

**GUJARAT ARTS AND SCIENCE COLLEGE**  
**DEPARTMENT OF CHEMISTRY**

PROGRAM NAME : MASTER OF SCIENCE IN CHEMISTRY  
PROGRAM CODE : MSc-CHE  
COURSE : CHE-509  
YEAR : 2022-23

**LIST OF STUDENTS WHO HAVE UNDERGONE INDUSTRIAL TRAINING**

SR NO.	NAME
1	CHANDERA RITESH RAJABHAI
2	DABHI VISHALKUMAR DIPABHAI
3	DAVE HARSHANG BHARATBHAI
4	DAVE HARSHKUMAR BHARATBHAI
5	GHANCHI HIBA MOHAMMED JAVED
6	GHANCHI VORA MAHAMMADRAIYYAN IKBALBHAI
7	SHAKTISINH DILIPSINH GOHIL
8	GOL VISHVABEN MANUBHAI
9	KANERIA NEELKUMAR MAHENDRABHAI
10	KHARADI STEPHY ERIK
11	KHER GUNJANBHAI PRAVINBHAI
12	MODI JONEEL SURESHBHAI
13	MOMIN MHAMMADFAIZAN JAFARHUSAIN
14	MOMIN MOHAMMADREZA IRSHADHUSEN
15	NAYKA JENCY BHAGUBHAI
16	DHRUMIL KIRTIKUMAR PANCHAL
17	PARMAR NISHANTKUMAR BHAVANBHAI
18	PATEL GAYATRIBEN SURESHBHAI
19	PATEL HETALKUMARI KHANDUBHAI
20	PATEL JANVIBEN DILIPBHAI
21	PATEL SHREYANSH PARSHOTTAMBHAI
22	PATEL YASHKUMAR NATWARLAL
23	PATEL YOVANKUMAR PANKAJBHAI
24	PRAJAPATI MEENABEN NATHTHUBHAI
25	RADADIYA SNEHABEN ASHOKBHAI
26	SHAIKH AAYESHABEGAM MOHMMADHANIF
27	SOLANKI AARTI DILAVAR BHAI
28	SUTHAR NISHIL BIRENKUMAR
29	THUMMAR DHAVAL BHAGAVANBHAI
30	VASAVA CHHAGANBHAI TETIYABHAI
31	VASAVA DIVYESHKUMAR PRATAPBHAI
32	VASAVA JASMINKUMAR GURJIBHAI
33	VASAVA RAJENDRAKUMAR GAMBHIRBHAI

<b>SR NO.</b>	<b>NAME</b>
34	YADAV SHRUTI SATISH KUMAR
35	ADODARIYA MONABEN RASHIKBHAI
36	ANSARI JULAYA SHANVIBANU MAHMAD SHAKIL
37	DOBARIYA NIRALI HASMUKHBHAI
38	KADACHHA SONALBEN MERUBHAI
39	LADANI UTTAMKUMAR MANSUKHBHAI
40	MAHIDA HARDIKSINH NARVATSINH
41	MAKWANA DIPAKBHAI SOMABHAI
42	MERAIYA SAMIR RAJESHBHAI
43	MISHRA DIVYA MUNISHANKAR
44	MOMIN MOHAMMAD ALI RASHID HUSEN
45	PARMAR JAY KISHOR
46	PATEL PARTH MAHESHBHAI
47	PATEL SAPAN SHARADCHANDRA
48	PATEL UTKARSHKUMAR DASHRATHBHAI
49	PATEL VISHALKUMAR BHIKHABHAI
50	POKIYA ARCHANA SHAILESHBHAI
51	PRAJAPATI KAUSHIKKUMAR DAHYALAL
52	RATHOD MILANBHAI MANUBHHAI
53	RATHOD NIHARKUMAR PRAVINCHANDRA
54	SAGAR SHASHIKANT
55	CHANDERA RITESH RAJABHAI
56	DABHI VISHALKUMAR DIPABHAI
57	NAI RAHUL RAMESHBHAI
58	NAIR MEGHA MOHANKUMAR
59	PADHIYAR VIJAYSINH RAYSINGBHAI
60	PANCHAL YASH RAJESHBHAI
61	PARMAR NITINKUMAR KIRITKANT
62	PATEL DEVARSH INDRAVADANBHAI
63	PATEL DHRUVANG G
64	PATEL DHWANI M
65	PATEL DIP A
66	PATEL JEEL VIPULBHAI
67	PATEL MEHUL P

**GUJARAT UNIVERSITY**



**GUJARAT UNIVERSITY**  
Estd. 1949

**AHMEDABAD-380009**

CHE-509 INDUSTRIAL TRAINING

INDUSTRIAL TRAINING on " DYES "

Submitted by:

Msc Sem :4

ROLL NO: 02

University seat no:

**UNDER THE SUPPORT AND GUIDANCE OF**

**PROF. K.R PATEL**

Associate Professor,

Gujarat Arts and Science

College, AHMEDABAD.



Submitted to

**The Department of  
Chemistry Gujarat Arts and  
Science College  
Ahmedabad – 380006**



MFG. OF : DYES

**SHREEJI**  
**KRUPA ENTERPRISE**

Date : February 9 , 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that CHANDERA RITESH RAJABHAI student from Gujrat arts and science college, Ahmedabad have undergone In- Plant Technical know – how training in Q C and R&D department from 18<sup>th</sup> January to 07<sup>th</sup> February 2023 in our Organization. He has covered all the Departments to study about the relevant details for his further studies.

We found him sincere ,hard working during the time of training and we wish him all the success for his or her future endeavors.

Thanking you,  
Yours faithfully ,  
For Shreejkrupa enterprise.

For, Shreejkrupa Enterprise  
  
Partner

Floor No. 131/2 (F2) Phase-II, Morden Bakery Road, G.I.D.C., NARODA, Ahmedabad 382330 . Ph (079) 22801034  
M. 98250 30234, 9898386929 . E-mail : shreeji320@gmail.com

PREFERENCE

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## INTRODUCTION OF THE COMPANY

The Naroda industrial Estate was established by GIDC in the year 1964. SHREEJIKRUPA ENT. was formed in October 1999 by RAJENDRA PATEL. Shreejikrupa enterprise formed reactive dyes.

Shreejikrupa ent. Is one of the most trusted name in dyes manufacture industry in India. Especially in Gujarat which is the center hub for dyes manufacturing company.

# INDUSTRIAL TRAINING



Gujarat Arts & Science College Ellisbridge Ahmedabad

Ahmedabad 380009

March 2022-2023

Roll Number: - 03(GIA)

MSc-SEM 4

**Prepared by**

Dabhi Vishalkumar D  
Uni exam number:  
M.sc Sem IV  
Organic chemistry  
(GIA)

**Submitted to**

Prof. K. R. Patel

**Head of department**

Prof. C. Srivastav

# CERTIFICATE



Unit-2, Survey No. 293/3, Behind Jalaram Mandir, Kalikund-Kheda Road, Dholka-382225, Dist.-Ahmedabad.  
Phone : 02714-222444 / Email : deeppharma79@gmail.com

Date: 20/02/2023

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that **MR DABHI VISHALKUMAR DIPABHAI** has completed his training in our organization during the period of 30/01/2023 to 20/02/2023.

This Certificate is being submitted in partial fulfillment of the requirement of the award of **'MASTER OF CHEMISTRY'** of The Department of Chemistry, Gujarat Arts & Science College, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA

# INDUSTRIAL TRAINING

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**CHE-509 INDUSTRIAL TRAINING**

An industrial training report

**K.M.Pharma.Solutions**

submitted for the degree of

**Master Of Science**

In

Organic chemistry

by

**DAVE HARSHANG BHARATBHAI**

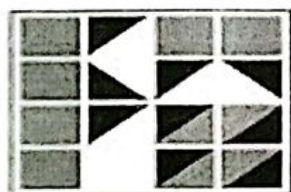


DEPARTMENT OF CHEMISTRY

GUJARAT ARTS AND SCIENCE COLLEGE

GUJARAT UNIVERSITY

ELLISBRIDGE AHMEDABAD-380006



**KMPS**  
K.M.Pharma Solution



K.M. Pharma Solution

Date: 25.02.2023

TO WHOM IT MAY CONCERN

This is certify that Mr. Dave Harshang Bharatbhai a post graduate student of Department of Chemistry- Gujarat Arts and Science college, Gujarat University, Ahmedabad has successfully completed 21 day's Industrial Training (From 16.01.2023 to 25.02.2023) at our organization in R&D Department. During the period of his Industrial Training with us and he was found punctual, hardworking and inquisitive. His Enrollment number is 202102300490.

With Kind Regards,

K. M. Pharma Solution

Dr. Kalpesh Patel

Director



**K.M. Pharma Solution**

Reg. Office: Block No. 33, 2-Ghanshyam Nagar (West), B/H. Crystal Mall, Kalavad Road, Rajkot - 360005.  
Lab: Unit No. 101, Shilvam Industrial Park, opp. Sarvoday Hotel, near Parikh Packaging, off NH 8A,  
Changodar, Ahmedabad, Gujarat, India. M. +91 98988 22121 | E. contact@kmpharma.in

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**Roll No. : 05 (GIA)**

**Exam No. :**

**PAPER No. : CHE(509)**

**PAPER NAME :  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY**



**IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF**

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**DAVE HARSHKUMAR BHARATBHAI**

**DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE COLLEGE  
ELLISBRIDGE  
AHMEDABAD-380009  
GUJARAT, INDIA  
APRIL 2023**

# CERTIFICATE OF INDUSTRIAL TRAINING



Dishman Carbogen Amcis Ltd  
Plot No. 1216/11, 12 & 1216/20 to 26,  
Phase - IV, GIIC Estate, Naroda  
Ahmedabad - 382330  
Gujarat, India  
CIN: L74900GJ2007PLC051338  
+91 079 2282 0234, 2282 0103  
dishman@dishmangroup.com  
www.imdcal.com

## Industrial Training Certificate

### To Whomsoever It May Concern

This is to certify that **Mr. Harshkumar Bharatbhai Dave** Student of M.sc (Semester - 4) from Gujarat arts and science College, Gujarat University, has undergone Industrial training at our company for the duration of 05/01/2023 to 31/01/2023.

During this period, his working and behavior was found to be satisfactory.

We wish him all the success in his future endeavors.

For Dishman Carbogen Amcis Limited

Authorized Signatory

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# INDUSTRIAL TRAINING REPORT

A  
REPORT SUBMITTED TO  
DEPARTMENT OF CHEMISTRY  
GUJARAT UNIVERSITY



**GUJARAT UNIVERSITY**

Estd. 1949

IN PARTIAL FULFILLMENT OF THE REQUIREMENT  
FOR THE DEGREE OF MASTER OF SCIENCE

IN  
ORGANIC CHEMISTRY  
BY

**GHANCHI HIBA MOHAMMED JAVED**

**Sem :- IV**

**Roll No :- 07(GIA)**

**Uni. Exam No:**

**Enrollment No :- 202102300495**

**Gujarat Arts and Science College, Ellisbridge Ahmedabad  
380006, Gujarat, India.**

**April 2023**

# CERTIFICATE



EROMA

EROMA PETROCHEMICALS PVT. LTD.<sup>®</sup>

Registered & Corporate Office :  
109, First Floor, Ayana Complex,  
Zydus Hospital Road, Thaltej, Ahmedabad - 380058, Gujarat.

## Certificate

### TO WHOM IT MAY CONCERN

This is to certify that Miss. Ghanchi Hiba Mohammed Javed, student of M.Sc. ( Organic Chemistry ) has under gone Industrial Training Program for 20<sup>th</sup> Jan 2023 to 10<sup>th</sup> Feb of 2023 at the Eroma Petrochemicals Pvt Ltd, Malarpura Kheda.

As a partial fulfillment of the requirement for Master of Science, Miss. Ghanchi Hiba mohammed Javed. Has satisfactorily completed his training in stipulated time period.

During the training period, He was found punctual in attendance and enthusiastic in his pursuit.

This certificate is issued to him only for purpose of the industrial training.

We wish him good luck for all future endeavors and a bright career.

Place: Malarpura Kheda.

Date: 10.02.2023

For EROMA PETROCHEMICAL PVT. LTD.



Mr. Mukesh Pawar

(C.M.D)

CIN : U23209GJ2012PTC071990

Works : Old Survey No. 210, New Survey No. 249, Village: Malarpura, Tal. & Dist. Kheda - 387540, Gujarat.

☎ +91 75758 08729

✉ info@eroma.in

🌐 www.eroma.in



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*CHE : 509 INDUSTRIAL TRAINING*

*INDUSTRIAL TRAINING REPORT*

Undergone At



**"GLOBAL ANALYTICAL LABORATORY"**

**"20<sup>th</sup> Jan, 2023 to 10<sup>th</sup> Feb, 2023"**

*Submitted in partial fulfillment of the  
Requirements for the award of the degree of*

**Masters of Science (M.Sc.)**

in

**Organic Chemistry**

Submitted By

**"GHANCHIVORA MAHAMMADRAIYYAN I."**

Roll no: "08"

Enrollment No: "202102300496"

Submitted To:

**GUJARAT ARTS & SCIENCE COLLEGE**

**Department of Chemistry**

*Affiliation: Gujarat University*

*AHMEDABAD, GUJARAT*





Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India  
Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com) E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

### TO WHOM IT MAY CONCERN

This is to certify that Ghanchivora Mahammadraiyyan Ikbalbhai a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 20/01/2023 to 10/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

  
Hiten Rajapati

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- INSTRUMENTS

Roll No.: 09

Exam No.:

PAPER No.: 509

PAPER NAME: CHE (O) 509 INDUSTRIAL TRAINING

INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



**GUJARAT UNIVERSITY**

Estd. 1949

IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

BY

NAME OF STUDENT: GOHIL SHAKTISINH DILIPSINH

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE COLLEGE

AHMEDABAD-380006

GUJARAT, INDIA

APRIL 2023



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Roll No.:10

Exam No.:

PAPER No.: 509

PAPER NAME: CHE(O)INDUSTRIAL TRAINING

INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



GUJARAT UNIVERSITY  
Estd. 1949

IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE

IN

CHEMISTRY

BY

NAME OF STUDENT: GOL VISHVABEN MANUBHAI

DEPARTMENT OF CHEMISTRY

GUJARAT ARTS AND SCIENCE COLLEGE

AHMEDABAD-380006

GUJARAT, INDIA.

APRIL,2023



# CERTIFICATE



MFG. OF : DYES

**SHREEJI**  
KRUPA ENTERPRISE

Date : February 9 , 2023

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that **GOL VISHVABEN MANUBHAI** student from Gujarat arts and science college, Ahmedabad have undergone In- Plant Technical know – how training in Q.C and R&D department from 18<sup>th</sup> January to 07<sup>th</sup> February 2023 in our Organization. She has covered all the Departments to study about the relevant details for her further studies.

We found him sincere ,hard working during the time of training and we wish him all the success for her future endeavors.

Thanking you,  
Yours faithfully,  
For Shreejirupa enterprise.

For, SHREEJIRUPA ENTERPRISE  
Partner  
Partner

Plot No.-131/2 (F2) Phase-II, Morden Bakery Road, G.I.D.C., NARODA, Ahmedabad-382330. Ph. (079) 22801034  
M. 98250 30234, 9898386929 • E-mail : shreeji320@gmail.com

By Vishva M. Gol

Gujarat Arts and Science College

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**Gujarat University**

**509: INDUSTRIAL TRAINING**

**An Industrial training report submitted for the degree of Master of Science in chemistry to Gujarat University.**

**Submitted by : Neelkumar Mahendrabhai Kaneria**

**Roll No. : 11**

**University seat No. :**

M.Sc. semester - 4



Department of Chemistry,  
Gujarat Arts and Science college,  
Ahmedabad-380009.

**Guided by: Prof. K. R. Patel,**  
Gujarat Arts and Science College,



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

## TO WHOM IT MAY CONCERN

This is to certify that **Kaneria Neelkumar Mahendrabhai** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 06/01/2023 to 27/01/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

Aayushi Pandya

The signature is written in black ink over a circular stamp. The stamp contains the text "GLOBAL ANALYTICAL LABORATORY" around the perimeter and "Ahmedabad" in the center. The signature is written in a cursive style.

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UNI. EXAM NO.-

# CHE (O) 509 INDUSTRIAL TRAINING

REPORT  
SUBMITTED TO  
GUJARAT UNIVERSITY



IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE

DEGREE OF

MASTER OF SCIENCE  
IN  
CHEMISTRY (ORGANIC)

BY

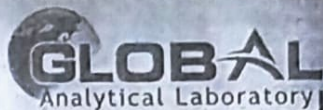
STEPHY E. KHARADI  
ROLL NO: 12(GIA)

GUJARAT ARTS AND SCIENCE COLLEGE,  
GUJARAT UNIVERSITY.

UNDER THE SUPPORT AND GUIDANCE  
OF  
PROF.K.R.PATEL

APRIL 2023.

# CERTIFICATE



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

## CERTIFICATE

This is to certify that **Kharadi Stephy Erik** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed her industrial training from 18/01/2023 to 10/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

She regularly attended in our organization and shown keen interest in her training. Her performance was found to be satisfactory.

We wish her all success in her future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitendra J. Jhapati

## Classification of Chromatographic method: -

Different methods were attempted for classification of chromatography: -

### A] According to mechanism of separation: -

- (1) Adsorption Chromatography
- (2) Partition Chromatography
- (3) Ion Exchange Chromatography
- (4) Molecular Exclusion (Size Exclusion) Chromatography
- (5) Zone Electrophoresis
- (6) Affinity Chromatography
- (7) Chiral Chromatograph

### B] According to Mobile Phase: -

In this regard chromatography is classified into: -

- (1) Liquid Chromatography (LC)
- (2) Gas Chromatography (GC)

MOBILE PHASE	STATIONARY PHASE
GAS GAS CHROMATOGRAPHY (GC)	LIQUID GAS-LIQUID CHROMATOGRAPHY (GLC)
	SOLID GAS-SOLID CHROMATOGRAPHY (GSC)
LIQUID LIQUID CHROMATOGRAPHY (LC)	LIQUID LIQUID-LIQUID CHROMATOGRAPHY (LLC)
	SOLID LIQUID-SOLID CHROMATOGRAPHY (LSC)

### C] According to The Technique: (Methods of holding the stationary phase): -

#### (1) Plane Chromatography

- (a) Thin Layer Chromatography (TLC)
- (b) Paper Chromatography (PC)



Roll No:13

Exam No:

PAPER NO:509  
PAPER NAME: INDUSTRIAL TRAINING REPORT  
AN  
INDUSTRY TRAINING REPORT  
SUBMITTED TO



GUJARAT UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT  
FOR THE DEGREE OF  
MASTER OF SCIENCE  
IN  
ORGANIC CHEMISTRY  
BY

KHER GUNIANBHAI PRAVINBHAI

ROLL NO: 13(GIA)

UNDER THE SUPPORT AND GUIDANCE OF  
PROF.K.R.PATEL



DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE COLLEGE  
ELLISBRIDGE, AHMEDABAD  
GUJARAT 380006

INTERNSHIP TRAINING DONE AT





A Step Ahead, **ALWAYS**

Date:-01-02-2023

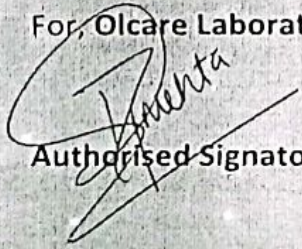
## Internship Certificate

This is to be certify that Kher Gunjanbhai Pravin Bhai has done internship at Olcare Laboratories from 09-01-2023 to 30-01-2023 in Analytical Department.

