

„INDUSTRIAL TRAINING“

A REPORT SUBMITTED TO
SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE



FOR THE DEGREE OF
MASTER OF SCIENCE
IN
ORGANIC CHEMISTRY
UNDER THE FACULTY OF SCIENCE
BY

Miss. Tejaswini Eknath Daware

Department of Chemistry, G. M. D.Arts,B.W. Commerce and
Science College, Sinnar

UNDER THE GUIDANCE OF

Prof. :- Dr. M.R. Gaware

Head of

DEPARTMENT OF CHEMISTRY

G.M.D.ARTS, B.W.COMMERCE AND SCIENCE COLLEGE,

SINNAR 422103

APRIL 2023





Maratha Vidya Prasarak Samaj's

G.M.D. ARTS, COMMERCE AND SCIENCE COLLEGE,

SINNAR, DISTRICT- NASHIK

DEPARTMENT OF CHEMISTRY (PG)

CERTIFICATE

This is to certify that **Miss. Tejaswini Eknath Daware** studying in M.Sc.-II (Organic Chemistry) at **M.V.P. Samaj's G.M.D. Arts, B.W. Commerce and Science College , Sinnar** has successfully completed "Pharmaceutical Training Course in Analytical Techniques" (**CHO-453-Industrial Training**) from 07/12/2022 to 07/01/2023 conducted by Arni Analyticals, Nashik during the semester IV of academic year 2022-2023.

Daware
**HOD Chemistry
HEAD**

Arni
Examiner

Arni
Principal

PRINCIPAL

**G.M.D.Arts, B.W.Commerce and
Science College, Sinnar, Dist. Nashik**





ARNI ANALYTICAL

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Certificate

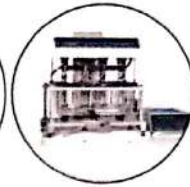
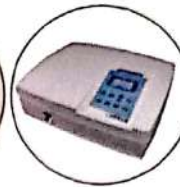
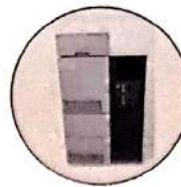
This is to Certify that **Tejaswini Eknath Daware**
has Successfully Completed Pharmaceutical Training Course in
Analytical Techniques includes Practically Handling the
Instruments Like HPLC, UV - Spectrophotometer,
Dissolution Test Apparatus & Pharmaceutical
Instruments in the Training Period From 7 Dec. 2022 To 7 Jan. 2023

Director





ARNI
ANALYTICALS



☎ : 9307686710

Certificate

“Pharmaceutical Training Course in Analytical Techniques”

This is to certify that Mr./Miss/ Mrs. **Tejaswini Eknath Daware** studying in **M. Sc.-II (Organic Chemistry)** at **M. V. P. Samaj's G. M. D. Arts, B. W. Commerce and Science College, Sinnar** has successfully completed “**Pharmaceutical Training Course in Analytical Techniques**” from 07/12/2022 to 07/01/2023 conducted by **Arni Analyticals, Nashik** and has obtained “**A**” grade.

Mr. Masum Deshmukh
Director



ACKNOWLEDGEMENT

The success and final outcome of this training required a lot of guidance and assistance from many people. All that I have done is only due to such supervision and assistance and I would never forget to thank them.

I respect and thank Respected Dr. P.V. Rasal Sir for providing me an opportunity to do the training and giving all the support and guidance which made me complete the training successfully. I am extremely thankful to him for providing such a nice support and guidance.

I owe my deep gratitude to Prof. Manoj Gaware Sir (Head of Chemistry Department) who took interest on my training and guided me all along, till the completion of training by providing all the necessary information .

I am thankful to Mr. Masum Deshmukh Sir for his guidance and suggestions during the training and thankful for giving all the knowledge during the training.

I am thankful to and fortunate enough to get constant encouragement, support and guidance from all Teaching Staffs of Department of Chemistry which helped me in successfully completing my training.

