



Natco Pharma Limited

Regd. Off. : 'NATCO HOUSE', Road No. 2, Banjara Hills, Hyderabad - 500034.
Telangana, INDIA. Tel : +91 40 23547532, Fax : +91 40 23548243
CIN : L24230TG1981PLC003201, www.natcopharma.co.in

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made and entered into as of 11th August 2021.

BETWEEN

Natco Pharma Limited, a company incorporated in accordance with the laws of INDIA and having its corporate office situated at Road No 2, Banjara Hills, Hyderabad- 500034 Telangana, (hereinafter referred to as "NATCO"), represented by Sri. A. Lakshminarayana, Vice President - HR.

AND

RBVRR Women's College of Pharmacy, Approved by PCI, Affiliated to Osmania University having its office at Barkatpura, Hyderabad-500027 Telangana (hereinafter referred to as "RBVRR").

WITNESETH

A. WHEREAS, NATCO and RBVRR have entered into an MOU, dated 11th August 2021, for the purpose of research and development.

B. NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL UNDERSTANDINGS, COVENANTS AND OBLIGATIONS HEREINAFTER SET FORTH, NATCO and RBVRR HERE TO AGREE AS FOLLOWS:

A. Role of RBVRR:

1. RBVRR will conduct the research and development work provided by NATCO Research Center scale synthesis of certain drug intermediates, formulation development of certain specific drug, plan for innovation of the existing formulations of NATCO from the date of signing this MOU.

2. RBVRR has the requisite technical manpower to perform the various R&D projects.



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3. RBVRR also has the necessary labs with equipment and instruments to carry out the projects.
4. RBVRR shall update from time to time to the concerned executive of NATCO about the progress of the work.
5. RBVRR shall strictly adhere to the timelines of the projects.
6. RBVRR will maintain strict confidentiality of the R&D projects.
7. RBVRR shall not divulge any of the information of the R&D works carried out to any third party, if so NATCO will have every right to take legal action against RBVRR.
8. RBVRR will not publish the R&D works in any of the scientific journals or present the data in any of the conferences.
9. RBVRR shall issue the invoice related to the R&D projects as agreed by NATCO before the commencement of the project.
10. RBVRR Shall maintain the records and samples of the R&D project for three years after the project is over.
11. RBVRR shall provide the soft copy and the hardcopy of the project data.

C. Role of NATCO:

1. Will provide the details/documentation of the R&D projects to RBVRR for evaluation.
2. NATCO will evaluate and decide after going through the cost proposal of the R&D work from RBVRR.
3. Arranging industrial visits for B. Pharm/ M. Pharm students.
- 4 Providing drug samples for students pursuing projects.
5. Providing summer internship program for B. Pharm students.



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6. Utilization of research facilities for analysis of samples of M. Pharm students.
7. The above MOU is for an initial period of 36 months.
8. The parties agree not to disclose during the term of this MOU to any third parties the existence or nature of the business

IN WITNESS WHEREOF, THE PARTIES HERE TO HAVE CAUSED THIS MOU TO BE DULY EXECUTED BY THEIR RESPECTIVE OFFICERS.

Natco Pharma Limited
For NATCO Pharma Limited

RBVRR Women's College of Pharmacy

By: 
A. LAKSHMINARAYANA
Vice President-HR
Name: A. Lakshminarayana

By: 
Name: Dr M. Sumakanth

Title: Vice President - HR

Title: Principal

PRINCIPAL
RBVRR Women's College of Pharmacy
Barkatpura, Hyderabad - 500 027 (TS)

Collaboration between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy for Particle Size Analysis

Collaborating Parties: NATCO Pharma Ltd and RBVRR Women's College of Pharmacy

As per the Memorandum of Understanding (MOU) between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy, a collaborative initiative has been established to conduct particle size analysis for formulations prepared by the project students pursuing M.Pharmacy in Pharmaceutics.

