

Carfentanil (Carfentanyl)

BMF 86 - Carfentanil

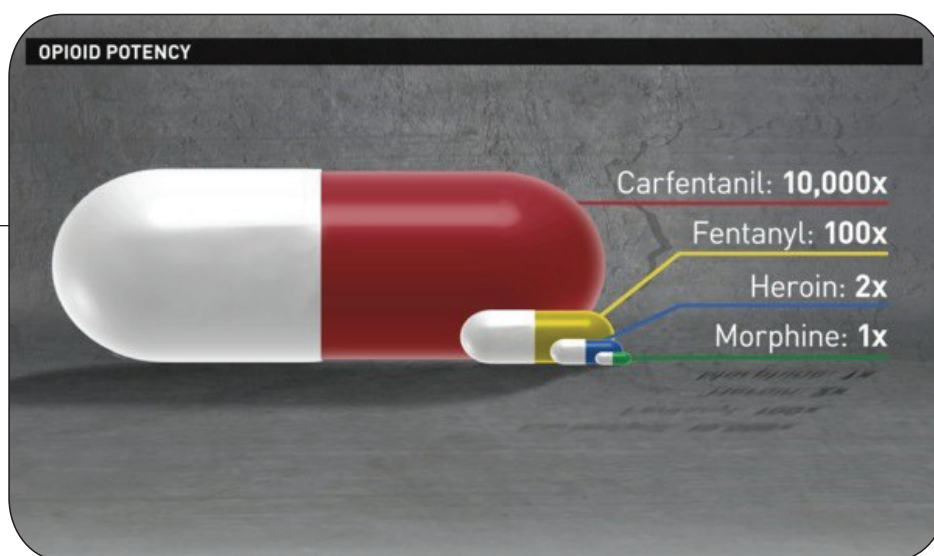
Carfentanil, first synthesized by Janssen Pharmaceuticals in 1974, is an ultra-potent synthetic opioid. It is the most powerful opioid commercially available, being 10,000 times stronger than morphine and 100 times more potent than fentanyl. It can be fatal in the low to sub milligram range. Carfentanil is not approved for human use, but is instead intended for use in veterinary practice, to rapidly incapacitate large animals.

Carfentanil was implicated in the 2002 Moscow theatre siege. An aerosol of carfentanil, and another powerful opioid; remifentanil, was infused into the building by Russian special forces with the intention of subduing Chechen terrorists. Unfortunately the potency and duration of action of the concoction was underestimated, and resulted in the death of 125 hostages through inadequate after care.

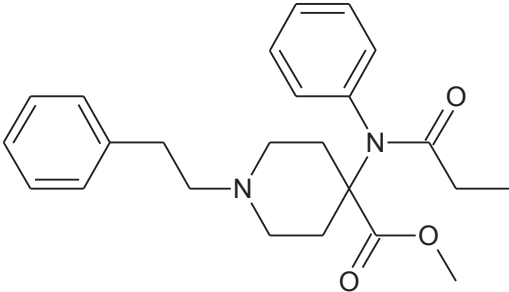
More recently carfentanil has been identified as an adulterant in heroin. In the US it resulted in a spate of overdoses in Ohio and elsewhere, triggering the U.S. Drug Enforcement Administration to initiate a public health emergency.

Severe toxicity may occur from exposure through injection, ingestion or skin contact. Unconsciousness may occur within minutes, and could lead to death from respiratory depression (Toxbase). Signs of exposure include nausea, vomiting, drowsiness, disorientation, sedation, pinpoint pupils and clammy skin. Naloxone is the recommended antidote for carfentanil exposure, and is available as a nasal spray and intramuscular injection.

The potency of this compound poses a significant threat to those who come into contact with it, including police, customs officials and laboratory personnel. Extreme caution should be exercised when handling this material. A full risk assessment is advised. End users are urged to familiarise themselves with the safety data sheet (SDS) before contact. Appropriate personal protective equipment should be in place to prevent accidental exposure.



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Compound: Carfentanil hydrochloride	 <p style="text-align: center;">HCl</p>
Chemical name: 4-Piperidinecarboxylic acid, 4-[(1-oxopropyl)phenylamino]-1-(2-phenylethyl)-, methyl ester	
Synonym(s): Carfentanyl, R 31833, Wildnil®	
CAS: 59708-52-0 (free base)	
Molecular formula: C ₂₄ H ₃₀ N ₂ O ₃ x HCl	
MW (g/mol): 430.97 (as salt), 394.51 (as free base)	

Chiron recently completed the synthesis of a carfentanil certified reference material:

Compound	Part No.	Concentration	Solvent	Qty
Carfentanil hydrochloride 59708-52-0 (free base)	11883.24-100-ME	100 µg base/mL	methanol	1 mL
	11883.24-K-ME	1000 µg base/mL	methanol	1 mL
	11883.24-5MG	neat	neat	5 mg
	11883.24-10MG	neat	neat	10 mg