Sign:- Tejaswini Eknath Daware

Name:- Tejaswini Eknath Daware

INDEX

Sr.No	Description	Page No.
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5	Dissolution Test Apparatus Worksheet	22
6	UV- Spectrophotometer Worksheet	24

TENELIGLIPTIN

Introduction-

- Teneligliptin is a pharmaceutical drug for the treatment of type-2 diabetes mellitus.
- Teneligliptin belongs to the category of medicines called "anti-diabetic".
- It is used along or in combination with other drugs to lower blood sugar levels.
- Teneligliptin tablet contains the teneligliptin which belongs to class of dipeptidyl peptidase-4 inhibitors.
- It works by blocking the action of DPP-4 (an enzyme that destroys the hormone 'Incretin'). The enzyme 'Incretins' helps to produce more insulin only when required and reduces the liver's blood sugar level when not needed.

Chemical Formula- C₂₂H₃₀N₆O₅

Molar Mass- 426.58 gm/mol

- Teneligliptin significantly controls glycemic parameters with safety. No dose adjustment is required.
- As we all know that teneligliptin tablet contains only 20 mg active ingredient i.e. teneligliptin. Other layers or coatings are exceptions.
- Once a tablet is formulated then directly it doesn't come to market. First of all some of the random tablets are collected and forwarded for testing.

Testing have 2 types-

1. Physical
2. Chemical

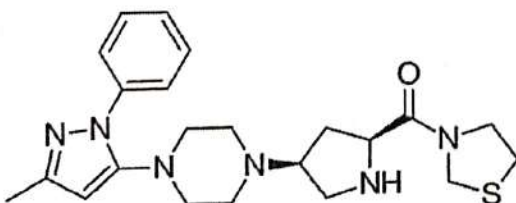
Physical Testing-

1. Average weight test
2. Uniformity of weight
3. Thickness
4. Dimensions
5. Hardness

Chemical Tests-

1. Dissolution Test
2. Separation Technique (HPLC)
3. Absorbance

Structure of Teneligliptin-





ARN ANALYTICAL

FINISHED PRODUCT SPECIFICATION AND TEST METHOD

NAME OF PRODUCT : TENELIGLIPTIN TABLETS 20 MG

PAGE NO.:- Page 2 of 4

TEST METHOD

1) **Description:** White coloured, round shaped, film coated tablets, plain on both sides.

2) **Identification:**

The retention time of the principal peak in the chromatogram of sample preparation should correspond to that of the standard preparation as obtained in the "Assay".

3) **Average weight:**

TABLETS-1	:	285 mg	TABLETS-6	:	285 mg
TABLETS-2	:	285 mg	TABLETS-7	:	292 mg
TABLETS-3	:	286 mg	TABLETS-8	:	285 mg
TABLETS-4	:	282 mg	TABLETS-9	:	280 mg
TABLETS-5	:	279 mg	TABLETS-10	:	295 mg

AVERAGE WEIGHT:- 285.4 mg

LIMIT: 283 MG ± 7.5%

4) **Uniformity of Weight:**

Select randomly 10 tablets and weigh individual tablet. Calculate average, the minimum and maximum value.

TABLETS-1	:	285 mg	TABLETS-6	:	285 mg
TABLETS-2	:	285 mg	TABLETS-7	:	292 mg
TABLETS-3	:	286 mg	TABLETS-8	:	285 mg
TABLETS-4	:	282 mg	TABLETS-9	:	280 mg
TABLETS-5	:	279 mg	TABLETS-10	:	295 mg

MINIMUM WEIGHT :- 279 mg

MAXIMUM WEIGHT :- 295 mg

LIMIT: 283 MG ± 7.5% (BETWEEN 261.8 MG AND 304.2 MG)





ARN ANALYTICAL

FINISHED PRODUCT SPECIFICATION AND TEST METHOD

NAME OF PRODUCT : TENELIGLIPTIN TABLETS 20 MG

PAGE NO.:- Page 3 of 4

5) Dissolution (By HPLC):