We have found him to be a self-starter who is motivated, duty bound and hardworking. He worked sincerely on his assignments and his performance was satisfactory.

We wish him best of luck for his future.

For, Olcare Laboratories

  
Authorised Signatory

Registered Office : Pharma Complex, Plot No. 29, B/h. Marketing Yard, G.I.D.C. Estate, Wadhwan-city-363 035.  
Phone : 02752-242072 [www.olcarelab.com](http://www.olcarelab.com) [info@olcarelab.com](mailto:info@olcarelab.com), [olcarelaboratories@gmail.com](mailto:olcarelaboratories@gmail.com)

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## **Global Analytical Laboratory Ahmedabad**

Address : 27, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral,  
Ahmedabad, Gujarat, India-382418

Phone : +91 99135 22863

Email : support@globalanalyticallab.com



**Gujarat Arts and Science College**  
Perpetuating Education Through Generations  
Estd:1860

Government of Gujarat

Address: Ellisbridge, Ahmedabad, Gujarat 380006

**REPORT SUBMITTED BY:- MODI JONEEL SURESHBHAI**

**ROLL NO. :- 15 (GIA)**

**BRANCH:- ORGANIC CHEMISTRY**



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

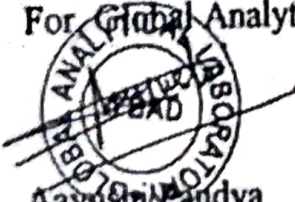
## TO WHOM IT MAY CONCERN

This is to certify that Modi Joneel Sureshbhai a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 06/01/2023 to 27/01/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

  
Aayush Pandya

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Roll No.: 16

Exams No.:

**CHE (O) 509 INDUSTRIAL TRAINING REPORT**

**SUBMITTED**

**TO**

**GUJARAT ARTS AND SCIENCE COLLEGE**



**IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF**

**master of science**

**IN**

**ORGANIC CHEMISTRY**

**SUBMITTED BY**

**MOMIN MOHAMMADREZA IRSHADHUSEN**

**M.Sc. SEMESTER-4, ORGANIC CHEMISTRY**

**[ROLL NO.16]**

**GUJARAT ARTS AND SCIENCE COLLEGE**

**ELLISBRIDGE, AHMEDABAD-380006,**

**GUJARAT, INDIA**

**MARCH-2023**

**INDUSTRIAL TRAINING CERTIFICATE**

Unit-2, Survey No: 293/3, Behind Jalaram Mandir, Kalikund-Kheda Road, Dholka-382225, Dist.-Ahmedabad.  
Phone : 02714-222444 / Email : deeppharma79@gmail.com

Date : 02/02/2023

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **MR MOMIN MHAMMADFAIZAN JAFARHUSAIN** has completed his training in our organization during the period of 06/01/2023 to 31/01/2023

This Certificate is being submitted in partial fulfillment of the requirement of the award of "**MASTER OF CHEMISTRY**" of Gujarat Arts and Science College, Gujarat University, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA



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Roll No.: 17

Exams No.:

**CHE (O) 509 INDUSTRIAL TRAINING REPORT  
SUBMITTED**

**TO**

**GUJARAT ARTS AND SCIENCE COLLEGE**



**IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF**

**MASTER OF SCIENCE**

**IN**

**ORGANIC CHEMISTRY**

**SUBMITTED BY**

**MOMIN MOHAMMADREZA IRSHADHUSEN**

**M.Sc. SEMESTER-4, ORGANIC CHEMISTRY**

**[ROLL NO.17]**

**GUJARAT ARTS AND SCIENCE COLLEGE**

**ELLISBRIDGE, AHMEDABAD-380006,**

**GUJARAT, INDIA**

**MARCH-2023**

Date : 02/02/2023

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **MR MOMIN MOHAMMADREZA IRSHADHUSEN** has completed his training in our organization during the period of 06/01/2023 to 31/01/2023

This Certificate is being submitted in partial fulfillment of the requirement of the award of "**MASTER OF CHEMISTRY**" of Gujarat Arts and Science College, Gujarat University, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA

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# CHE (509) INDUSTRIAL TRAINING

S R ENGINEERS, HAZIRA PLANT,

HAZIRA, SURAT – 394510

Submitted in partial fulfilment of the  
Requirement for the award of the degree of

**MASTER OF SCIENCE (SEM-4)**

**IN**

**(ORGANIC CHEMISTRY)**



Submitted to

**GUJRAT ARTS AND SCIENCE COLLEGE, ELLISBRIDGE – 380006**

**April - 2023**



**Affiliation- GUJARAT UNIVERSITY**

**Submitted by:**

**Nayka jency bhagubhai**

**Roll no. – 18**

**Enrolment No. – 202102300522**

**Mentor:**

**pf.C B Srivastav**

**Associate professor**

**Gujarat college, Ahmedabad**

# CERTIFICATE

## **SRE** S R ENGINEERS

D-47, JAYRAJ SOCIETY, ICHHAPORE NO.03, HAZIRA MAIN ROAD, SURAT - 394510, GUJARAT  
(M) 9712310766, 8715079963  
E-MAIL: - sr.engineers22@gmail.com

### CERTIFICATE

This is to certify that Miss. Jency Bhagubhai Nayka, student of M.Sc.Chemistry (4<sup>th</sup> Sem.) from Gujarat Arts and Science College, Elishbridge Ahmedabad has completed the industrial training at our organization M/S. S R Engineers, Surat ONGC Hazira (Cogen steam system) site during Date. 05/01/2023 to 31/01/2023.  
During his training period we found him sincere, punctual and hard worker. He has submitted his project report to us.  
We wish him a successful career in future.

Yours Faithfully  
For S R ENGINEERS

  
03.01.2023  
  
Authorized Sign.

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Roll No.: 19

Exam No.:

PAPER No.: CHE (509)

PAPER NAME:  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**DHRUMIL KIRTIKUMAR PANCHAL**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE COLLEGE

ELLISBRIDGE  
AHMEDABAD-380009

GUJARAT, INDIA

**APRIL 2023**



# CETIFICATE

अहमदाबाद वस्त्र उद्योग अनुसंधान संस्थान

पी.ओ. आंबावादी विस्तार, अहमदाबाद - 380015. भारत

फोन : (079) 2630 7921 - 7922 - 7923 - 5132

फैक्स : (079) 2630 4677 - 1969 - 5131

ई-मेल : atiraad1@sancharnet.in वेबसाइट : www.atira.in



AHMEDABAD TEXTILE INDUSTRY'S  
RESEARCH ASSOCIATION

P.O. : Ambawadi Vistar, Ahmedabad-380015. India

Phone : (079) 2630 7921-7922 - 7923 -5132

Fax : (079) 2630 4677 - 1969 - 5131

E-mail : atiraad1@sancharnet.in Website : www.atira.in

## Certificate for Industrial Training

Date: -13/03/2023

To whomsoever it may concern

This is to certify that **Mr. Dhrumil Kirtikumar Panchal**, student of **M.Sc.** semester IV, Organic Chemistry, Department of Chemistry, Gujarat Arts & Science College (Ahmedabad) has successfully completed the one-month Industrial Training program at our prestigious institute ATIRA (Ahmedabad Textile Industry's Research Association) from **23<sup>rd</sup> January, 2023 to 28<sup>th</sup> February, 2023**

This Certificate is issued to him as a part of the partial fulfillment of **M.Sc.** Degree in Chemistry for the Year 2022-2023. During the training he was involved in Physico-Chemical Analysis, Instrumental Training of UV-VIS Spectrophotometer, Inductive Coupled Plasma-Optical Emission Spectrophotometer (ICP-OES), Gas Chromatography (GC-ECD) in water, waste water and Textile Parameters.

He was found punctual, hardworking and inquisitive during the training program and we wish him every success in life.

Authorized Signatory

*Pahin Rhatib*

Ms. Fahimunnisa Khatib  
(In-charge/Technical manager)

**Eco Testing Laboratory**  
**Chemistry Division**  
**ATIRA**



Authorized Signatory

*Mr. M.R. Parikh*

Mr. M.R. Parikh

Authorized Signatory  
Chemical Analytical Testing Laboratory  
ATIRA, Ahmedabad.

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Roll No.: 20

Exam No.:

PAPER No.: CHE (509)  
PAPER NAME:  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF  
**MASTER OF SCIENCE**  
IN  
**CHEMISTRY**  
BY

**PARMAR NISHANTKUMAR BHAVANBHAI**  
DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE COLLEGE  
ELLISBRIDGE  
AHMEDABAD-380009  
GUJARAT, INDIA  
**APRIL 2023**

## अहमदाबाद वस्त्र उद्योग अनुसंधान संस्थान

पी.ओ. आंबावाडी विस्तार, अहमदाबाद - 380015. भारत

फोन : (079) 2630 7921 - 7922 - 7923 - 5132

फैक्स : (079) 2630 4677 - 1969 - 5131

ई-मेल : atiraad1@sancharnet.in वेबसाइट : www.atira.in



## AHMEDABAD TEXTILE INDUSTRY'S RESEARCH ASSOCIATION

P.O. : Ambawadi Vistar, Ahmedabad-380015. India

Phone : (079) 2630 7921- 7922 - 7923 -5132

Fax : (079) 2630 4677 - 1969 - 5131

E-mail : atiraad1@sancharnet.in Website : www.atira.in

### Certificate for Industrial Training

Date: -13/03/2023

#### To whomsoever it may concern

This is to certify that **Mr. Parmar Nishantkumar Bhavanbhai**, student of **M.Sc.** semester IV, Organic Chemistry, Department of Chemistry, Gujarat Arts & Science College (Ahmedabad) has successfully completed the one-month Industrial Training program at our prestigious institute **ATIRA (Ahmedabad Textile Industry's Research Association)** from **23<sup>rd</sup> January, 2023 to 28<sup>th</sup> February, 2023**

This Certificate is issued to him as a part of the partial fulfillment of **M.Sc.** Degree in Chemistry for the Year 2022-2023. During the training he was involved in Physico-Chemical Analysis, Instrumental Training of UV-VIS Spectrophotometer, Inductive Coupled Plasma-Optical Emission Spectrophotometer (ICP-OES), Gas Chromatography (GC-ECD) in water, waste water and Textile Parameters.

He was found punctual, hardworking and inquisitive during the training program and we wish him every success in life.

Authorized Signatory

*Fahim Khatib*

Ms. Fahimunnisa Khatib  
(In-charge/Technical manager)

**Co Testing Laboratory**  
**Chemistry Division**  
**ATIRA**



Authorized Signatory

*M.R. Parikh*

Mr. M.R. Parikh

Authorized Signatory  
Chemical Analytical Testing Laboratory  
ATIRA, Ahmedabad.

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# **509 INDUSTRIAL TRAINING REPORT**

SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF  
***MASTER OF SCIENCE***

IN  
ORGANIC CHEMISTRY  
BY  
PATEL GAYATRIBEN SURESHBHAI

**ROLL NO:-21**

GUJARAT ARTS AND SCIENCE COLLEGE,  
GUJARAT UNIVERSITY,  
UNDER THE SUPERVISION OF

**Prof.C. B. SRIVASTAV**

**April 2023**



MEGHMANI  
INDUSTRIES LTD

## CERTIFICATE OF TRAINING



MEGHMANI INDUSTRIES LIMITED

CIN U29139GJ1393PLC019013

10<sup>th</sup> February -2023

### CERTIFICATE

This is to certify that Ms. Patel Gayatriben, a student of 4<sup>th</sup> Semester of M.Sc in Organic Chemistry. From Gujarat Arts & Science College at Ahmedabad, has undergone Industrial Training in our Company from 18<sup>th</sup> January 2023 to 10<sup>th</sup> February-2023. We have found her very sincere, keen and co-operative.

We wish her *EVERY SUCCESS* IN HER FUTURE endeavors.

For, Meghmani Industries Limited,

  
Patel Pratik  
Executive (HR & Admin)



Corporate : 903-904, B-Wing, Siddhivinayak Tower, Nr. Kefaria Arcade, Off S. G. Highway, Makarba, Ahmedabad - 380051, Gujarat, India.  
Office : Tele : +91-79-26812827, +91-815501751/52/53, E-mail : exports@meghmanindies.com Website : www.meghmaniglobal.com  
Regd. Office & : Plot No.27, Phase-I, GIDC Industrial Estate, Vatva, Ahmedabad - 382445, Gujarat, India.  
Units-II : Tele. : +91-79-25897793, 25833381  
Units-III : Plot No. Z-6, Dahaj S.F. Area, Village - Dahaj, Tal - Vagra, Dist. Bharuch - 392130, Gujarat, India.  
Unit-IV : Plot No. 144, GIDC, Phase-I, Vatva, Ahmedabad - 382445, Gujarat, India.  
Unit-V : Plot No. 42/5, GIDC, Dahaj, Tal. : Vagra, Bharuch - 392130, Gujarat, India.



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PAPER NUB:509

PAPER NAME:CHE(0)509 INDUSTRIAL TRAINING

**INDUSTRIAL TRAINING REPORT**

Submitted to

**THE GUJARAT UNIVERSITY**



IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

In

**ORGANIC CHEMISTRY**

By

**Patel Hetalkumari Khandubhai**

University nub: , Rollnub:22

**Mentor: PF.CHARULATA SHRIVASTAV**

**GUJRAT ARTS AND SCIENCE COLLEGE**

**ELLISBRIDGE,AHEMDABAD-380006**

**SIDMAK INDIA**

Sidmak Laboratories (India) Pvt. Ltd.

**Works & Registered office:**

Survey No.4662,4663,4779&4785,  
National Highway No. 48, Abrama,  
Post Box No. 121, Valsad-396001  
Gujarat, India

**Contact:**

Phone: +91 6356 399001/399002  
+91 6356 399003/399004  
E mail: info@sidmak.com  
Web. : www.sidmak.com

CIN: U24230GJ1983PTC006167

Date: 08/02/2023

Training Completion Certificate.

This is to certify that **Ms. Patel Hetalkumari Khandubhai**, currently M.Sc student from **Gujarat Arts And Science College, Ahmedabad** . has successfully completed her Industrial Training at our organization from **08<sup>th</sup> Jan.2023 to 08<sup>th</sup> Feb.2023.**

She was found to be sincere and hardworking during the training period.

We wish her all the best for her future endeavors.

For Sidmak Laboratories (I) Pvt. Ltd.,



**SUNIL PATEL**  
**(ASST. G. M - PERSONNEL & ADMINISTRATION)**

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GUJARAT UNIVERSITY



**GUJARAT UNIVERSITY**  
Estd. 1949

**AHMEDABAD-380009**

CHE-509 INDUSTRIAL TRAINING

INDUSTRIAL TRAINING on " DYES"

Submitted by:

Msc Sem :

ROLL NO: 23

University seat no:

UNDER THE SUPPORT AND GUIDANCE OF

**PROF.CHARULARA SRIVASTAV**

Associate Professor,

Gujarat Arts and Science

College, AHMEDABAD.



Submitted to

**The Department of  
Chemistry Gujarat Arts and  
Science College  
Ahmedabad – 380006**

# CERTIFICATE



MFG. OF : DYES

**SHREEJI**  
KRUPA ENTERPRISE

Date : February 9 , 2023

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that **PATEL JANVI DILIPBHAI** student from Gujrat arts and science college, **Ahmedabad** have undergone In- Plant Technical know – how training in Q C and R&D department from 18<sup>th</sup> January to 07<sup>th</sup> February 2023 in our Organization. She has covered all the Departments to study about the relevant details for her further studies.

We found him sincere ,hard working during the time of training and we wish him all the success for her future endeavors.

Thanking you,  
Yours faithfully ,  
For Shreejikrupa enterprise.

**For, Shreejikrupa Enterprise**

  
**Partner**

Plot No.-131/2 (F2) Phase-II, Morden Bakery Road, G.I.D.C., NARODA, Ahmedabad-382330. • Ph. (079) 22801034  
M. 98250 30234, 9898386929 • E-mail : shreeji320@gmail.com

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Roll No:- 24

Exam No:-

Paper No:- 509

Paper Name :- **Industrial Training**

A Industrial Training at Global Analytical lab Report is

Submitted To

The Gujarat University



**GUJARAT UNIVERSITY**

Estd. 1949

In Partial Fulfillment Of The  
Requirement For The Degree Of

**MASTER OF SCIENCE**

**IN CHEMISTRY**

By

**Shreyansh patel**

**Gujarat Arts And Science College**

**Gujarat University**

**Ahmedabad 380009**

**Gujarat, India**

**April 2023**



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

### TO WHOM IT MAY CONCERN


This is to certify that **Patel Shreyansh Parshottambhai** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 18/01/2023 to 10/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitendra Prajapati

  
Hitendra Prajapati



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**A INDUSTRIAL TRAINING (CHE(O)509)**

**SUBMITTED  
TO  
THE GUJARAT UNIVERSITY**



**IN PARTIAL FULLFILLMENT OF THE  
REQUIRMENT FOR THE DEGREE OF**

**MASTER OF SCIENCE  
IN  
ORGANIC CHEMISTRY**

**BY**

**PATEL YASHKUMAR NATWARLAL**

**Roll No: 25(GIA)**

**DEPARTMENT OF CHEMISTRY  
GUJARAT UNIVERSITY**

**GUJARAT ARTS AND SCIENCE COLLEGE**

**ELLISBRIDGE  
Estd 1949  
AHMEDABAD-380006**



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

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Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)


## TO WHOM IT MAY CONCERN

This is to certify that **Patel Yashkumar Natwarlal** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 21/01/2023 to 13/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitesh Rajapati

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**GUJARAT UNIVERSITY**

Estd. 1949



# INDUSTRIAL TRAINING REPORT



Undergone At

**ACCRETION PHARMACEUTICALS**

**17 January 2023 to 14 february 2023**

*Submitted in partial fulfillment of the  
Requirement for the award of the  
Degree of*

Masters of Science (M.sc)  
in  
Organic Chemistry

## **Submitted By**

Patel Yovankumar Pankajbhai

Roll No : 26

University Exam No:

Enrollment No: 202102300548

## **Submitted To:**

**GUJARAT ARTS & SCIENCE COLLEGE**

Department of Chemistry

Affiliation: Gujarat University

AHMEDABAD, GUJARAT



To Whom It May Concern

This is to certify that Mr. Yovankumar Pankajbhai Patel Enrolment No ; 202102300548 , MSc Organic Chemistry, Gujarat Arts and Science Collage has worked as QC Analyst trainee in our organization. He worked with our organization from 17<sup>th</sup> Jan 2023 to 14th Feb 2023.

As a, QC Analyst trainee, he has showcased his sincere efforts and excellent performance till the date he has joined.

He had enhanced himself with numerous skills and work experience.  
The overall experience of working with him has been a great experience for us.

We wish him all the best for his bright future carrier.

For Accretion Pharmaceuticals

A handwritten signature in black ink, appearing to read "Yovankumar", is written over a horizontal line.

