

# Certificate of Analysis

## Chloroform

**PurTech Standard for GC**  
(Secondary Reference Standard)

|                   |                   |              |               |
|-------------------|-------------------|--------------|---------------|
| Product Number    | PSI023            | CAS No.      | 67-66-3       |
| Brand             | PureSynth         | Lot No.      | 267H0324      |
| Molecular Formula | CHCl <sub>3</sub> | Date of Mfg. | March,2024    |
| Molecular Weight  | 119.38 g/mol      | Date of Exp. | February,2027 |

| Test                                 | Specification               | Result                 |
|--------------------------------------|-----------------------------|------------------------|
| Description                          | Colorless liquid            | Colorless liquid       |
| Clarity                              | Clear                       | Clear                  |
| Assay (GC-FID)                       | ≥ 99.0 %                    | 99.85 %                |
| Water (By KF)                        | NMT 0.10 %                  | 0.068 %                |
| Density                              | 1.48-1.50 g/cm <sup>3</sup> | 1.49 g/cm <sup>3</sup> |
| Identification by <sup>1</sup> H NMR | Conforms to structure       | Conforms               |
| Identification by GC-MS              | Conform to molecular        | Conforms               |
| Identification by IR                 | Conforms to structure       | Conforms               |

**\*Traceable to USP Reference Standard 1601383 with Current Lot No: G0I192**

**Storage Condition:** Store at room temperature and keep the container tightly closed.

**Remark:** The batch complies with the prescribed quality of the above specification.

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## Assay by GC-FID

### METHOD: GC- FID conditions:

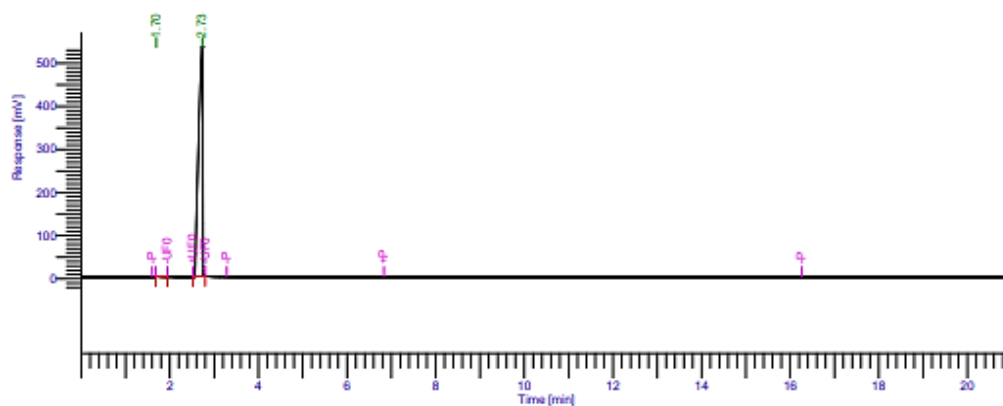
**Column:** Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

**Instrument:** PerkinElmer, GC 2014,

**Detector:** FID, **Carrier gas:** Nitrogen

**Temp programming:** Initial 50°C hold for 1min, 5°C Ramp/ min., 100 °C hold for 1 min., 25°C Ramp up to 250°C hold for 2 min., Run time 20 min.

|                       |                       |                 |                       |
|-----------------------|-----------------------|-----------------|-----------------------|
| Software Version      | : 6.3.4.0700          | Date            | : 23-04-2024 16:36:53 |
| Operator              | : manager             | Sample Name     | : Chloroform          |
| Sample Number         | : 001                 | Study           | :                     |
| AutoSampler           | : BUILT-IN            | Rack/Vial       | : 0/23                |
| Instrument Name       | : Clarus 690          | Channel         | : A                   |
| Instrument Serial #   | : 690S23050206        | A/D mV Range    | : 1000                |
| Delay Time            | : 0.00 min            | End Time        | : 21.00 min           |
| Sampling Rate         | : 12.5000 pts/s       |                 |                       |
| Sample Volume         | : 1.000000 ul         | Area Reject     | : 0.000000            |
| Sample Amount         | : 1.0000              | Dilution Factor | : 1.00                |
| Data Acquisition Time | : 23-04-2024 12:37:48 | Cycle           | : 1                   |



