

Certificate of Analysis

Tridecane

PurCert Standard for GC

| | | | |
|--------------------------|---------------------------------|---------------------|------------|
| Product Number | PSR38449 | CAS No. | 629-50-5 |
| Brand | PureSynth | Lot No. | BHGFDF04T |
| Molecular Formula | C ₁₃ H ₂₈ | Date of Mfg. | Apr.2023 |
| Molecular Weight | 184.36 g/mol | Date of Exp. | March.2027 |

| Test | Specification | Result |
|--------------------------------------|----------------------------|------------------|
| Description | Colorless liquid | Colorless liquid |
| Assay (GC-FID) | ≥98.5% | 99.92 % |
| Water (By KF) | NMT 0.2000 % | 0.0187 % |
| Identification by ¹ H NMR | Conforms to structure | Conforms |
| Identification by GC-MS | Conforms to molecular mass | Conforms |
| Identification by IR | Conforms to structure | Conforms |

***Traceable to Internal Reference Standard**

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:

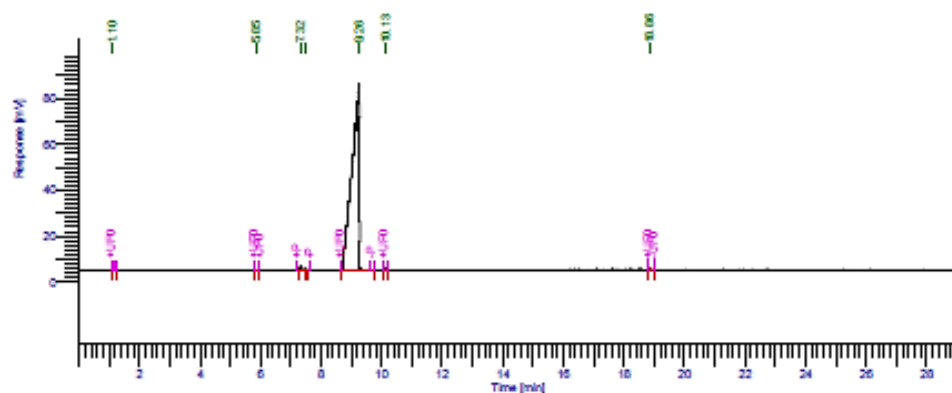
Column: Agilent Technologies DB-FFAP 30mx 0.530mm, 1.0micron

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 : 04/07/2023 12.46.09 PM |
| Operator : manager | Sample Name : AR23000356-TRI-DECANE-BHGFDF0 |
| Sample Number : 1 | 4T |
| AutoSampler : BUILT-IN | Study : GC Purity |
| Instrument Name : Clarus 680 | Rack/Vial : 0/81 |
| Instrument Serial # : None | Channel : A |
| Delay Time : 0.00 min | A/D mV Range : 1000 |
| Sampling Rate : 12.5000 pts/s | End Time : 29.00 min |
| Sample Volume : 1.000000 ul | |
| Sample Amount : 1.0000 | |
| Data Acquisition Time : 04/07/2023 12.03.10 PM | Area Reject : 0.000000 |
| | Dilution Factor : 1.00 |
| | Cycle : 1 |



GC Reports

| Peak # | Component Name | Time [min] | Area [uV*sec] | Height [uV] | Area [%] |
|--------|----------------|------------|---------------|-------------|----------|
| 1 | | 1,096 | 2824.02 | 3639.65 | 0.20 |
| 2 | | 5,853 | 803.36 | 287.99 | 0.06 |
| 3 | | 7,324 | 8193.43 | 2163.89 | 0.58 |
| 4 | | 7,501 | 1375.20 | 534.99 | 0.10 |
| 5 | | 9,260 | 1385822.68 | 81110.86 | 98.92 |
| 6 | | 10,129 | 1465.85 | 559.32 | 0.10 |
| 7 | | 18,857 | 515.15 | 135.26 | 0.04 |

1400999.69 88431.95 100.00

Missing Component Report
Component Expected Retention (Calibration File)

All components were found

Purity by GC-FID: 99.92 %

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IDENTIFICATION TESTS

GC-MS Spectrum:

METHOD: GC-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

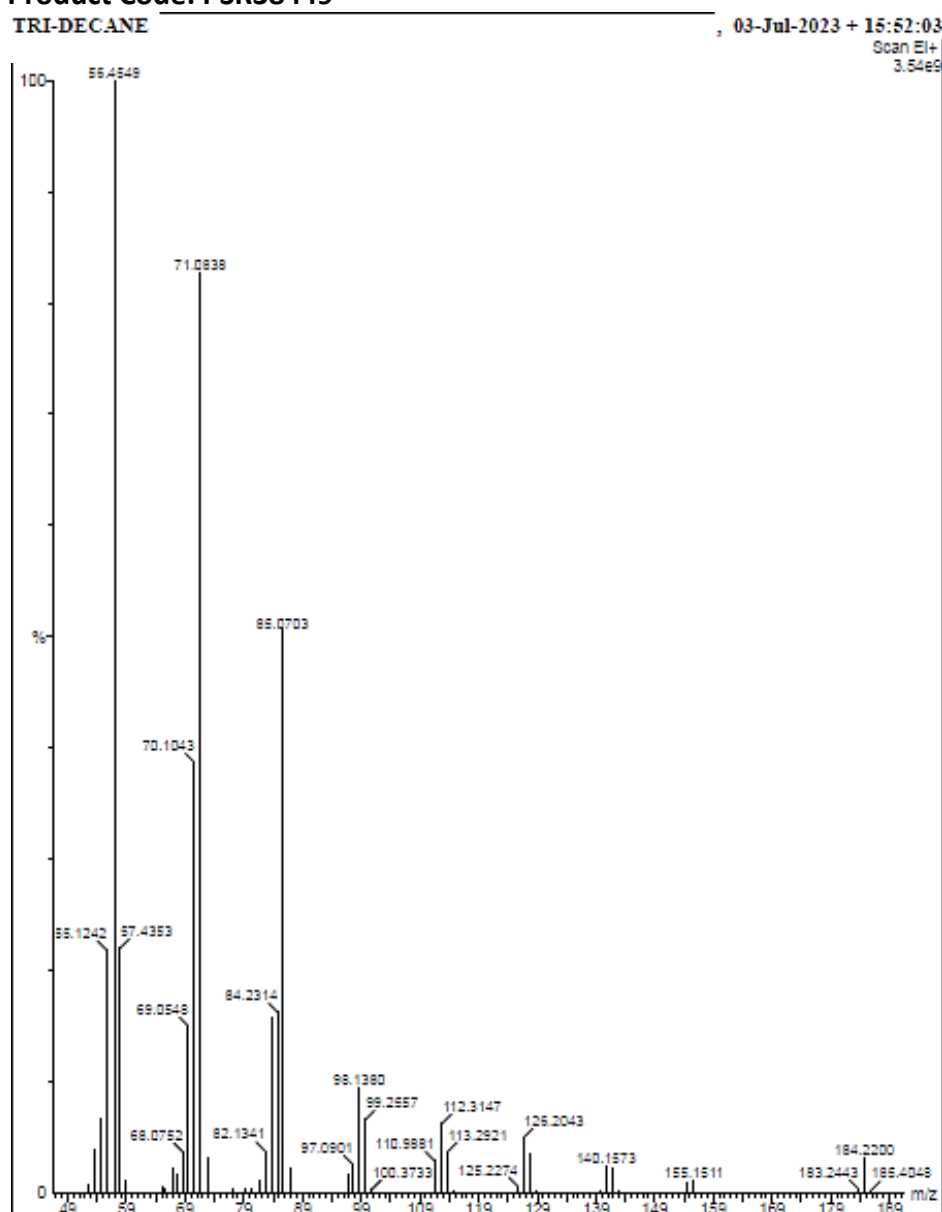
Inlet Temp.: 180°C, Diluent: Methanol

Source energy: 70eV

Mass by GC-MS:

Product Name: Tridecane

Product Code: PSR38449



Identification by GC-MS: Conforms to molecular mass

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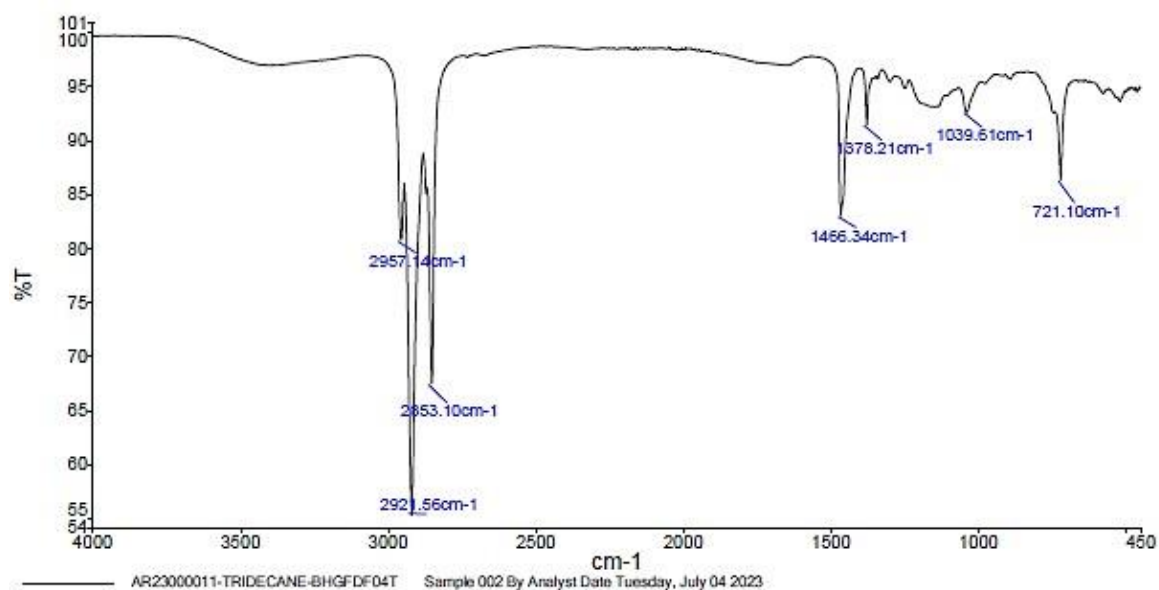
Infrared spectrum:

Product Name: Tridecane

Product Code: PSR38449

PerkinElmer Spectrum IR Version 10.7.2
04 July 2023 12:30

Analyst:
Date:



| Source Spectra Results | | |
|-------------------------------|-----------------|--------|
| Spectrum Name | Number Of Peaks | |
| AR23000011-TRIDECANE-BHGDF04T | 7 | |
| List of Peak Area/Height | | |
| Peak Number | X (cm-1) | Y (%T) |
| 1 | 2957.14 | 80.79 |
| 2 | 2921.56 | 55.29 |
| 3 | 2853.10 | 67.52 |
| 4 | 1466.34 | 83.08 |
| 5 | 1378.21 | 91.50 |
| 6 | 1039.61 | 92.68 |
| 7 | 721.10 | 88.43 |

Identification by IR: Conforms to structure

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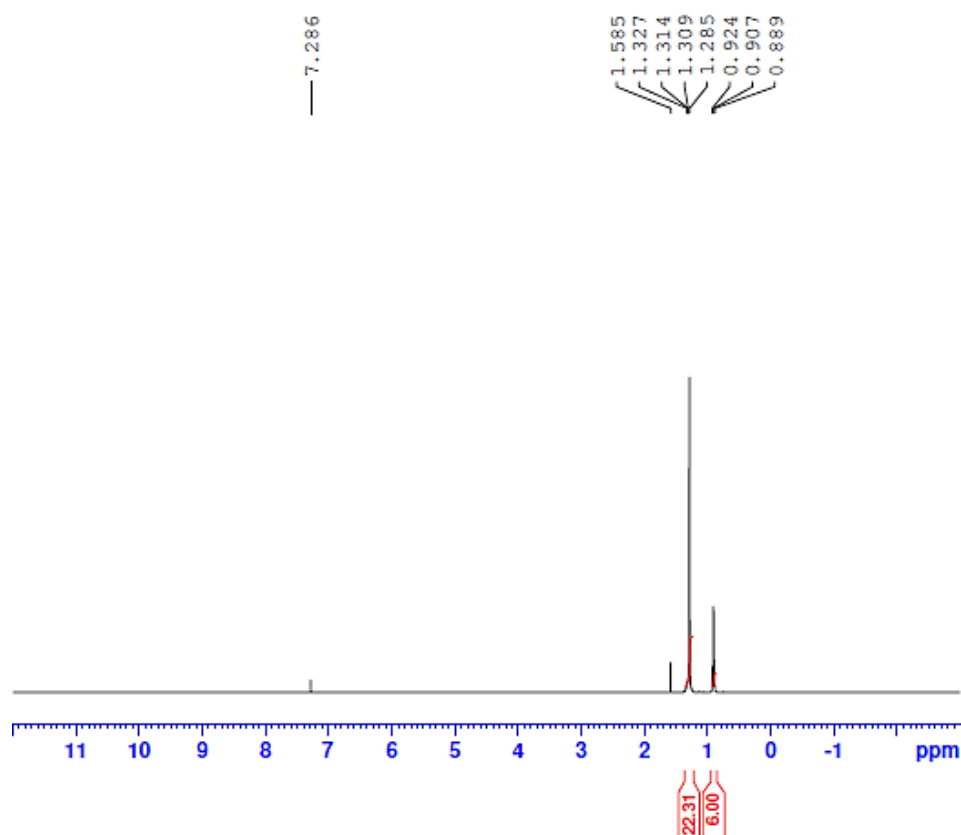
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¹H NMR Spectrum:

Product Name: Tridecane

Product Code: PSR38449

Tridecane
B.NO.BHGFGF04T
1H-NMR in CDCl₃



Identification by ¹H NMR: Conforms to structure

Maximum limits of impurities

WATER DETERMINATION

Method: Karl Fisher titration

Water Content (PSR38449) = **0.0187 %**

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