1. GENERAL INFORMATION

**IUPAC Name:**  
N-(4-chlorophenyl)-1-phenethylpiperidin-4-amine

**CAS#:**  
NA

**Synonyms:**  
N-(4-chlorophenyl)-1-(2-phenylethyl)piperidin-4-amine, para-chloro-4-ANPP

**Source:**  
DEA Reference Material Collection

**Appearance:**  
white powder

**$UV_{max}(nm)$:**  
253.1nm, 300.4nm

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 ($^\circ$C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>$C_{19}H_{23}ClN_2$</td>
<td>314.85</td>
<td>NA</td>
</tr>
<tr>
<td>HCl</td>
<td>$C_{19}H_{23}ClN_2 \cdot HCl$</td>
<td>351.31</td>
<td>NA</td>
</tr>
</tbody>
</table>
3. QUALITATIVE DATA

3.1 NUCLEAR MAGNETIC RESONANCE

Sample Preparation: Dilute analyte to ~10 mg/mL in CD3OD containing TMS for 0 ppm reference and 1,4-BTMSB-d₄ 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

¹HNMR: Despropionyl para-Chlorofentanyl HCl; Lot# 0600260-9; CD3OD; 400MHz
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 μm
Carrier Gas: Helium at 1.5mL/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: 100
- Tune file: stune.u
- Acquisition mode: scan

Retention Time: 16.298min

EI Mass Spectrum: Despropionyl para-Chlorofentanyl HCl; Lot# 0600260-9

Latest Revision: 09/07/2021
3.3 INFRARED SPECTROSCOPY (FTIR)

**Instrument:** FTIR with diamond ATR attachment (3 bounce)

**Scan Parameters:**
- Number of scans: 32
- Number of background scans: 32
- Resolution: 4 cm\(^{-1}\)
- Sample gain: 4
- Aperture: 150

FTIR ATR (Diamond 1 Bounce): Despropionyl para-Chlorofentanyl HCl; Lot# 0600260-9

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[Graph showing infrared spectra with labeled wavenumbers in cm\(^{-1}\).]
Despropionyl para-Chlorofentanyl

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

3.4. GAS CHROMATOGRAPHY /INFRARED DETECTION:

Sample Preparation: Dilute analyte 1mg/ml in CHCl₃

Instrument: Gas Chromatograph in split mode with Infrared Detection
Column: HP-5; 30m x 0.32 mm id x 0.25 μm
Carrier Gas: Helium at 2.0mL/min
Temperature: Injector: 280°C  Split ratio: 2:1, 2μl injection
65°C hold 0.5min., ramp to 310°C at 20°C/min., hold 5min.

IRD: Detector: Transfer line
Temp 280°C
Flow Cell Temp 280°C
Resolution 8 cm⁻¹

GC-IRD: Despropionyl para-chlorofentanyl HCl; Lot# 0600260-9
Despropionyl para-Chlorofentanyl

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

4. ADDITIONAL RESOURCES

No additional resources as of 09/07/2021