Dissolution Parameters :					
Medium	:	Water	Rotatory Speed	:	75 rpm
Volume	:	900 mL	Temperature	:	37°C
Apparatus	:	USP Type II	Time	:	45 minutes

Standard Weight :- 32.43 mg

Potency:- 99.85

$$\text{Calculations: Teneligliptin (\% Drug Release)} = \frac{A_t}{A_s} \times \frac{W_s}{100} \times \frac{900}{LC} \times \frac{P}{100} \times \frac{426.57}{628.86} \times 100$$

$$\text{Tablet 1} = \frac{0.6682}{\cancel{0.2316} \text{ } 0.6642} \times \frac{32.43}{100} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = \frac{5}{50} = 99.43\%$$

$$\text{Tablet 2} = \frac{0.5994}{0.6642} \times \frac{32.43 \times 5}{100 \times 50} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = 89.19\%$$

$$\text{Tablet 3} = \frac{0.6237}{0.6642} \times \frac{32.43 \times 5}{100 \times 50} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = 92.81\%$$

$$\text{Tablet 4} = \frac{0.5951}{0.6642} \times \frac{32.43 \times 5}{100 \times 50} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = 88.55\%$$

$$\text{Tablet 5} = \frac{0.5808}{0.6642} \times \frac{32.43 \times 5}{100 \times 50} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = 86.43\%$$

$$\text{Tablet 6} = \frac{0.6084}{0.6642} \times \frac{32.43 \times 5}{100 \times 50} \times \frac{900}{20} \times \frac{99.85}{100} \times \frac{426.57}{628.86} \times 100 = 90.53\%$$

89.95+

Average:- 91.15 %

Limits: Not less than 80.00 % of labeled amount is dissolved in 45 minutes





ARN ANALYTICAL

FINISHED PRODUCT SPECIFICATION AND TEST METHOD

NAME OF PRODUCT : TENELIGLIPTIN TABLETS 20 MG

PAGE NO.:- Page 4 of 4

6) Assay (By HPLC):

Chromatographic Conditions:

Column	:	C18, (150 mm x 4.6 mm), 5 µm
Pump mode	:	Isocratic
Mobile Phase	:	Buffer : Acetonitrile 60 (65:35)
Flow rate	:	1.0 mL/min
Injection volume	:	20 µl
Column Temperature	:	30°C
Wavelength	:	UV, 210 nm

FOR USE
25/12/22

Preparation of solutions:

• Standard preparation:

20 mg of Teneligliptin (29.48 mg Teneligliptin Hydrobromide hydrate) dissolve in 100 ml volumetric Flask.

• **Sample preparation:** weigh 10 tablets & determine average weight. crush the tablets to a fine powder, weigh & transfer powder eq. to 20 mg of teneligliptin to 100 ml volumetric Flask. Filter through 0.45 µ Nylon filter discarding first few ml of filtrate,

Standard Weight :- 29.48

Sample Weight :- 286

Average Weight :- 286.9

Potency :- 99.86 %

• Calculations:

$$\% \text{ of Teneligliptin} = \frac{A_t}{A_s} \times \frac{W_s}{100} \times \frac{100}{W_t} \times \frac{P}{100} \times A_w \times \frac{426.57}{628.86} \times \frac{100}{LC}$$

$$1) \frac{11452512}{14939435} \times \frac{29.48}{100} \times \frac{100}{286} \times \frac{99.86}{100} \times 286.9 \times \frac{426.57}{628.86} \times \frac{100}{20}$$

$$= 76.77 \%$$

$$2) \frac{12414022}{14939435} \times \frac{29.48}{100} \times \frac{100}{286} \times \frac{99.86}{100} \times 286.9 \times \frac{426.57}{628.86} \times \frac{100}{20}$$

$$= 83.21 \%$$

Average :- 79.99 %

Limit: Not less than 90.00 % and not more than 110.00 % of the label claim





ARNI ANALYTICALS

TITLE	HPLC DATA SHEET	
Instrument Name :-	HPLC	Page No
Instrument Make :-	SHIMADZU	
Instrument Model No. :-	LC 2010 CHT	1 of 1
Instrument ID :-	ARNI/INS-001	

