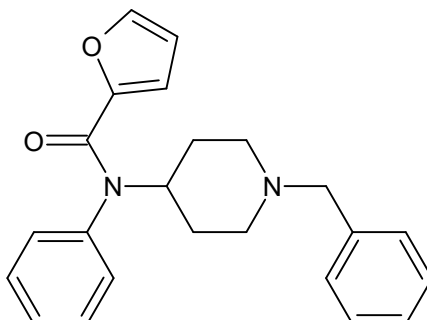




## 2-Furanylbenzyl fentanyl

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*-phenylfuran-2-carboxamide

**CAS#:** NA

**Synonyms:** N-benzyl Furanyl norfentanyl

**Source:** DEA Reference Material Collection

**Appearance:** White 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>23</sub> H <sub>24</sub> N <sub>2</sub> O <sub>2</sub>	360.45	Not Determined



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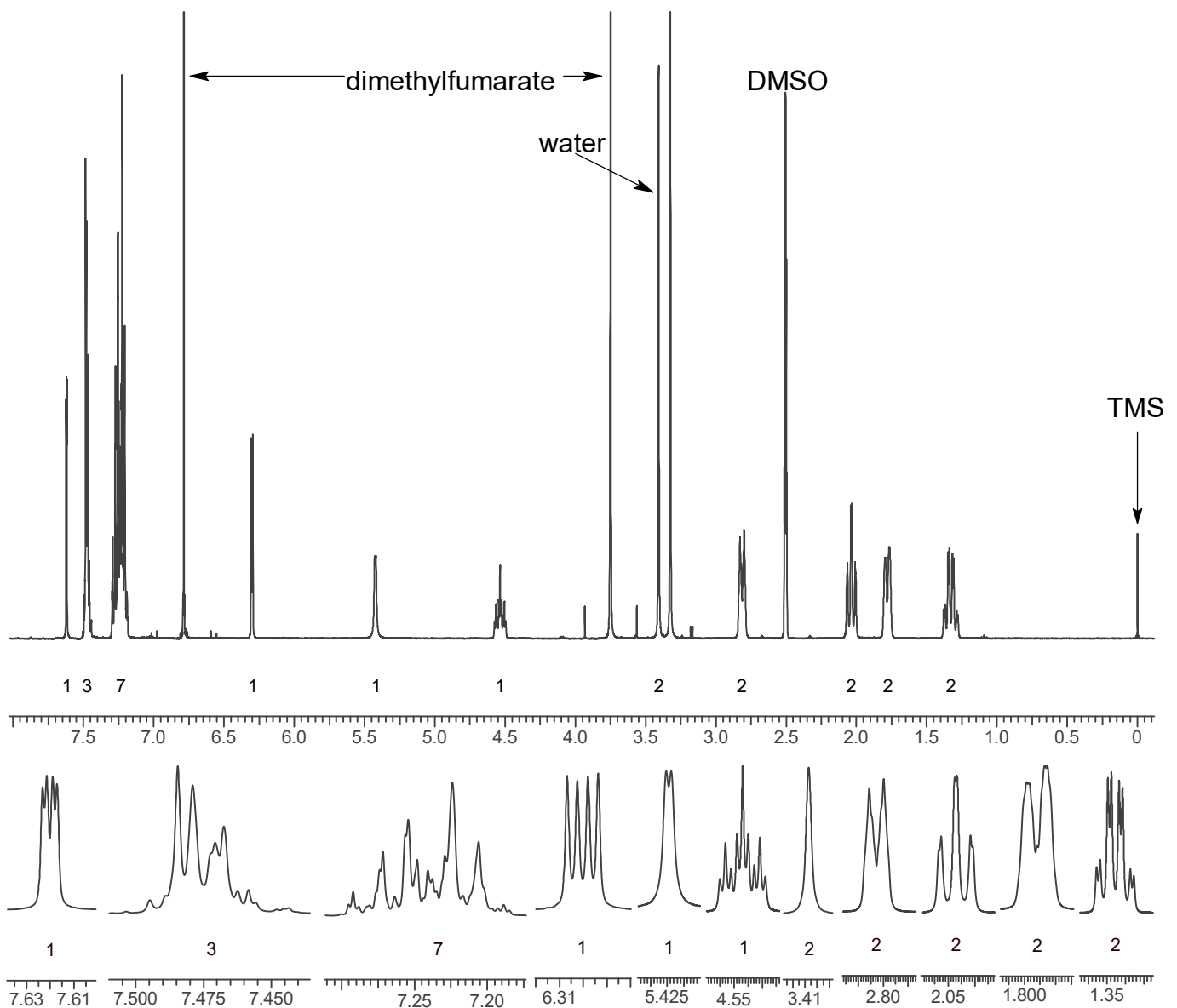
### 3. QUALITATIVE DATA

#### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~10 mg/mL in DMSO- $d_6$  containing TMS for 0 ppm reference and dimethyl fumarate as quantitative internal standard.

