-piperidone	3-Methylpiperidin-4-one		5773-58-0		
114*	No Use	1-Phenethylpiperidin-4-ylidenephethylamine	<i>N</i> -Phenyl-1-(2-phenylethyl)piperidin-4-imine; 1-phenethyl-4-phenyliminopiperidine; <i>N</i> -(1-Phenethylpiperidine-4-ylidene)aniline		57958-48-2		
115*	No Use	1-Phenethylpiperidin-4-yl propionate	[1-(2-phenylethyl)piperidin-4yl] propanoate; 1-Phenethyl-4-propionyloxypiperidine		1462260-87-2		
116*	Unknown	1-(1-Phenylpropan-2-yl)piperidin-4-one	1-(1-methyl-2-phenylethyl)-4-piperidinone		16771-90-7		



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
117*	Unknown	<i>N</i> -(3-Methyl-4-piperidinyl)aniline	3-methyl- <i>N</i> -phenylpiperidin-4-amine; <i>N</i> -phenyl-(3-methylpiperidin-4-yl)amine; 4-anilino-3-methylpyridine		53757-54-3 (cis); 57444-99-2 (trans)		
118*	Unknown	3-Methyl benzylfentanyl	<i>N</i> -(3-methyl-1-(phenylmethyl)piperidin-4-yl)- <i>N</i> -phenylpropanamide; <i>N</i> -(3-methyl-1-benzylpiperidin-4-yl)- <i>N</i> -phenylpropanamide; 1-benzyl-3-methyl-4-(<i>N</i> -propananilido)piperidine; <i>N</i> -benzyl 3-methyl norfentanyl	isofentanyl	79278-40-3		
119*	Unknown	3-Methyl norfentanyl	<i>N</i> -(3-methylpiperidin-4-yl)- <i>N</i> -phenylpropanamide; <i>N</i> -(3-methyl-4-piperidinyl)propionanilide; <i>Nor</i> -3-methylfentanyl		33794-42-2		
120*	Unknown	3-Methyl-1-phenethyl-4-piperidone	3-Methyl-1-(2-phenylethyl)-4-piperidone; 3-Methyl-1-phenethylpiperidin-4-one; 1-benzyl-3-methyl-4-piperidone	3-methyl NPP	82003-82-5	108897-28-5	
121*	Unknown	Despropionyl 3-fluorofentanyl	<i>N</i> -(3-fluorophenyl)-1-phenethylpiperidin-4-amine; <i>N</i> -(3-fluorophenyl)-1-(2-phenylethyl)-4-piperidinamine; despropionyl 3-FF; despropionyl <i>m</i> -FF; despropionyl <i>meta</i> -fluorofentanyl; despropionyl <i>m</i> -fluorofentanyl; <i>meta</i> -fluoro 4-ANPP	3F-ANPP	416881-38-4		
122*	Unknown	<i>para</i> -Fluoro cyclopropyl norfentanyl	<i>N</i> -(4-piperidyl)- <i>N</i> -(4-fluorophenyl)cyclopropanecarboxamide				
123*	Unknown	Cyclopropyl norfentanyl	<i>N</i> -(4-piperidyl)- <i>N</i> -phenylcyclopropanecarboxamide		802543-92-6	1432-04-8	
124*	Unknown	Isobutyryl norfentanyl	2-methyl- <i>N</i> -phenyl- <i>N</i> -piperidin-4-ylpropanamide; <i>N</i> -phenyl- <i>N</i> -4-piperidinyl-isobutyramide; 2-methyl- <i>N</i> -phenyl- <i>N</i> -(4-piperidinyl)propanamide		1046436-53-6		
125*	Unknown	Valeryl norfentanyl	<i>N</i> -phenyl- <i>N</i> -4-piperidinyl-pentanamide				
126*	Unknown	4-(Phenylamino)-1-benzyl-4-piperidinecarbonitrile	4-anilino-1-benzylpiperidine-4-carbonitrile; 1-benzyl-4-cyano-4-(phenylamino)piperidine;		968-86-5		
127*	Unknown	Despropionyl carfentanil	Methyl 4-anilino-1-(2-phenylethyl)piperidine-4-carboxylate; 4-(phenylamino)-1-(2-phenylethyl)-4-piperidinecarboxylic acid methyl ester; methyl 4-(phenylamino)-1-(2-phenylethyl)-4-piperidinecarboxylate		61085-55-0		
128*	Unknown	Benzyl carfentanil	methyl 1-(phenylmethyl)-4-(phenyl-propanoylamino)piperidine-4-carboxylate; methyl 1-benzyl-4-(<i>N</i> -phenylpropionamido)piperidine-4-carboxylate; 4-(1-oxopropyl-phenylamino)-1-(phenylmethyl)-4-piperidinecarboxylic acid methyl ester; benzyl remifentanyl		61085-72-1		
129*	Unknown	Norocfentanil	<i>N</i> -(2-fluorophenyl)-2-methoxy- <i>N</i> -piperidin-4-ylacetamide; <i>N</i> -(2-fluorophenyl)-2-methoxy- <i>N</i> -piperidin-4-yl-ethanamide; norocfentanyl		132896-22-1		
130*	No Use	1-Phenethylpiperidin-4-ol	1-(2-phenylethyl)piperidin-4-ol; 1-phenethyl-4-hydroxypiperidine		3518-76-1		
131*	Unknown	1-Benzyl-3-(methoxycarbonyl)-4-piperidone	4-oxo-1-(phenylmethyl)-3-piperidinecarboxylic acid methyl ester; methyl-1-benzyl-4-oxo-3-piperidinecarboxylate; <i>N</i> -benzyl-3-methoxycarbonyl-4-piperidone; <i>N</i> -benzyl-4-oxonipecotic acid methyl ester;		57611-47-9		