## GC Reports

| Peak # | Component Name | Time [min] | Area [uV*sec] | Height [uV] | Area [%] |
|--------|----------------|------------|---------------|-------------|----------|
| 1      |                | 1.696      | 5189.05       | 948.00      | 0.15     |
| 2      |                | 2.731      | 3423038.81    | 535740.57   | 99.85    |
|        |                |            | 3428227.86    | 536688.57   | 100.00   |

### Missing Component Report

Component Expected Retention (Calibration File)

All components were found

**Purity by GC-FID: 99.85 %**

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## IDENTIFICATION TESTS

### GC-MS Spectrum:

#### METHOD: G.C-MS conditions:

**Column:** Agilent Technologies, Elite -5MS, 30 m X 0.25 mm, 1.0micron

**Instrument:** Perkin Elmer, **Carrier gas:** Helium

**Source Temp.:** 230°C, **Transfer line:** 250°C,

**Inlet Temp.:** 180°C, **Diluent:** Methanol,

**Source energy:** 70eV

#### Mass by GC-MS:

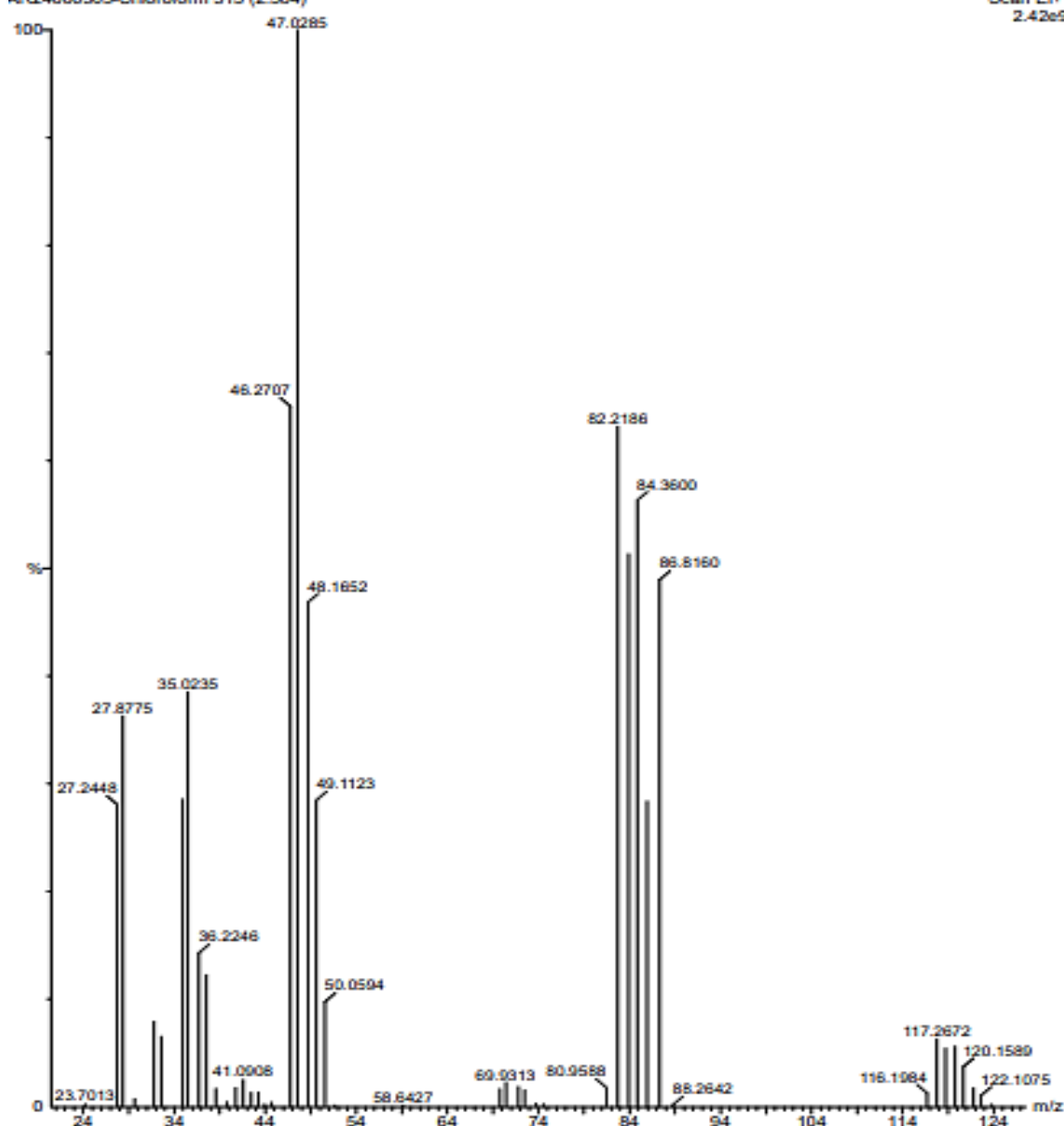
