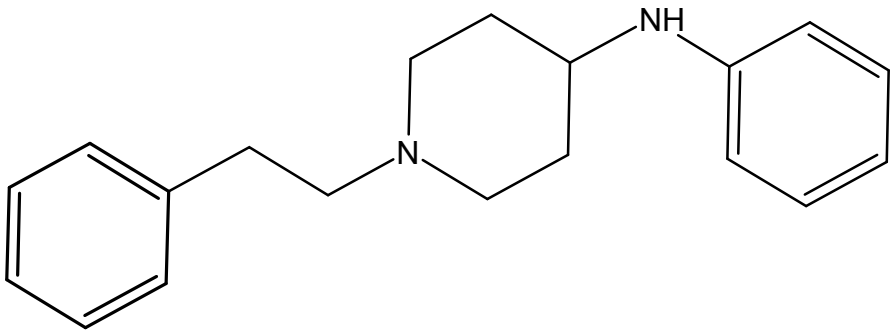
# 4-ANPP

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




## *1. GENERAL INFORMATION*

***IUPAC Name:*** N-phenyl-1-(2-phenylethyl)piperidin-4-amine

***CAS#:*** Not Available

***Synonyms:*** Despropionyl fentanyl; ANPP; 4-anilino-N-phenethylpiperidine

***Source:*** DEA Reference Material Collection

***Appearance:*** Yellow powder

***$UV_{max}$(nm):*** Not Determined

## *2. CHEMICAL AND PHYSICAL DATA*

### 2.1 CHEMICAL DATA

| Form | Chemical Formula | Molecular Weight | Melting Point ($^{o}$C) |
|---|---|---|---|
| Base | $C_{19}H_{24}N_2$ | 280.4 | 98.2 |