Authorised Signatory

18<sup>th</sup> Feb 2023



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UNI.EXAM NO.-

**CHE(O) 509 INDUSTRIAL TRAINING REPORT**



**SUBMITTED  
TO  
GUJARAT UNIVERSITY**  
*IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF*  
**MASTER OF SCIENCE IN CHEMISTRY**

**BY**

**Prajapati Meena N.**

**SEMESTER - 4**

**(ORGANIC CHEMISTRY)**

**ROLL NO : 27**

**GUJARAT ARTS AND SCIENCE**

**COLLEGE, AHMEDABAD**

**UNER THE SUPERVISION OF**

**PROF. R.R.PATEL**

**APRIL, 2023**



# CERTIFICATE



## MEGHMANI INDUSTRIES LIMITED

CIN U29199GJ1993PLC019011

10<sup>th</sup> February -2023

### CERTIFICATE

This is to certify that Ms. Prajapati Meenaben, a student of 4<sup>th</sup> Semester of M.Sc in Organic Chemistry. From Gujarat Arts & Science College at Ahmedabad, has undergone Industrial Training in our Company from 18<sup>th</sup> January 2023 to 10<sup>th</sup> February-2023. We have found her very sincere, keen and co-operative.

We wish her *EVERY SUCCESS* IN HER FUTURE endeavors.

For, Meghmani Industries Limited,

*phpatel*  
Patel Pratik  
Executive (HR & Admin)



---

Corporate Office	: 103/104, 8 Wing, Siddhivinayak Tower, Hi. Kataria Area, DPT S. G. Highway, Mahindra, Ahmedabad - 380051, Gujarat, India
Regd. Office A	: Plot No 27, Phase I, DIIIC Industrial Estate, Vatva, Ahmedabad - 382445, Gujarat, India
Unit-II	: Plot No 2 & Dahaj SJJ Area, Village Dahaj, Tal. : Vagra, Dist. Bharuch - 392130, Gujarat, India
Unit-IV	: Plot No. 144, GIDC, Phase I, Vatva, Ahmedabad - 382445, Gujarat, India
Unit-V	: Plot No. 42/5, GIDC, Dahaj, Tal. : Vagra, Bharuch - 392130, Gujarat, India

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- ❖ PARTICAL SIZE ANALYZER
- ❖ SONICATOR
- ❖ CONCLUSION
- ❖ REFERENCE

# 509 INDUSTRIAL TRAINING REPORT

SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF  
**MASTER OF SCIENCE**

IN  
ORGANIC CHEMISTRY  
BY  
RADADIYA SNEHA ASHOKBHAI

ROLL NO:-28

GUJARAT ARTS AND SCIENCE COLLEGE,

GUJARAT UNIVERSITY,

UNDER THE SUPERVISION OF

**Prof. R. R. PATEL**

April 2023



**MEGHMANI  
INDUSTRIES LTD**

## CERTIFICATE OF TRAINING



**MEGHMANI INDUSTRIES LIMITED**

CIN U28299GJ1999PLCO1301E

10<sup>th</sup> February -2023

### CERTIFICATE

This is to certify that **Ms. Radadiya Snehaben**, a student of 4<sup>th</sup> Semester of M.Sc in Organic Chemistry. From Gujarat Arts & Science College at Ahmedabad, has undergone Industrial Training in our Company from 18<sup>th</sup> January 2023 to 10<sup>th</sup> February-2023. We have found her very sincere, keen and co-operative.

We wish her *EVERY SUCCESS* IN HER FUTURE endeavors.

For, Meghmani Industries Limited,

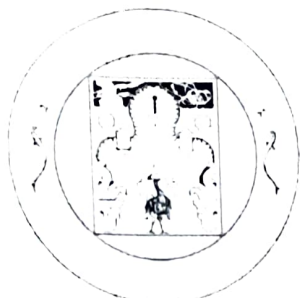
*phpatel*  
Pavai Pratik  
Executive (HR & Admin)





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Estd. 1949

# GUJARAT UNIVERSITY

CHE [0] 509

**INDUSTRIAL TRAINING REPORT**

At

**GLOBAL ANALYTICAL LABORATORY**

SUBMITTED

TO

**GUJARAT UNIVERSITY**

FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**ORGANIC CHEMISTRY**

SUBMITTED TO



**GUJARAT ARTS &  
SCIENCE COLLEGE**

SUBMITTED BY

**SHAIKH AAYSHA  
MO HANIF**

ROLL NO:- 29

EXAM NO:-

**UNDER THE SUPERVISION  
OF**

*Pf R R PATEL*



Approved by FDA-Government of Gujarat Licence No. : GTL/A7/42

FF 27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India  
Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com) E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

## CERTIFICATE

This is to certify that **Shaikh Aayeshabegam Mo.Hanif** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed her industrial training from 18/01/2023 to 10/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

She regularly attended in our organization and shown keen interest in her training. Her performance was found to be satisfactory.

We wish her all success in her future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitesh B. Japati

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**Gujarat Arts & Science College**

**Ellis Bridge**

**Ahmedabad – 380009**

**March 2022-2023**

**Roll Number – 30 (GIA)**

**M.sc SEM – 4**

**Prepared by**

Solanki Aarti D.

Uni exam no.:

M.sc Sem- IV

Organic chemistry

(GIA)

**Submitted to**

Prof. R.R. Patel

**Head of Department**

Prof. C. Srivastav

## CERTIFICATE



Date - 01/ 02/ 2023

### *CERTIFICATE*

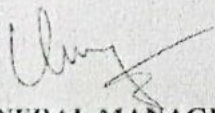
This is to certify that **AARTI DILAVARBHAI SOLANKI** student of "GUJARAT ARTS & SCIENCE COLLEGE, GUJARAT UNIVERSITY AHMEDABAD" has completed her industrial training at our unit **CONTINENTAL CHEMICALS, AHMEDABAD** during 10/01/2023 to 31/01/2023.

She is sincerely done her training; also she has good character and hardworking person. The above said industrial training is carried out for her M.SC (Chemistry) course.

Her skill and qualification proved successfully with regard to task assigned to her. We wish a successful carrier for her in future.

UMANG AGRAWAL



  
GENERAL MANAGER

Registered & Correspondence Office  
Plot No. 632, Phase-IV, GIDC Estate, Naroda, Ahmedabad-382330, Gujarat, India  
Phone: +91-9099951770, Email:richa@continentalchem.net

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**Roll No. :31**

**Exam No. :**

CHE (0) 509 Industrial training  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**SUTHAR NISHIL BIRENKUMAR**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE COLLEGE  
ELLISBRIDGE, AHMEDABAD  
GUJARAT-380006  
INDIA  
**APRIL 2023**

## Certificate:-



# Laakoonaa Reactions

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56/B-2, Bharat Cement Compound, Kiran Ind. Lane, Phase-I  
G.I.D.C., Valva, Ahmedabad - 382445. Gujarat, (India)  
Telefax : 25833214, 25894061, 9909032747

Date:-02/02/2023

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Suthar Nishil Birenkumar** student of **MSc. Sem -4 (Organic Chemistry)** from **Gujarat Arts And Science College** has successfully completed his industrial training for 21 days from **09/01/2023** to **02/02/2023** in our Research & Development, Quality Control and Production department at our company Laakoonaa Reaction.

During the period of his training he had been found sincere, honest, and hardworking to duties allotted to him.

We wish him all the success in his future endeavour.

Yours Sincerely

For laakoonaa Reactions,  
(Gopinath Chemech. LTD.)

**For, LAKOONAA REACTIONS**

**Authorised Sign./Partner**

Authorised Signature

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Roll No. : 32

Exam No. :

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INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE  
IN  
CHEMISTRY  
BY**

**THUMMAR DHAVAL**  
DEPARTMENT OF CHEMISTRY  
Gujarat Arts and Science College  
Ellis Bridge  
AHMEDABAD-380006  
GUJARAT, INDIA  
APRIL 2022



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Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com) E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

## TO WHOM IT MAY CONCERN

This is to certify that **Thummar Dhaval Bhagavanbhai** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 18/01/2023 to 10/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

  
Hiten Rajapati



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# INDUSTRIAL TRAINING REPORT

(CHE (O) 509)

SUBMITTED TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIRERMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**CHEMISTRY**

BY

VASAVA CHHAGANBHAI TETIYABHAI

**Roll No: GIA-33 Exam No. (2022-2023)**

DEPARTMENT OF CHEMISTRY  
GUJARAT ART'S & SCIENCE COLLEGE  
ELLIS BRIDGE, AHMEDABAD-380006  
GUJARAT, INDIA

APRIL 2023

**MEGHMANI  
ORGANICS LIMITED**

REGD. OFFICE : PLOT NO 184, (PHASE III), G.I.D.C. INDUSTRIAL ESTATE, VATVA, AHMEDABAD-382 445 (INDIA)  
PHONE : 91-79-25831210, 25834657 FAX : 91-79-25833403, 25892327 E-mail : exports@meghmani.com  
Site : www.meghmani.com



January 29, 2023.

**CERTIFICATE**

*This is to certify that Mr. Vasava Chhaganbhai Tettyabhai, student of M. Sc. from Gujarat Arts & Science College, Ahmedabad has completed the industrial training at our unit Meghmani Organics Ltd. Ahmedabad during 08/01/2023. to 29/01/2023.*

*During his training, we found him sincere, punctual and hard worker. He has submitted his project report to us.*

*We wish him a successful career in future.*

*S. M. SHUKLA.*  
G.M.

CORPORATE OFFICE "MEGHMANI HOUSE", SHREE NIVAS SOCIETY, PALDI, AHMEDABAD - 380 007 (INDIA)  
PHONE: 91-79-26640668/69 FAX: 91-79-26640670 E-mail : exports@meghmani.com  
Site : www.meghmani.com

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Roll No. : 34 (GIA)

Exam No. :

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PAPER NAME : INDUSTRIAL TRAINING  
A TRAINING REPORT  
ENTITLED "**PIGMENT GREEN 7 DYE**"

SUBMITTED  
TO  
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IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**  
— IN —  
**CHEMISTRY**

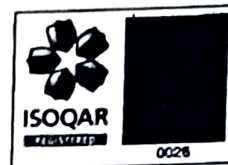
BY

**VASAVA DIVYESHKUMAR PRATAPBHAI**

DEPARTMENT OF CHEMISTRY  
GUJARAT ART'S AND SCIENCE COLLEGE  
AHMEDABAD-380006  
GUJARAT, INDIA  
APRIL 2023

## MEGHMANI ORGANICS LIMITED

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PHONE : 91-79-25831210, 25834657 FAX : 91-79-25833403, 25892327 E-mail : exports@meghmani.com  
Site : www.meghmani.com



January 29, 2023.

## CERTIFICATE

*This is to certify that Mr. Vasava Divyeshkumar Pratapbhai, student of M. Sc. from Gujarat Arts & Science College, Ahmedabad has completed the industrial training at our unit Meghmani Organics Ltd. Ahmedabad during 08/01/2023. to 29/01/2023.*

*During his training, we found him sincere, punctual and hard worker. He has submitted his project report to us.*

*We wish him a successful career in future.*

*S. M. SHUKLA*

S. M. SHUKLA

G.M.

1167

CORPORATE OFFICE : 'MEGHMANI HOUSE', SHREE NAGAR, DREYER ROAD, AHMEDABAD-380 007 (INDIA),  
PHONE : 91-79-26640668/69 FAX 91 79 26640670 E-mail : exports@meghmani.com  
Site : www.meghmani.com

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Roll No. : 35(GIA)

Exam No. :

PAPER No. : 509

PAPER NAME : CHE(O)509

INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**CHEMISTRY**

BY

NAME OF STUDENT : VASAVA JASMINKUMAR GURJIBHAI

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE COLLEGE

GUJARAT UNIVERSITY

AHMEDABAD-380006

GUJARAT, INDIA

APRIL 2023





**Valiant Organics**  
Limited

Date: 29<sup>th</sup> January-2023

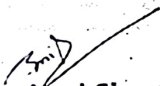
### Certificate

This is certify that Mr. Vasava Jasminkumar Gurjibhai, a student of M.Sc. Chemistry Sem-4 from Gujarat Arts & Science College, Ahmedabad has completed his Industrial training at our unit Valiant Organics Ltd. Jhagadia, Bharuch During 08/01/2023 to 29/01/2023.

During his Training, We found him Sincere, Punctual and hard worker. He has submitted his project report to us

We wish him success in his future career.

For, Valiant Organics Ltd, Jhagadia

  
Authorised Signatory

Factory : Unit I, Plot No. 775, 776, 777, 915, 914/1, GIDC Jhagadia, Bharuch-393110, Gujarat.  
Regd. office : 109, Udyog Kshetra, 1st Floor, Mulund Goregaon Link Rd, Mulund West, Mumbai 400 080, India.  
91 22 6797 6683 • info@valiantorganics.com • www.valiantorganics.com  
CIN NO. : L24230MH2005PLC151348

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Roll No. : 36(GIA)

Exam No. :

PAPER No. : 509

PAPER NAME : CHE(O)509

INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**CHEMISTRY**

BY

NAME OF STUDENT : VASAVA RAJENDRAKUMAR GAMBHIRBHAI

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE COLLEGE  
GUJARAT UNIVERSITY

AHMEDABAD-380006

GUJARAT, INDIA

APRIL 2023

## MEGHMANI ORGANICS LIMITED

REGD. OFFICE : PLOT NO 184, (PHASE II), G.I.D.C. INDUSTRIAL ESTATE, VATVA, AHMEDABAD-382 445. (INDIA)  
PHONE : 91-79-25831210, 25834657 FAX : 91-79-25833403, 25892327 E-mail : exports@meghmani.com  
Site : www.meghmani.com



January 29, 2023.

## CERTIFICATE

*This is to certify that Mr. Vasava Rajendrakumar Gambhirbhai, student of M. Sc. from Gujarat Arts & Science College, Ahmedabad has completed the industrial training at our unit Meghmani Organics Ltd. Ahmedabad during 08/01/2023. to 29/01/2023.*

*During his training, we found him sincere, punctual and hard worker. He has submitted his project report to us.*

*We wish him a successful career in future.*

S. M. SHUKLA.

G.M.

CORPORATE OFFICE : 'MEGHMANI HOUSE', SHREE NIVAS SOCIETY, PALDI, AHMEDABAD - 380 037 (INDIA)  
PHONE : 91-79-26640603-69 FAX 91-79-26610670 E-mail : exports@meghmani.com  
Site : www.meghmani.com

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Roll No. :

Exam No. :

PAPER No. : 509  
PAPER NAME : INDUSTRIAL TRAINING  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

BY

**YADAV SHRUTI SATISHKUMAR**

TO

**Pro R.R.PATEL**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE COLLEGE  
GUJARAT UNIVERSITY  
AHMEDABAD-380009  
GUJARAT, INDIA  
APRIL 2023

## INDUSTRIAL CERTIFICATE SCANNED COPY



# SHREEJI INDUSTRIES

Mfg. & Exporters of : Reactive Dyes

435 & 436, Phase - II, G.I.D.C., Vatva, Near Vinzol Approach, Ahmedabad-382 445.  
M. : 98250 47409 - Email : vedprakash.shreeji@gmail.com

Date : 22/02/2023

### CERTIFICATE

This is to certify that **Ms. Yadav Shrutiben S**, student of **M.Sc. from Gujarat Arts and Science College, Ellisbridge** has completed the industrial training at our unit **Shreeji Industries, Ahmedabad** during **01/02/2023 to 21/02/2023**.

During his training, we found him sincere, punctual and hard worker. He has submitted his project report to us.

We wish him successful career in future.

For, SHREEJI INDUSTRIES

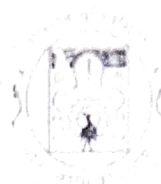
PROPRIETOR.

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GUJARAT UNIVERSITY

## **509: Industrial Training**



An ISO 14001:2004 Company

**An Industrial training report submitted for the degree of Master of Science in chemistry to Gujarat University.**

**Submitted By: - Monaben Rasikbhai Adodariya**

**M.Sc. Sem : 4**

**University Seat No :**



**Department of Chemistry,**

**Gujarat arts and science college, Ahmedabad**

**Guide by:- Prof D. H. Gandhi**

**Associate professor**

**Gujarat arts and science,**

**Ahmedabad.**

**Co Guide:- prof. Krupa Patel**

**Associate professor**

**Gujarat arts and science college,**

**Ahmedabad.**

## Colorant Limited

Plot No. 116, Phase - II, G.I.D.C., Vatva  
Ahmedabad - 382 445, INDIA Phone : +91 79 4030 7233  
E-mail : mkg@colorantindia.com www.colorantindia.com  
CIN : U24110GJ1999PLC036748



# COLORANT<sup>®</sup>

Quality is Colorant

Date: February 06, 2023

### TO WHOMSOEVER IT MAY CONCERN

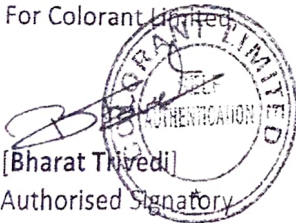
This is to certify that **Ms. Adodariya Mona Rasikbhai**, Student from Gujarat Arts & Science College, Ahmedabad – Organic Chemistry have undergone through Industrial Training during 06.01.2023 to 27.01.2023 in our organization. She has undergone through Production, Quality control, Laboratory and all other concerned departments to study about the relevant details for her further studies.

We found her sincere, hardworking during the time of training and we wish her all success for his future endeavors.

Thanking you,

Yours faithfully,

For Colorant Limited,

  
[Bharat Thivedi]

Authorised Signatory

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# *INDUSTRIAL TRAINING REPORT*

Submitted To

Gujarat University



In Partial Fulfilment of the Requirement For

The Degree Of

*MASTER OF SCIENCE IN CHEMISTRY (ORGANIC)*

BY

Shanvi S. Ansari

Roll no. 52(HPP)

Exam No:

Sem - 4

Department of Chemistry  
Gujarat Arts & Science College  
Ahmedabad,  
Gujarat, India

Ref: NSAM/22-23/ 53

Date: 23-02-2023

**To WHOM SO EVER IT MAY CONCERN**

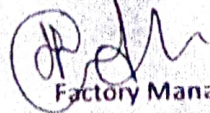
This is to certify that "Ansari Julayashanvi Mohmadshakil " student of M.sc .chemistry having enrolment no 202102300485 from Gujarat University Ahmedabad .Has under gone an industrial training at NOVEL SPENT ACID MANAGMENT. Successfully completed his training from 18 January -2023 to 07 February -2023 Long internship Program at these Group Laboratories area of training Quality Control & Quality Assurance department and Production areas of NOVEL SPENT ACID MANAGEMENT at GIDC VATVA. During the period of her internship program with our companies .We found him very punctual, Sincere having hardworking nature and dedicated towards the work assigned.

We wish her all the very best for her future endeavors

Thanking You

Yours faithfully,

For, Novel Spent Acid Management

  
Factory Manager

Jaymit Gandhi (7573007310)

**SPENT ACID BANK & GYPSUM WASHERY PROJECT**  
COMMON ENVIRONMENTAL TREATMENT FACILITY



8001 TO 8044, Phase - 2, G.I.D.C. Vatva, Ahmedabad - 382445, Gujarat [India] Phone : +91 79 40084182 to 87 Fax : +91 79 40084188  
Email : info@novelwaste.com, Plant@novelwaste.com Web. : www.novelwaste.com CIN : U-93090GJ2007NPL050142

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Roll No. : 53

Exam No. :

PAPER No. : 509  
PAPER NAME: Industrial Training  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**Nirali H. Dobariya**

**Gujarat Arts and Science College, Ellis bridge**

**AHMEDABAD-380009**

**GUJARAT, INDIA**

**APRIL 2022**



## CERTIFICATE

To,  
Dobariya Nirali Hasmukhbhai  
Roll No.53  
Msc Organic Chemistry  
Gujarat Arts & Science College  
Ahmedabad.

