Analysis: Add 5 drops of barium chloride TS to 10 mL of the *Sample solution.*
Acceptance criteria: No turbidity is produced.

• **LIMIT OF NONVOLATILE RESIDUE**
Sample: 20 mL
Analysis: Evaporate the *Sample* in a tared porcelain dish on a steam bath, and dry it at 105° for 1 h.
Acceptance criteria: The weight of the residue does not exceed 1.0 mg (NMT 0.005%).

SPECIFIC TESTS

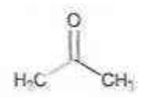
• **READILY OXIDIZABLE SUBSTANCES**
Sample: 20 mL in a glass-stoppered flask
Analysis: Add 0.30 mL of 0.10 N potassium permanganate to the *Sample.*
Acceptance criteria: The pink color is not changed to brown immediately, and the liquid does not become entirely brown or free from a pink tint in less than 30 s.

ADDITIONAL REQUIREMENTS

• **PACKAGING AND STORAGE:** Preserve in tight containers.

Acetic Acid, Glacial—*see Glacial Acetic Acid General Monographs*

Acetone



C_3H_6O 58.08
2-Propanone;
Acetone [67-64-1].

DEFINITION

Acetone contains NLT 99.0% of C_3H_6O, calculated on the anhydrous basis.
[**CAUTION**—Acetone is very flammable. Do not use where it may be ignited.]

IDENTIFICATION

• **A. INFRARED ABSORPTION** ⟨197F⟩
• **B.** The retention time of the *Sample* corresponds to that of USP Acetone RS, as obtained in the *Assay.*

ASSAY

• **PROCEDURE**
Sample: Acetone
System suitability solution: Dilute 1.0 mL of USP Methyl Alcohol RS and 1.0 mL of USP Acetone RS with tetrahydrofuran to 50 mL.
Chromatographic system
(See *Chromatography* ⟨621⟩, *System Suitability.*)
Mode: GC
Detector: Flame ionization
Column: 0.32-mm × 30-m fused-silica capillary; 1.8-µm of phase G43
Temperature
Column: See *Table 1.*

Table 1

Initial Temperature (°)	Temperature Ramp (°/min)	Final Temperature (°)	Hold Time at Final Temperature (min)
40	0	40	5
40	20	240	—

Injector: 200°
Detector: 280°
Carrier gas: Helium
Flow rate: 35 cm/s (linear velocity)
Split ratio: 400:1
Injection volume: 1 µL
System suitability
Sample: *System suitability solution*
[NOTE—The relative retention times for methyl alcohol, acetone, and tetrahydrofuran are about 0.6, 1.0, and 1.9, respectively.]
Suitability requirements
Resolution: NLT 15 between the methyl alcohol and acetone peaks
Analysis
Sample: *Sample*
Calculate the percentage of acetone (C_3H_6O) in the portion of Acetone taken:

$$\text{Result} = (r_U/r_T) \times 100$$

r_U = peak area due to the acetone peak in the *Sample*
r_T = sum of the areas of all the peaks in the *Sample*
[NOTE—No separate correction is applied for water content, because water does not respond to the flame-ionization detector.]
Acceptance criteria: NLT 99.0% on the anhydrous basis

SPECIFIC TESTS

• **SPECIFIC GRAVITY** ⟨841⟩: NMT 0.789
• **NONVOLATILE RESIDUE:** Evaporate 50 mL in a tared porcelain dish on a steam bath, and dry at 105° for 1 h.
Acceptance criteria: The weight of the residue does not exceed 2 mg (0.004%).
• **WATER**
Sample: Acetone
Standard solution: Transfer 0.50 mL of water to a dry 100-mL volumetric flask, dilute with dehydrated isopropyl alcohol to volume, and mix.
Blank: Dehydrated isopropyl alcohol
Chromatographic system
(See *Chromatography* ⟨621⟩, *System Suitability.*)
Mode: GC
Detector: Thermal conductivity
Column: 0.32-mm × 50-m capillary; 5.0-µm layer of support S2
Temperature
Column: See *Table 2.*

Table 2

Initial Temperature (°)	Temperature Ramp (°/min)	Final Temperature (°)	Hold Time at Final Temperature (min)
100	25	190	—

Injector: 250°
Detector: 250°
Carrier gas: Helium
Flow rate: 11 mL/min
Split ratio: 4.5:1
Injection size: 1.0 µL
Analysis
Samples: Acetone, *Standard solution,* and *Blank*
[NOTE—Identify the peaks based on their relative retention times, which are 1.0 for water and about 1.9 for isopropyl alcohol.]
Acceptance criteria: The area of the water peak for Acetone is NMT that from the *Standard solution,* corrected for the area of the water peak from the *Blank* (0.5%).