## *3. QUALITATIVE DATA*

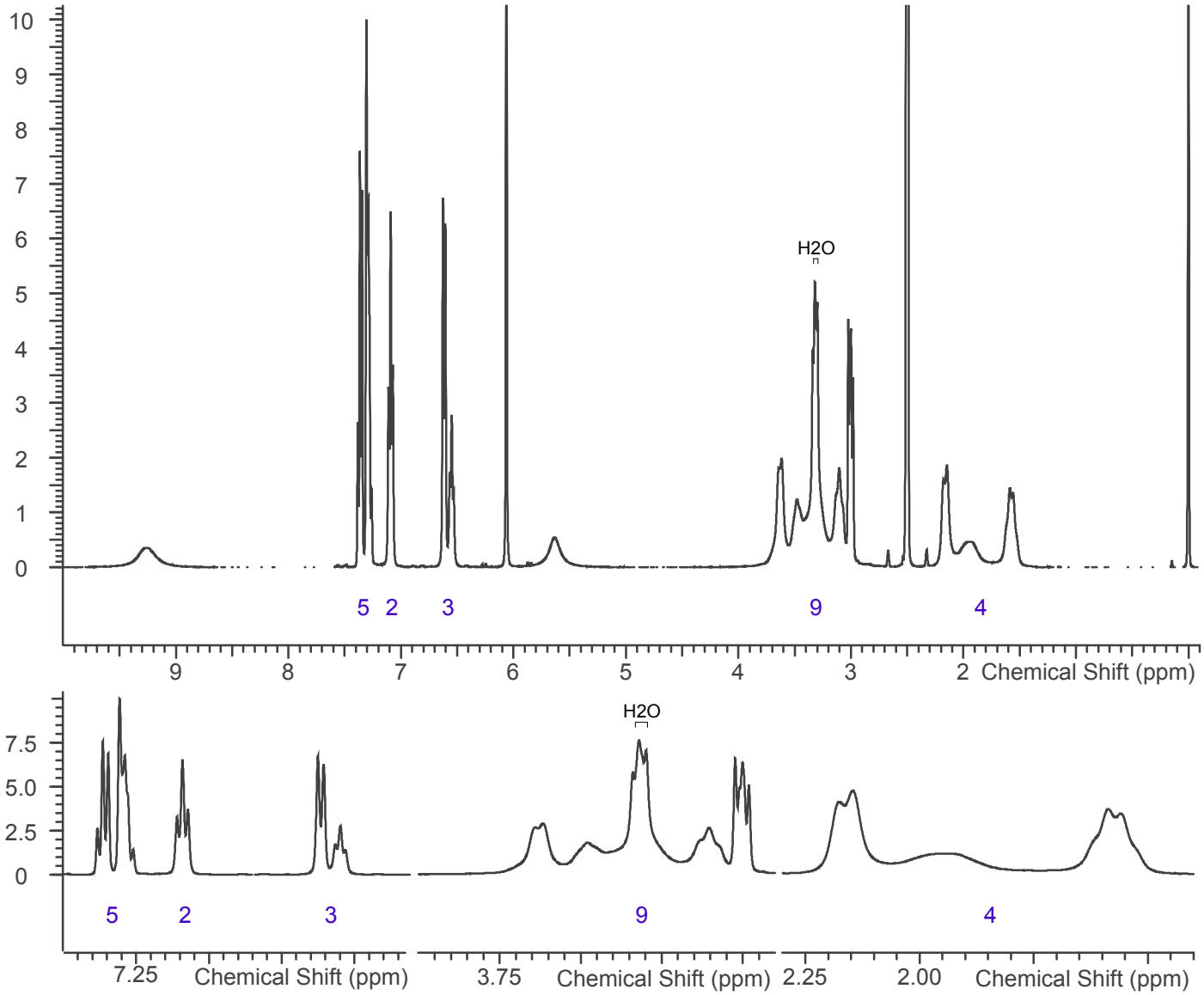
### *3.1* NUCLEAR MAGNETIC RESONANCE

**Method NMR DMSO**

*Sample Preparation:* Dilute analyte to ~5 mg/mL inDMSO containing TMS 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

$^{1}$H NMR: 4-ANPP Lot ALB5-2; DMSO; 400MHz

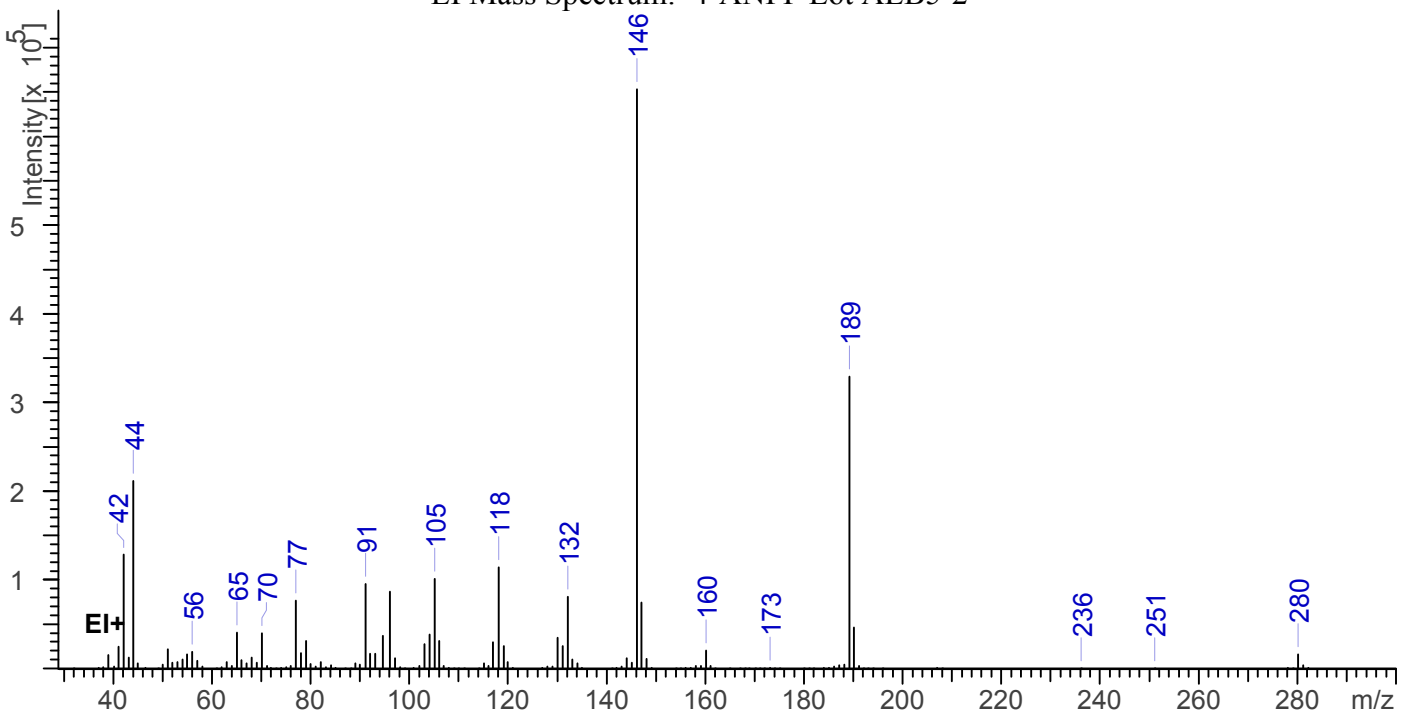


### 3.2 Gas Chromatography/Mass Spectrometry

*Sample Preparation:* Dilute analyte ~1 mg/mL in chloroform.