Objective: The primary objective of this collaboration is to provide students with practical exposure to advanced analytical techniques and instrumentation used in pharmaceutical research and development. By availing the expertise and resources of NATCO Pharma Ltd, the project students can enhance their understanding of particle size characterization and its relevance in formulation development.

Overview of the Collaboration: Under this collaboration, the project students of M.Pharmacy in Pharmaceutics at RBVRR Women's College of Pharmacy prepare various formulations as part of their academic projects. These formulations encompass diverse pharmaceutical dosage forms such as tablets, capsules, suspensions, and emulsions.

Following the preparation of these formulations, NATCO Pharma Ltd facilitates particle size analysis using state-of-the-art instrumentation and methodologies available at their research facility. Particle size analysis is a crucial parameter in pharmaceutical formulation development as it influences the stability, bioavailability, and therapeutic efficacy of the final product.

Implementation: Upon completion of the formulations by the project students, samples are submitted to NATCO Pharma Ltd for particle size analysis. The analysis is conducted by skilled analysts and scientists proficient in particle characterization techniques such as laser diffraction, dynamic light scattering (DLS), and microscopy.

NATCO Pharma Ltd ensures accurate and precise particle size measurements, providing valuable data and insights to the project students. The results obtained from the particle size analysis contribute to the optimization and refinement of the formulations, enabling students to enhance their research outcomes and academic learning.

Impact and Benefits: The collaboration between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy offers numerous benefits to both parties:

1. **Enhanced Learning Experience:** Students gain hands-on experience with advanced analytical techniques and instrumentation, enriching their academic learning and skill development.
2. **Industry Exposure:** Students are exposed to industry best practices and standards in pharmaceutical research, preparing them for future careers in the pharmaceutical sector.

3. **Quality Assurance:** Particle size analysis conducted by NATCO Pharma Ltd ensures the quality and integrity of the formulations developed by the project students, thereby enhancing the credibility of their research findings.
4. **Academic-Industry Collaboration:** The collaboration fosters synergies between academia and industry, promoting knowledge exchange, innovation, and research excellence.

Conclusion: The collaborative initiative between NATCO Pharma Ltd and RBVRR Women's College of Pharmacy for particle size analysis represents a significant step towards bridging the gap between academia and industry in the field of pharmaceutical sciences. By leveraging the resources and expertise of NATCO Pharma Ltd, students receive invaluable support in their academic endeavors, paving the way for future advancements in pharmaceutical research and development.

Sample analysis reports are attached



RBVRR WOMEN'S COLLEGE OF PHARMACY

3-4-343, Barkathpura, Hyderabad - 500 027 (T.S), India

Office: +91 40-27563065, Mobile: +91 9848930555

(Approved by the AICTE, PCI & Affiliated to Osmania University)

Recognized under Section 2(f) of the UGC Act 1956

EAMCET Code: RBVW | PGCET Code: RBVW1

College Code: 1706

Prof. M. SUMAKANTH
Principal

www.rbvrrwcp.org | Email: rbvrrwcp@rediffmail.com & rbvrrwcp2006@gmail.com

No.6010/ Acad/M.Pharm/Project Work/WCP/2021-22,

Date: 06-10-2023

To

Shri/Prof. Apte

Head, Department of Formulation (R & D)

Research Centre

NatcoPharma Ltd.

Sanathnagar

HYDERABAD - (TS).

SUB: RBVRR-WCP - Providing of Assistance to the M.Pharmacy (Pharmaceutics) Students to perform Particle Size Analysis and Zeta Potentials for their Project Work - Request - Reg.

=====

Dear Sir,

I wish to inform you that, the following Bonafide students of this college who are pursuing M.Pharmacy (Pharmaceutics) Course Final Semester Project Solid Lipid nanoparticles, Nanosuspension, Niosomes, Invasomes to perform the "Particle Size Analysis and Zeta Potentials" at your esteemed organization as a part of their academic curriculum. Moreover, we do not have this facility of testing data on Particle Size Analyzer at our College. These students will carry the samples along with them for making data.