## TO WHOM IT MAY CONCERN

This is to certify that Ms. Dobariya Nirali Hasmukhbhai , student of M.Sc. (Organic Chemistry ) has under gone Industrial Training programme for 17<sup>th</sup> Jan 2023 to 6<sup>th</sup> Feb of 2023 at the Shubham Colours , Vatva.

As a partial Fulfilment of the requirement for Master of Science , Ms. Dobariya Nirali Hasmukhbhai .has satisfactorily completed her training in stipulated time period.

During the training period, She was found punctual in attendance and enthusiastic in her pursuit

This certificate is issued to her only for purpose of the industrial training.

We wish her good luck for all future endeavours and a bright career.

Place : VATVA

Date : 10<sup>th</sup> Feb 2023.

For, SHUBHAM COLOURS

A handwritten signature in black ink, appearing to read "Nileshbhai Sheladiya", is written over the printed name of the partner.

Partner

( Mr. Nileshbhai Sheladiya)



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University Seat No.

## CHE 509 INDUSTRIAL TRAINING REPORT

Submitted to  
The Department of Chemistry  
Gujarat Arts and Science College  
Ahmedabad – 380006



Submitted by  
Sonal M. Kadachha

MSc Sem: 4  
Roll No: 56 (HPP)

Under the support and guidance of

Professor D. H. Gandhi  
(Guide)  
Associate Professor,  
Gujarat Arts & Science College  
Ahmedabad

# CERTIFICATE



Ghansendra Patel  
Chairman

Anandbhai Patel  
Vice Chairman (Admin)

Sureshbhai Patel  
Vice Chairman (Technical)

Dineshbhai Shah  
Managing Director

Ref: NSAM/22-23/ 51

Date: 23-02-2023

## To WHOM SO EVER IT MAY CONCERN

This is to certify that "Kadachha Sonalben Merubhai" student of M.sc .chemistry having enrolment no 202102300503 from Gujarat University Ahmedabad .Has under gone an industrial training at NOVEL SPENT ACID MANAGEMENT. Successfully completed his training from 18 January -2023 to 07 February -2023 Long internship Program at these Group Laboratories area of training Quality Control & Quality Assurance department and Production areas of NOVEL SPENT ACID MANAGEMENT at GIDC VATVA. During the period of her internship program with our companies We found him very punctual, Sincere having hardworking nature and dedicated towards the work assigned.

We wish her all the very best for her future endeavors

Thanking You

Yours faithfully,

For, Novel Spent Acid Management

  
Factory Manager

Jaymit Gandhi (7573007310)

SPENT ACID BANK & GYPSUM WASHERY PROJECT  
COMMON ENVIRONMENTAL TREATMENT FACILITY



8001 TO 8044, Phase - 2, G.I.D.C. Vatva, Ahmedabad - 382445, Gujarat [India] Phone : +91 79 40084182 to 87 Fax : +91 79 40084188  
Email : info@novelwaste.com, Plant@novelwaste.com, Web : www.novelwaste.com, CIN : U-93090GJ2007NPLG50142

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A  
**INDUSTRIAL TRAINING REPORT(509)**

SUBMITTED TO

**GUJARAT UNIVERSITY**

FOR THE DEGREE OF



**Master of Science**

IN

**ORGANIC CHEMISTRY**

BY

**UTTAM LADANI**

Roll no : 59 Exam No:410

Department Of Chemistry,  
Gujarat art and science collage

Gujarat university, Ahmedabad

UNDER THE SUPERVISION OF

DR.DIVYANG GANDHI

# CERTIFICATE



ZEON BIOTECH PVT.LTD.  
Plot No. 1307/08, Phase-III, Vatva Gidc,  
Ahmedabad 382445.

## Certificate of Experience


To whomsoever it may concern,

This is to certify that **Mr. Uttamkumar Mansukhbhai Ladani** Student of Gujarat Arts & Science college, Ahmedabad. Has undergone industrial training of 150 hours according to requirement by PCI with our organization in manufacturing and formulation department from 09<sup>th</sup> January 2023 to 30<sup>th</sup> January of 2023.

We have found him to be self-starter who is motivated, duty bound and hard working. He worked sincerely on his assignments and his performance was Par excellence.

We wish him best of luck for his future.

ZEON BIOTECH PVT. LTD.

  
AUTHORISED SIGNATORY

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Roll No. : 60(HPP)

Exam No. :

PAPER No. : 509  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF  
**MASTER OF SCIENCE IN CHEMISTRY**

BY

**MAHIDA HARDIKSINH NARVATSINH**

*Under the supervision of*

**DR.D.H. GANDHI**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS&SCIENCE COLLEGE  
GUJARAT UNIVERSITY  
AHMEDABAD-380009  
GUJARAT, INDIA  
**APRIL 2023**





स्थापना १८६३

# ગુજરાત આર્ટ્સ એન્ડ સાયન્સ કોલેજ

એલીસલિજ, અમદાવાદ - ૩૮૦ ૦૦૬  
(ગુજરાત સરકાર)

(NAAC Accredited Grade 2.83)

ફોન : ૦૭૯-૨૬૪૪૬૯૩૯, ફેક્સ : ૦૭૯-૨૬૪૪૬૯૩૯ ઇમેઇલ : gascprin@gmail.com

Ref. No.

No./GASC/

Date : - - 202

## CERTIFICATE

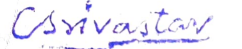
This is to certify that the industrial report is a bonafide record of independent training work done by **Mr.MAHIDA HARDIKINH NARVATSINH** (Exam No.: M.Sc.-IV Roll No: 80(HPP) under my supervision and submitted to the Gujarat University in partial fulfillment for the award of the Degree of Master of Science (M.Sc.).

Supervised by:

  
DR. D.H.GANDHI

Department of Chemistry  
Gujarat Arts & science  
College, Ahmedabad,  
Gujarat-India.

Forwarded by:

  
C.B . SRIVASTAV

Head Of Department  
Gujarat Arts & science  
College, Ahmedabad, Gujarat-  
India.

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# INDUSTRIAL TRAINING



Gujarat Arts & Science College Ellisbridge Ahmedabad

Ahmedabad 380009

March 2022-2023

Roll Number: - 61(HPP)

MSc SEM 4

Prepared by

Submitted to

Head of department

Makwana Dipak S  
Uni exam number:  
M.sc Sem IV  
Organic chemistry  
(HPP)

Prof. D. H. Gandhi

Prof. C. Srivastav

CERTIFICATE



Unit-2, Survey No. 293/3 Behind Jalaram Mandir, Kakkund-Kheda Road, Dholka-382225, Dist - Ahmedabad  
Phone : 02714-222444 / Email : deeppharma79@gmail.com

Date : 20/02/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **MR MAKWANA DIPAKBHAI SOMABHAI** has completed his training in our organization during the period of 30/01/2023 to 20/02/2023.

This Certificate is being submitted in partial fulfillment of the requirement of the award of **"MASTER OF CHEMISTRY"** of The Department of Chemistry, Gujarat Arts & Science College, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA

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Roll No. : 62

Exam No. :

PAPER No. :509  
PAPER NAME :  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**CHEMISTRY**

BY

NAME OF STUDENT : Meriaya Samir R

DEPARTMENT OF CHEMISTRY  
SCHOOL OF SCIENCES  
GUJARAT UNIVERSITY  
AHMEDABAD-380009  
GUJARAT, INDIA

INDUSTRIAL CERTIFICATE SCANNED COPY



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastrol, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

### TO WHOM IT MAY CONCERN

This is to certify that **Mr. Meraiya Samir Rajeshbhai** a student of M.Sc. Sem-4 (Organic Chemistry) from Gujarat arts & Science College, Ahmedabad has completed his industrial training from 01/02/2023 to 28/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

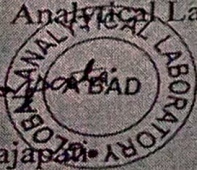
He regularly attended our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

A handwritten signature in black ink, appearing to read "Hitendra Prajapati", is written over the typed name.

Hitendra Prajapati



Roll No.:63

Exam No.:

PAPER No.: 509  
CHE(O)INDUSTRIAL TRAINING  
INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

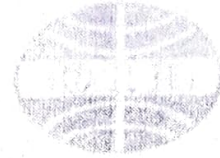
**CHEMISTRY**

**BY**

**DIVYA MiSHRA**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS & SCIENCE  
GUJARAT UNIVERSITY  
AHMEDABAD-380006  
GUJARAT, INDIA  
APRIL 2023





DYNAMIC INDUSTRIES LIMITED

## INTERNSHIP CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

THIS IS CERTIFY THAT MISHRA DIVYA MUNISHANKAR, M.Sc. (Chemistry, second year) STUDENT OF CHEMISTRY DEPARTMENT GUJARAT ARTS AND SCIENCE COLLEGE ELLIS BRIDGE GUJARAT UNIVERSITY HAS SUCCESSFULLY UNDERGONE THREE WEEK TRAINING AT DYNAMIC INDUSTRY LIMITED. DURING 09.01.2023 TO 02.02.2023.

DURING THEIR TRAINING PERIOD WE FIND THEM SINCERE, HARD WORKING AND HAVING GOOD BEHAVIOUR AND MORAL CHARACTER WE WISH THEM ALL SUCCESS IN HER FUTURE ENDEAVOUR.

FROM DYNAMIC INDRUSTRIES LIMITED

---

REGD. OFFICE :

DYNAMIC INDUSTRY LIMITED PLOT NO. :- 5501 NEAR TIKAMPURA CHAR RASTA VATVA GIDC ,AHMEDABAD  
GUJARAT- 380038    PHONE NO. : 9724322931    EMAIL : [sales@dynaind.com](mailto:sales@dynaind.com)

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Roll No.: 64

Exam No.:

CHE (O) 509  
INDUSTRIAL TRAINING REPORT  
SUBMITTED TO  
GUJARAT ARTS AND SCIENCE COLLEGE  
FOR THE DEGREE OF



**MASTER OF SCIENCE**

IN

**ORGANIC CHEMISTRY**

**SUBMITTED BY:**

**MOMIN MOHAMMADALI RASHIDHUSEN**

**M.Sc. SEMESTER-4, ORGANIC CHEMISTRY**

**[ROLL NO.64 (HPP)]**

**GUJARAT ARTS AND SCIENCE COLLEGE,**

**ELLISBRIDGE – AHMEDABAD,**

**GUJARAT.**

## INDUSTRIAL TRAINING CERTIFICATE



Unit-2, Survey No. 293/3, Behind Jalaram Mandir, Kalkund-Kheda Road, Dhoka-382225, Dist.-Ahmedabad  
Phone : 02714-222444 / Email : deeppharma79@gmail.com

Date: 02/02/2023

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **MR MOMIN MOHAMMADALI RASHIDHUSEN** has completed his training in our organization during the period of 06/01/2023 to 31/01/2023

This Certificate is being submitted in partial fulfillment of the requirement of the award of "MASTER OF CHEMISTRY" of Gujarat Arts and Science College, Gujarat University, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA

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# INDUSTRIAL TRAINING REPORT



**RELIANCE**  
**RASAYAN PVT. LTD**  
**SINCE 1988**



**Gujarat Arts and Science College**  
Perpetuating Education Through Generations  
Estd:1860

Government of Gujarat

**Roll No. :70**

**Exam No. :**

**PAPER No. : 509**



**RELIANCE**  
RASAYAN PVT. LTD.

+91-79-29701875  
contact@rrplpharma.com  
www.rrplpharma.com

## CERTIFICATE

This is to certify that **Mr. Parmar Jay Kishor** student of M.Sc semester IV Organic chemistry, Gujarat Arts & Science College, Ellidbridge, Ahmedabad has successfully completed his industrial training from 01/02/2023 to 21/02/2023 in our organization, RELIANCE RASAYAN PVT LTD.

Dr. Kashyap Wadekar, Ph.D  
Executive Director



Address : PLOT No.-15, PHASE-III, G.I.D.C, NARODA, AHMEDABAD - 382330, GUJARAT, INDIA

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# 509: INDUSTRIAL TRAINING

INDUSTRIAL TRAINING REPORT

SUBMITTED TO

THE GUJRAT UNIVERSITY



IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE

IN

CHEMISTRY

Submitted by:

PARTH MAHESHBHAI PATEL

Master of Science (Organic Chemistry)

Gujarat Arts & Science College

Ahmedabad

## Industrial Training Certificate

### To Whomsoever It May Concern

This is to certify that **Mr. Parth Maheshbhai Patel** Student of M.sc. (Semester - 4) from Gujrat Arts & science College, Gujarat University, has undergone Industrial training at our company for the duration of 11/01/2023 to 06/02/2023.

During this period, his working and behavior was found to be satisfactory.

We wish him all the success in his future endeavors.

**For Dishman Carbogen Amcis Limited**



**Authorized Signatory**

## Index

1. Introduction of Company
2. Quality Control
3. Quality Assurance
4. Production
5. Research and development

# Industrial training report

A report  
Submitted to  
DEPARTMENT OF CHEMISTRY GUJARAT UNIVERSITY



**GUJARAT UNIVERSITY**

Estd. 1949

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
DEGREE OF  
MASTER OF SCIENCE IN  
ORGANIC CHEMISTRY  
BY

Patel Sapan Sharadchandra  
Roll No:- 80 (HPP)  
Enrollment number: 202102300543  
Sem:- IV

Gujarat Arts and Science College, Ellisbridge  
Ahmedabad 380006, Gujarat, India. April 2022



Approved by FDA Government of Gujarat Licence No. 1/GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad 382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

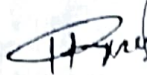
### TO WHOM IT MAY CONCERN

This is to certify that **Mr. Patel Sapan Sharadchandra** a student of M.Sc. Sem-4 (Organic Chemistry) from Gujarat arts & Science College, Ahmedabad has completed his dissertation work in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitendra Prajapati



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Roll No. : 81

Exam No.

PAPER No. : 509

PAPER NAME : INDUSTRIAL TRAINING  
INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

IN

**CHEMISTRY**

BY

UTKARSH DASHRATHBHAI PATEL

DEPARTMENT OF CHEMISTRY

SCHOOL OF SCIENCES

GUJARAT UNIVERSITY

AHMEDABAD-380009

GUJARAT, INDIA



**NAREN**  
chemicals

factory : Plot No. 562, Phase II, G.I.D.C., Vatva, Ahmedabad, Gujarat 382445, IN.  
email - narenchemicals@rediffmail.com

Manufacturer And Exporter of  
Plastic chemicals and additive.

## CIRTIIFICATE

This Is To Certify That Mr. Utkarsh D Patel Student Of M.s.c SEM IV (Organic )  
Of Chemistry Department , Gujarat Arts And Science College, Ahmedabad.

Has Successfully Completed His industrial Training For 21 Days From Date 2<sup>nd</sup> Feb  
2023 to 22<sup>nd</sup> Feb 2023,

During The Training Period We Found Her Regular, Sincere And Hard-working,  
Training Is Successfully Completed And We Are Satisfied.

For,

NAREN CHEMICALS

Devarsh T Parikh (Co-Owner)

4



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1. INTRODUCTION OF COMPANY
2. CLIENTS
3. HIETARCHY OF PRODUCTION OF PACKING.
4. DEATILS OD PRODUCTS MANUFACTURING BY COMPANY.
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7. POLYMER L.D.P.E.
8. PHYSICAL PROPERTIES.
9. DETAILS OF PIGMENT.
10. CACO3 (CALCIUM CARBONATE).
11. GENERALLY OTHER RAW MATRIAL.
12. TESTING.
13. USE.
14. CONCLUSION

# **INDUSTRIAL TRAINING REPORT**

A

REPORT SUBMITTED TO  
DEPARTMENT OF CHEMISTRY  
GUJARAT UNIVERSITY



IN PARTIALFULFILLMENT OF REQUIREMENT

FOR THE DEGREE OF  
MASTER OF SCIENCE

IN

ORGANIC CHEMISTRY

BY

PATEL VISHALKUMAR BHIKHABHAI

SEM :- IV

ROLL NO :- 82(HPP)

UNI.SEAT NO. :- 420

ENROLLMENT NO :- 202102300546

**Gujarat Art's And Science College, Ellisbridge,**

**Ahmedabad 380006, Gujarat, India**

APRIL 2023



## CERTIFICATE

This is to certify that **Mr. [Name]** has successfully completed the course of **[Course Name]** and has been awarded the **[Degree/Diploma]** by **Sravya Healthcare** on the **[Date]** at **[Location]**.

We request the recipient to use the certificate and degree for **[Purpose]** and to uphold the standards of **[Institution]**.

We wish the recipient to be successful in all his/her endeavors.

**Dr. [Name]**  
**Dr. [Name]**  
**Dr. [Name]**



**SRAVYA HEALTHCARE PVT. LTD.**

Address: **[Address]**  
 Phone: **[Phone]**  
 Email: **[Email]**  
 Website: **[Website]**  
 GST No: **[GST No]**



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Roll no. : 83  
Paper no. : 509

Exam:  
Sem :IV

## INDUSTRIAL TRAINING REPORT

report submitted to  
department of chemistry  
in  
Gujrat university



Degree – master of science

In

organic chemistry

pokiya Archana Shaileshbhai

professor name : D. K, PANCHAL



Gujrat arts and science college, ellis bridge

Ahmedabad 380006 , Gujarat , India

[www.gasc.gujarat.gov.in](http://www.gasc.gujarat.gov.in)

## Certificate

This is to certify that the project entitled "**Thin film nano composites membrane for water treatment**" is an authentic record of the project work done by **Ms. Archana shaileshbhai pokiya (Roll No: 83)** under my supervision and guidance in the Membrane Science and Separation Technology Division (MSST), CSIR-CSMCRI Bhavnagar, Gujarat, for the period of three months from 16/01/2023 to 16/04/2023.) In partial fulfilment of the requirement for the degree Master of Science in Organic Chemistry, Gujrat arts and Science College, Ellis Bridge, Ahmedabad-380006, Gujarat, India.

Place: Bhavnagar

Date:



**Mr. Pankaj D. Indurkar**  
Scientist  
MSST Division  
CSIR-CSMCRI, Bhavnagar  
Gujarat

पंकज डी. इंदुरकर / Pankaj D. Indurkar  
वैज्ञानिक / Scientist  
अिल्ली विज्ञान और पृथक्करण प्रौद्योगिकी विभाग  
Membrane Science and Separation Technology Division  
सी.एस.आई. मार - सी.एस.एम.सी.आर.आई.  
CSIR-Central Salt & Marine Chemicals Research Institute,  
जी.बी. मार्ग, भावनगर / G.B. Marg, Bhavnagar - 364002  
गुजरात / Gujarat, भारत / India

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7. references

Roll No.: 84

SEAT No.:

**CHE(O) 509**  
**INDUSTRIAL TRAINING**  
**REPORT**  
**SUBMITTED**  
**TO THE**  
**DEPARTMENT OF CHEMISTRY**  
**GUJARAT UNIVERSITY**



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**  
**IN**  
**CHEMISTRY**  
**(With: Organic Chemistry)**

BY  
**Prajapati Kaushikkumar Dahyalal**

DEPARTMENT OF CHEMISTRY  
GUJARAT & SCIENCE COLLEGE  
AHMEDABAD-380006  
GUJARAT, INDIA  
APRIL 2023



# CERTIFICATE



Bhupendra Patel  
Chairman

Anandbhai Patel  
Vice-Chairman (Admin)

Sureshbhai Patel  
Vice-Chairman (Technical)

Dineshbhai Shah  
Managing Director

Ref: NSAM/22-23/ 52

Date: 23-02-2023

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that "Prajapati kaushikkumar Dahyalal " student of M.sc .chemistry having enrolment no 202102300550 from Gujarat University Ahmedabad .Has under gone an Industrial training at NOVEL SPENT ACID MANAGEMENT. Successfully completed his training from 18 January -2023 to 07 February -2023 Long internship Program at these Group Laboratories area of training Quality Control & Quality Assurance department and Production areas of NOVEL SPENT ACID MANAGEMENT at GIDC VATVA. During the period of her internship program with our companies .We found him very punctual, Sincere having hardworking nature and dedicated towards the work assigned.

