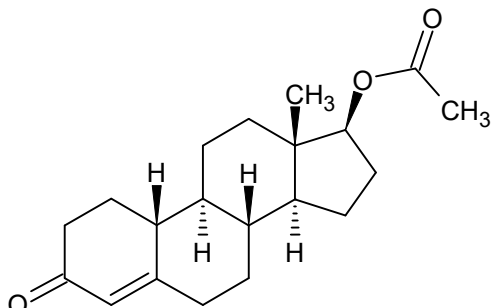




# Nandrolone Acetate

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



## 1. GENERAL INFORMATION

<b>IUPAC Name:</b>	17 $\beta$ -hydroxyestr-4-en-3-one acetate
<b>CAS#:</b>	1425-10-1
<b>Synonyms:</b>	3-oxoestr-4-en-17 $\beta$ -yl acetate, 19-Nortestosterone Acetate, 4-Estren-17 $\beta$ -ol-3-one Acetate
<b>Source:</b>	DEA Reference Material Collection
<b>Appearance:</b>	White powder
<b>UV<sub>max</sub>(nm):</b>	Not determined

## 2. CHEMICAL AND PHYSICAL DATA

### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Neutral	C <sub>20</sub> H <sub>28</sub> O <sub>3</sub>	316.43	85.42



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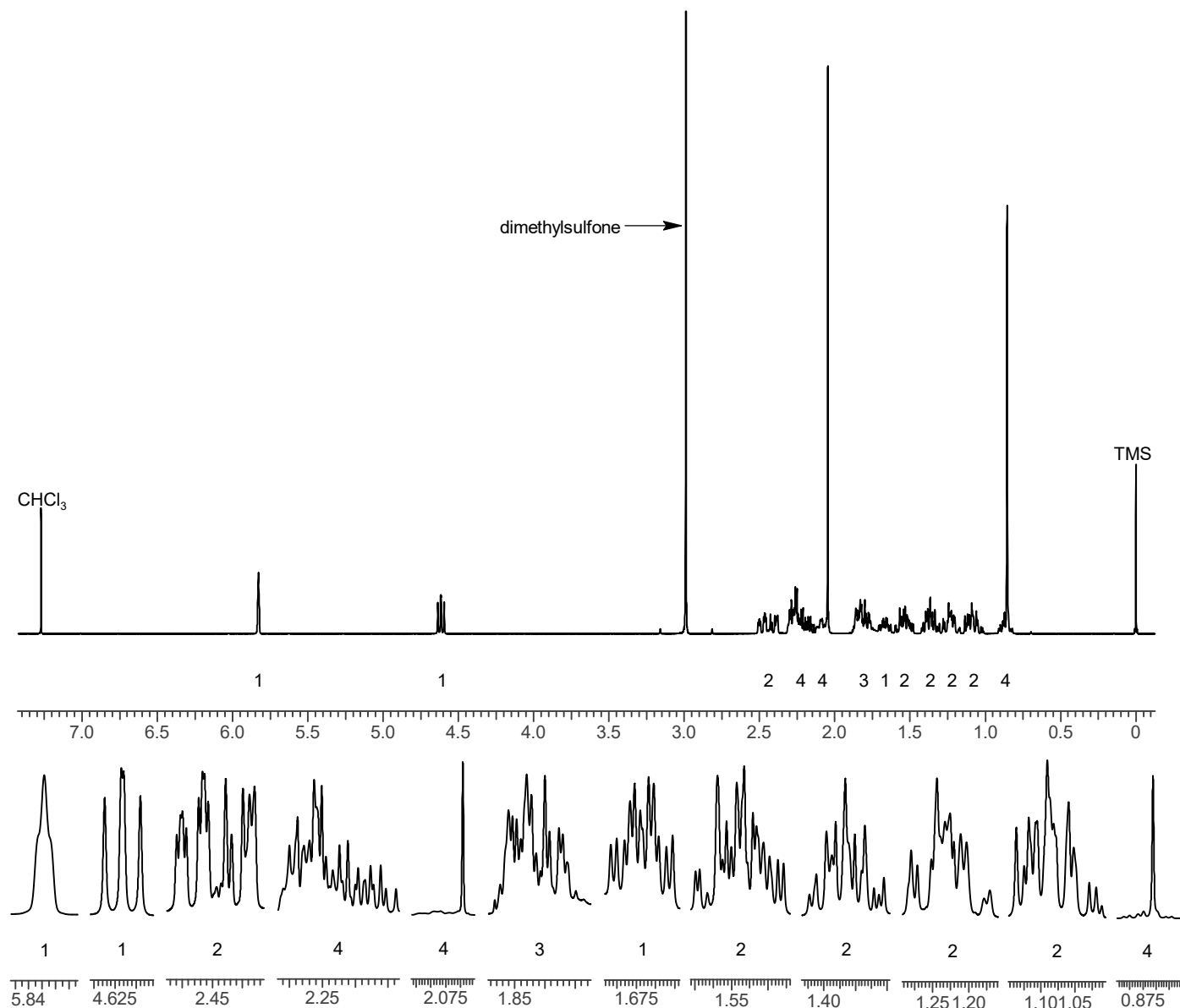
## 3. QUALITATIVE DATA

### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~10 mg/mL in  $\text{CDCl}_3$  containing TMS for 0 ppm reference and dimethylsulfone as quantitative internal standard.

