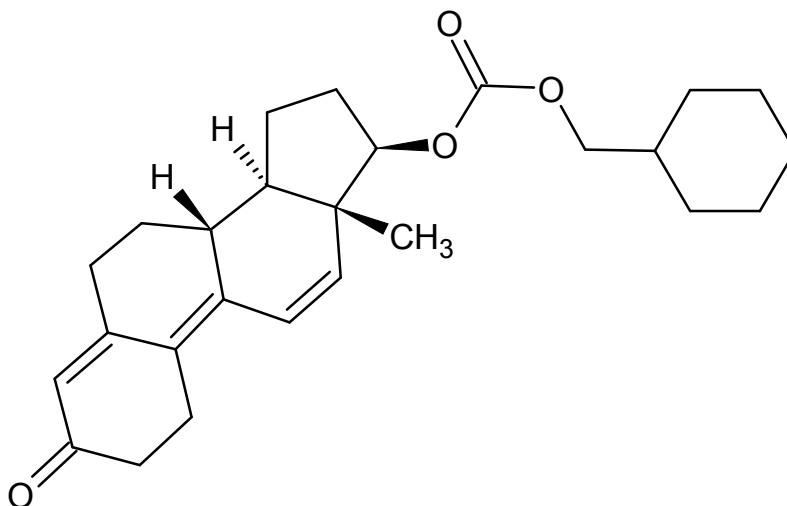




## Trenbolone Hexahydrobenzylcarbonate

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



### 1. GENERAL INFORMATION

**IUPAC Name:** cyclohexylmethyl(17-beta)-3-oxoestra-4,9,11-trien-17-yl carbonate

**CAS#:** 23454-33-3

**Synonyms:** 4,9,11-estratrien-17beta-ol-3-one hexahydrobenzylcarbonate

**Source:** DEA Reference Material Collection

**Appearance:** Yellow powder

**UV<sub>max</sub>(nm):** Not Determined

### 2. CHEMICAL AND PHYSICAL DATA

#### 2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Melting Point (°C)
Base	C <sub>26</sub> H <sub>34</sub> O <sub>4</sub>	410.55	73.7



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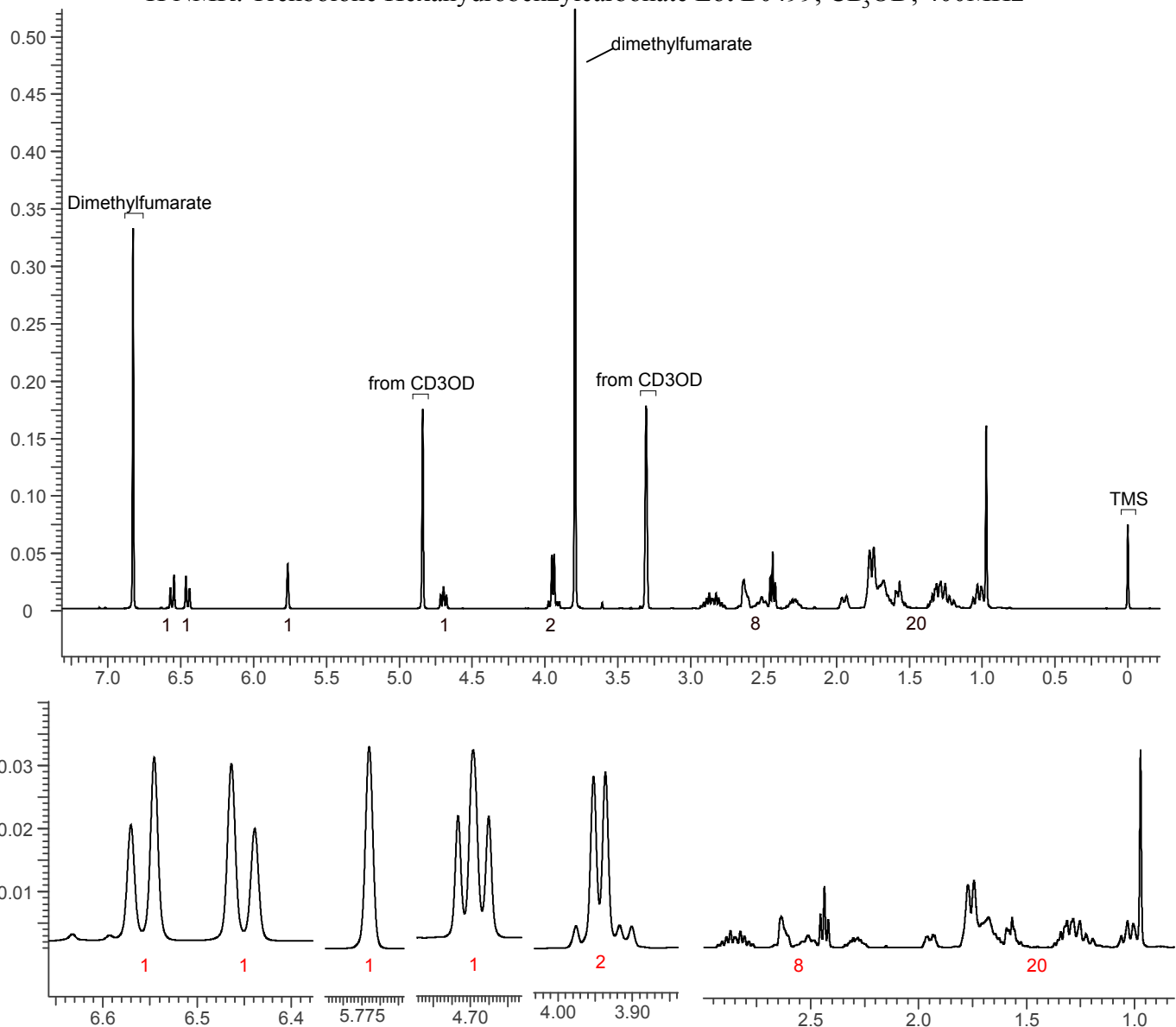
## 3. QUALITATIVE DATA

