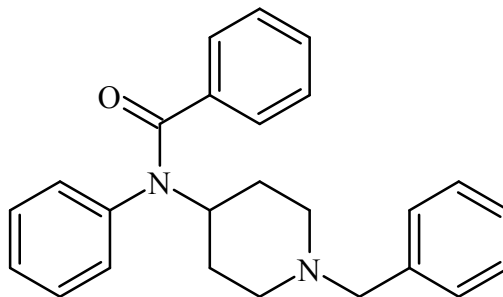




## Benzoylbenzyl fentanyl

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



### 1. GENERAL INFORMATION

**IUPAC Name:** *N*-(1-benzylpiperidin-4-yl)-*N*-phenylbenzamide

**CAS#:** NA

**Synonyms:** NA

**Source:** DEA Reference Material Collection

**Appearance:** off-white powder

**UV<sub>max</sub>(nm):** NA

### 2. CHEMICAL AND PHYSICAL DATA

#### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Base	C <sub>25</sub> H <sub>26</sub> N <sub>2</sub> O	370.49	NA
HCl	C <sub>25</sub> H <sub>26</sub> N <sub>2</sub> O HCl	406.95	NA



# Benzoylbenzyl fentanyl

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



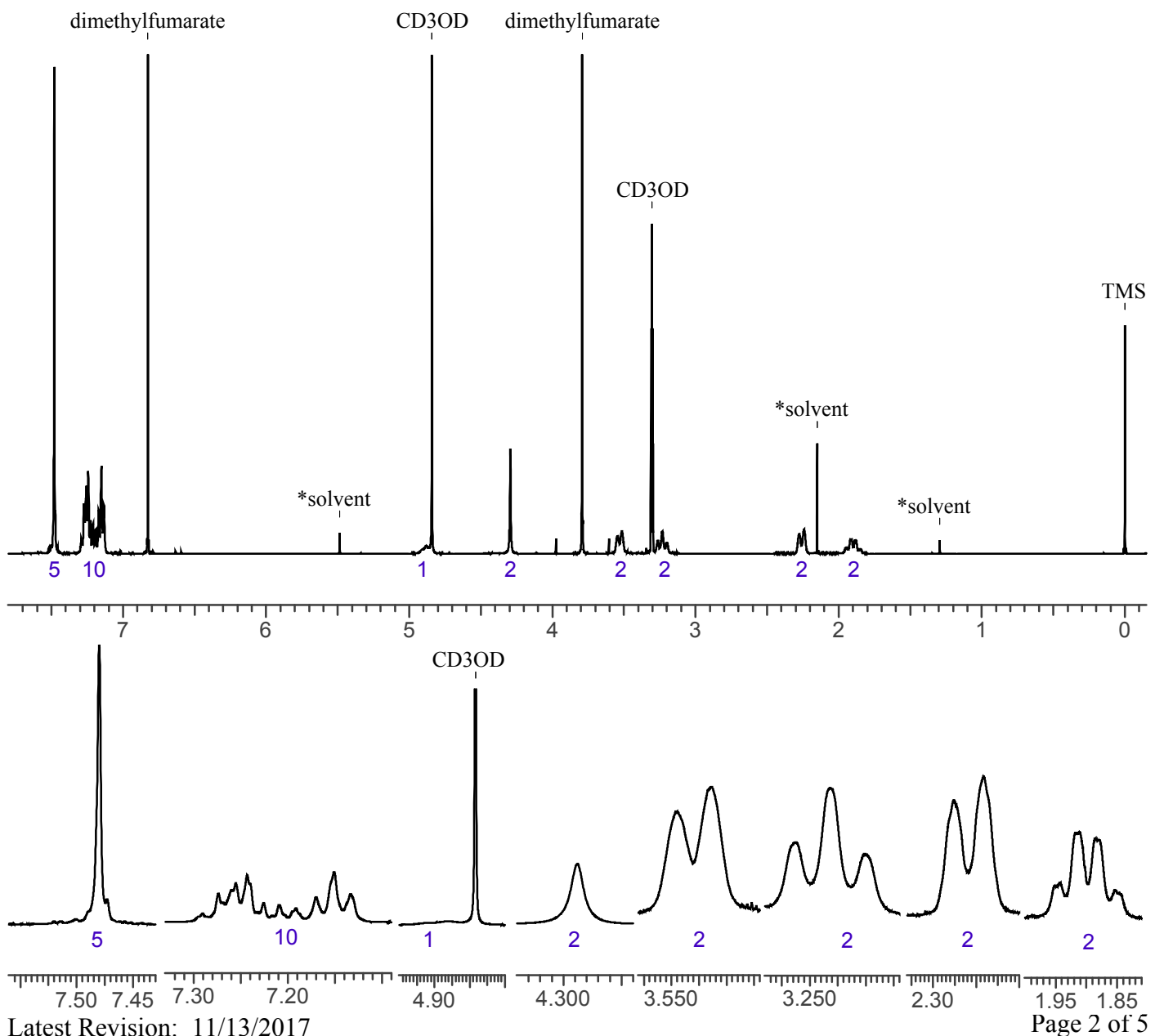
## 3. QUALITATIVE DATA

### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~9mg/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 ppm through 13 ppm  
Pulse angle: 90°  
Delay between pulses: 45 seconds

<sup>1</sup>HNMR: Benzoylbenzyl fentanyl HCl; lot# N18-P66A; CD<sub>3</sub>OD; 400MHz