**Instrument:** 400 MHz NMR spectrometer  
**Parameters:** Spectral width: at least containing -3 ppm through 13 ppm  
Pulse angle:  $90^\circ$   
Delay between pulses: 45 seconds

$^1\text{H}$ NMR: 2-Furanylbzyl fentanyl base; Lot# N18-P85D; DMSO- $d_6$ ; 400MHz





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### 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

**Sample Preparation:** Dilute analyte ~4.0 mg/mL in MeOH

**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

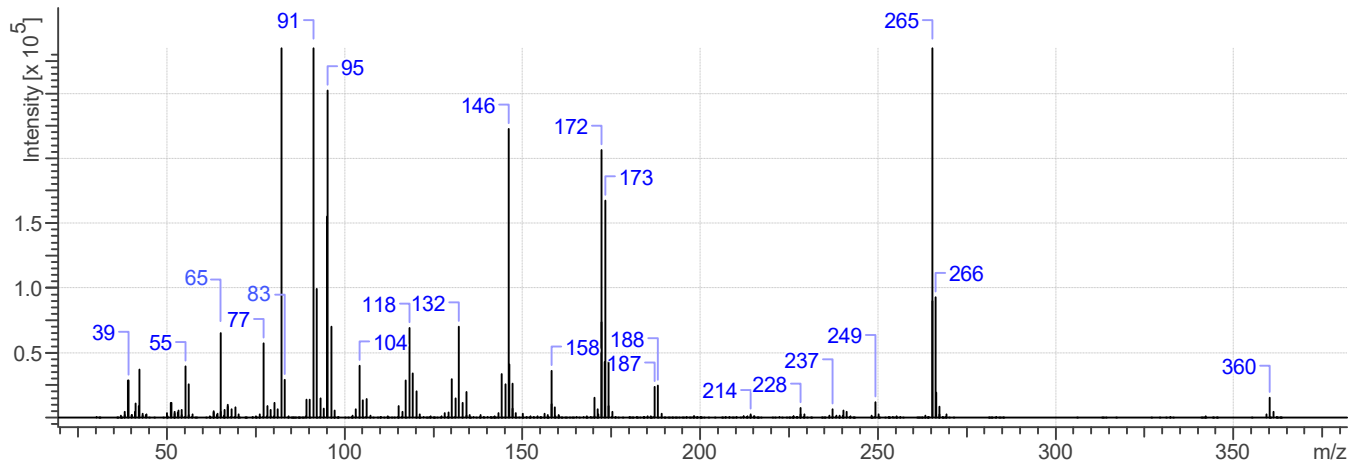
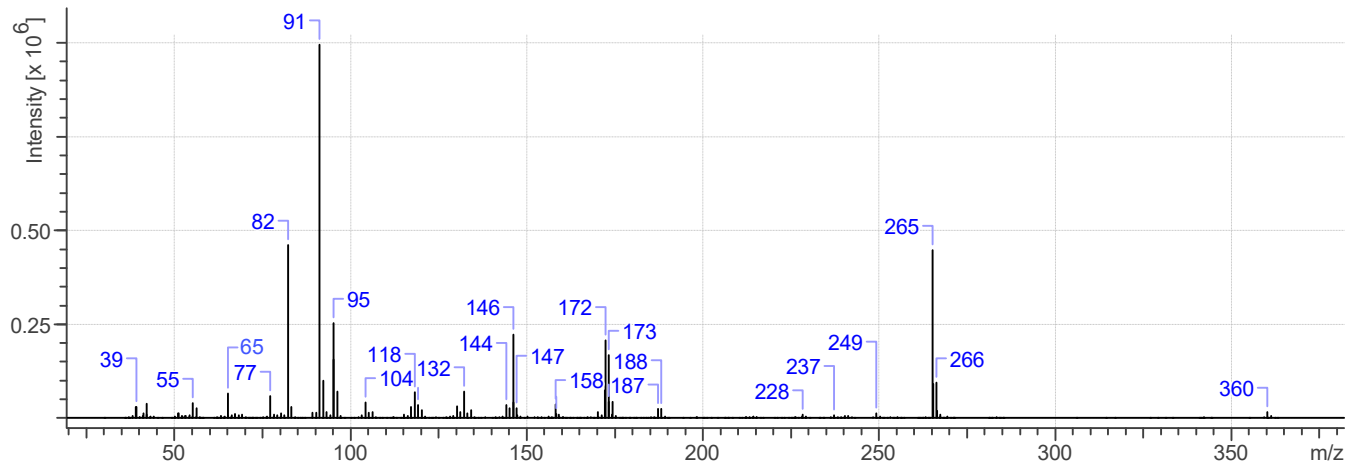
**MS Parameters:** Mass scan range: 30-550 amu                      Threshold: 250

Tune file: stune.u

Acquisition mode: scan

**Retention Time:** 18.671 min

EI Mass Spectrum: 2-Furanylbzyl fentanyl base; Lot# N18-P85D





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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): 2-Furanylbenzyl fentanyl base; Lot# N18-P85D