### 3.1 NUCLEAR MAGNETIC RESONANCE

**Sample Preparation:** Dilute analyte to ~6 mg/mL in CD<sub>3</sub>OD 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

<sup>1</sup>H NMR: Trenbolone Hexahydrobenzylcarbonate Lot B0499; CD<sub>3</sub>OD; 400MHz





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### 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

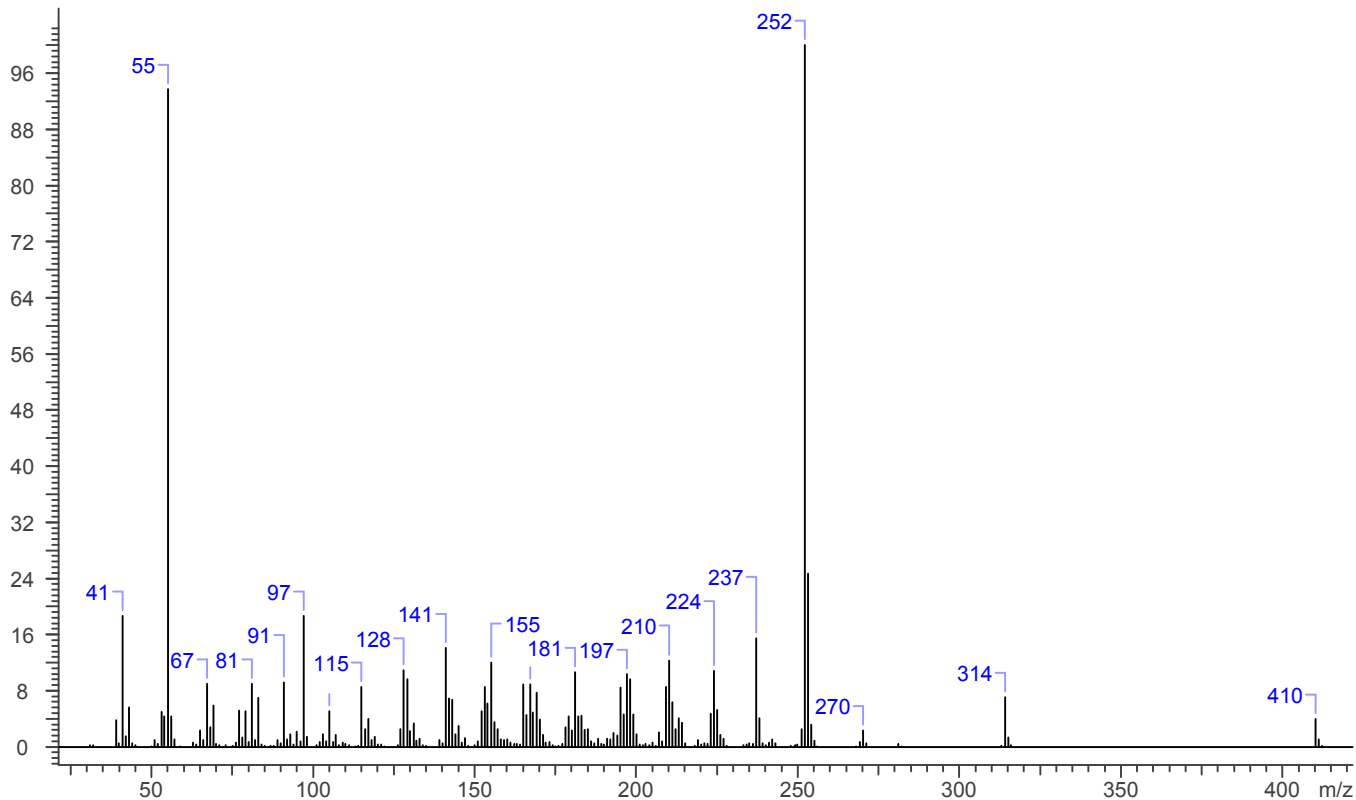
*Sample Preparation:* Dilute analyte ~2 mg/mL in MeOH

**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  $\mu$ m  
**Carrier Gas:** Helium at 1 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 300°C at 12 °C/min  
3) Hold final temperature for 9.0 min

**Injection Parameters:** Split Ratio = 20:1, 1  $\mu$ L injected  
**MS Parameters:** Mass scan range: 30-550 amu  
Threshold: 100  
Tune file: stune.u  
Acquisition mode: scan

**Retention Time:** 23.224 min

EI Mass Spectrum: Trenbolone Hexahydrobenzylcarbonate Lot B0499





# Trenbolone Hexahydrobenzylcarbonate

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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 cm<sup>-1</sup>  
Sample gain: 8  
Aperture: 150

FTIR ATR (Diamond, 1-Bounce): Trenbolone Hexahydrobenzylcarbonate Lot B0499