SI No	Name of the Student	H.T. Nos
1	Ms. J.Chelsea Ruth	1706-21-886-005
2	Ms. Jyoti	1706-21-886-006
3	Ms. B.Neharika	1706-21-886-008
4	Ms. V. Pooja	1706-21-886-011

In view of the above, I request you to provide necessary arrangements for preparing the data analysis to the above students which will help them to complete their project work successfully.

Your co-operation and assistance over the years in this regard is appreciated.

Warm Regards.

Yours Sincerely,

Principal

PRINCIPAL

RBVRR Women's College of Pharmacy

(CC No. 1706)

Barkathpura, Hyderabad-500 027 (TS)



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Prof. M. SUMAKANTH
Principal

www.rbvrrwcp.org | Email: rbvrrwcp@rediffmail.com & rbvrrwcp2006@gmail.com

No. 7922/ Acad/M.Pharm/Project Work/WCP/2021-22,

Date: 07-09-2022

To

Shri/Prof. Apte

Head, Department of Formulation (R & D)

Research Centre

NatcoPharma Ltd.

Sanathnagar

HYDERABAD - (TS).

SUB: RBVRR-WCP - Providing of Assistance to the M.Pharmacy (Pharmaceutics) Students to perform Particle Size Analysis and Zeta Potentials for their Project Work - Request - Reg.

=====

Dear Sir,

I wish to inform you that, the following Bonafide students of this college who are pursuing M.Pharmacy (Pharmaceutics) Course Final Semester Project on Formulation development of SMEDDS, Nanoparticles, Niosomes, Ethosomes&Transforosomes to perform the "Particle Size Analysis and Zeta Potentials" at your esteemed organization as a part of their academic curriculum. Moreover, we do not have this facility of testing data on Particle Size Analyzer at our College. These students will carry the samples along with them for making data.

SI No	Name of the Student	H.T. Nos
1	Ms. AmenaAmreen	1706-20-886-001
2	Ms. K. Sneha	1706-20-886-005
3	Ms. RayneeKirthi	1706-20-886-007
4	Ms. SunehaKhathun	1706-20-886-008

In view of the above, I request you to provide necessary arrangements for preparing the data analysis to the above students which will help them to complete their project work successfully.

Your co-operation and assistance over the years in this regard is appreciated.

Warm Regards.

Yours Sincerely,

(Prof. M. SUMAKANTH)
Principal

PRINCIPAL
RBVRR Women's College of Pharmacy
(CC No: 1706)
Barkatpura, Hyderabad-500 027 (TS)

Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: F3 PS 1
SOP Name: 12-5 Size SOP.sop
General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 15 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 21 November 2022 12:49:08

