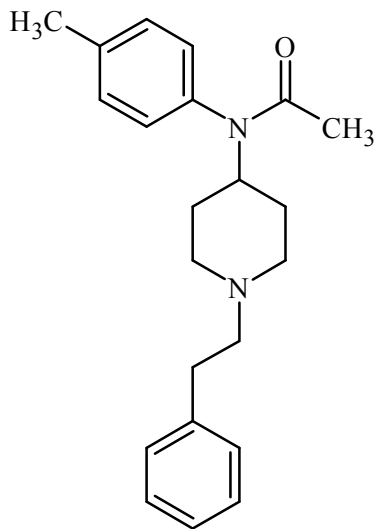




## para-Methyl Acetyl Fentanyl

The Drug Enforcement Administration's Special Testing and Research Laboratory generated this monograph using structurally confirmed reference material.



### 1. GENERAL INFORMATION

**IUPAC Name:** N-(4-methylphenyl)-N-(1-phenethylpiperidin-4-yl)acetamide

**CAS#:** N/A

**Synonyms:** 4-methyl acetyl fentanyl, p-methyl acetyl fentanyl,  
N-(4-methylphenyl)-N-[1-(2-phenylethyl)piperidin-4-yl]acetamide

**Source:** DEA Reference Material Collection

**Appearance:** Beige powder

**UV<sub>max</sub>(nm):** Not Determined

### 2. CHEMICAL AND PHYSICAL DATA

#### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Base	C <sub>22</sub> H <sub>28</sub> N <sub>2</sub> O	336.47	Not Determined
HCl	C <sub>22</sub> H <sub>28</sub> N <sub>2</sub> O HCl	372.93	Not Determined



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## 3. QUALITATIVE DATA

### 3.1 NUCLEAR MAGNETIC RESONANCE

*Sample Preparation:* Dilute analyte to ~11 mg/mL in CD<sub>3</sub>OD containing TMS for 0 ppm reference and dimethylfumarate as quantitative internal standard.

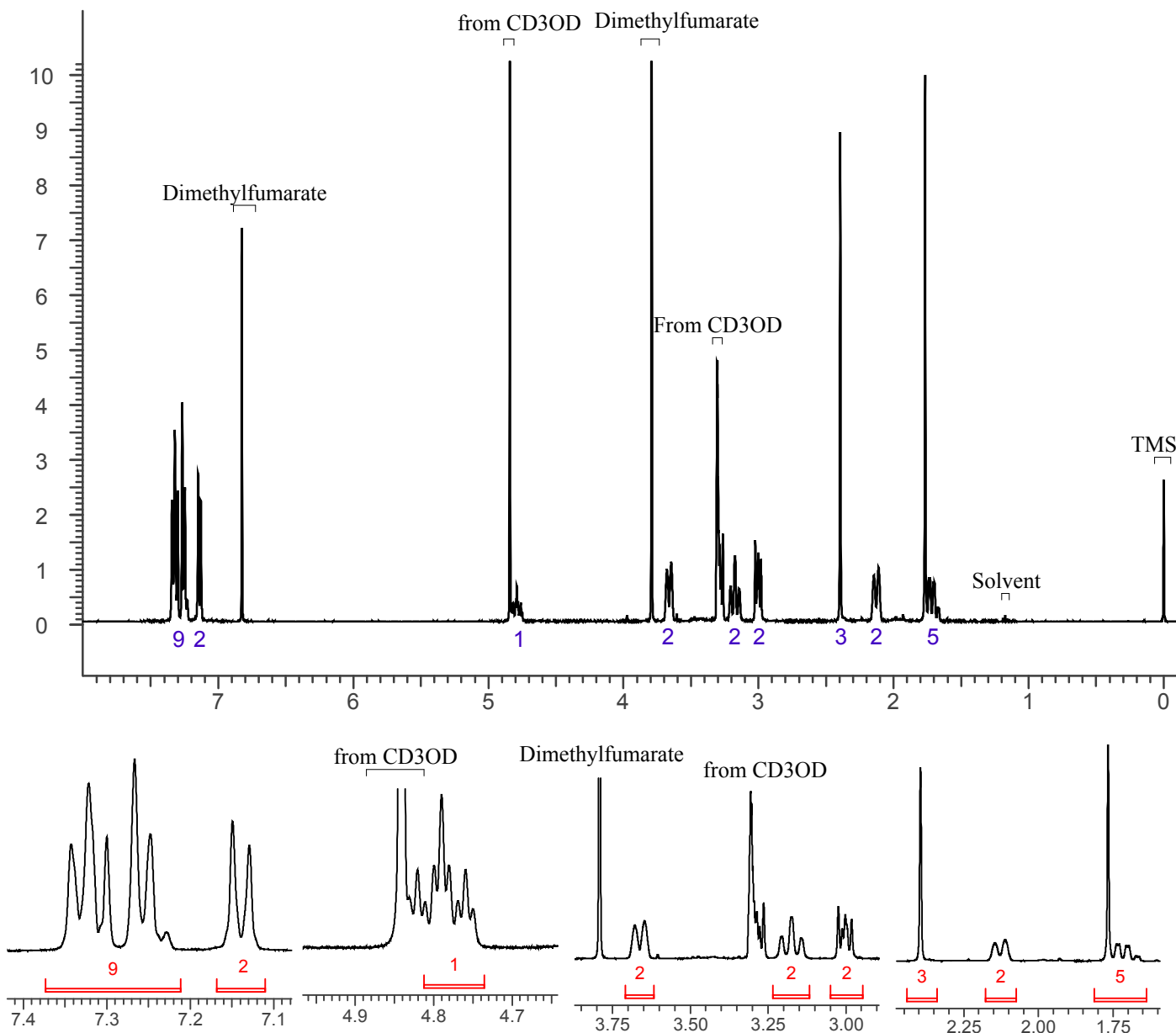
*Instrument:* 400 MHz NMR spectrometer

*Parameters:* Spectral width: at least containing -3.0 ppm through 13.0 ppm

Pulse angle: 90°

Delay between pulses: 45 seconds

<sup>1</sup>HNMR: para-methyl acetyl fentanyl HCl; Lot 0514281-6; CD<sub>3</sub>OD: 400MHz





