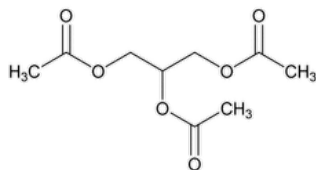


Triacetin



$C_9H_{14}O_6$ 218.21
1,2,3-Propanetriol triacetate;
Triacetin;
Glyceryl triacetate CAS RN[®]: 102-76-1.

DEFINITION
Triacetin contains NLT 97.0% and NMT 102.0% of triacetin ($C_9H_{14}O_6$), calculated on the anhydrous basis.

- IDENTIFICATION**
Change to read:
- **A.** [▲ SPECTROSCOPIC IDENTIFICATION TESTS \(197\), Infrared Spectroscopy: 197F ▲](#) (CN 1-MAY-2020)
 - **B.** The retention time of the triacetin peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the Assay.

ASSAY
• **PROCEDURE**
Internal standard solution: 0.1 mg/mL of benzyl alcohol in [2-propanol](#)
Standard solution: 0.25 mg/mL of [USP Triacetin RS](#) in *Internal standard solution*
Sample solution: 0.25 mg/mL of Triacetin in *Internal standard solution*
Chromatographic system
(See [Chromatography \(621\), System Suitability.](#))
Mode: GC
Detector: Flame ionization
Column: 0.25-mm × 30-m; coated with a 0.25-μm film of phase [G46](#)
Temperatures
Injection port: 200°
Detector: 250°
Column: See [Table 1](#).

Table 1

Initial Temperature (°)	Temperature Ramp (°/min)	Final Temperature (°)	Hold Time at Final Temperature (min)
100	—	100	1
100	30	230	1

Carrier gas: Hydrogen
Flow rate: 1.5 mL/min

Injection volume: 1 µL

Injection type: Split ratio, 40:1

System suitability

Sample: *Standard solution*

[NOTE—The relative retention times for benzyl alcohol and triacetin are 0.7 and 1.0, respectively.]

Suitability requirements

Tailing factor: NMT 2.0 for the triacetin peak

Relative standard deviation: NMT 1.0%, peak response ratio of triacetin to benzyl alcohol

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of triacetin ($C_9H_{14}O_6$) in the portion of Triacetin taken:

$$\text{Result} = (R_U/R_S) \times (C_S/C_U) \times 100$$

R_U = peak response ratio of triacetin to benzyl alcohol from the *Sample solution*

R_S = peak response ratio of triacetin to benzyl alcohol from the *Standard solution*

C_S = concentration of [USP Triacetin RS](#) in the *Standard solution* (mg/mL)

C_U = concentration of Triacetin in the *Sample solution* (mg/mL)

Acceptance criteria: 97.0%–102.0% on the anhydrous basis

IMPURITIES

• ORGANIC IMPURITIES

Internal standard solution: 0.02 mg/mL of benzyl alcohol in [2-propanol](#)

Peak identification solution: 0.25 mg/mL each of glycerol, monoacetin, diacetin, and [USP Triacetin RS](#) in *Internal standard solution*

Standard solution: 0.02 mg/mL of [USP Triacetin RS](#) in *Internal standard solution*

Sample solution: 20 mg/mL of Triacetin in *Internal standard solution*

Chromatographic system

(See [Chromatography \(621\)](#), [System Suitability](#).)

Mode: GC

Detector: Flame ionization

Column: 0.25-mm × 30-m; coated with a 0.25-µm film of phase [G46](#)

Temperatures

Injection port: 200°

Detector: 250°

Column: See [Table 2](#).

Table 2

Initial Temperature (°)	Temperature Ramp (°/min)	Final Temperature (°)	Hold Time at Final Temperature (min)
50	—	50	4
50	30	140	13
140	30	230	2

Carrier gas: Hydrogen

Flow rate: 1.5 mL/min

Injection volume: 1 µL

Injection type: Split ratio, 40:1

System suitability

Sample: *Standard solution*