We wish her all the very best for her future endeavors

Thanking You

Yours faithfully,

For, Novel Spent Acid Management

  
Factory Manager

Jaymit Gandhi (7573007310)

SPENT ACID BANK & GYPSUM WASHERY PROJECT  
COMMON ENVIRONMENTAL TREATMENT FACILITY



8001 TO 8044, Phase - 2, G.I.D.C. Vatva, Ahmedabad - 382445, Gujarat [India] Phone : +91 79 40084182 to 87 Fax : +91 79 40084188  
Email : info@novelwaste.com. Plant@novelwaste.com Web. : www.novelwaste.com CIN : U 93090GJ2007NPL050142

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Roll No- 85

Exam No-

INDUSTRIAL TRAINING REPORT [CHE(O)-509]



GUJARAT UNIVERSITY

Estd. 1949

A REPORT SUBMITTED TO  
GUJARAT UNIVERSITY  
IN PARTIAL FULFILMENT OF  
THE REQUIRMENT FOR THE DEGREE OF  
MASTER OF SCIENCE

IN ORGANIC CHEMISTRY

SUBMITTED BY

RATHOD MILANBHAI MANUBHAI

SEM-IV

ROLL NO-85

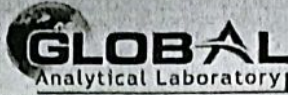
UNDER THE GUIDANCE OF

PROF.D.K.PANCHAL

GUJARAT ARTS AND SCIENCE COLLEGE, ELLISBRIDGE

AHMEDABAD-380006, GUJARAT (APRIL-2023)

# INDUSTRIAL TRAINING CERTIFICATE



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavanl Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India  
Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com) E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

## TO WHOM IT MAY CONCERN

This is to certify that Rathod Milanbhai Manubhai a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 17/01/2023 to 06/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

  
Hiten Rajapati

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Roll No. : 86

Exam No. :

**PAPER No. : 509**  
**PAPER NAME : INDUSTRIAL TRAINING**  
**SUBMITTED**  
**TO**  
**THE GUJARAT UNIVERSITY**



**IN PARTIAL FULLFILLMENT OF THE**  
**REQUIREMENT FOR THE DEGREE OF**

**MASTER OF SCIENCE**  
**IN**  
**CHEMISTRY**

**BY**  
**RATHOD NIHAR P**

**DEPARTMENT OF CHEMISTRY**  
**GUJARAT ARTS & SCIENCE COLLAGE**  
**GUJARAT UNIVERSITY**  
**AHMEDABAD-380006**  
**GUJARAT, INDIA**  
**APRIL 2023**



Approved by FDA Government of Gujarat Licence No. G.F. 3742

F1-27 to 32, Astha-II Complex, Opp. Bhayani Party Plot, Madhav School Road, Vastrapal, Ahmedabad-382418, Gujarat, India  
Website: [www.globalanalyticallab.com](http://www.globalanalyticallab.com) E-mail: [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

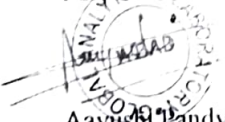
### TO WHOM IT MAY CONCERN

This is to certify that **Rathod Nihar P.** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 07/01/2023 to 28/01/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

A circular stamp with the text "GLOBAL ANALYTICAL LABORATORY" around the perimeter. In the center, there is a signature and the name "Aayush Pandya".  
Aayush Pandya

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Roll No:

Exam No:

**PAPER -509**  
**(INDUSTRIAL TRAINING)**

INDUSTRIAL TRAINING REPORT  
SUBMITTED

TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILMENT OF THE  
REQUIRMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**SHASHIKANT A. SAGAR**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE  
COLLEGE

GUJARAT UNIVERSITY  
AHMEDABAD 380009  
GUJARAT, INDIA

APRIL 2023

# CERTIFICATE



## CERTIFICATE

This is to certify that Mr. SAGAR SHASHIKANT AMRUTBHAI, Student of M.sc. (Chemistry) Sem-IV of Gujarat Art & Science Collage of Gujarat University – Ahmadabad has successfully completed his Industrial Training at “Kesar Pharma Pvt Ltd. – Chhatral” during 10<sup>th</sup> January 2023 to 30<sup>th</sup> January 2023. he has done his work diligently and sincerely and I am fully content with her performance.

For, Kesar Pharma Pvt Ltd.

HR Department

(Ms. Janhvi Jani)



**Kesar Pharma Private Limited**

(A WHO GMP & ISO 9001:2015 Certified Co.)

Regd. Office: 3rd Floor, Jivabhai Chambers,  
Opp. Bata Showroom, Ashram Road, Ahmedabad - 380009.  
Phone: 079-26372942, 26372943, 26372944  
www.ksarpharma.com Email: [business@ksarpharma.com](mailto:business@ksarpharma.com)

Regd. Office: Factory Plot Survey No. 100/177, At: Chhatral, Block: Chhatral, Tal: Chhatral, Dist: Gandhinagar, Gujarat - 380015.  
Tel: Kiosk: 079-26372942, 26372943, 26372944  
Ph: 02794-233622, Email: [ksar@ksarpharma.com](mailto:ksar@ksarpharma.com)

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2(b)	QA Department
2(c)	Safety Department
3	List of Instrument
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5	Conclusion

# INDUSTRIAL TRAINING REPORT

A Report Submitted to Gujarat University  
for the Partial Fulfilment of the requirement for the Degree  
of Master of Science in  
Chemistry (Organic).



**GUJARAT UNIVERSITY**

Estd. 1949

By

NAI RAHUL NARESHBHAI

SEM: 4

ROLL NO: 65

EXAM NO:

ENROLLMENT NUMBER: 202102300520

GUJARAT ARTS AND SCIENCE COLLEGE

# TRAINING CERTIFICATE



**CORONA Remedies Private Limited**

Regd. Office: CORONA House  
C- Mondeal Business Park, Near Gurudwara, S.G. Highway,  
Thaltej, Ahmedabad 380 059, Gujarat, India  
Tele. + 079 - 40233000 Fax + 079 - 40233999  
Online at : info@coronaremedies.com  
website : www.coronaremedies.com  
CIN : U24231GJ2004PTC044656

28/02/2023

## CERTIFICATE

### TO WHOM IT MAY CONCERN

This is to certify that **Student Rahul Naresh Bhai Nai** of Master in Science Chemistry department of Gujarat Arts and Science College, Ahmedabad has successfully completed a summer internship from **(23rd January 2023 to 15th February 2023)**

Their internship activities include familiarization to all the departments, their operations and process along with a management overview involved in the processes.

During the period of their internship program with us, he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We look forward to having you on our team! If you have any questions, please feel free to reach out to us.

We wish their every success in his life and career.

Sincerely,

A handwritten signature in black ink that reads "Nutan Patel".

Nutan Patel  
Manager - Corporate HR



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Roll No. : 66

Exam No. :

PAPER No. : 509

PAPER NAME : INDUSTRIAL TRAINING REPORT

INDUSTRIAL TRAINING REPORT

SUBMITTED

TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**NAIR MEGHA MOHANKUMAR**

DEPARTMENT OF CHEMISTRY

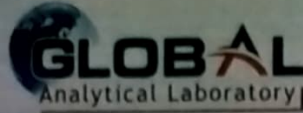
SCHOOL OF SCIENCES

GUJARAT UNIVERSITY

AHMEDABAD-380009

GUJARAT, INDIA

APRIL 2022



Approved by FDA-Government of Gujarat Licence No. 1 GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)


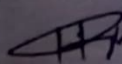
## CERTIFICATE

This is to certify that **Ms. Nair Megha Mohankumar** a student of M.Sc. Sem-4 (Organic Chemistry) from Gujarat arts & Science College, Ahmedabad has completed her industrial training from 01/02/2023 to 28/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

She regularly attended our organization and shown keen interest in her training. Her performance was found to be satisfactory.

We wish her all success in her future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory



Hitendra Prajapati



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Roll No:-  
Paper No:-509

Exam No:-

Paper Name:-

## Industrial Training Report

A Report Submitted to Department of Chemistry  
Gujarat University



GUJARAT UNIVERSITY

Estd. 1949

In Partial Fulfilment of the requirement for the degree of  
Master of Science in Organic Chemistry By  
Padhiyar Vijaysinh RaysingBhai  
Sem – IV

Gujarat Arts and Science College, Ellisbridge Ahmedabad  
380006, Gujarat, India.

April 2023



**Gujarat Arts and Science College**

Perpetuating Education Through Generations

Estd:1860

Government of Gujarat



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF/27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)


## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Padhiyar Vijaysinh Raysingbhai** a student of M.Sc. Sem-4 (Organic Chemistry) from Gujarat arts & Science College, Ahmedabad has completed his industrial training from 01/02/2023 to 28/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For, Global Analytical Laboratory

  
Hitendra



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Roll No. : 69

Exam No. :

AN INDUSTRIAL TRAINING REPORT  
SUBMITTED  
TO  
THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE REQUIREMENT  
FOR THE DEGREE OF  
**MASTER OF SCIENCE**  
IN  
**ORGANIC CHEMISTRY**  
BY

**PANCHAL YASH RAJESHBHAI**

DEPARTMENT OF CHEMISTRY  
GUJARAT ARTS AND SCIENCE COLLAGE,  
ELLISBRIDGE, AHMEDABAD-380009  
GUJARAT, INDIA  
**APRIL 2023**

# Industrial Training Certificate



Approved by FDA-Government of Gujarat Licence No. : GTL/37/42

FF 27 to 32, Astha-II Complex, Opp. Bhavani Party Plot, Madhav School Road, Vastral, Ahmedabad-382418, Gujarat, India

Website : [www.globalanalyticallab.com](http://www.globalanalyticallab.com)

E-mail : [support@globalanalyticallab.com](mailto:support@globalanalyticallab.com)

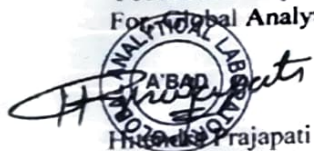
## TO WHOM IT MAY CONCERN

This is to certify that **Panchal Yash Rajeshbhai** a student of M.Sc. (Organic Chemistry) from Gujarat Art's & Science collage, Gujarat University has completed his industrial training from 17/01/2023 to 06/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended in our organization and shown keen interest in his training. He performance was found to be satisfactory.

We wish his all success in future assignment.

Thanks and Regards,  
Yours Faithfully  
For Global Analytical Laboratory

  
H. Prajapati

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Roll No. : 71

Exam No.

PAPER NO. : 509

PAPER NAME: INDUSTRIAL TRAINING REPORT

INDUSTRIAL TRAINING REPORT

ENTITLED

SUBMITTED

TO

THE GUJARAT UNIVERSITY



IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE  
IN  
CHEMISTRY  
BY

**PARMAR NITINKUKAR KIRITKANT**

DEPARTMENT OF CHEMISTRY  
Gujrat Arts And Science College,  
Ellisbridge, AHMEDABAD - 380008  
GUJARAT, INDIA  
APRIL 2023





# MEGHMANI DYES AND INTERMEDIATES LLP

LLP IN AAF-9872

Ref: MDILLP/HR/2022-23/37

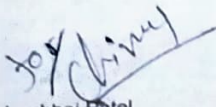
Date: 30-01-2023

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. NITINKUMAR K PARMAR, Enrollment No-202102300530 student of Chemistry Department, Gujarat Arts & Science College, Ahmedabad has successfully completed his Industrial Training at our Meghmani Dyes and Intermediates LLP from 09/01/2023 to 29/01/2023.

During this period, his performance was found to be satisfactory and we wish him all the best for his future endeavors.

For,  
Meghmani Dyes and Intermediates LLP

  
Mr. Vishnubhai Patel  
Manager (HR & ADMIN)

**Corporate Office** 901-902, B-Wing, Siddhivinayak Tower, Nr. Katanya Arcade, Off. S.G. Highway, **Makarba**,  
Ahmedabad-380051, Gujarat, India **Tele:** +91-79-26812827, +91-815501751/52/53.  
**E-Mail:** exports@meghmanidyes.com **Website:** www.meghmanidyes.com  
**Plot No. 87, Phase II GIDC Industrial Estate, Vatva, Ahmedabad - 382445**  
**Plot No. 89-90, GIDC, Nandesari, Dist. Vadodara 391340**  
**Block No. 577A, 57B, 579, Village Dhudawada, Ta. Padra, Dist. Vadodara - 3914440**  
**Plot No. 430 Phase-II, GIDC Industrial Estate, Vatva, Ahmedabad - 382445**  
**Plot No. 108, GIDC, Nandesari, Dist.: Vadodara 391340**

**Regd. Office & Unit II**  
Unit: I  
Unit: III  
Unit: IV  
Unit: V



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**Gujarat University  
Ahmedabad – 380009**



**CHE (0) 509 – INDUSTRIAL TRAINING**

**Submitted By :**

**PATEL DEVARSH INDRAVADANBHAI**

**MSC Sem : 4**

**Roll No: 72(HPP)**

**Under the support and guidance of Submitted to,**

**Professor M.R. Solanki**  
Mentor  
Associate professor,  
Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad, 380006

**Professor C.B. Srivastav**  
Head of Department  
Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad, 380006



**The Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad – 380006,**



**AIREY INDUSTRIES**

Manufacturer & Exporter of Dyes & Dye Intermediate

February 22, 2023

### CERTIFICATE

This is certify that **Mr. PATEL DEVARSH INDRAVADANBHAI**, student of **M.Sc.**  
From Gujarat arts and science College, **Gujarat University, Ahmedabad** has  
completed the industrial training at our unit **AIREY INDUSTRIES, Khambhat**  
during 01/02/2023. to 21/02/2023.

During his training, we found him sincere, punctual and hard worker. He has  
submitted his project report to us.

We wish him a successful career in future.

Sincerely,

  
**Airey Industries**

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**University Seat No. - 181**

**Gujarat University  
Ahmedabad – 380009**



**CHE (0) 509 – Industrial-Training**

Submitted By :  
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MSC Sem : 4  
**Roll No: 73(HPP)**

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Associate professor,  
Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad, 380006

**PROFESSOR C.B. SRIVASTAV**

Head of Department  
Department of Chemistry  
Gujarat Arts And Science College  
Ahmedabad-380006



**The Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad  
MARCH - 2023**

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Patel Dhruvang Ghanshyam Bhai, A Student from Gujarat Arts & Science College has undergone training from 07<sup>th</sup> Jan 2023 to 27<sup>th</sup> Jan 2023 in our organization.

He has done his training in the area of Quality Control and Quality assurance completed the same successfully with full dedication.

During the training period his performance and attitude was found to be satisfactory.

We wish him all the best for his bright future

Best wishes

For West Coast Pharmaceutical Works

  
LALIT PRAJAPATI  
HR HEAD

DATE: 28<sup>th</sup> Jan, 2023.

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# INDUSTRIAL TRAINING REPORT - 509



PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
DEGREE OF  
MASTER OF SCIENCE IN CHEMISTRY

By : DHWANI M PATEL (ROLL NO-74)  
(UNIVERSITY EXAM NO -XXX)

MASTER OF SCIENCE (Organic Chemistry)

GUJARAT ARTS & SCIENCE COLLEGE, ELLISBRIDGE,  
AHMEDABAD

# INTERNSHIP CERTIFICATE



Date: 02/03/2023

## TO WHOM OVER IT MAY CONCERN

This Is to Certify That Miss Dhvani Mukeshbhai Patel, Student of M.Sc. Organic Chemistry (Gujarat Arts and Science College, Ahmedabad) has under gone industrial training program for 6<sup>th</sup> Feb 2023 to 02<sup>nd</sup> Mar 2023 in Our Organization.

As Partial Fulfillment Of Requirement For The Degree Of Master Of Science , Miss Dhvani Mukeshbhai .Patel Has Satisfactory Completed Her Training And Dissertation In Stipulated Time Period .

During the training period, she was found punctual in attendance and enthusiastic in her pursuit.

This certificate is issued to her only for purpose of the industrial training.

For,

Lincoln Pharmaceuticals Limited,



Regd. Office : "Lincoln House", Science City Road, Sola, Ahmedabad-380 060. Gujarat, India

Phone : +91-79 4107 - 8000 / 4107 - 8062

E-mail : info@lincolnpharma.com | Website : www.lincolnpharma.com

CIN : L24230GJ1995PLC024288

Factory : Survey No. 410/1, Baliyasan, B/h. Shanku's Water Park, Mehsana-Ahmedabad Highway, Dist. Mehsana-382 732, Gujarat, INDIA

Phone : 7096523657

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4. **REFERENCES**

**Roll No. : 75**

**Exam No. :**

**PAPER No: 509**

**PAPER NAME: Industrial Training**

**SUBMITTED**

**TO**

**THE GUJARAT UNIVERSITY**



**IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF**

**MASTER OF SCIENCE**

**IN**

**CHEMISTRY**

**BY**

**Dip A. Patel**

**Gujarat Arts and Science College, Ellis Bridge**

**AHMEDABAD-380009**

**GUJARAT, INDIA**

**MARCH- APRIL 2023**

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Patel Dip Alkeshkumar** a student of M.Sc. (Organic Chemistry) from Gujarat arts & Science College, Ahmedabad has completed his industrial training from 01/02/2023 to 23/02/2023 in Global Analytical Laboratory under my guidance and it is up to my satisfaction.

He regularly attended our organization and shown keen interest in his training. His performance was found to be satisfactory.

We wish him all success in future assignment.

Thanks and Regards,

Yours Faithfully

For Global Analytical Laboratory

Aayush Pandya



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University Seat No. - 236

**Gujarat University**  
**Ahmedabad – 380009**



**CHE (0) 509 – INDUSTRIAL TRAINING**

**Submitted By :**

**PATEL JEEL VIPULBHAI**

**MSC Sem : 4**

**Roll No: 77 (HPP)**

**Under the support and guidance of Submitted to,**

**Professor M.R. Solanki**  
Mentor  
Associate professor,  
Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad, 380006.

**Professor C.B. Srivastav**  
Head of Department  
Department of Chemistry  
Gujarat Arts and Science College,  
Ahmedabad, 380006.



**The Department of Chemistry**  
**Gujarat Arts and Science College,**  
**Ahmedabad – 380006,**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Patel Jeel Vipul Bhai. A Student from Gujarat Arts & Science College has undergone training from 07<sup>th</sup> Jan 2023 to 27<sup>th</sup> Jan 2023 in our organization.

He has done his training in the area of Quality Control and Quality assurance completed the same successfully with full dedication.

During the training period his performance and attitude was found to be satisfactory.

We wish him all the best for his bright future

Best wishes  
For West Coast Pharmaceutical Works

  
LALIT PRAJAPATI  
HR HEAD

DATE: 28<sup>th</sup> Jan, 2023.



