1. GENERAL INFORMATION

**IUPAC Name:** N-phenyl-N-(piperidin-4-yl)acetamide

**CAS#:** 22352-82-5 (HCl)

**Synonyms:** acetylnorfentanyl

**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(<em>{13})H(</em>{18})N(_{2})O</td>
<td>218.29</td>
<td>Not Determined</td>
</tr>
<tr>
<td>HCl</td>
<td>C(<em>{13})H(</em>{18})N(_{2})O·HCl</td>
<td>254.75</td>
<td>Not Determined</td>
</tr>
</tbody>
</table>
3. QUALITATIVE DATA

3.1 NUCLEAR MAGNETIC RESONANCE

Sample Preparation: Dilute analyte to ~5 mg/mL in methanol- $d_4$ 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: Acetyl norfentanyl HCl; LOT # 0450748-6; methanol- $d_4$; 400MHz
3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample Preparation: Dilute analyte ~4 mg/mL in CHCl₃ (base extracted)

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 μm

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
- Tune file: stune.u
- Acquisition mode: scan
- Threshold: 250

Retention Time: 10.986 min

EI Mass Spectrum: Acetyl norfentanyl HCl; LOT # 0450748-6
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): Acetyl norfentanyl HCl; LOT # 0450748-6
4. ADDITIONAL RESOURCES

No additional resources as of 11/16/2016