NAME OF STUDENT :- Daware Tejaswini Eknath

DATA SHEET

NAME OF TEST :- SYSTEM SUITABILITY

SYSTEM SUITABILITY CHECK BY INJECTING 3 REPLICATE INJECTIONS OF CAFFEINCE

• **Chromatographic Conditions:**

Column	
Data Aquisition Time	10 min
Pump (Flow Rate)	1.00 ml/min
Port	A
Detector (Wavelength)	273 nm
Column Oven Temperature	30°C
Degasser	off
Autosampler Temperature	off

• **MOBILE PHASE PREPARATION :-**

mixture of water and acetonitrile prepare in proportion of 7:3.

• **STANDARD PREPARATION :-**

weigh accurately 20 mg of caffeine standard to a 100 ml volumetric flask. Add 60 ml of HPLC grade water and shake to dissolve completely. slowly makeup the volume upto the mark. mix well. further dilute 5 ml of the above solⁿ to 50 ml volumetric flask.

• **SEQUENCE OF INJECTION :-** dilute with water to makeup volume.

Name of Solution	No. Of Injection
Blank	—
Standard	3

Daware
ANALYSED BY

Murugan
CHECKED BY

ARNI ANALYTICALS

TITLE	HPLC DATA SHEET	
Instrument Name :-	HPLC	Page No
Instrument Make :-	SHIMADZU	
Instrument Model No. :-	LC 2010 CHT	1 of 1
Instrument ID :-	ARNI/INS-001	

DATA SHEET

NAME OF TEST :- SYSTEM SUITABILITY

SYSTEM SUITABILITY CHECK BY INJECTING 3 REPLICATE INJECTIONS OF CAFFEINE

• Chromatographic Conditions:

Column	A stainless steel column Dimensions :- Length :- 15 cm × Diameter:- 4.6 mm ; Particle size :-5μm Length :- 150 mm × Diameter:- 4.6 mm ; Particle size :-5μm Stationary Phase :- Packed with octadecylsilyl (C18) silica gel
Data Acquisition Time	7 Minutes
Pump (Flow Rate)	1.00 ml/min
Port	A
Detector (Wavelength)	273nm
Column Oven Temperature	30°C
Degasser	Off
Autosampler Temperature	Off

• MOBILE PHASE PREPARATION :-

Prepare a Mixture of 80 volumes of Water and 20 volumes of Methanol. Mix well.

• STANDARD PREPARATION :-

Weigh accurately 20mg of Caffeine standard to a 100ml volumetric flask. Add 50ml of HPLC grade water and shake to dissolve completely. Slowly makeup the volume upto the mark. Mix well. Further dilute 5ml of the above solution to 50ml volumetric flask, dilute with water to makeup volume.



ARNI ANALYTICALS

TITLE	HPLC DATA SHEET	
Instrument Name :-	High Performance Liquid Chromatography	Page No
Instrument Make :-	SHIMADZU	
Instrument Model No. :-	LC 2010 CHT	1 of 3
Instrument ID :-	ARNI/INS-001	
Name Of Student :-	Daware Tejaswini Eknath	

HPLC DATA SHEET

- **HPLC Parameter settings:**

- Make a purging of the mobile phase of all ports & injection port to remove the air bubble from the line.
- Create a new method by using below parameter.
- Save the Method Parameters with a file name.
- Download the method to the instruments.