**Product Name:** Chloroform

**Product Code:** PSI023

**Chloroform** 267H0324  
AR24000303-Chloroform 513 (2.564)

, 26-Apr-2024 + 21:27:39

Scan El+  
2.42e9



Identification by GC-MS: Conform to molecular

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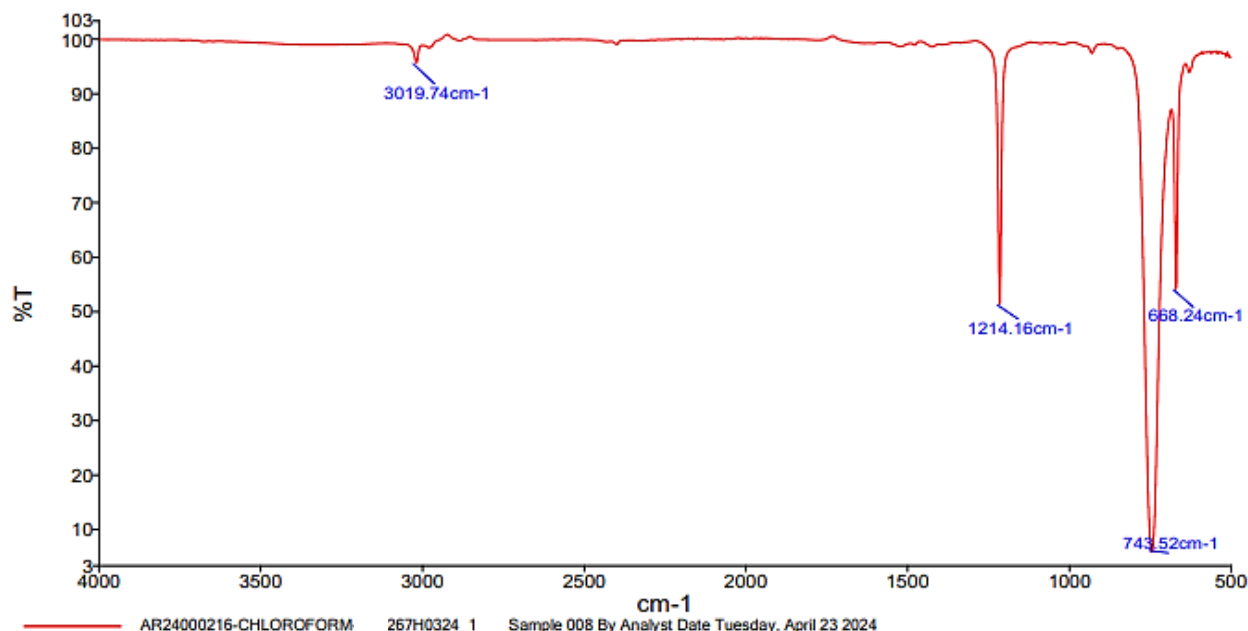
## Infrared spectrum:

Product Name: Chloroform

Product Code: PSI023

PerkinElmer Spectrum IR Version 10.7.2  
23 April 2024 12:30

Analyst  
Date



| Source Spectra Results           |          |                 |
|----------------------------------|----------|-----------------|
| Spectrum Name                    |          | Number Of Peaks |
| AR24000216-CHLOROFORM 267H0324_1 |          | 4               |
| List of Peak Area/Height         |          |                 |
| Peak Number                      | X (cm-1) | Y (%T)          |
| 1                                | 3019.74  | 95.79           |
| 2                                | 1214.16  | 51.51           |
| 3                                | 743.52   | 5.76            |
| 4                                | 668.24   | 54.26           |