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4	Brief information of instruments and tests
5	Conclusion
6	Reference



Gujarat  
University

CHE(O) 509

2022-23

# INDUSTRIAL TRAINING REPORT

Submitted by

**Patel Mehul P.**

Roll No : 78

Uni Exam No :

Enrollment No : 202102300541

*In partial fulfillment  
for the award of the  
degree of*

**Masters Of Science**

In

**Organic Chemistry (Sem-IV)**



Gujarat Arts & Science College  
Ellisbridge - Ahmedabad

# CERTIFICATE



Unit-2, Survey No: 293/3, Behind Jalaram Mandir, Kalikund-Kheda Road, Dholka-382225, Dist. - Ahmedabad.  
Phone : 02714-222444 / Email : deeppharma79@gmail.com

Date : 20/02/2023

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that **MR PATEL MEHUL PRATAPBHAI** has completed his training in our organization during the period of 30/01/2023 to 20/02/2023.

This Certificate is being submitted in partial fulfillment of the requirement of the award of "**MASTER OF CHEMISTRY**" of The Department of Chemistry, Gujarat Arts & Science College, Ahmedabad.

During this period we found him Disciplined, Enthusiastic, Sincere, Honest and Hard working. We wish him every success in his future Endeavors.

Wishing him best of luck



FOR DEEP PHARMA

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GUJARAT ARTS AND SCIENCE COLLEGE  
AHMEDABAD

Department of Chemistry

Academic Year: 2022-23

## PROJECT DETAILS

Sr. No.	Title of Project	Students Name
1	REACTIVE DYES	DESAI SAMBHVI SAGARBHAI
		BHIL SMIT ANANDBHAI
		VALA ARYANKUMAR PRATAPBHAI
		PRAJAPATI DHAVAL ASHOKBHAI
		SHERPURA DEEP PRAVINBHAI
2	Preparation of Pregabalin	BALDANIYA BIPIN KATHADBHAI
		HADIYA SACHIN VALABHAI
		BABARIYA ABHISHEK DHIRUBHAI
		RABARI MEHUL RAMABHAI
		JEJRIYA HARH NATUBHAI
3	TO IDENTIFICATION AND ESTIMATION OF IBUPROFEN DRUG BY RP HPLC METHOD	RAJPUT OMJISINGH AVINASHSINGH
		PATEL ANKIT PIYUSHBHAI
		BAJARIYA ASHISH HARESHBHAI
		MEMON AAFIYABANU UMARBHAI
		BADRESHIYA MAYANK RAMESHBHAI
4	WATER AND WASTE WATER ANALYSIS	SUTHAR DHRUVKUMAR RAJUBHAI
		PATEL SARITA CHHEDILAL
		BHUNATAR PURVIL PRIYAKANT
		PATEL YUKTA NARSINHBHAI
		VEGADA ZINAL AMRUTBHAI
5	CHARECTERIZATION & IDENTIFICATION OF THIOCOLCHICOSIDE	AJMERI FAIZAN DILIPBHAI
		VASOYA JAYKUMAR SHAILESHBHAI
		TAVIYAD PINALBEN RAJUBHAI
		DOBARIYA BHARGAV NANDLALBHAI
		PATEL HET BHARATBHAI
6	DISSOLUTION TEST OF AZITHROMYCIN	PATEL HARSH RAMESHBHAI
		BHARWAD UMANG RAMUBHAI
		GAJERA PRITESHKUMAR NANDLAL
		KANOTARA MAHESHBHAI DINESHBHAI
		BHADANI PARTHIV VIJAYBHAI
7	AZO (REACTIVE NAVY BLUE RGB) DYES	SOLANKI VISHAL DINESHBHAI
		CHAUHAN ADITYA RAMKYAS
		CHAUDHARI VISHALKUMAR JASHUBHAI
		KAPADIYA MEET CHIMANBHAI
		SAKARIYA AKSHAY MUKESHBHAI
8	CHARECTERIZATION & IDENTIFICATION OF ALKAZIP SODA	DODIYA RAVIRAJBHAI RANJEETBHAI
		RATHOD KINJAL ASHOKBHAI
		VAGHELA DIVYABEN VIJAYSINH

		RAVAL CHINTAN KAMLESHKUMAR
		RUPAVATIYA KRISH HIMMATBHAI
9	SYNTHESIS OF RASPBERRY KETONE	HARKHANI PRATIK DINESHBHAI
		KATARIYA HARDIKBHAI DINESHBHAI
		VAKOT MOAYAZ YUNUSBHAI
		VISHWAKARMA AANCHAL ASHOKBHAI
		GOHIL SUNILBHAI ARVINDBHAI
10	ACID ORANGE 7	GADHAVI DINESHDAN HUKAMDAN
		LORIYA SAKSHIBEN CHAMANBHAI
		PARMAR VEDKUMAR PRAVINBHAI
		CHAUDHARI MIHIRBHAI BABUBHAI
		JADAV KARANKUMAR NANUBHAI
11	Reactive violet 5 dyes	BODAT CHINTANKUMAR DINESHBHAI
		DARJI PARTH MANOJKUMAR
		PADHIYAR HAPPYBEN BHUPEDRAKUMAR
		PATEL NIRVESH RAVCHANDBHAI
		PATEL SMIT RAMESHKUMAR
12	DIRECT REDUCTIVE AMINATION OF ALDEHYDES AND KETONES	KANZARIYA DHARMESH RAMESHBHAI
		CHAUHAN ARYAN MAHENDRAKUMAR
		GADHETHARIYA TANVIBEN PRAKASHBHAI
		MAKWANA DHAVAL MAGANBHAI
		LAVANIA ANU RAVISHKUMAR
13	SOLVENT-FREE REDUCTION OF ALDEHYDEAND KETONS USING SODIUM BOROHYDRIDE	JADEJA CHANDRAPALSINH DEVENDRASINH
		BALDANIYA NIKUNJ GOBARBHAI
		RATHAVA VIPULBHAI SINDHUBHAI
		THAKOR JAYPALSINH RAMDEVSINH
		AGHARA PURAVKUMAR ASHOKKUMAR
14	Aceclofenac Drug Identification and Characterization	ZALA PRADHYUMANSINH RAJDIPSINH
		VERMA ARUN INDRAPRASAD
		KO PATEL PAVANBHAI ISHVARBHAI
		PATEL CHETAN NATAVARBHAI
		BALAT RAHULKUMAR MAGANBHAI
15	Synthesis, characterization of acrylic polymer	SOLANKI KEVALKUMAR MUKESHBHAI
		PRAJAPATI AJAYKUMAR PRAHLADBHAI
		CHAVDA DHARMIKKUMAR VASHRAMBHAI
		VAGHELA RAJVEERSINH GAJENRASINH
		DAMOR VIJAYKUMAR HIRABHAI
16	WASTE WATER ANALYSIS	LORIYA MEHULBHAI DHARASHIBHAI
		PARMAR MEHUL CHANDUBHAI
		VADGAMA VINAYAK ANILBHAI
		KAPADIYA ADITYA ALPESHBHAI

		SISODIYA RAJDEEP RAGHUVIRSINH
17	Preparation and characterization of 2,4,6-tribromoaniline	DODIYA RONAKKUMAR ASHOKBHAI GUPTA HARIOM VIRENDRA KALSARIYA PRIYANKABEN BHUPATBHAI UPADHYAY RAHUL MAHENDRABHAI SHAIKH MAHIN FATEMA MAKSUDAHEMAD
18	Biodegradable polymers	DODIYA RONAKKUMAR ASHOKBHAI GUPTA HARIOM VIRENDRA KALSARIYA PRIYANKABEN BHUPATBHAI UPADHYAY RAHUL MAHENDRABHAI SHAIKH MAHIN FATEMA MAKSUDAHEMAD
19	REACTIVE DYE NAVY BLUE 171	PRAJAPATI JAYDEEP ARVINDBHAI KALAL RAHUL HIRALAL YADAV ANKESHKUMAR SHIVCHARAN AGHERA ASHA JAYESHBHAI BHANKHODIYA ALPESHKUMAR MAHESHBHAI
20	HEXYLE SALICYLATE	MONA YADAV SHUKLA SATYAM SANTOSH PATEL DIVY HIMANSHUKUMAR PATEL VISHNUBHAI GHANSHYAMBHAI PARMAR VISHVESHKUMAR SOMABHAI
21	REACTIVE DYE MAGENTA XL	GOHIL KARAN DAHYABHAI HEMANT KUMAR SOLANKI ARYAN GOPALBHAI LAHERI SAHIL BHARATBHAI PARMAR VISHAL BHANJIBHAI
22	Synthesis of dissertation work on chloryriphos	ARVADIYA ZINKALBEN LALITBHAI BALDANIYA DIVYESH ABHALBHAI CHAVDA PARESHBHAI BHUPATBHAI DODIYA VISHVJEET AJITBHAI GOHEL HIMANIBEN JAYPRAKASHBHAI



*CSrivastav*





Estd. 1863  
**GUJARAT ARTS & SCIENCE COLLEGE**

ELLISBRIDGE, AHMEDABAD - 380 006.

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Phone : 079-26446939, Fax : 079-26446939, Email : gascprin@gmail.com

Ref No.

No./GASC/

Date : - - 201

**CERTIFICATE**

It is certified that 6<sup>th</sup> Semester BSc Students of Chemistry Department, **Desai Sambhvi Sagarbhai, Bhil Smit Anandbhai, Vala Aryankumar Pratapbhai, Prajapati Dhaval Ashokbhai and Sherpura Deep Pravinbhai**, have submitted their project on “**Reactive Dyes**” in due time. Their Project Work is extensive and satisfactory, befitting the purpose of their training.

Date: 27/02/2023

Place: Ahmedabad



*C. Srivastava*

Head,

Chemistry Department,  
Gujarat Arts and Science College,  
Ellisbridge, Ahmedabad

# INDEX

Sr. No.	Topic
1	Introduction of Dyes
2	Classification of Dyes and their examples
3	General Application
4	Reporting of Product
5	Result & Discussion
6	Conclusion & Reference

## INTRODUCTION OF DYES AND INTERMEDIATES

- Dyestuff is a general industry term covering both **dyes and pigments** in terms of chemistry, reactions and properties. Dyes are intensely coloured organic compounds or mixtures used for imparting colour to the substrates ranging from cloth, paper, leather to plastics in a permanent fashion. There are about **600 types** of dyestuffs produced in the country. A dye is generally applied in an aqueous solution, and may require a mordant to improve the fastness of the dye on the fibre. The basic importance of dye lies in its product and resistant to washing. Pigments, on the other hand, are insoluble and are important inputs to products such as paints.
  
- A dye intermediate is the main raw material used for the manufacturing dyestuff. The manufacturing chain of dyes can be traced back to petroleum based products. Naphtha and natural gas are used for the production of **benzene and toluene**, which are subsequently used for manufacturing nitro-aromatics. The nitro-aromatics are then used for manufacturing the compounds called dye intermediates. Hence, the third stage of production i.e., from nitro aromatics to a dye intermediate is a part of the dyes and dye intermediate sector. Examples of major dye intermediates are **Vinyl Sulfone**.



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Ref No.

No./GASC/

Date : - - 201

**CERTIFICATE**

It is certified that 6<sup>th</sup> Semester BSc Students of Chemistry Department, **Baldaniya Bipin Kathadbhai, Hadiya Sachin Valabhai, Babariya Abhishek Dhirubhai, Rabari Mehul Ramabhai and Jejriya Harh Natubhai**, have submitted their project on “**Preparation Of Pregabalin**” in due time. Their Project Work is extensive and satisfactory, befitting the purpose of their training.

Date: 27/02/2023

Place: Ahmedabad



*C. Srivastava*

Head,

Chemistry Department,  
Gujarat Arts and Science College,  
Ellisbridge, Ahmedabad

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### **Background**

Pregabalin, sold under the brand name Lyrica among others, is an anticonvulsant, analgesic, and anxiolytic amino acid medication used to treat epilepsy, neuropathic pain, fibromyalgia, restless leg syndrome, opioid withdrawal, and generalized anxiety disorder (GAD). Pregabalin also has antiallodynic properties. Its use in epilepsy is as an add-on therapy for partial seizures. It is a gabapentinoid medication and acts by inhibiting certain calcium channels. When used before surgery, it reduces pain but results in greater sedation and visual disturbances. It is taken by mouth.

Pregabalin (Lyrica, Parke-Davis/ Pfizer) has been approved by the FDA for the management of neuropathic pain associated with diabetic peripheral neuropathy (DPN) and post-herpetic neuralgia (PHN). It has also been approved as an adjunctive therapy for adults with partial onset of seizures.

DPN is a progressive disorder characterized by pain in the extremities, accompanied by a progressive decline in peripheral sensation, which may result in a complete loss of sensation in the affected area. Initial symptoms are often manifested as a tingling or burning sensation, with sudden fluctuations in intensity. It is estimated that 15% of patients

with a long history of diabetes will develop DPN.



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Ref No.

No./GASC/

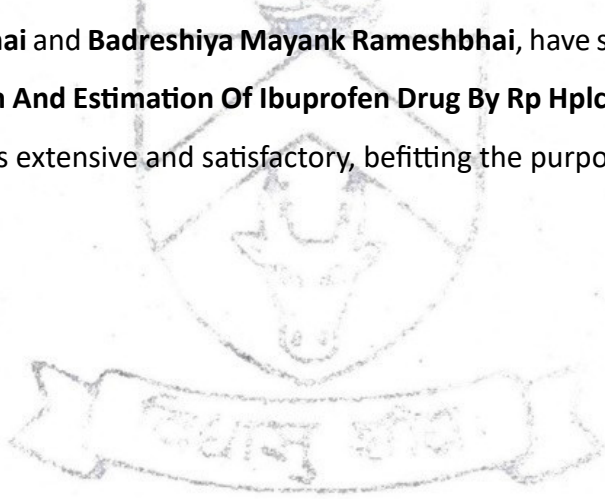
Date : - - 201

**CERTIFICATE**

It is certified that 6<sup>th</sup> Semester BSc Students of Chemistry Department, **Rajput Omjisingh Avinashsingh, Patel Ankit Piyushbhai, Bajariya Ashish Hareshbhai, Memon Aafiyabanu Umarbhai and Badreshiya Mayank Rameshbhai**, have submitted their project on "**To Identification And Estimation Of Ibuprofen Drug By Rp Hplc Method**" in due time. Their Project Work is extensive and satisfactory, befitting the purpose of their training.

Date: 27/02/2023

Place: Ahmedabad



*C. Srivastava*

Head,

Chemistry Department,  
Gujarat Arts and Science College,  
Ellisbridge, Ahmedabad



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## INTRODUCTION

### ❖ Importance of water

➤ Water is the single most important substance known in the world, it is elixir of life without it life is not possible, it represents a fundamental requirement for all life activities, it is essential to man, animals and plants. The supply of it is endless in the world map since it covers over 80% of the earth's surface, only a small fraction of the water in the world is available to manage for human use.

➤ Moreover considerable part of this limited quality of water is polluted by sewage, industrial waste and a wide range of synthetic chemicals. Fresh water which is a precious and limited vital resource needs to be protected, conserved and used wisely by man. But unfortunately such has not been the case, as the polluted lakes, rivers and streams throughout the world testify.

### ❖ Quality of water

➤ Safe drinking water is important in the control of many diseases such as diarrhea, cholera, typhoid, 80% of all diseases in the world are associated with unsafe water. Water of good chemical and physical quality is necessary from the point of view of its acceptability to the consumer, protection of consumer health, and conservation of the water system, offending chemical substances have made a water source unacceptable to the public even though its bacteriological quality was excellent.

➤ The contamination of drinking water will occur through increased leaching of toxic metals into both surface and ground water. Standard methods for drinking water analysis should be tested under local conditions for accuracy and precision, agreed at national level.

### ❖ Effects of human activities on water quality

➤ The usefulness of water for a particular purpose is determined by the water quality, which is determined by the solutes and gases dissolved in the water as well as the matter suspended in and floating on the water. It is a consequence often natural physical and chemical state of the water as well as any alterations that may have occurred as a consequence of human activity.

➤ If human activity alters the natural water quality so that it is no longer fit for purpose for which it had previously been suited the water is said to be polluted or Contaminated. In any case water quality is usually effected directly or indirectly by human activities making the harmful for living plants and animals.



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## THIOLCHICOSIDE

### ❖ INTRODUCTION OF THIOLCHICOSIDE :

- Thiocolchicoside is a muscle relaxant with anti-inflammatory and analgesic effects. Its mechanism of action is unknown, but it is believed to act via antagonism of nicotinic acetylcholine receptors. However, it also appears to be a competitive antagonist of GABA and glycine receptors. As such, it has powerful convulsant activity and should not be used in seizure-prone individuals.
- In contrast to a proposed agonistic action at these two types of inhibitory receptors. Pharmacological evidence has shown that, under certain conditions, THC manifests convulsant activity in animals and humans.
- Its modulation of chemokine and prostanoid production and inhibition of neutrophil and endothelial cell adhesion molecules by which it interferes with the initiation and amplification of the joint inflammation.
- Thiocolchicoside is originated from flower seeds of *Gloriosa superba*. Colchicaceae. *Gloriosa superba* is the national flower of Zimbabwe. It is also state flower of Tamil Nadu state in India, and was the national flower of Tamil Eelam and as such was displayed during Maaveerar Day.
- The drug blocks muscle contractions by activating the GABA inhibitory motor pathway.
- As an adjuvant treatment in painful spasm associated with degenerative vertebral disorders and vertebral static problem, torticollis, dorsal pain, low back pain, traumatological and neurological and neurological disorders.



- Thiocochicoside works on the centres of spinal cord and brain. This helps relieve muscle stiffness and improves muscle movements, thereby relieves pain due to muscle spasms.



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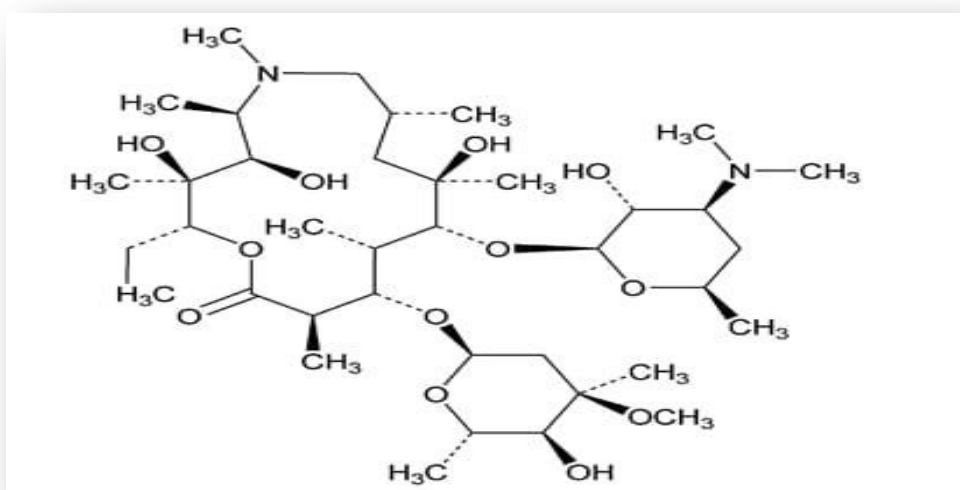
## INTRODUCTION OF AZITHROMYCIN TABLET IP :

**Azithromycin** was discovered in **Croatia** in **1980** by the pharmaceutical company **Pliva** and approved for medical use in 1988 under the brand name **Sumamed** . It is on the **World Health Organization's List of Essential Medicines**. The World Health Organization classifies it as **critically important for human medicine**. It is available as a **generic medication** and is sold under many trade names worldwide. In 2020, it was the 68th most commonly prescribed medication in the **United States**, with more than **10 million prescriptions**.