- **CHROMATOGRAPHIC PARAMETERS-1**

INSTRUMENT PARAMETERS		Set Parameters
Data Acquisition Time	:	10 min
Pump	:	1.00 mL/min
Port	:	A
Detector (Wavelength)	:	210 nm
Column Oven Temperature	:	30°C
Degasser	:	on
Autosampler Temperature	:	10°C

ANALYSED BY
Eknath

CHECKED BY
Tejaswini



ARNI ANALYTICALS

TITLE	HPLC DATA SHEET	
Instrument Name :-	HPLC	Page No
Instrument Make :-	SHIMADZU	
Instrument Model No. :-	LC 2010 CHT	2 of 3
Instrument ID :-	ARNI/INS-001	
Name Of Student :-	Daware Tejaswini Eknath	

• CHROMATOGRAPHIC PARAMETERS-2

INSTRUMENT PARAMETERS		Set Parameters
Data Aquisition Time	:	13 min
Pump	:	0.80 ml/min
Port	:	C
Detector (Wavelength)	:	222 nm
Column Oven Temperature	:	40°C
Degasser	:	off
Autosampler Temperature	:	7°C

• CHROMATOGRAPHIC PARAMETERS-3

INSTRUMENT PARAMETERS		Set Parameters
Data Aquisition Time	:	22 min
Pump	:	1.20 ml/min
Port	:	A
Detector (Wavelength)	:	260 nm
Column Oven Temperature	:	30°C
Degasser	:	off
Autosampler Temperature	:	15°C

Faware
ANALYSED BY

M. B. Kulkarni
CHECKED BY



ARNI ANALYTICALS

TITLE

HPLC DATA SHEET

Instrument Name :-

HPLC

Page No

Instrument Make :-

SHIMADZU

Instrument Model No. :-

LC 2010 CHT

Instrument ID :-

ARNI/INS-001

3 of 3

Name Of Student :-

Daware Tejaswini Eknath

• CHROMATOGRAPHIC PARAMETERS-4

INSTRUMENT PARAMETERS		Set Parameters
Data Acquisition Time	:	30 min
Pump	:	1.50 ml/min
Port	:	B
Detector (Wavelength)	:	260 nm
Column Oven Temperature	:	30°C
Degasser	:	off
Autosampler Temperature	:	15°C

• CHROMATOGRAPHIC PARAMETERS-5

INSTRUMENT PARAMETERS		Set Parameters
Data Acquisition Time	:	20 min
Pump	:	0.00 ml/min
Port	:	A
Detector (Wavelength)	:	off
Column Oven Temperature	:	off
Degasser	:	off
Autosampler Temperature	:	off

Tejaswini
ANALYSED BY

M. S. S.
CHECKED BY



ARNI ANALYTICALS

TITLE

MONTHLY CALIBRATION RECORD OF ANALYTICAL BALANCE

Instrument Name :-

Analytical Balance

Page No.

Instrument Make :-

WENSAR

Instrument Model No. :-

DS 8000

1 of 3

Instrument ID :-

ARNI/JNS-004

NAME OF STUDENT:-

MONTHLY CALIBRATION RECORD

1. Calibration by using Standard certified weights:

Observation Table:

Sr. No.	Reference Weight in g	Observed Weight in g	Weight in g (Limit: $\pm 0.1\%$)
1	200.0000	200.011	199.8000 to 200.2000
2	100.0000	98.770	99.9000 to 100.1000
3	50.0000	50.703	49.9500 to 50.0500
4	20.0000	19.055	19.9800 to 20.0200
5	10.0000	10.001	9.9900 to 10.0100
6	5.0000	5.085	4.9950 to 5.0050
7	2.0000	1.327	1.9980 to 2.0020
8	1.0000	0.926	0.9990 to 1.0010
9	0.5000	0.151	0.4995 to 0.5005
10	0.2000	0.105	0.1998 to 0.2002
11	0.1000	0.056	0.0999 to 0.1001
12	0.0500	0.036	0.0499 to 0.0501
13	0.0200	0.014	0.0199 to 0.0200
14	0.0100	0.016	0.0099 to 0.0100
15	0.0050	0.000	0.0049 to 0.0051

Conclusion: The observed weights are within limit/ out of limit.

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CHECKED BY:-



ARNI ANALYTICALS

TITLE

MONTHLY CALIBRATION RECORD OF ANALYTICAL BALANCE

Instrument Name :-

Analytical Balance

Page No.