# Benzoylbenzyl fentanyl

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



## 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

**Sample Preparation:** Dilute analyte ~4 mg/mL into methanol.

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

**Column:** HP-5; 30m x 0.25 mm x 0.25 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 µL injected

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

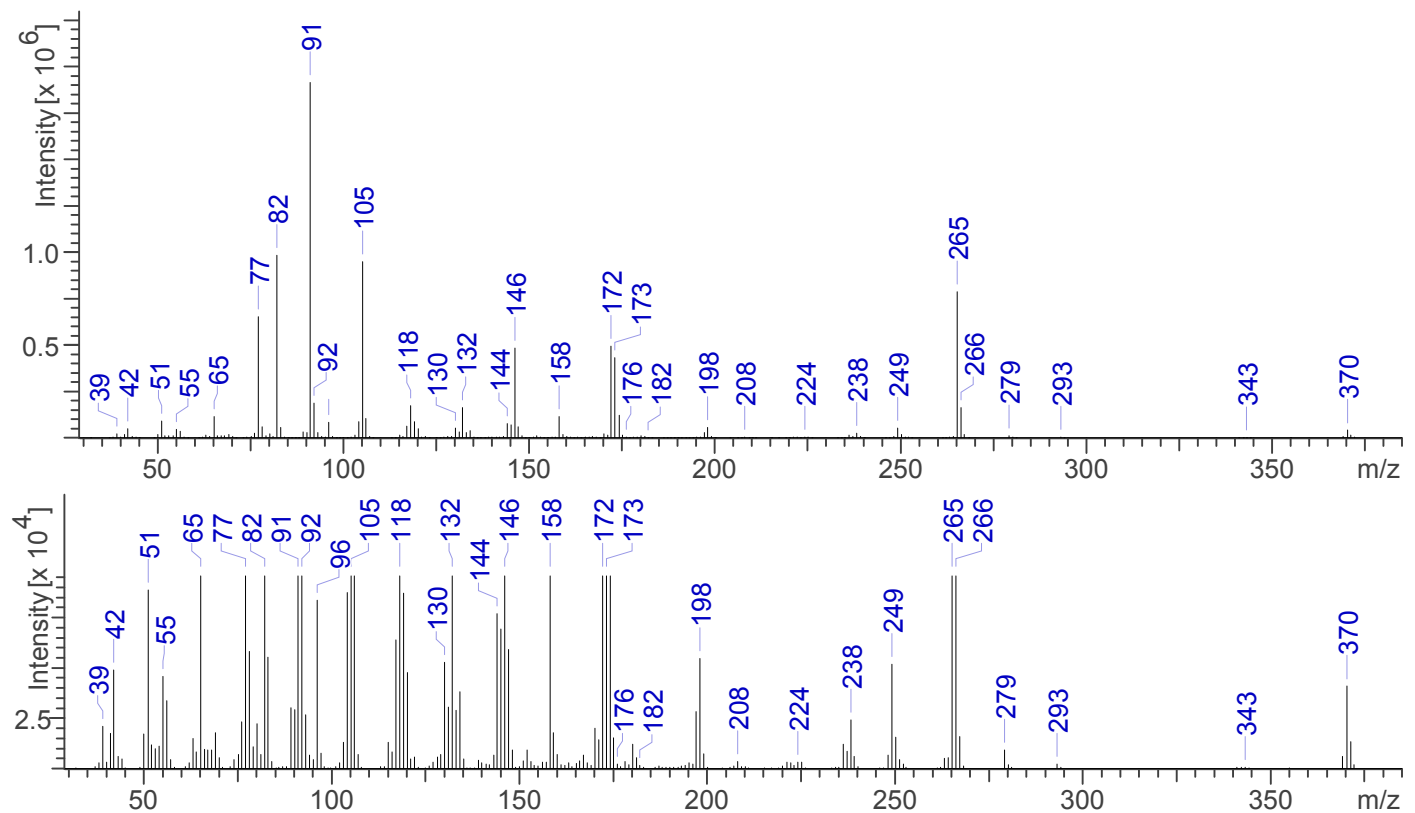
Threshold: 250

Tune file: stune.u

Acquisition mode: scan

**Retention Time:** 20.526 min

EI Mass Spectrum: Benzoylbenzyl fentanyl HCl; lot# N18-P66A





# Benzoylbenzyl fentanyl

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

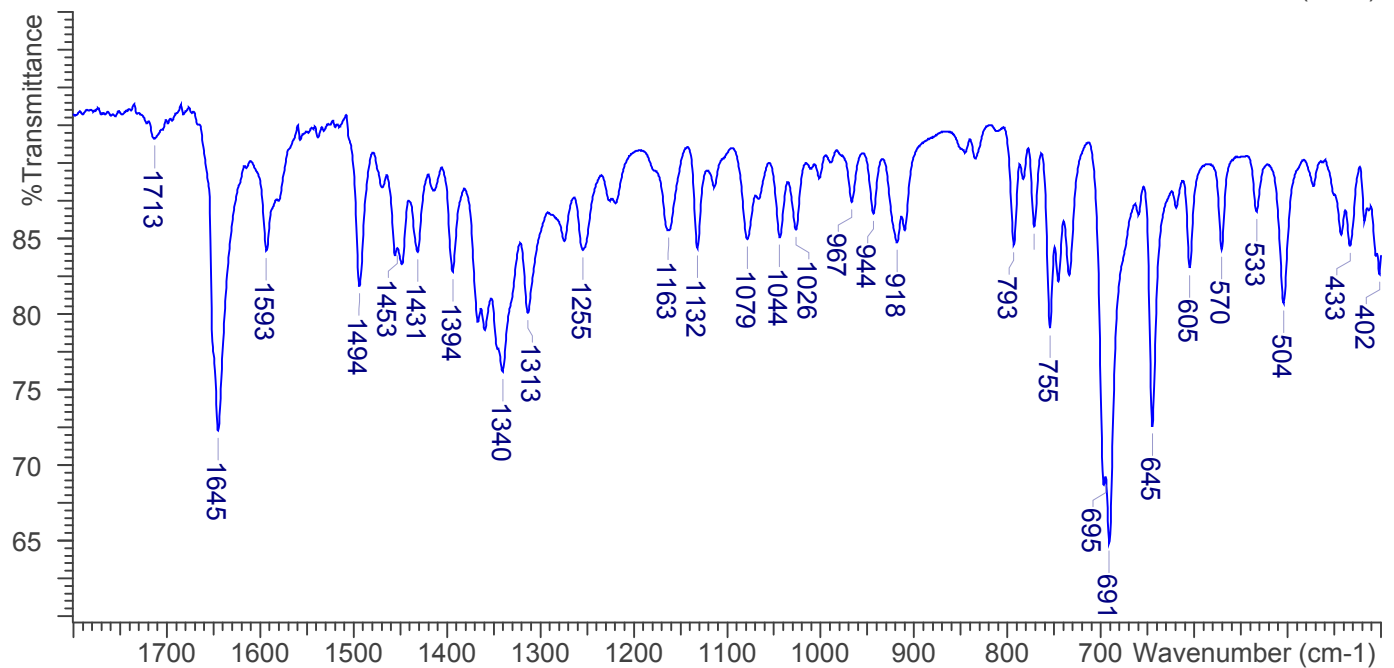
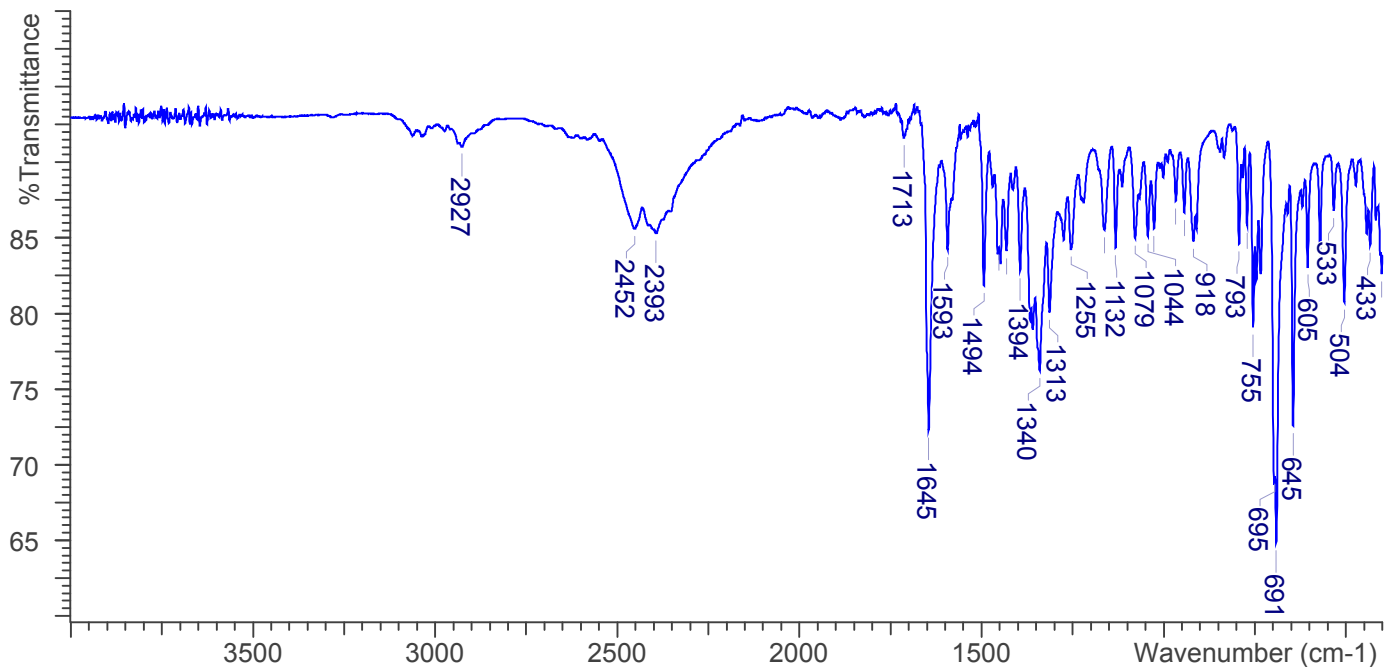


## 3.3 INFRARED SPECTROSCOPY (FTIR)

**Instrument:** FTIR (SensIR Dura-Scope ATR Accessory)

**Scan Parameters:**  
Number of scans: 32  
Number of background scans: 32  
Resolution: 4 cm<sup>-1</sup>  
Sample gain: 8  
Aperture: 150

FTIR ATR (Diamond 1 Bounce): Benzoylbenzyl fentanyl HCl; lot# N18-P66A





## Benzoylbenzyl fentanyl

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



### **4. ADDITIONAL RESOURCES**

*no available literature as of 11/13/17*