Common side effects include **nausea, vomitin', diarrhea** and **upset stomach**. An allergic reaction such as anaphylaxis, **QT prolongation**, or a type of diarrhea caused by **Clostridium difficile** is possible. No harm has been found with its use during pregnancy. Its safety during **breastfeeding** is not confirmed, but it is likely safe. Azithromycin is an **azalide**, a type of **macrolide** antibiotic. It works by decreasing the production of protein, thereby stopping bacterial growth.

**Azithromycin**, sold under the brand names **Zithromax** (in oral form) and **Azasite** (as an eye drop), is an antibiotic medication used for the treatment of a number of bacterial infections **This includes middle ear infections, strep throat, pneumonia, traveller's diarrhea**, . and certain other intestinal infections. Along with other medications, **it may also be used for malaria** It can be taken by mouth or intravenously.

### Chemical structure of Azithromycin





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## INTRODUCTION OF DYE

Dyes are fascinating substances used to impart color to various materials, including textiles, paper, leather, and more.

### ❖ History of Dyes

- Though textile dyeing dates back to during the Neolithic period, the first documented use of dyes through written record was in China in 2600 B.C., nearly five thousand years ago. The next documented use was in Rome in 715 B.C., when wool dyeing was established as an art and craft two thousand years later. However, textile dyeing is common in cultures and civilizations in different times and places, often with differing locally natural products.

### ❖ Natural Dyes

- Sources like vegetables, fruits, animals, and other plants served as the original raw materials used in natural dyes. Some of these are still used today. However, in the middle of the nineteenth century, the first synthetic dyes were developed, which are what most dyes we use today.
- Some of the most notable natural dyes include indigo, Tyrian purple, alizarin, logwood, and yellow, with indigo being the oldest of these and logwood being the only one that remains in modern usage.

### ❖ Synthetic Dyes

- The Industrial Revolution and its resulting growth in the textiles industry meant the need for quick and cheap dyes skyrocketed. Thus, the already existing difficulties of using natural dyes were that much more prominent and discouraging, leading to innovation that paved the way for synthetic dyes to take the textiles industry and every other industry by storm. The economy needed dyes that were extremely inexpensive, easy to use, long-lasting, and allowed for variety in color, a need that was unmet in the current market.
- In 1856, William Henry Perkin was the first to discover the synthetic dyestuff of mauve, which is different from our modern mauveine, while researching for cures for malaria. This spurred the dye industry and even organic chemistry in general. After doing lengthy research on the use of coal tar, a German scientist was able to isolate more than 50 compounds to use in the creation of synthetic dyes in 1914. This marked the birth of a new industry, leading to the thousands of synthetic dyes now in existence today.



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# ALKAZIP SODA EFFERVESCENT GRANULES

## ❖ INTRODUCTION OF ALKAZIP SODA :

- Alkazip soda contains Sodium Bicarbonate, Sodium Citrate, Citric Acid & Tartaric Acid , All of these salts make up an antacid that neutralizes stomach acid & an urinary alkalizer that helps make urine alkaline or less acidic .
- Alkazip soda should be taken after meals along with a glass full of water or fruit juice to avoid stomach upset. Keep taking it as suggested by the doctor to get the most benefits. You might experience stomach pain while taking this medicine .
- It is prescribed in cases of temporary relief from minor gastric upsets; in combination with antibiotics, when the effectiveness of an antibiotic is increased in the presence of alkaline urine & in urinary conditions where alkaline urine will benefit & help kidneys to get rid of uric acid in blood as well as removes.
- Alkazip soda contains Disodium Hydrogen Citrate which belongs to the group of medicines called urinary Alkalizers. It is used to treat the symptoms of urinary tract infections. When used in combination with antibiotics.



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# FRAGRANCE

## ➤ Defination of Fragrance:

A fragrance is a chemical mixture that has a smell or odor - but it is so much more besides, encompassing cultural, historical, social, economic and emotional value.

## ➤ Fragrance used :

Fragrances are used in products for a variety of reasons to enhance the user experience. Fragrances can provide a pleasant odor and make the products more recognizable or distinct, as well as help mask the smell of some ingredients.

## ➤ Fragrance formulation :

Flavor and fragrance formulations are essential additions to various foods and beverages, cosmetics, pharmaceuticals, personal care, and home care products. These formulations can be either single compounds or a mixture of small chemical compounds, carefully selected to enhance the overall taste and scent of a product.

Five classes of compounds make up most fragrance ingredients:

- **Alcohols.**
- **Aldehydes.**
- **Ketones.**
- **Esters.**
- **Lactones.**

Aromatic compounds are at the heart of fragrance chemistry. These compounds contain what is known as an aromatic ring, a stable and unique arrangement of carbon and hydrogen atoms. Aromatic rings can be found in various natural and synthetic fragrance ingredients.

Most of the chemical compounds in natural perfumes were terpenes, limonene, hexyl cinnamal and linalool. The most common contaminants found in most spray products are Toluene, benzene, styrene, methyl ethyl ketone and butyl acetate in the range of concentration of 5.3–125 mg L<sup>-1</sup> .



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# Chapter : 1

## 1.1

### Introduction of Dye

- Dyes are colored substances that impart color to materials, such as textiles, paper, leather, and other substrates, through a process of absorption or chemical reaction.
  
- There are two broad categories of dyes: natural and synthetic; Natural dyes are dyes extracted from plants, insects, or minerals. The majority of natural dyes are vegetable dyes derived from plant sources such as roots, berries, leaves and wood, as well as other biological sources like fungi.
  
- Synthetic dyes are also referred to as “coal tar dyes” because they are derived from substances that, could only be extracted from coal tar. A synthetic dye consist of a chromophore and an auxochrome added to a benzene derivative.
  
- Both dye and pigments are colored, because they absorb only some wavelengths of visible light. Dyes are usually soluble in water, whereas pigments are insoluble. Some dyes can be insoluble with the addition of salt to produce a lake pigment.



# HISTORY

- The history of dyes is a tale spanning millennia, from ancient civilizations extracting color from nature's palette to the transformative 19th-century discovery of synthetic dyes. In antiquity, societies like the Egyptians and Romans utilized plants, minerals, and insects to create vibrant hues for textiles. The Middle Ages witnessed the expansion of dye knowledge, with the Renaissance introducing new sources such as cochineal and indigo. The pivotal moment came in 1856 when Sir William Henry Perkin accidentally synthesized mauveine, sparking the era of synthetic dyes and the establishment of dye industries. Throughout the 20th century, continuous advancements in dye chemistry led to the development of diverse classes of synthetic dyes. Today, the dye industry grapples with environmental concerns, prompting research into sustainable alternatives, marking an ongoing chapter in the colorful history of dyes.



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## *INTRODUCTION OF DYES*

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Dyes are molecules which absorb and reflect light at specific wavelengths to give human eyes the sense of colour. Dyes are the chemical substances that impart their colour on clothes and that chemical substances are soluble in water. Dye is a coloured substance that chemically bonds to the substrate to which it is being applied. Dye is generally applied in an aqueous solution and may require a mordant to improve the fastness of the dye on the fiber. Dyes are organic compounds that are used to impart colour to various substrate, including paper, leather, fur, hair, drugs, cosmetics, waxes, greases, plastics, and textile materials.

Dyes are used to colour substrates to which they have affinity. Pigments can be used to colour any polymeric substrate but by a mechanism quite different from that of dyes, in that surface-only colouration is involved unless the pigment is mixed with the polymer before fibre or moulded article formation.

Dyestuff is a general industry term covering both dyes and pigments in terms of chemistry, reactions and properties. Dyes are intensely coloured organic compounds or mixtures used for imparting colour to the substrates ranging from cloth, paper, leather to plastics in a permanent fashion. There are about 600 types of dyestuffs produced in the country. A dye is generally applied in an aqueous solution, and may require a mordant to improve the fastness of the dye on the fibre. The basic importance of dye lies in its product and resistant to washing. Pigments, on the other hand, are insoluble and are important inputs to products such as paints.

A dye intermediate is the main raw material used for the manufacturing dyestuff. The manufacturing chain of dyes can be traced back to petroleum-based products. Naphtha and natural gas are used for the production of benzene and toluene, which are subsequently used for manufacturing nitro-aromatics. The nitro-aromatics are then used for manufacturing the compounds called dye intermediates. Hence, the third stage of production i.e., from nitro aromatics to a dye intermediate is a part of the dyes and dye intermediate sector. Examples of major dye intermediates are Vinyl Sulfone.

Dyes and pigments have the power to transform our world, adding colour, beauty, and functionality to our everyday lives. Dyes and pigments are the most important colourants used

to add colour or to change the colour of something. They are widely used in the textile, pharmaceutical, food, cosmetics, plastics, paint, ink, photographic and paper industries. Different types of dyes are available for different types of work.



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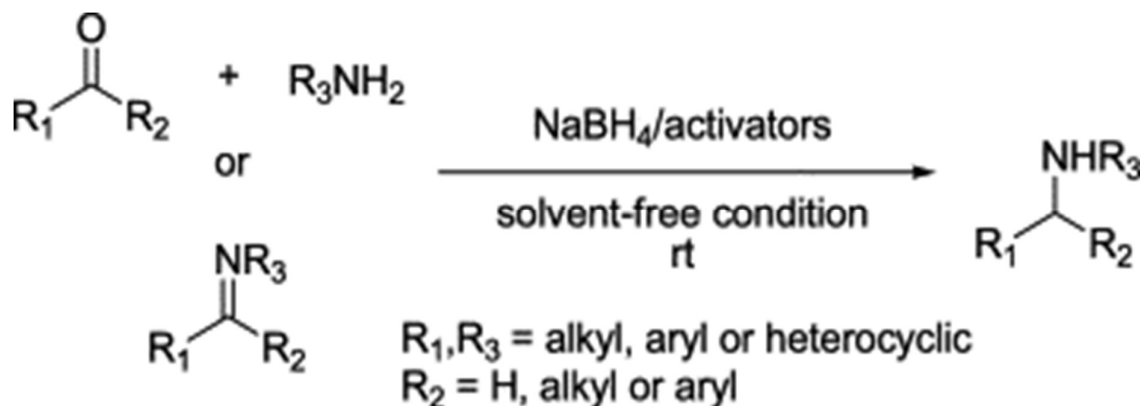
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## INTRODUCTION:

The transformation of amines from aldehydes and ketones is an important method in organic synthesis because of their versatile utility as intermediates for synthesis of pharmaceuticals and agrochemicals. For the transformation, the two synthetic methods are commonly used. One is the reductive amination, which is termed as a direct reaction.

**Reductive amination** (also known as **reductive alkylation**) is a form of amination that involves the conversion of a carbonyl group to an amine via an intermediate imine. The carbonyl group is most commonly a ketone or an aldehyde. It is a common method to make amines and is widely used in green chemistry since it can be done catalytically in one-pot under mild conditions.

The amine first reacts with the carbonyl group to form a hemiaminal species which subsequently loses one molecule of water in a reversible manner by alkylamino-de-oxo-substitution to form the imine intermediate. The equilibrium between aldehyde/ketone and imine is shifted toward imine formation by dehydration. This intermediate imine can then be isolated and reduced with a suitable reducing agent (e.g., sodium borohydride) to produce the final amine product. Intramolecular reductive amination can also occur to afford a cyclic amine product if the amine and the carbonyl are on the same molecule of the starting material.



There are two ways to conduct a reductive amination reaction: direct and indirect.

### Direct Reductive Amination


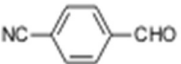
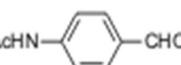
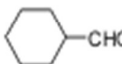


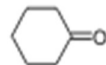
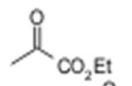
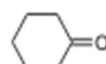

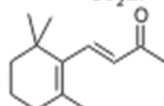
In a direct reaction, the carbonyl and amine starting materials and the reducing agent are combined and the reductions are done sequentially. These are often one pot reactions since the imine intermediate is not isolated before the final reduction to the product. Instead, as the reaction proceeds, the imine becomes favoured for reduction over the carbonyl starting material. The two most common methods for direct reductive amination



are hydrogenation with catalytic platinum, palladium, or nickel catalysts and the use of hydride reducing agents like cyanoborohydride ( $\text{NaBH}_3\text{CN}$ ).

### Indirect Reductive Amination

Indirect reductive amination, also called a stepwise reduction, isolates the imine intermediate. In a separate step, the isolated imine intermediate is reduced to form the amine product.

Carbonyl compound	Amine	t (min)	Yield (% Isol.)	Carbonyl compound	Amine	t (min)	Yield (% Isol.)
Ph-CHO		10	99		$\text{H}_2\text{N-Ph}$	40	99
Ph-CHO	$\text{H}_2\text{N-C}_7\text{H}_{15}$	20	93		$\text{H}_2\text{N-Ph}$	40	91
		20	94		$\text{H}_2\text{N-Ph}$	30	98
	$\text{H}_2\text{N-Ph}$	10	93		$\text{H}_2\text{N-Ph}$	30	71
		20	35		$\text{H}_2\text{N-Ph}$	90	25

#### ❖ Common Reducing Agent: -

#### ❖ Sodium Borohydride: -

$\text{NaBH}_4$  reduces both imines and carbonyl groups. However, it is not very selective and can reduce other reducible functional groups present in the reaction. To ensure that this does not occur, reagents with weak electrophilic carbonyl groups, poor nucleophilic amines and sterically hindered reactive centres should not be used, as these properties do not favour the reduction of the carbonyl to form an imine and increases the chance that other functional groups will be reduced instead.

Sodium borohydride ( $\text{NaBH}_4$ ) can be made through the addition of sodium hydride ( $\text{NaH}$ ) to our old friend borane ( $\text{BH}_3$  – See post: *Hydroboration-Oxidation of Alkenes*) in an appropriately chosen solvent. We generally don't think of the hydride ion ( $\text{NaH}$ ) as being a very good nucleophile, but the empty p-orbital of  $\text{BH}_3$  makes this addition much easier.



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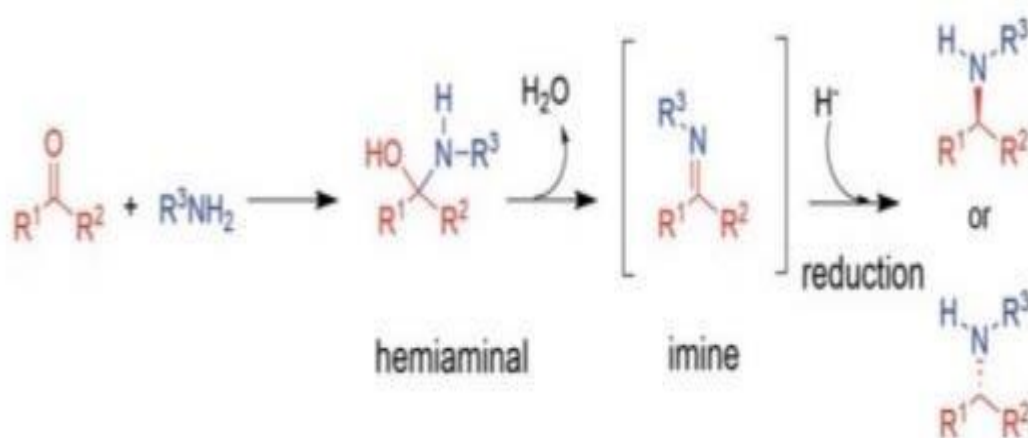
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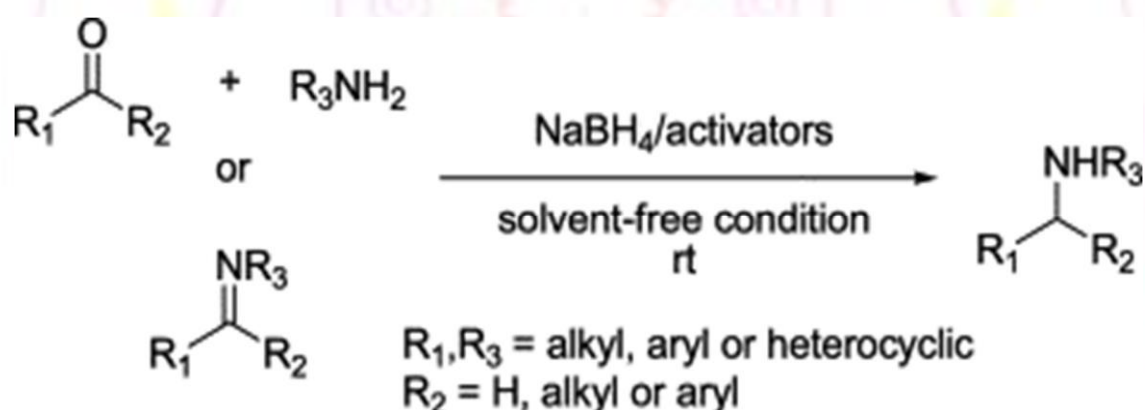
## Introduction of Reductive Amination

The Synthesis of chiral amines is of significant importance to the pharmaceutical and agrochemical industry as this group is widely distributed amongst the most used bioactive compounds in the world. Their synthesis is often accomplished through reductive amination, in which an amine is reacted with a ketone partner to form an intermediate hemiaminal, which then loses water to give an imine that is subsequently reduced to the corresponding amine. For the transformation, the two synthetic methods are commonly used. One is the reductive amination, which is termed as a direct reaction. This method allows the conversion of a carbonyl compound and the amine with a suitable reducing agent in a single operation without the performance of an intermediate imine salt. The other is a stepwise or indirect reaction which involves the conversion of an amine from the reduction of the imine derivatives isolated in a separate step. As effective reducing methods for these conversions, catalytic hydrogenation, metal hydride reductions using  $\text{NaBH}_3\text{CN}^4$ ,



The transformation of amines from aldehydes and ketones is an important method in organic synthesis because of their versatility as intermediates for synthesis of pharmaceuticals and agrochemicals. For the transformation, the two synthetic methods are commonly used. One is the reductive amination, which is termed as a direct reaction.

Reductive amination (also known as reductive alkylation) is a form of amination that involves the conversion of a carbonyl group to an amine via an intermediate imine. The carbonyl group is most commonly a ketone or an aldehyde. It is a common method to make amines and is widely used in green chemistry since it can be done catalytically in one-pot under mild conditions.



Reductive amination (also known as reductive alkylation) is a form of amination that involves the conversion of a carbonyl group to an amine via an intermediate imine. The carbonyl group is most commonly a ketone or an aldehyde. It is a common method to make amines and is widely used in green chemistry since it can be done catalytically in one-pot under mild conditions.

The amine first reacts with the carbonyl group to form a hemiaminal species which subsequently loses one molecule of water in a reversible manner by alkylamino-de-oxo-substitution to form the imine intermediate. The equilibrium between



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**Report:**  
**Aceclofenac Drug Identification and  
Characterization**

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# OBJECTIVE

- Drug Identification and Characterization of **ACECLOFENAC** Drug in its pharmaceutical dosage by **IR & HPLC Analysis Method**.
- **Drug characterization studies** can provide information useful for **drug law enforcement authorities**. Chemical links between samples can be established, and material from different seizures can be classified into groups of related samples.
- The method used in Analysis procedure is validated as per IP-2018 guideline protocol.
- It was successfully applied for the analysis of drug in bulk and could be effectively used for the routine analysis.