No.*	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
132*	Unknown	2-(2-Chloroethyl)-1,4-dimethoxybenzene			51016-50-3		
133	Unknown	2,5-Dimethoxyfentanyl	<i>N</i> -[1-[2-(2,5-dimethoxyphenyl)ethyl]-4-piperidyl]- <i>N</i> -phenylpropanamide; 2',5'-dimethoxy fentanyl				
134*	Unknown	<i>para</i> -Fluoro 4-ANBP	4-fluoro 4-ANBP; despropionyl <i>N</i> -benzyl <i>para</i> -fluoro norfentanyl; <i>N</i> -(4-fluorophenyl)-1-(phenylmethyl)-4-piperidinamine; 1-Benzyl- <i>N</i> -(4-fluorophenyl)piperidin-4-amine	<i>p</i> -F-4-ANBP			
135*	Unknown	4-Anilino piperidine- <i>t</i> -BOC	<i>tert</i> -butyl 4-(phenylamino)piperidine-1-carboxylate; 4-(phenylamino-1-piperidinecarboxylic acid 1,1-dimethylethyl ester; <i>tert</i> -butyl-4-anilino piperidine-1-carboxylate; 1-Boc-4-(phenylamino)piperidine; 4-Anilino-1-Boc-piperidine	4-AP- <i>t</i> -BOC	125541-22-2		
136	Unknown	Isovaleryl fentanyl	3-Methyl- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide; <i>β</i> '-methylbutyryl fentanyl				
137	Unknown	<i>meta</i> -Fluorofuranyl fentanyl	<i>N</i> -(3-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidyl]furan-2-carboxamide; 3-fluoro furanyl fentanyl				
138	Unknown	<i>ortho</i> -Fluorofuranyl fentanyl	<i>N</i> -(2-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidyl]furan-2-carboxamide; 2-fluoro furanyl fentanyl				
139	Unknown	Phenethyl 4-ANPP	<i>N</i> ,1-diphenethyl- <i>N</i> -phenylpiperidin-4-amine; <i>N</i> -Phenyl- <i>N</i> ,1-bis(2-phenylethyl)-4-piperidinamine; <i>N</i> , <i>N</i> -phenethyl-phenyl-1-(2-phenylethyl)piperidin-4-amine,				
140	Unknown	Fentanyl carbamate	ethyl <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]carbamate; ethylformate fentanyl; ethylformate 4-ANPP; phenyl[1-(2-phenylethyl)-4-piperidinyl]-carbamic acid, ethyl ester				
141	Unknown	2-Fluoro acrylfentanyl	<i>N</i> -(2-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide; <i>N</i> -(2-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)acrylamide; <i>ortho</i> -Fluoro acrylfentanyl; <i>o</i> -fluoro acrylfentanyl		2309383-09-1		
142	Unknown	3'-Methyl-4-fluoroisobutyrylfentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -(1-(3-methylphenethyl)piperidin-4-yl)isobutyramide; 3'-Methyl-4-fluoroisobutyrylfentanyl	3-Me'-4F-iBF			
143	Unknown	3-Fluoroisobutyrylfentanyl	<i>N</i> -(3-fluorophenyl)-2-methyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; <i>Meta</i> -fluoro isobutyrylfentanyl; <i>N</i> -(3-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)isobutyramide; <i>meta</i> -Fluoroisobutyrylfentanyl	3-FIBF; <i>m</i> -FIBF			
144*	Unknown	4-(<i>p</i> -Fluoroanilino)-1-Boc-piperidine	<i>tert</i> -butyl 4-(4-fluoroanilino)piperidine-1-carboxylate; 1-(<i>tert</i> -butoxycarbonyl)-4-[(4-fluorophenyl)amino]piperidine; 4-(4-fluorophenylamino)-piperidine-1-carboxylic acid <i>tert</i> -butyl ester; 1-Boc-4-(4-fluorophenylamino)-piperidine; 4-(<i>p</i> -Fluoroanilino)-1-Boc-piperidine; 1-Boc- <i>para</i> -fluoro-4-anilino piperidine; <i>tert</i> -butyl 4-[(4-fluorophenyl)amino]piperidine-1-carboxylate; 1-Boc- <i>para</i> -fluoro-4-AP; <i>para</i> -fluoro- <i>t</i> -boc-4-AP; 4-(<i>para</i> -Fluoroanilino)-1-Boc-piperidine		288573-56-8	911103-09-8	
145	Unknown	<i>ortho</i> -Chlorofentanyl	<i>N</i> -(2-chlorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-propanamide; 2-chlorofentanyl; <i>o</i> -chlorofentanyl; <i>N</i> -(2-chlorophenyl)- <i>N</i> -[1-(2-		88796-96-7	77463-24-2	