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### 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

**Sample Preparation:** Dilute analyte ~8 mg/mL in methanol.

**Instrument:** Agilent gas chromatograph operated in split mode with MS detector

**Column:** HP-5 MS (or equivalent); 30m x 0.25 mm x 0.25  $\mu$ m

**Carrier Gas:** Helium at 1.5 mL/min

**Temperatures:** Injector: 280°C

MSD transfer line: 280°C

MS Source: 230°C

MS Quad: 150°C

Oven program:

1) 100°C initial temperature for 1.0 min

2) Ramp to 280°C at 12 °C/min

3) Hold final temperature for 9.0 min

**Injection Parameters:** Split Ratio = 25:1, 1  $\mu$ L injected

**MS Parameters:** Mass scan range: 30-550 amu

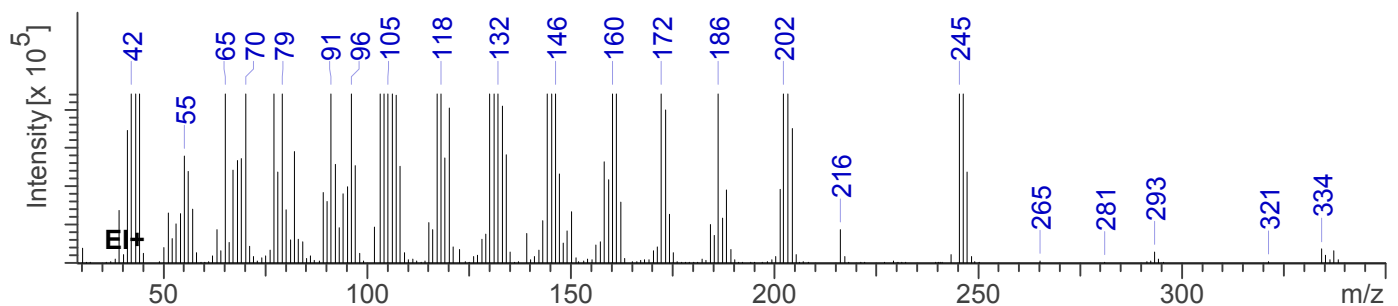
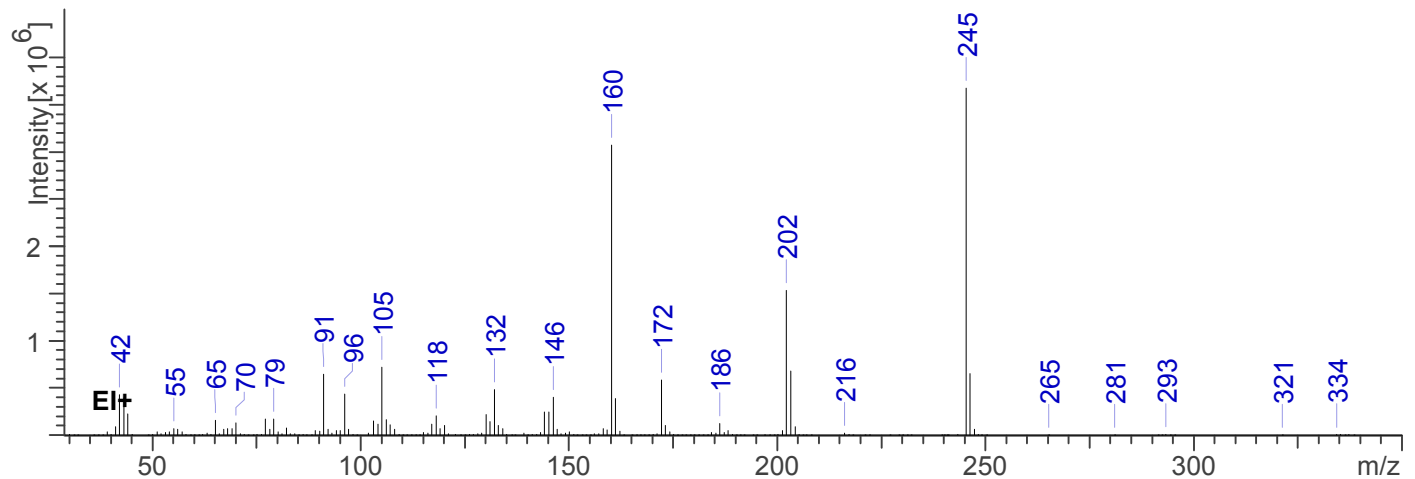
Threshold: 100

Tune file: stune.u

Acquisition mode: scan

**Retention Time:** 17.199 min

EI Mass Spectrum: para-Methyl Acetyl Fentanyl HCl; Lot 0514281-6





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## 3.3 INFRARED SPECTROSCOPY (FTIR)

**Instrument:** FTIR with diamond ATR attachment (1 bounce)

**Scan Parameters:**  
Number of scans: 32  
Number of background scans: 32  
Resolution: 4 cm<sup>-1</sup>  
Sample gain: 1  
Aperture: 150

FTIR ATR (Diamond 1 Bounce): para-methyl acetyl fentanyl HCl; Lot 0514281-6