Identification by IR: Conforms to structure

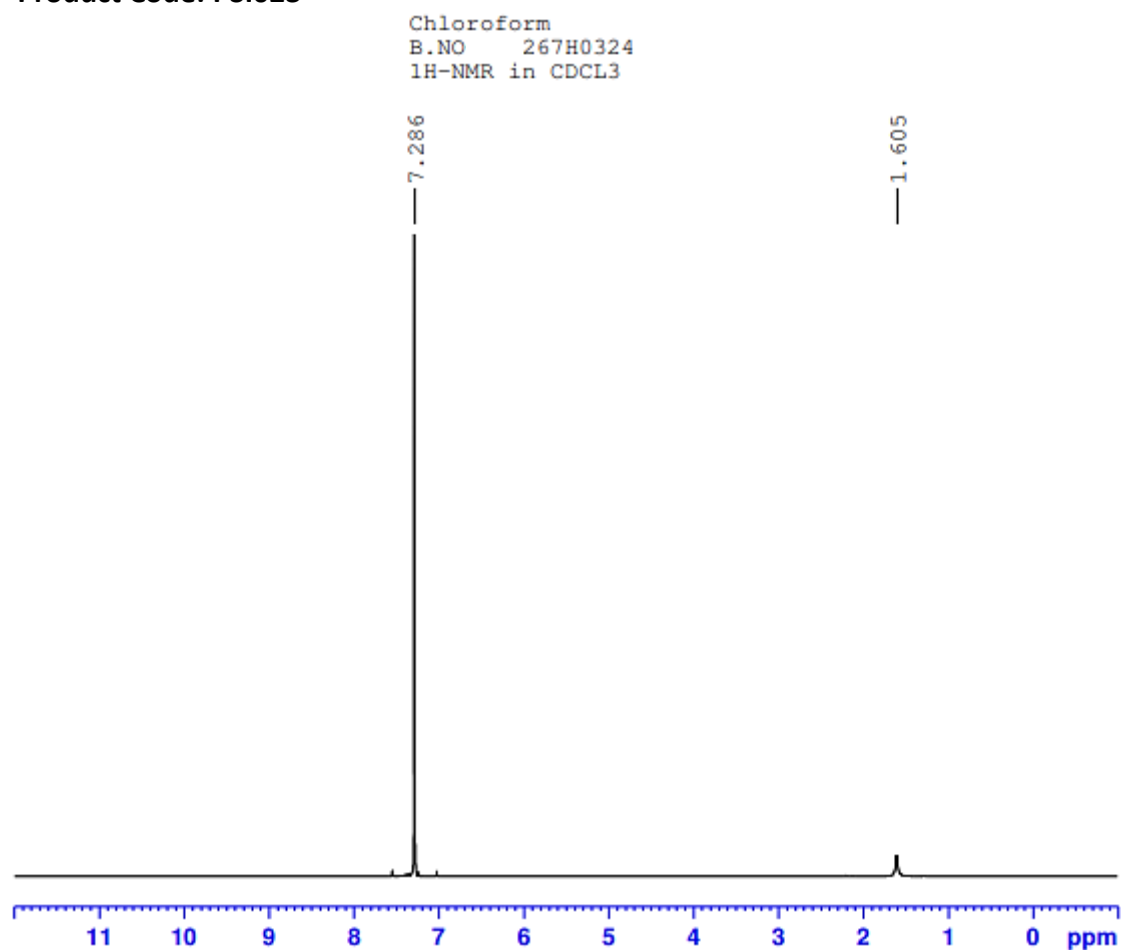
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**<sup>1</sup>H NMR Spectrum:**

Product Name: Chloroform

Product Code: PSI023



Identification by <sup>1</sup>H NMR: Conforms to structure

**Maximum limits of impurities**

**WATER DETERMINATION**

Method: Karl Fisher titration

Water Content (PSI023) = **0.0680 %**

Approved By  
Technical Head

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