Instrument Make :-

WENSAR

Instrument Model No. :-

DS 8000

2 of 3

Instrument ID :-

ARNI/JNS-004

2. Test for Linearity:

Sr. No.	Selected Weights in g	Observed Weight in g
1	200.0012	200.0012
2	100	98.773
3	50	50.702

Conclusion: The observed weights are Consistent/not Consistent.

ANALYSED BY

CHECKED BY:-

3. Test for Eccentricity:

1	2
A	
3	4

Sr. No.	Weight Observed in g	Difference in g	Limit
1.	At Centre- (A) 5.083		± 0.1 %
2.	At Corner 1 (B) 5.082	B-A = -0.001	
3.	At Corner 2 (C) 5.082	C-A = -0.001	
4.	At Corner 3 (D) 5.083	D-A = 0.000	
5.	At Corner 4 (E) 5.082	E-A = -0.001	

Conclusion: The maximal Differential Eccentricity error is within limit/out of limit of Std. deviation.

ANALYSED BY

CHECKED BY:-



ARNI ANALYTICALS

TITLE

MONTHLY CALIBRATION RECORD OF ANALYTICAL BALANCE

Instrument Name :-

Analytical Balance

Page No.

Instrument Make :-

WENSAR

Instrument Model No. :-

DS 8000

3 of 3

Instrument ID :-

ARNI/JNS-004

4. Test for Repeatability :

Selected Weight in g: 5 g

Sr. No.	Observed Weight in g	Sr. No.	Observed Weight in g	Limit
1	5.079	6	5.082	± 0.1 %
2	5.080	7	5.082	
3	5.082	8	5.083	
4	5.082	9	5.082	
5	5.081	10	5.082	

Conclusion: Individual measurement deviation from average value ~~exceeds/~~ does not exceed standard deviation.

Remark: The instrument is found ~~Satisfactory/~~ unsatisfactory for its use.

Forward
ANALYSED BY

M. Ballal
CHECKED BY:-



MONTHLY CALIBRATION RECORD

1. Calibration by using Weights:

Observation Table:

Sr. No.	Reference Weight in g	Observed Weight in g	Weight in g (Limit: $\pm 0.1\%$)
1	200.0000	199.998 g	199.8000 to 200.2000
2	100.0000	98.755 g	99.9000 to 100.1000
3	50.0000	50.692 g	49.9500 to 50.0500
4	20.0000	19.049 g	19.9800 to 20.0200
5	10.0000	9.998 g	9.9900 to 10.0100
6	5.0000	5.082 g	4.9950 to 5.0050
7	2.0000	1.327 g	1.9980 to 2.0020
8	1.0000	0.923 g	0.9990 to 1.0010
9	0.5000	0.152 g	0.4995 to 0.5005
10	0.2000	0.103 g	0.1998 to 0.2002
11	0.1000	0.059 g	0.0999 to 0.1001
12	0.0500	0.069 g	0.0499 to 0.0501
13	0.0200	0.016 g	0.0199 to 0.0200
14	0.0100	0.015 g	0.0099 to 0.0100
15	0.0050	0.000 g.	0.0049 to 0.0051

Conclusion: The observed weights are within limit/ out of limit.

Edward
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Edward
CHECKED BY



ARNI ANALYTICALS

TITLE

MONTHLY CALIBRATION RECORD OF ANALYTICAL BALANCE

Instrument Name :-

Analytical Balance

Page No

Instrument Make :-

WENSAR

Instrument ID :-

ARNI/JNS -004

2 of 3

2. Test for Linearity:

Sr. No.	Selected Weights in g	Observed Weight in g
1	100 g	98.750 g
2	5 g	5.080 g
3	200 g	199.992 g

Conclusion: The observed weights are ~~Consistent~~/~~not Consistent~~ Consistent.