Compound	Part No.	Concentration	Solvent	Qty
Carfentanil precursor 1863947-94-7	12215.28-K-ME	1000 µg/mL	methanol	1 mL
	12215.28-5-MG	neat	neat	5 mg
Norcarfentanil hydrochloride 61085-87-8	12223.16-K-ME	1000 µg/mL	methanol	1 mL
	12223.16-5MG	neat	neat	5 mg
N-Methylcarfentanil hydrochloride 59708-50-8 (free base)	12224.17-K-ME	1000 µg/mL	methanol	1 mL
	12224.17-5MG	neat	neat	5 mg

**COMING
SOON!**



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Chiron also offer a range of other fentanyl in neat form, as solutions and mixtures:

Catalogue No.	Description	CAS No.	Concentration	Solvent	Volume
4-ANPP (Despropionyl fentanyl)					
12035.19-100-AN	4-ANPP	21409-26-7	100 µg/mL	acetonitrile	1 mL
12035.19-K-AN	4-ANPP	21409-26-7	1000 µg/mL	acetonitrile	1 mL
12035.19-5MG	4-ANPP	21409-26-7	neat	neat	5 mg
Acetyl fentanyl					
11421.21-K-ME	Acetyl fentanyl	3258-84-2	1000 µg/mL	methanol	1 mL
11421.21-10MG	Acetyl fentanyl	3258-84-2	neat	neat	10 mg
Acryl fentanyl					
11474.22-K-AN	Acryl fentanyl hydrochloride	79279-03-1	1000 µg base/mL	acetonitrile	1 mL
11474.22-5MG	Acryl fentanyl hydrochloride	79279-03-1	neat	neat	5 mg
Acetyl norfentanyl					
11862.14-100-ME	Acetyl norfentanyl hydrochloride	22352-82-5	100 µg base/mL	methanol	1 mL
Butyryl fentanyl					
11636.23-K-AN	Butyryl fentanyl hydrochloride	1443-52-3	1000 µg base/mL	acetonitrile	1 mL
11636.23-5MG	Butyryl fentanyl hydrochloride	1443-52-3	neat	neat	5 mg
11636.23-10MG	Butyryl fentanyl hydrochloride	1443-52-3	neat	neat	10 mg
(4-Cl-IBF) 4-Chloroisobutyryl fentanyl					
11489.23-K-ME	4-Cl-IBF hydrochloride	244195-34-4	1000 µg base/mL	methanol	1 mL
11489.23-10MG	4-Cl-IBF hydrochloride	244195-34-4	neat	neat	10 mg
Fentanyl					
9471.22-100-ME	Fentanyl	437-38-7	100 µg/mL	methanol	1 mL
9471.22-K-ME	Fentanyl	437-38-7	1000 µg/mL	methanol	1 mL
9471.22-10MG	Fentanyl	437-38-7	neat	neat	10 mg
9471.22-50MG	Fentanyl	437-38-7	neat	neat	50 mg
9471.22-100MG	Fentanyl	437-38-7	neat	neat	100 mg
9184.22-100-ME	Fentanyl-d5 (N-phenyl-d5)	118357-29-2	100 µg/mL	methanol	1 mL
9184.22-K-ME	Fentanyl-d5 (N-phenyl-d5)	118357-29-2	1000 µg/mL	methanol	1 mL
9184.22-10MG	Fentanyl-d5 (N-phenyl-d5)	118357-29-2	neat	neat	10 mg
9184.22-50MG	Fentanyl-d5 (N-phenyl-d5)	118357-29-2	neat	neat	50 mg
9184.22-100MG	Fentanyl-d5 (N-phenyl-d5)	118357-29-2	neat	neat	100 mg
11859.14-100-ME	Norfentanyl (NSC 89293)	1609-66-1	100 µg/mL	methanol	1 mL
11859.14-10MG	Norfentanyl (NSC 89293)	1609-66-1	neat	neat	10 mg
9237.14-100-ME	Norfentanyl-d5 (phenyl-d5)	1211527-23-9	100 µg/mL	methanol	1 mL
9237.14-10MG	Norfentanyl-d5 (phenyl-d5)	1211527-23-9	neat	neat	10 mg
ortho-Fluorofentanyl hydrochloride (o-FF, 2-Fluorofentanyl, 2-FF)					
11858.22-100-ME	ortho-Fluorofentanyl hydrochloride	N/A	100 µg base/mL	methanol	1 mL
11858.22-5MG	ortho-Fluorofentanyl hydrochloride	N/A	neat	neat	5 mg
Furanyl fentanyl hydrochloride (Fu-F)					
11293.24-K-AN	Furanyl fentanyl hydrochloride	101365-56-4	1000 µg base/mL	acetonitrile	1 mL
11293.24-5MG	Furanyl fentanyl hydrochloride	101365-56-4	neat	neat	5 mg
11293.24-10MG	Furanyl fentanyl hydrochloride	101365-56-4	neat	neat	10 mg

