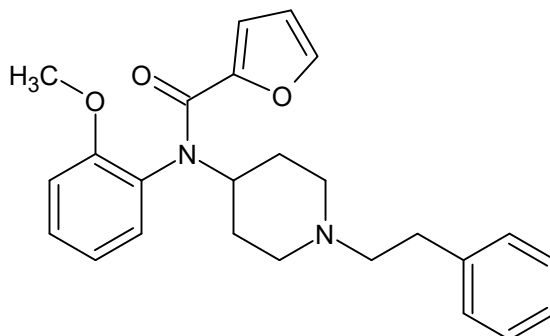




## ortho-Methoxy furanyl fentanyl

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



### 1. GENERAL INFORMATION

<b>IUPAC Name:</b>	<i>N</i> -(2-methoxyphenyl)- <i>N</i> -(1-phenethylpiperidin-4-yl)furan-2-carboxamide
<b>CAS#:</b>	101343-50-4
<b>Synonyms:</b>	2-methoxy Fu-F, o-methoxy Fu-F, ortho-methoxy Fu-F, 2-methoxy Furanyl fentanyl, o-methoxy Furanyl fentanyl, <i>N</i> -(2-methoxyphenyl)- <i>N</i> -[1-(2-phenylethyl)piperidin-4-yl]furan-2-carboxamide
<b>Source:</b>	DEA Reference Material Collection
<b>Appearance:</b>	White powder
<b>UV<sub>max</sub>(nm):</b>	Not determined

### 2. CHEMICAL AND PHYSICAL DATA

#### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Base	C <sub>25</sub> H <sub>28</sub> N <sub>2</sub> O <sub>3</sub>	404.50	Not Determined



## *ortho*-Methoxy furanyl fentanyl

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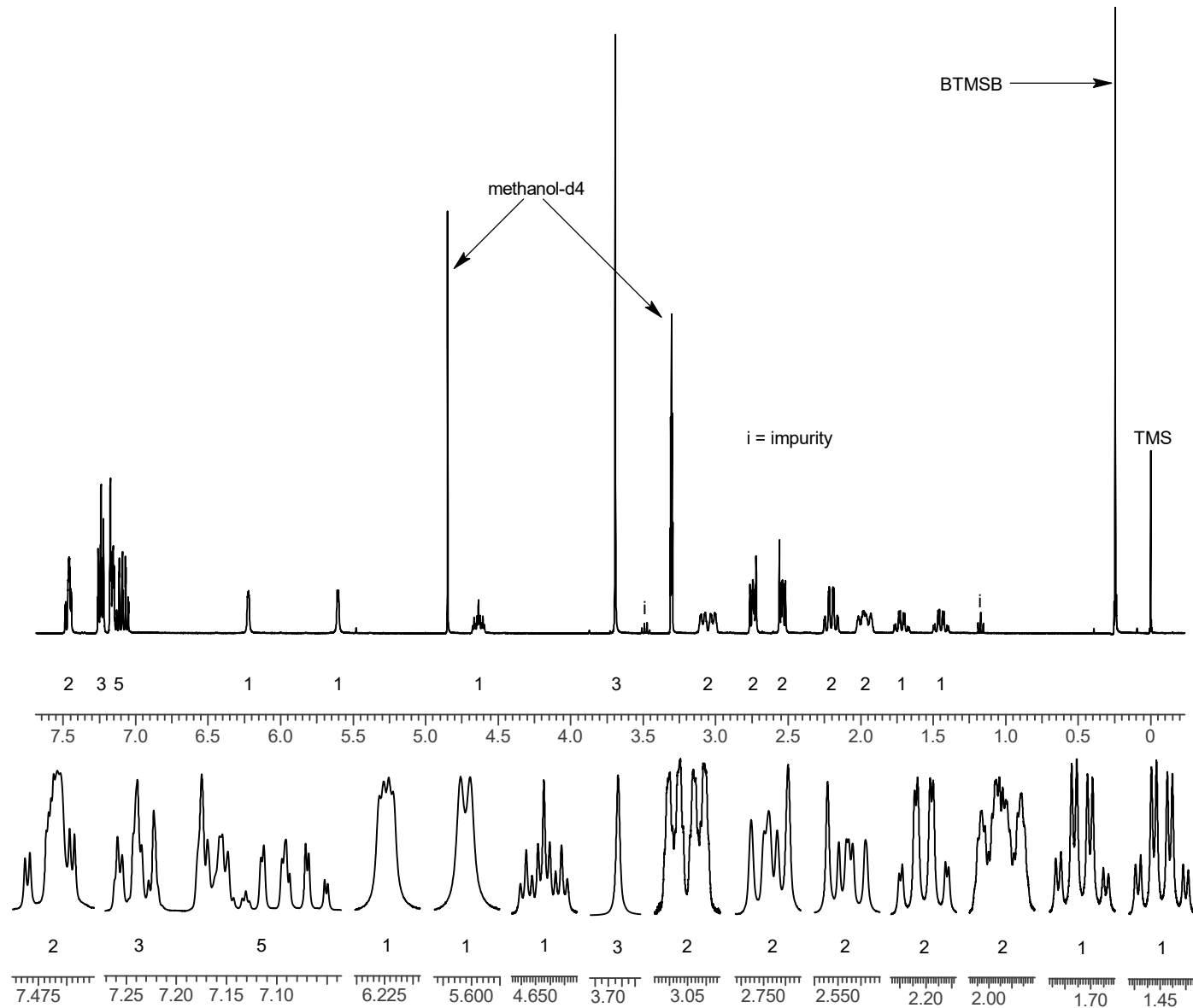
### 3. QUALITATIVE DATA

#### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~15 mg/mL in methanol- $d_4$  containing TMS for 0 ppm reference and 1,4-BTMSB- $d_4$  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

$^1\text{H}$ NMR: *ortho*-Methoxy furanyl fentanyl; Lot# 0546722-3; methanol- $d_4$ ; 400MHz





## *ortho*-Methoxy furanyl fentanyl

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### 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

*Sample Preparation:* Dilute analyte ~4 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

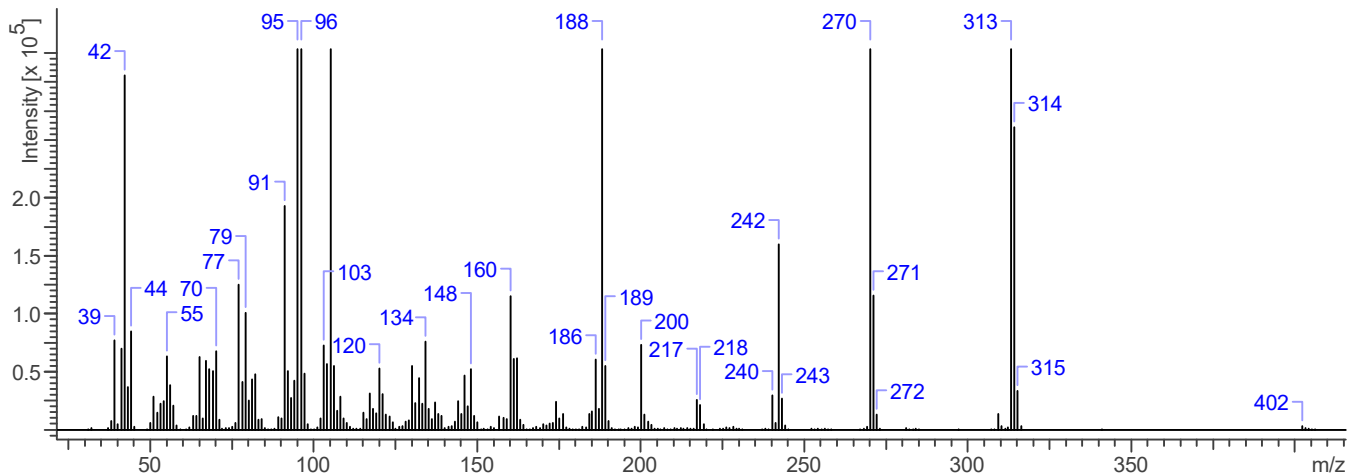
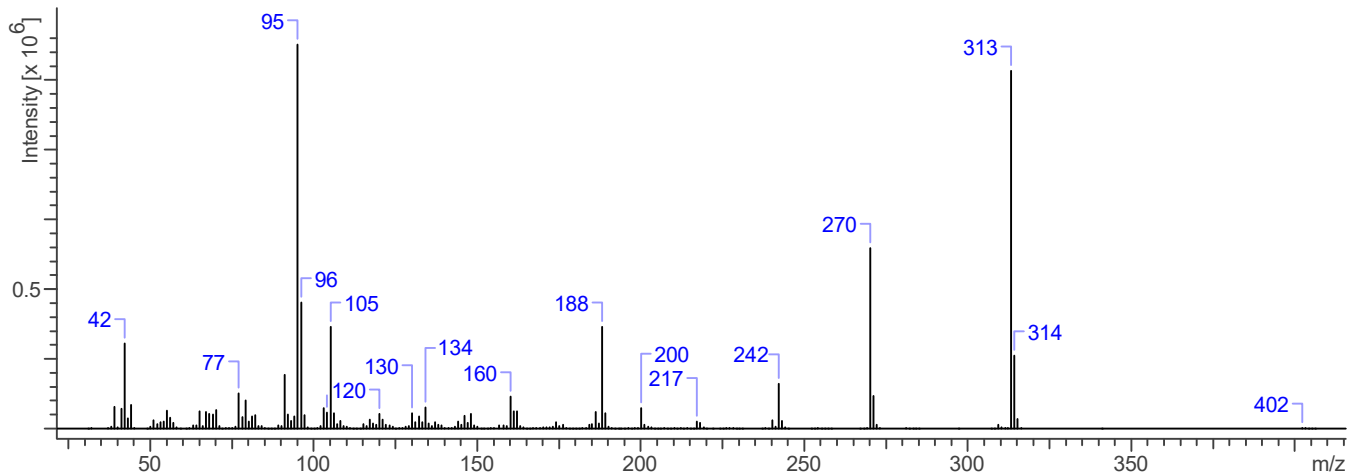
**Injection Parameters:** Split Ratio = 25:1, 1  $\mu$ L injected

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

Tune file: stune.u                      Acquisition mode: scan

**Retention Time:** 21.83 min

EI Mass Spectrum: *ortho*-Methoxy furanyl fentanyl; Lot# 0546722-3





# *ortho*-Methoxy furanyl fentanyl

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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: 8  
Aperture: 80

FTIR ATR (Diamond 1 Bounce): *ortho*-Methoxy furanyl fentanyl; Lot# 0546722-3