No. *	Uses ^b	Common Substance Name	Other/ Alternative Substance Name(s) ^c	Abbreviations	CAS No.	CAS No. ^d (HCl)	Intl Ctrl. ^e
			phenylethyl)piperidin-4-yl]propanamide; N-(2-chlorophenyl)-N-(1-phenethylpiperidin-4-yl)propionamide				
146	Unknown	<i>para</i> -Chlorofentanyl	<i>N</i> -(4-chlorophenyl)- <i>N</i> -[1-(2-phenylethyl)-4-piperidinyl]-propanamide; 2-chlorofentanyl; <i>p</i> -chlorofentanyl; <i>N</i> -(4-chlorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]propanamide; <i>N</i> -(4-chlorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)propionamide		117994-22-6	117994-27-1	
147	Unknown	<i>alpha</i> '-Methyl butyryl fentanyl	2-methyl- <i>N</i> -(1-phenethylpiperidin-4-yl)- <i>N</i> -phenylbutanamide; 2-Methyl- <i>N</i> -phenyl- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide; (2-Methyl) Butyryl fentanyl				
148	Unknown	<i>beta</i> -Methyl acetyl fentanyl	<i>N</i> -phenyl- <i>N</i> -(1-(2-phenylpropyl)piperidin-4-yl)acetamide; <i>N</i> -phenyl- <i>N</i> -[1-(1-phenyl-2-propyl)-4-piperidinyl]-acetamide		90736-19-9		
149	Unknown	<i>ortho</i> -Methoxybutyryl fentanyl	<i>N</i> -(2-methoxyphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)butyramide; <i>N</i> -(2-methoxyphenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]butanamide; <i>o</i> -methoxybutyrylfentanyl; 2-methoxybutyrylfentanyl		1648274-07-0		
150	Unknown	<i>para</i> -Fluoro acrylfentanyl	<i>N</i> -(4-fluorophenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]prop-2-enamide; <i>N</i> -(4-fluorophenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)acrylamide; 4-Fluoro acrylfentanyl; <i>p</i> -fluoro acrylfentanyl		2306823-27-6		
151*	Unknown	<i>para</i> -Fluoro 4-anilinopiperidine	<i>N</i> -(4-fluorophenyl)piperidin-4-amine; <i>para</i> -fluoro 4-AP; <i>p</i> -fluoro 4-AP; <i>N</i> -(4-fluorophenyl)-4-piperidinamine; (4-Fluoro-phenyl)-piperidin-4-yl-amine; (4-fluorophenyl)-4-piperidylamine		38043-08-2	2093571-14-1; 1193389-70-6 (2HCl)	
152*	Unknown	<i>ortho</i> -chloro 4-anilino- <i>N</i> -phenethylpiperidine	<i>N</i> -(2-chlorophenyl)-1-phenethylpiperidin-4-amine; <i>ortho</i> -chloro-ANPP; <i>N</i> -(2-chlorophenyl)-1-(2-phenylethyl)piperidin-4-amine; despropionyl <i>ortho</i> -chlorofentanyl; despropionyl 2-chlorofentanyl		101365-53-1		

* Denotes a possible precursor of a fentanyl-related substance

a - Fentanyl-related substances include those with a chemical structure related to fentanyl.

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 Drug Control Conventions and schedule which the substance is listed. Not all substances under international control have legitimate uses.