1. GENERAL INFORMATION

**IUPAC Name:** N-phenyl-N-[1-(2-phenylethyl)piperidin-4-yl]furan-2-carboxamide

**CAS#:** 101345-66-8

**Synonyms:** 2-Furanyl fentanyl

**Source:** DEA Reference Material Collection

**Appearance:** White powder

**UV\_{max} (nm):** Not determined

2. CHEMICAL AND PHYSICAL DATA

2.1 CHEMICAL DATA

<table>
<thead>
<tr>
<th>Form</th>
<th>Chemical Formula</th>
<th>Molecular Weight</th>
<th>Melting Point (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>C_{24}H_{26}N_{2}O_{2}</td>
<td>374</td>
<td>Not Determined</td>
</tr>
<tr>
<td>HCl</td>
<td>C_{24}H_{26}N_{2}O_{2}·HCl</td>
<td>411</td>
<td>232.7</td>
</tr>
</tbody>
</table>

Latest Revision: 6/15/2016  SWGDRUG.org/monographs.htm
3. QUALITATIVE DATA

3.1 NUCLEAR MAGNETIC RESONANCE

Sample Preparation: Dilute analyte to ~12 mg/mL in DMSO-$d_6$ 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

$^1$HNMR: Furanyl fentanyl HCl; Lot# ALB-288-12; 400MHz
3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample Preparation: Dilute analyte ~3 mg/mL in CHCl₃

Instrument: Agilent gas chromatograph operated in split mode with MS detector
Column: DB-1 MS (or equivalent); 30m x 0.25 mm x 0.25 ȝm
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 = 23:1
- 1 ȝL injected

MS Parameters:
- Mass scan range: 30-550 amu
- Threshold: 150
- Tune file: stune.u
- Acquisition mode: scan

Retention Time:
20.634 min

EI Mass Spectrum: Furanyl fentanyl HCl; Lot# ALB-288-12
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⁻¹
- Sample gain: 4
- Aperture: 80

FTIR ATR (Diamond 1 Bounce): Furanyl fentanyl HCl; Lot# ALB-288-12

Wavenumber (cm⁻¹)
Furanyl Fentanyl
The Drug Enforcement Administration's Special Testing and Research Laboratory generated this monograph using structurally confirmed reference material.

4. ADDITIONAL RESOURCES

Wikipedia