# INTRODUCTION

- Characterization testing is used to gain an understanding of the physical and chemical properties of pharmaceutical materials. During process and drug development, these properties can have an impact on the product's performance, ability to be processed, stability and appearance.
- The purpose of identification testing is to verify the identity of the active pharmaceutical ingredient (API) on the pharmaceutical tablet. The identification test will be able to discriminate between compounds of nearly related structures that are probably present.
- The identification tests are prescribed by pharmacopoeias to check the quality of the drugs, pharmaceutical reagents required for the test. The principle of these tests are based upon the reactions of ions or radicals inorganic or organic reagent. Single compound or a mixture of compounds can undergo these tests.



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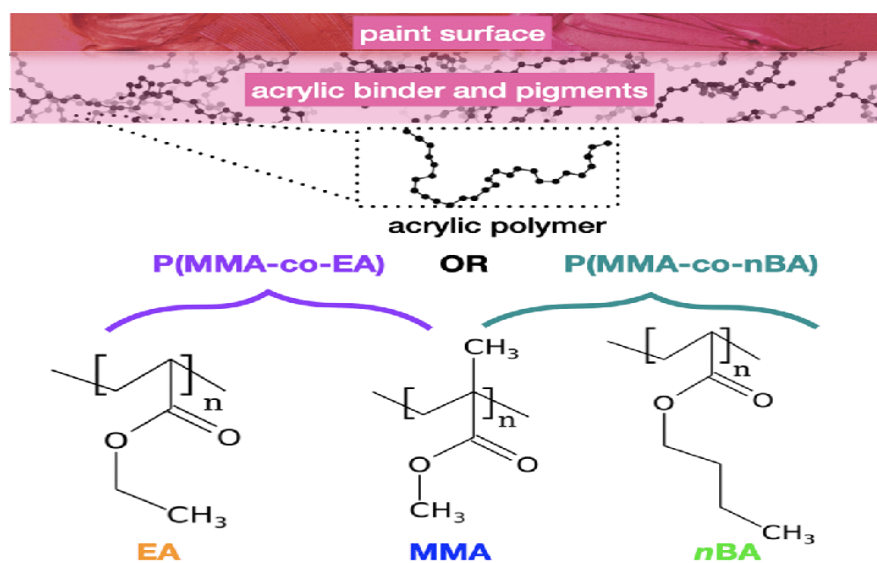
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## ABSTRACT

This work propose polyacrylate binders synthesized by emulsion polymerization. Emulsions used as pigment binders in formulations that have to deal with the challenge to assure an outstanding film configuration and exterior as well as good mechanical properties. To produce polyacrylate binder, homo and copolymers were synthesized by emulsion polymerization using different types of monomers. Emulsion polymerization is a type of radical polymerization that usually starts with an emulsion incorporating water, monomer, and surfactant. With increasing proportion of monomers in the formulation, lower conversion was observed which could be due to the lower reactivity of monomers for radical polymerization in the presence of these others monomers. It is ensured that monomers were put one by one to the reactor instead of putting quickly & the stirring speed was not more or less comparing with the standard. In accordance with recipe calculation and method of preparation, our sample shows pretty good tensile and tear strengths, good abrasion resistance and stiffness, excellent chemical resistance and water repellence as well as air permeability. In the area of testing, gel ratio and solid content percentage of soft polymer and hard polymer is tested. Also the dilution, acid, alkali and electrolyte resistance stability were checked.

## GRAPHICAL ABSTRACT

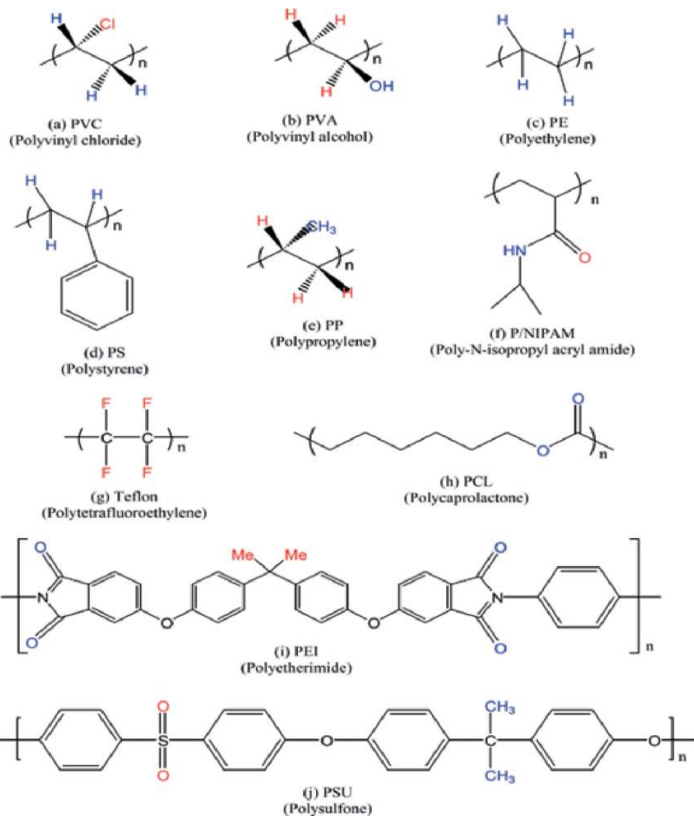


# INTRODUCTION

## ➤ Introduction of polymers:

Polymers are large molecules made up of repeating subunits known as monomers. They can be natural or synthetic and are widely used in various industries due to their unique properties. Polymers can be classified into two main categories: thermoplastics and thermosets. Thermoplastics can be melted and reshaped multiple times, while thermosets undergo a chemical reaction during curing and cannot be melted or reshaped once cured.

Acrylic binders are a type of thermoplastic polymer that are widely used in various applications such as adhesives, coatings, and inks. They are synthesized through the polymerization of acrylic monomers such as methyl methacrylate, ethyl acrylate, and n-butyl acrylate. The properties of acrylic binders can be tailored by varying the type and amount of monomers used in the polymerization process.





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## **LIST OF ABBREVIATIONS**

<b>ETP</b>	<b>Effluent treatment plant</b>
<b>STP</b>	<b>Sewage treatment plant</b>
<b>COD</b>	<b>Chemical Oxygen Demand</b>
<b>BOD</b>	<b>Biological Oxygen Demand</b>
<b>TDS</b>	<b>Total Dissolved Solid</b>
<b>TSS</b>	<b>Total Suspended Solid</b>
<b>CL</b>	<b>Chlorine</b>
<b>BR</b>	<b>Burette Reading</b>
<b>OD</b>	<b>Optical Density</b>
<b>PPM</b>	<b>Parts Per Million</b>

## INTRODUCTION

Wastewater is produced from various industrial processes such as mining, power generation, petroleum refineries, breweries, dairy processing, chemical production, food production and many more.

One of the most common by-products of industrial or commercial activities is industrial wastewater, i.e., the water that was used to make commercial products across every industry in nearly all phases of production. Once this process water has been used, it is considered waste and needs to be treated before it is discharged.





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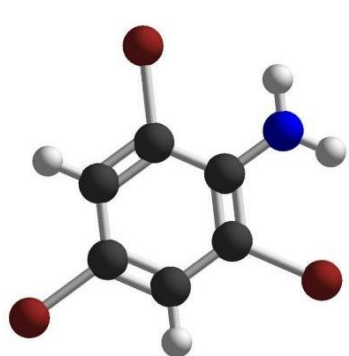
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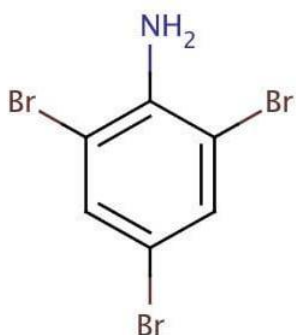
## CHAPTER 1. INTRODUCTION

### ➤ 2,4,6-TRIBROMOANILE

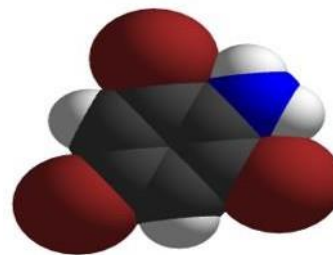
**2,4,6-Tribromoaniline** is a chemical compound with a formula of  $C_6H_3Br_3N$ . It is used in organic synthesis of pharmaceuticals, agrochemicals and fire-extinguishing agents[1].



(The ball and stick model of 2,4,6-tribromoaniline)



(structure of 2,4,6-tribromoaniline)



(the space-filling model of 2,4,6-tribromoaniline)

[Figure 1 : Structure of 2,4,6 – tribromoaniline ]

In organic chemistry, the **bromine test** is a qualitative test for the presence of unsaturation (carbon-to-carbon double or triple bonds), phenols and anilines. An unknown sample is treated with a small amount of elemental bromine in an organic solvent, being as dichloromethane or carbon tetrachloride. Presence of unsaturation and/or phenol or aniline in the sample is shown by disappearance of the deep brown coloration of bromine when it has reacted with the unknown sample. The formation of a



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# INTRODUCTION

Plastic is an organic and synthetic polymer, solid in your final stage as a finished product, and at some point, in its production phase was turned to fluid, suitable for molding by the actions of heat and pressure.

Most of the industrial plastic materials have petroleum as raw material, a non-renewable natural source. Among the most used plastics, it is possible to highlight the polypropylene (PP), high density polyethylene (HDPE) and low density (LDPE).

Currently, 140 millions tons of plastic are produced per year, distributed between different products. This number is related to the easy processing and low cost of this material.

Plastic is a material of difficult compaction, which can lead to waste accumulation in the environment, also compromising the decomposition of other organic materials.

Plastic material is resistant to fungi and bacteria, resulting in a slow degradation. In direct contact with the environment, it can take around 100 thousand years to be decomposed. Most of its waste is discarded at dumps and landfills, leading to concern around the disposal process.

Due to the great environmental impact caused by the use of plastic products, in the past years has been studied alternative routes to obtain plastics made by renewable sources, such as bioplastics.





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# 1. Abstract

- This dissertation provides a comprehensive investigation into dyes, encompassing their classification, industry dynamics, and experimental analysis. Dyes, vital components in various sectors including textiles and biomedical applications, are subjected to a detailed examination from both theoretical and practical perspectives.
  - The introduction sets the stage by defining dyes and their significance in different industries. It offers an overview of the literature, focusing on the classification of dyes, the landscape of the Indian Dyes and Dye Intermediate Industry, and the diverse factors influencing dye properties and applications.
  - The aim of the present work is to bridge theoretical understanding with practical experimentation. The experimental section delineates the detailed procedures, including product details, raw materials, chemical reactions, reaction mechanisms, synthesis processes, calculations, and properties, and applications. Through systematic analysis and characterization, the study aims to uncover the underlying principles governing dye behavior and performance.
  - By integrating theoretical insights with experimental findings, this dissertation contributes to a deeper understanding of dyes, their classification, and their industrial applications. The research outcomes offer valuable insights for researchers, industry practitioners, and policymakers, paving the way for advancements in dye technology and sustainable practices.
-

## 2. Introduction

- A dye is a colored substance that chemically bonds to the substrate to which it is being applied. This distinguishes dyes from pigments which do not chemically bind to the material they colour.
  - Reactive dye, any of a class of highly colored organic substances, primarily used for tinting textiles, that attach themselves to their substrates by a chemical reaction that forms a covalent bond between the molecule of dye and that of the fiber. The dyestuff thus becomes a part of the fiber and is much less likely to be removed by washing than are dyestuffs that adhere by adsorption.
  - A dye intermediate is the main raw material used for the manufacturing of dyestuff. The manufacturing chain of dyes can be traced back to petroleum-based products. Naphtha and natural gas are used to produce benzene and toluene, which are subsequently used for manufacturing nitroaromatics.
  - A dye intermediate is the main raw material used for the manufacturing of dyestuff. The manufacturing chain of dyes can be traced back to petroleum-based products. Naphtha and natural gas are used for the production of benzene and toluene, which are subsequently used for manufacturing nitro-aromatics. The nitroaromatics are then used for manufacturing the compounds called dye intermediates. Hence, the third stage of production i.e., from nitro aromatics to a dye intermediate is a part of the dyes and dye intermediate sector. Examples of major dye intermediates are Vinyl Sulfone.
  - Examples of major dye intermediates are 6-acetyl OAPSA, Vinyl Sulfone, Gamma Acid, H Acid, CPC Blue, J Acid,  $\alpha$ Naphthyl Amine, etc.
-



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It is certified that 6<sup>th</sup> Semester BSc Students of Chemistry Department, **Mona Yadav, Shukla Satyam Santosh, Patel Divy Himanshukumar, Patel Vishnubhai Ghanshyambhai** and **Parmar Vishvesh Kumar Somabhai**, have submitted their project on "Hexyle Salicylate" in due time. Their Project Work is extensive and satisfactory, befitting the purpose of their training.

Date: 27/02/2023

Place: Ahmedabad



*C. Srivastava*

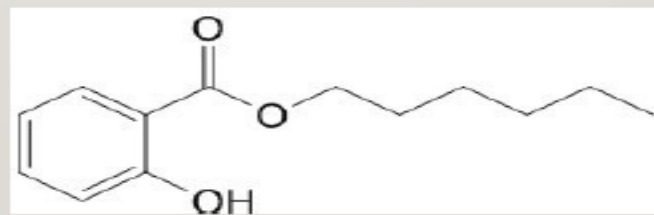
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# HEXYL SALICYLATE

## INTRODUCTION

### 1. History and IUPAC Name of Hexyl Salicylate



Members of the salicylate family (mainly methyl, butyl, amyl, hexyl, benzyl and 3- hexenyl salicylates) are widely used in perfumery.

The first example in fine fragrance was probably isoamyl salicylate, discovered early on by Darzens and used in 1898 by Jacques Rouché (both at the Piver company) in the perfume 'Trefle incarnat.' Patricia de Nicolai in her article 'A Smelling Trip into the Past: The Influence of Synthetic Materials on the History of Perfumery' notes that 'it was a real revolution in the Fougère family.'

The overdose of benzyl salicylate (19%) in 'L'Air du Temps' (Nina Ricci, 1948), present at even higher concentrations in 'Amarige' (Givenchy, 1991) and 'CK Be' (Calvin Klein, 1996), is another famous example and clearly shows the tremendous value of this class of compounds in perfumery to build floral compositions.

Moreover, perfumers associate salicylates with three other very important characteristics: their excellent blending properties, the great linearity of compositions in which they are present (the tendency for compositions to maintain a certain degree of odour similarity from beginning to end) and their incredible blooming effect.

IUPAC Name of Hexyl Salicylate: Hexyl 2-hydroxybenzoate

Molecular Formula: C<sub>13</sub>H<sub>18</sub>O<sub>3</sub>

Molecular Weight: 222.28 gm/mol



\*Production Capacity Production Capacity of Plant: 3500 kg per batch

\*Overall Production Capacity in the World: 2800 to 7000 Metric Tons per year

\*Market Value Market Value of the Product: ₹300 per kilograms







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## **What is Dyes?**

Dyes are substances those are used to color various materials, including **textiles**, plastics, paper, and other materials. They are soluble, coloured organic compounds that are usually applied to textiles from a solution in water. Dyes can be natural or synthetic. They are designed to bond strongly to the polymer molecules that make up the **textile fibre**. A dye is used to impart color to materials of which it becomes an integral part. Dyes are widely used in many industries, including textiles, printing, and cosmetics, to add color to products and materials. Some common types of dyes include acid dyes, basic dyes, disperse dyes, reactive dyes, and vat dyes, each with its own specific properties and uses. In this article I will discuss dyes classification and explain important types of dyes.

## **Classification of Dyes:**

Dyes can be classified into various categories based on their origin, chemical structure, solubility, application method, and other factors. Some common classification of dyes include:

### **1. Classification of dyes based on origin:**

- a. Natural dyes
- b. **Synthetic dyes**

### **2. Dyes classification based on chemical structure:**

- a. Azo dyes
- b. Anthraquinone dyes
- c. Triphenylmethane dyes
- d. Phthalocyanine dyes
- e. Quinoline dyes
- f. Nitroso dyes
- g. Indigoid dyes
- h. Natural dyes

### **3. Classification of dyes based on application method:**

- a. Direct dyes
- b. Reactive dyes
- c. Acid dyes
- d. Basic dyes
- e. Disperse dyes
- f. Vat dyes
- g. Pigments

#### **4. Dyes classification based on solubility:**

- a. Water-soluble dyes
- b. Oil-soluble dyes
- c. Solvent dyes

#### **5. Classification of dyes based on use:**

- a. Textile dyes
- b. Food dyes
- c. Ink dyes
- d. Leather dyes
- e. Hair dyes
- f. Medical dyes

Each type of dye has its own unique properties, advantages, and disadvantages, and is used for specific applications depending on its characteristics.

#### ***Important types of dyes are briefly discussed below:***

**1. Synthetic dyes:** Synthetic dyes are man-made chemical compounds used to add color to a variety of materials, including textiles, plastics, paper, and food. They are often preferred over natural dyes due to their wider range of colors, greater consistency, and lower cost. Synthetic dyes are classified based upon their chemical composition and the method of their application in the dyeing process.

**2. Basic / cationic dyes:** Basic dyes are water soluble and are mainly used to dye acrylic fibres. They are mostly used with a mordant. A mordant is a chemical agent

which is used to set dyes on fabrics by forming an insoluble compound with the dye.  
With mordant, basic dyes are used for cotton, linen, acetate, nylon,



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## PREFACE



The objective of the industrial training is to help students gain first-hand information regarding functioning of the industry which presents the students with opportunities to plan, organize and engage in active learning experiences both inside and outside the classroom.



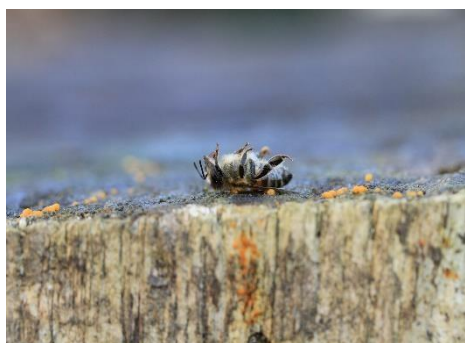
In addition of technical knowledge, here i got chance to improve skill like self- esteem, team work, communication, creative thinking, etc. Which are very important for making the career.



The report contains the company detail, process description and description related to Pesticides production, details of different Pesticides and applications.

## Introduction of pesticide

A pesticide is any substance used to kill, repel, or control certain forms of plant or animal life that are considered to be pests. Pesticides include herbicides for destroying weeds and other unwanted vegetation, insecticides for controlling a wide variety of insects, fungicides used to prevent the growth of mould and mildew, disinfectants for preventing the spread of bacteria, and compounds used to control mice and rats.



Because of the widespread use of agricultural chemicals in food production, people are exposed to low levels of pesticide residues through their diets. Scientists do not yet have a clear understanding of the health effects of these pesticide residues. Results from the Agricultural Health Study, an ongoing study of pesticide exposures in farm families, show that farmers who used agricultural insecticides experienced an increase in headaches, fatigue, insomnia, dizziness, hand tremors, and other neurological symptoms. Evidence suggests that children are particularly susceptible to adverse effects from exposure to pesticides, including neurodevelopmental effects. People may also be exposed to pesticides used in a variety of settings including homes, schools, hospitals, and workplaces.



Two centuries Ago, there was no scientific bases for plant protection activities. Therefore, primitive plant protection measures were employed, for example wheat was soaked in salt water, use of vinegar, ash among others. However, more than 2700 years ago the Greeks utilized sulphur a fungicide while the Chinese in this same period used arsenical compounds as insecticides. Due to these problems, development of technologies that guarantee their elimination in a safe, efficient and economical way is important. However excessive use of these chemicals leads to the microbial imbalance, environmental pollution and health hazards.