



Certificate of Analysis

1.04379.6026 n-Heptane for analysis EMSURE® Reag. Ph Eur
 Batch K54474179

	Spec. Values		Batch Values	
Purity (GC)	≥ 99	%	99	%
Identity (IR)	conforms		conforms	
Color	≤ 10	Hazen	< 5	Hazen
Free acid (as CH ₃ COOH)	≤ 0.0005	%	0.0001	%
Density (d 20 °C/20 °C)	0.683 - 0.686		0.685	
Refractive index (n 20/D)	1.387 - 1.388		1.388	
Boiling range (97°C-98°C)	≥ 95	% (v/v)	97	% (v/v)
Aromatic hydrocarbons (as C ₆ H ₆)	≤ 0.1	%	< 0.1	%
Sulfur compounds (as S)	≤ 0.005	%	≤ 0.005	%
Readily carbonizable substances	conforms		conforms	
Al (Aluminium)	≤ 0.00001	%	≤ 0.00001	%
B (Boron)	≤ 0.000002	%	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%	≤ 0.00001	%
Ca (Calcium)	≤ 0.00005	%	≤ 0.00005	%
Cd (Cadmium)	≤ 0.000005	%	≤ 0.000005	%
Co (Cobalt)	≤ 0.000002	%	≤ 0.000002	%
Cr (Chromium)	≤ 0.000002	%	≤ 0.000002	%
Cu (Copper)	≤ 0.000002	%	≤ 0.000002	%
Fe (Iron)	≤ 0.00001	%	≤ 0.00001	%
Mg (Magnesium)	≤ 0.00001	%	≤ 0.00001	%
Mn (Manganese)	≤ 0.000002	%	≤ 0.000002	%
Ni (Nickel)	≤ 0.000002	%	≤ 0.000002	%
Pb (Lead)	≤ 0.00001	%	≤ 0.00001	%
Sn (Tin)	≤ 0.00001	%	≤ 0.00001	%
Zn (Zinc)	≤ 0.00001	%	≤ 0.00001	%
Evaporation residue	≤ 0.001	%	< 0.001	%
Water	≤ 0.01	%	< 0.01	%

Ph Eur-reagent

Date of release (DD.MM.YYYY) 20.07.2022
 Minimum shelf life (DD.MM.YYYY) 31.07.2027

Jeannette David
 Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.

TEST REPORT: 7191294804-CHM22-TSL

Date: 19 OCT 2022

Tel: +65 6973 6176

Client's Ref: PO:4200723863

Email: Sihai.Li@tuv sud.com

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.



PSB Singapore

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SUBJECT

Analysis of "n-Heptane" Sample

CLIENT

Medtronic Singapore Operations Pte. Ltd.
49 Changi South Avenue 2
Singapore 486056

Attn: Miss Liew Yui Sin

SAMPLE SUBMISSION DATE

10 Oct 2022

DESCRIPTION OF SAMPLE

A 25 Litre tin of solvent sample labelled as follows was received.

S/N	Sample	Batch No.	Expiry Date
1	n-Heptane for Analysis EMSURE® Reag. Ph. Eur	K54474179	31.07.2027

DATE OF ANALYSIS

11 Oct 2022 – 19 Oct 2022

METHOD OF TEST

1. Density: By ASTM D3505 as reference.
2. Boiling Point: By ASTM D1078 as reference.
3. Refractive Index: By Refractometer.
4. Form & Visible Particulates: By Visual Observation.



Laboratory:
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Singapore 609937
TÜV®

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RESULTS

Table 1 : Analysis Results for "n-Heptane, Batch No: K54474179" Sample

Test	Test Result	Client Specifications	Inferred Result
1. Density @ 20°C	0.68 g/ml	0.68 g/ml	Pass
2. Boiling Point	98.0°C	98.4 ± 2°C	Pass
3. Refractive Index @ 20°C	1.3872	1.3866 – 1.3885	Pass
4. Form	Colorless	Colorless	Pass
5. Visible Particulates >100 µm	<10 per 100ml	10 per 100ml Max	Pass

MS TAN SER LING
TECHNICAL EXECUTIVE

DR LI SIHAI
AVP / SENIOR CHEMIST
MICROCONTAMINATION DIAGNOSIS
CHEMICAL & MATERIALS

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19 OCT 2022

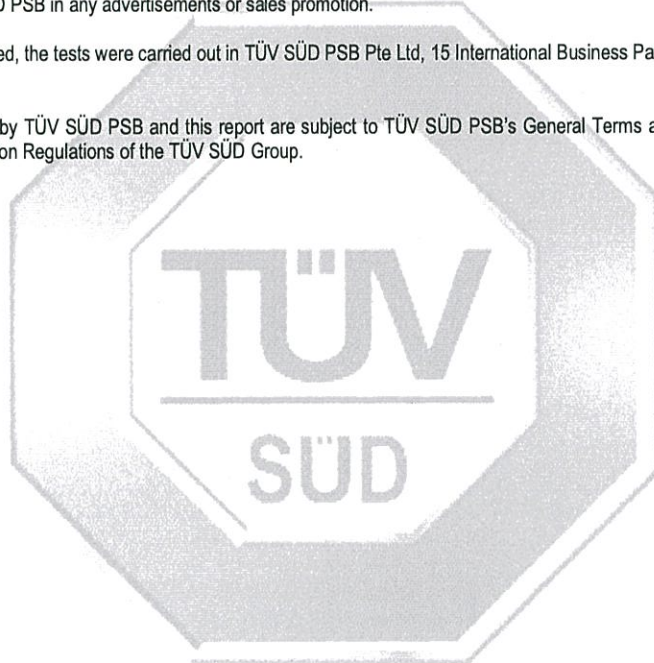


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Effective 26 January 2021





SALES PERSON : Angeline Winata
CUSTOMER SERVICE : Kaylen Liew
FIELD ENGINEER : Louis Lee
TERMS OF DELIVERY : DAP singapore
TERMS OF PAYMENT : 30 Days
CUSTOMER CODE : 70101853
GST REG NUMBER : M2-0126886-9
COMPANY REG NUMBER : 199406040G
GROUP : S

Page: 1/1

DELIVERY NOTE

SHIP TO : 70101853

MEDTRONIC SINGAPORE OPERATIONS
49 CHANGI SOUTH AVENUE 2
SINGAPORE 486056
CONTACT PERSON : JAVINE TONG
TELEPHONE NUMBER : 6436 5035
MOBILE NUMBER :

DELIVERY NOTE NO. : 7014326405
SALES ORDER NO. : 7019170145

DATED : 05.05.2023
DATED : 30.08.2022

YOUR PURCHASE ORDER : 4505975815

DATED : 30.08.2022

"Special COA to be attached from Ops"

ITEM	QTY ORDER	QTY SHIPPED	ITEM CODE/ DESCRIPTION	STORAGE DESCRIPTION	UOM
10	24	24	1.04379.6026 Your material no : 171006003 N-HEPTANE GR FOR ANALYSIS REAG. PH EUR Batch/Serial No. K54474179 (QTY. 24) EXPIRY DATE : 31.07.2027	STORE WITHOUT RESTRICTIONS Danger Item IMCO Class 3, II	25L

COA REQUEST : <http://www.merckmillipore.sg>

TOTAL NO OF PACKAGES

RECEIVED IN GOOD ORDER & CONDITION
COMPANY'S STAMP & SIGNATURE



FOR AND ON BEHALF OF
MERCK PTE. LTD.

DATE :

E & E.O



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