1. GENERAL INFORMATION

**IUPAC Name:** 2-(ethylamino)-1-(4-fluorophenyl)propan-1-one

**CAS#:** 1225625-74-0

**Synonyms:** 4-FEC

**Source:** DEA Reference Material Collection

**Appearance:** white powder

**$UV_{\text{max}}(\text{nm})$:** 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 ($^\circ$C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>$\text{C}<em>{11}\text{H}</em>{14}\text{FNO}$</td>
<td>195.23</td>
<td>Not Determined</td>
</tr>
<tr>
<td>HCl</td>
<td>$\text{C}<em>{11}\text{H}</em>{14}\text{FNO} \text{HCl}$</td>
<td>231.69</td>
<td>Not Determined</td>
</tr>
</tbody>
</table>
3. QUALITATIVE DATA

3.1 NUCLEAR MAGNETIC RESONANCE

Sample Preparation: Dilute analyte to ~10 mg/mL in D$_2$O containing TSP for 0 ppm reference and maleic acid 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: 4-Fluoroethcathinone HCl; LOT# 0434486-43; D$_2$O; 400MHz
3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample Preparation: Dilute analyte ~9 mg/mL base extracted in CHCl₃

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
  Threshold: 150
  Tune file: stune.u
  Acquisition mode: scan

Retention Time:
  5.703 min

EI Mass Spectrum: 4-Fluoroethcathinone HCl; LOT# 0434486-43
4-Fluoroethcathinone
The Drug Enforcement Administration's Special Testing and Research Laboratory generated this monograph using structurally confirmed reference material.

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: 1
Aperture: 150

FTIR ATR (Diamond 1 Bounce): 4-Fluoroethcathinone HCl; LOT# 0434486-43