**Instrument:** 400 MHz NMR spectrometer  
**Parameters:** Spectral width: at least containing -3 ppm through 13 ppm  
Pulse angle:  $90^\circ$   
Delay between pulses: 45 seconds

$^1\text{H}$ NMR: Nandrolone Acetate, Lot# B0148;  $\text{CDCl}_3$ ; 400MHz





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## 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

**Sample Preparation:** Dilute analyte ~4 mg/mL in CHCl<sub>3</sub>

**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:

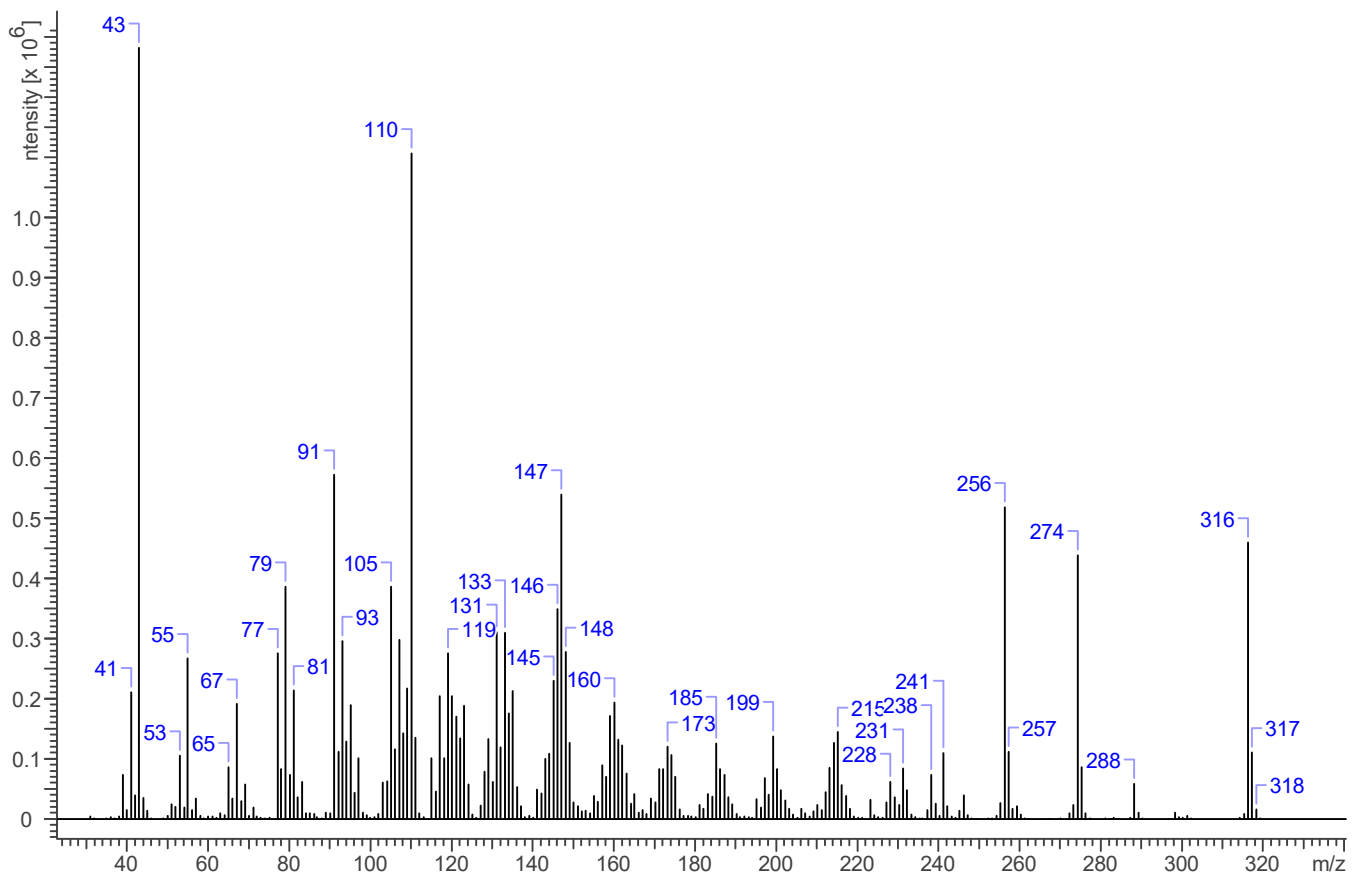
- 1) 100°C initial temperature for 1.0 min
- 2) Ramp to 280°C at 12 °C/min
- 3) Hold final temperature for 30.0 min

**Injection Parameters:** Split Ratio = 25:1, 1 μL injected

**MS Parameters:** Mass scan range: 30-550 amu                      Threshold: 250  
Tune file: stune.u                      Acquisition mode: scan

**Retention Time:** 17.05 min

EI Mass Spectrum: Nandrolone Acetate, Lot# B0148





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## 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  $\text{cm}^{-1}$   
Sample gain: 1  
Aperture: 150

FTIR ATR (Diamond 1 Bounce): Nandrolone Acetate, Lot# B0148