| | |
|---|---|
| ***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 µm |
| ***Carrier Gas:*** | Helium at 1 mL/min |
| ***Temperatures:*** | Injector: 280°C<br>MSD transfer line: 280°C<br>MS Source: 230°C<br>MS Quad: 150°C<br>Oven program:<br>1) 100°C initial temperature for 1.0 min<br>2) Ramp to 300°C at 12 °C/min<br>3) Hold final temperature for 9.0 min |
| ***Injection Parameters:*** | Split Ratio = 20:1, 1 µL injected |
| ***MS Parameters:*** | Mass scan range: 30-550 amu<br>Threshold: 100<br>Tune file: stune.u<br>Acquisition mode: scan |
| ***Retention Time:*** | 15.502 min |

EI Mass Spectrum: 4-ANPP Lot ALB5-2

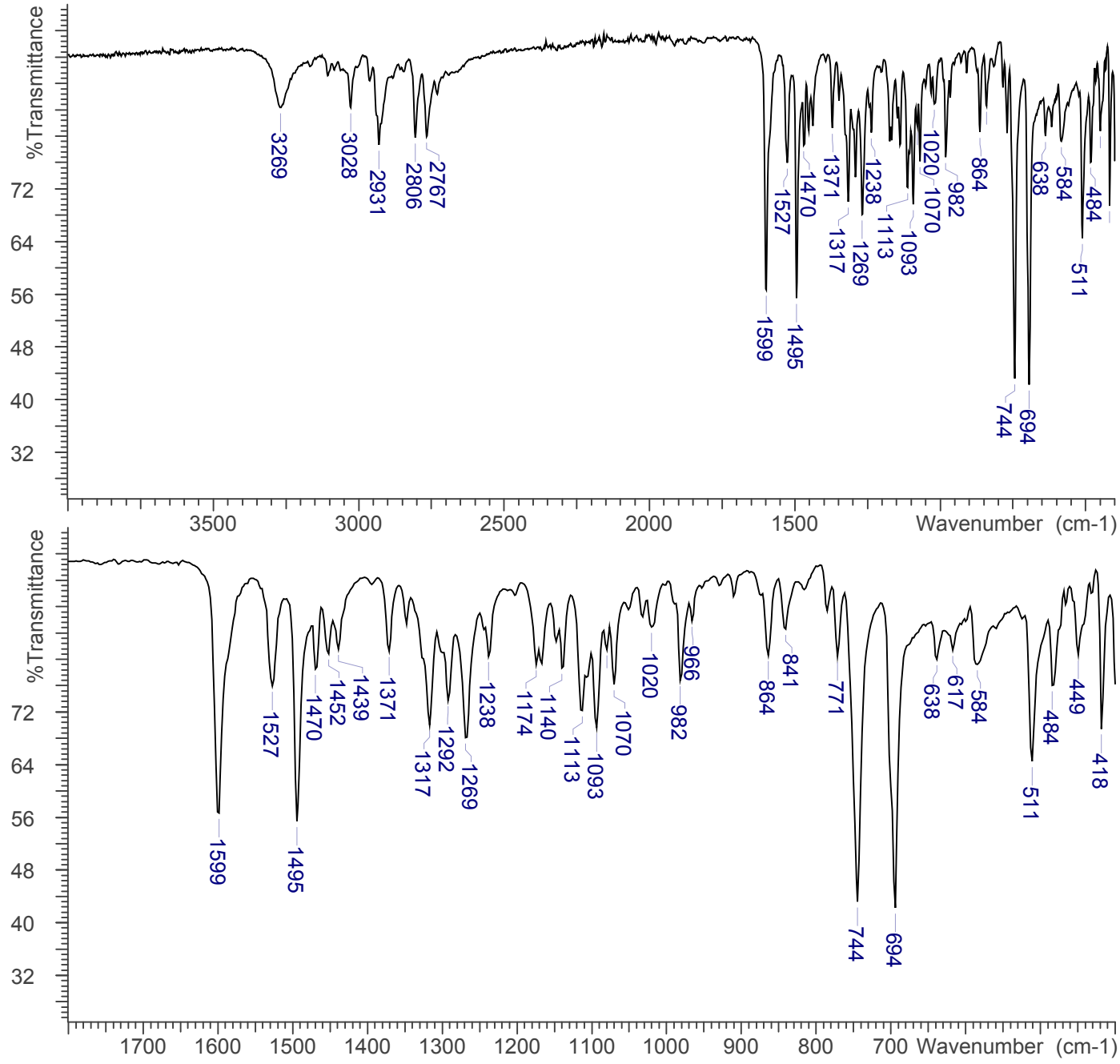


## 3.3 INFRARED SPECTROSCOPY (FTIR)

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

**Scan Parameters:**
Number of scans: 32
Number of background scans: 32
Resolution: 4 $cm^{-1}$
Sample gain: 8
Aperture: 150

FTIR ATR (Diamond, 3 Bounce): 4-ANPP Lot ALB5-2



## *4. ADDITIONAL RESOURCES*

***Forendex***

Noggle F.T., Andurkar S.V., Clark C.R., DeRuiter J. GC-MS Analysis of Fentanyl Synthesized from 1-phenethyl-4-piperidone. Microgram 26, (1993): 285.