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4-Fluoro-isobutyryl fentanyl (4-FIBF, <i>para</i>-Fluoroisobutyryl fentanyl, NIH 10487)					
11865.23-100-ME	4-Fluoro-isobutyryl fentanyl hydrochloride	244195-32-2 (free base)	100 µg base/mL	methanol	1 mL
11865.23-5MG	4-Fluoro-isobutyryl fentanyl hydrochloride	244195-32-2 (free base)	neat	neat	5 mg
4-MeO-butyryl fentanyl (4-methoxy-Butyryl fentanyl)					
11861.24-100-ME	4-Methoxy-Butyryl fentanyl hydrochloride	N/A	100 µg base/mL	methanol	1 mL
Ocfentanil (A-3217)					
11659.22-K-ME	Ocfentanil hydrochloride	112964-97-3	1000 µg base/mL	methanol	1 mL
11659.22-5MG	Ocfentanil hydrochloride	112964-97-3	neat	neat	5 mg
11659.22-10MG	Ocfentanil hydrochloride	112964-97-3	neat	neat	10mg
Remifentanil (Remifentanyl)					
11900.20-K-ME	Remifentanil hydrochloride	132539-07-2	1000 µg base/mL	methanol	1 mL
11900.20-10MG	Remifentanil hydrochloride	132539-07-2	neat	neat	10 mg
Valeryl fentanyl (NIH 10488, Pentanoyl fentanyl, Pentanyl fentanyl)					
11863.24-100-ME	Valeryl fentanyl hydrochloride	117332-91-9	100 µg base/mL	methanol	1 mL

Please enquire for other pack sizes and presentations.

Fentanyl Mix 1			
7 compounds at 100µg base/mL in methanol, 1x1 mL			
Catalogue No.	Part No.	Description	CAS No.
S-4924-100-ME	11421.21	Acetyl fentanyl	3258-84-2
	11474.22	Acryl fentanyl hydrochloride	79279-03-1
	11636.23	Butyryl fentanyl hydrochloride	1443-52-3
	11489.23	4-Cl-IBF hydrochloride	244195-34-4
	9471.22	Fentanyl	437-38-7
	11293.24	Furanyl fentanyl hydrochloride	101365-56-4
	11659.22	Ocfentanil hydrochloride	112964-97-3

Fentanyl Mix 2			
15 compounds at 100µg base/mL in methanol, 1x1 mL			
Catalogue No.	Part No.	Description	CAS No.
S-4923-100-ME	11421.21	Acetyl fentanyl	3258-84-2
	11862.14	Acetyl norfentanyl hydrochloride	22352-82-5
	11474.22	Acryl fentanyl hydrochloride	79279-03-1
	11636.23	Butyryl fentanyl hydrochloride	1443-52-3
	11861.24	4-methoxy-Butyryl fentanyl hydrochloride	N/A
	11489.23	4-Cl-IBF hydrochloride	244195-34-4
	11860.19	Despropionyl <i>p</i> -fluoro fentanyl	122861-41-0
	9471.22	Fentanyl	437-38-7
	11293.24	Furanyl fentanyl hydrochloride	101365-56-4
	11859.14	Norfentanyl	1609-66-1
	11659.22	Ocfentanil hydrochloride	112964-97-3
	11858.22	<i>ortho</i> -Fluorofentanyl hydrochloride	N/A
	11863.24	Valeryl fentanyl hydrochloride	117332-91-9
	11864.19	W-15	93100-99-3
	11635.19	W-18	93101-02-1



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References:

- [1] *FENTANYL: Incapacitating Agent*, CDC Centers for Disease Control and Prevention, The National Institute for Occupational Safety and Health (NIOSH).
- [2] Michael G. Feasel, Ariane Wohlfarth, John M. Nilles, Shaokun Pang, Robert L. Kristovich and Marilyn A. Huestis. *Metabolism of Carfentanil, an Ultra-Potent Opioid, in Human Liver Microsomes and Human Hepatocytes by High-Resolution Mass Spectrometry*. DOI:10.1208/s12248-016-9963-5
- [3] James R. Riches Robert W. Read Robin M. Black Nicholas J. Cooper Christopher M. Timperley. *Analysis of Clothing and Urine from Moscow Theatre Siege Casualties Reveals Carfentanil and Remifentanil Use*. *J Anal Toxicol* (2012) 36 (9): 647-656.
- [4] *Scientific Working Group for the Analysis of Drugs (SWGDRUG) Monograph* <http://www.swgdrug.org/Monographs/Carfentanil.pdf>
- [5] *Toxbase. Carfentanyl (Pharmaceutical), New 1/2014 and Opioids with potential for human incapacitation, Updated 6/2015.*

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