Fowar

ANALYSED BY

Mscop

CHECKED BY

3. Test for Eccentricity:

1	2
A	
3	4

Sr. No.	Weight Observed in g	Difference in g	Limit
1.	At Centre- (A) 50.691	-	± 0.1 %
2.	At Corner 1 (B) 50.692	B-A = 0.001	
3.	At Corner 2 (C) 50.691	C-A = 0.0	
4.	At Corner 3 (D) 50.690	D-A = -0.001	
5.	At Corner 4 (E) 50.690	E-A = -0.001	

Conclusion: The maximal Differential Eccentricity error is ~~within limit~~/~~out of limit~~ of Std. deviation.

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ARNI ANALYTICALS

TITLE

MONTHLY CALIBRATION RECORD OF ANALYTICAL BALANCE

Instrument Name :-

Analytical Balance

Page No

Instrument Make :-

WENSAR

Instrument ID :-

ARNI / INS - 004

3 of 3

4. Test for Repeatability :

Selected Weight in g: 5 g

Sr. No.	Observed Weight in g	Sr. No.	Observed Weight in g	Limit
1	5.080	6	5.082	± 0.1 %
2	5.080	7	5.081	
3	5.080	8	5.080	
4	5.082	9	5.080	
5	5.081	10	5.081	

Conclusion: Individual measurement deviation from average value **exceeds/ does not exceed** standard deviation.

Remark: The instrument is found **Satisfactory/ unsatisfactory** for its use.

Howar
ANALYSED BY

M. Prasad
CHECKED BY





ARNI ANALYTICALS

TITLE

DAILY CALIBRATION RECORD OF pH-METER

Instrument Name :-

pH - METER

Page No

Instrument Make :-

LABMAN

Instrument Model No. :-

LMPH - 10

1 of 1

Instrument ID :-

ARNJINS - 005

DAILY CALIBRATION RECORD

• Procedure: Refer SOP No. : SOP/ARN/INS-005

• Preparation Of Solutions:

• pH-4.01 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 4.0 ± 0.05 at 25°C .

• pH-7.00 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 7.0 ± 0.05 at 25°C .

• pH-9.20 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 9.20 ± 0.05 at 25°C .

• Observation Table:

Sr. No.	Date	pH	
		4.00 (± 0.05)	7.00 (± 0.05)
1.	11/12/22	4.02	6.80

slope = 87 %

Floware
PERFORMED BY

Mahesh
CHECKED BY

ARNI ANALYTICALS

TITLE

DAILY CALIBRATION RECORD OF pH-METER

Instrument Name :-

PH- METER

Page No

Instrument Make :-

LABMAN

Instrument Model No. :-

LMPH - 10

1 of 1

Instrument ID :-

ARNI/INS-005

DAILY CALIBRATION RECORD

- Procedure: Refer SOP No. : SOP/ARN/INS-005

Preparation Of Solutions:

- pH-4.01 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 4.0 ± 0.05 at 25°C .

- pH-7.00 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 7.0 ± 0.05 at 25°C .

- pH-9.20 :-

- Transfer the capsule content in a 100ml volumetric flask using a funnel.
- Dissolve the contents in 10 ml of distilled water and then make it up to 100 ml with distilled water.
- This solution will have a pH of 9.20 ± 0.05 at 25°C .

- Observation Table:

Sr. No.	Date	pH	
		4.00 (± 0.05)	7.00 (± 0.05)
1.	15/12/2022	3.90	6.80

slope = 97%

I. Gowth
PERFORMED BY

M. S. Rao
CHECKED BY



ARNI ANALYTICALS

TITLE

UV-SPECTROPHOTOMETER WORKSHEET

Instrument Name :-

UV - Spectrophotometer

Page No.

Instrument ID :-

ARNI/TNS -002

Instrument Model No. :-

LMSP-UV 100 B

1 of 1

Name Of Students

Daware Tejaswini Eknath

NAME OF TEST :-

- 1) PHOTOMETRIC ANALYSIS
- 2) WAVELENGTH SCAN

PREPARATIONS:-

STANDARD PREPARATION :-

Weigh accurately 10mg of Caffeine standard in a 100ml volumetric flask, add 60ml of water sonicate for 5 minutes to completely dissolve, makeup the volume with water.

Further dilute 5ml of the above solution to 50ml with water.

UV-SPECTROPHOTOMETER WAVELENGTH :- 273nm

ANALYSED BY

CHECKED BY:-



ARNI ANALYTICALS

TITLE

UV-SPECTROPHOTOMETER WORKSHEET

Instrument Name :-

UV-spectrophotometer

Page No.

Instrument ID :-

ARNI/INS-002

Instrument Model No. :-

LMSP-UV 100B

1 of 1

Name Of Students

Daware Tejaswini Eknath

Date:-

NAME OF PRODUCT	:	Caffeine
WORKING STANDARD NO.	:	-
POTENCY	:	-
INSTRUMENT ID	:	ARNI/INS-002

NAME OF TEST :- Wavelength scan

PREPARATIONS:-

STANDARD PREPARATION :-

weigh accurately 10 mg of caffeine standard in a 100 ml volumetric flask, add 60 ml of water, sonicate for 5 minutes to completely dissolve, makeup the volume with water.

Further dilute 5 ml of the above solution to 50 ml with water.

UV-SPECTROPHOTOMETER WAVELENGTH :-

273 nm - maximum

206 nm - minimum

OBSERVATIONS:-

MAXIMUM ABSORPTION WAVELENGTH

273 nm

Daware
ANALYSED BY

Tejaswini
CHECKED BY:-



ARNI ANALYTICALS

TITLE

DISSOLUTION TEST APPARATUS WORKSHEET

Instrument Name :-

DISSOLUTION TEST APPARATUS.

Page No.

Instrument ID :-

ARNI/INS -003

Instrument Model No. :-

DS 8000

1 of 1

Name Of Students

Daware Tejaswini Eknath

NAME OF TEST :-

TRIAL FOR DISSOLUTION TEST.

DISSOLUTION CONDITIONS:-

Dissolution Media	WATER
Media Volume	900 mL
Apparatus	USP TYPE II PADDLE
RPM	100
Temperature	37.0 ± 0.5°C
Time	45 Minutes

PREPARATIONS:-

Pour 900 mL of dissolution medium in each vessel. Allow sufficient time for the dissolution medium to equilibrate at 37°C ± 0.5°C. Adjust stirring element speed to 100 rpm. Place one capsule in each of six paddle and adjust the paddle in the dissolution medium so that there is a distance of 25 mm ± 2 mm between the bottom of the paddle and inside bottom of the vessel. Start the apparatus. At the end of specified time interval, withdraw 10 mL aliquot from a zone midway between the surface of the dissolution medium and at top of the rotating paddle. Further dilute 2ml of the above solution to 25ml with dissolution medium.

Daware
ANALYSED BY

Masga
CHECKED BY:-

ARNI ANALYTICALS

TITLE

DISSOLUTION TEST APPARATUS WORKSHEET

Instrument Name :-

Dissolution Test Apparatus

Page No.

Instrument ID :-

ARNI/INS -003

Instrument Model No. :-

DS-8000

1 of 1

Name Of Students

Daware Tejaswini Eknath

NAME OF TEST :-

TRIAL FOR DISSOLUTION TEST.

DISSOLUTION CONDITIONS:-

Dissolution Media	Water
Media Volume	900ml
Apparatus	USP Type II Paddle
RPM	100
Temperature	37°C
Time	45 minutes

PREPARATIONS:-

Pour 900 ml of dissolution medium in each bowl. maintain the temperature of water bath at 37.5°C.

Adjust the stirring speed at 100 RPM.

Adjust the paddle with shaft in dissolution medium

Adjust the distance between paddle & inside bottom

of the bowl. start the apparatus. End of the

specific time interval withdraw 10 ml aliquot from dissolution medium.

Further dilute 2 ml of solution to 25 ml with dissolution medium.

Daware
ANALYSED BY

J. K. Kulkarni
CHECKED BY:-