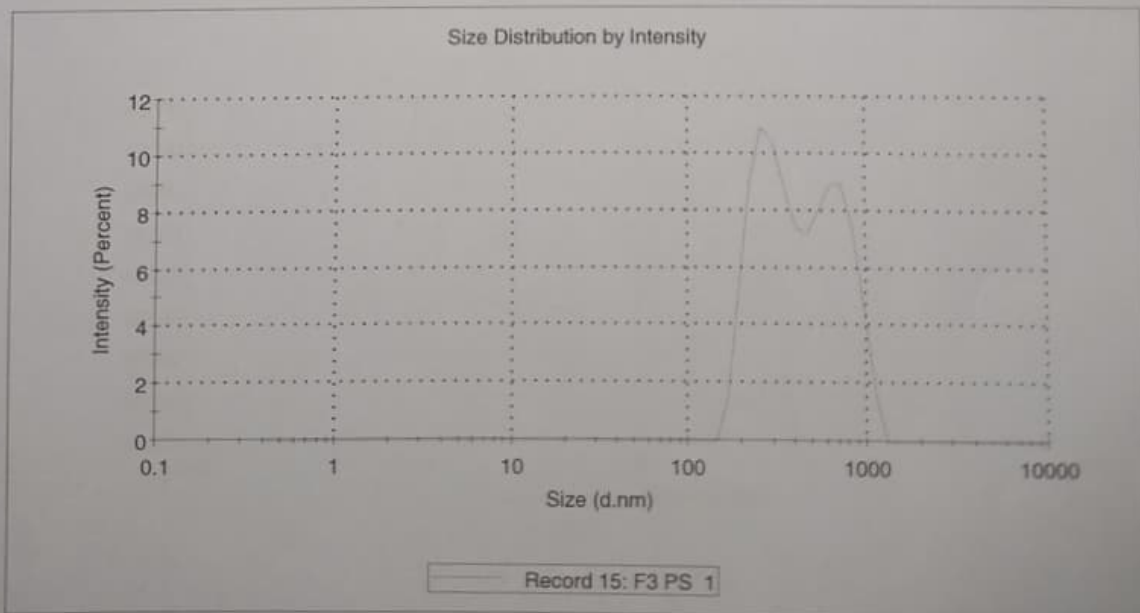
System

Temperature (°C): 25.0 Duration Used (s): 60
Count Rate (kcps): 238.6 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 642.1	Peak 1: 303.3	56.5	84.65
PdI: 0.654	Peak 2: 680.4	43.5	172.2
Intercept: 0.805	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: F 3 ZP 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts	Dispersant Name: Water
Record Number: 16	Dispersant RI: 1.330
Date and Time: 21 November 2022 12:51:06	Viscosity (cP): 0.8872
	Dispersant Dielectric Constant: 78.5

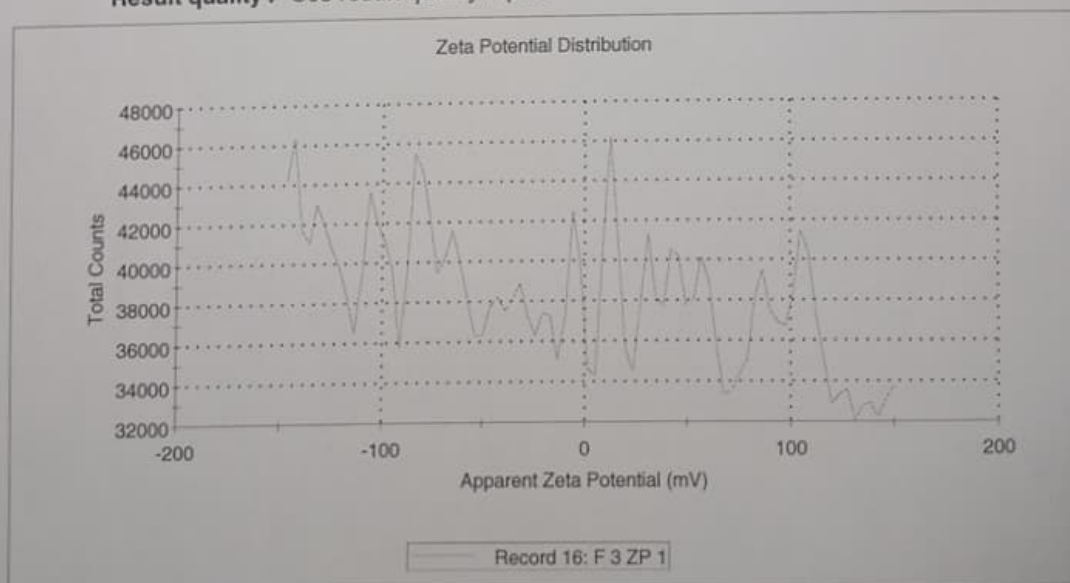
System

Temperature (°C): 25.0	Zeta Runs: 50
Count Rate (kcps): 112.2	Measurement Position (mm): 2.00
Cell Description: Clear disposable zeta cell	Attenuator: 8

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): 1.10	Peak 1: 83.0	8.8	9.43
Zeta Deviation (mV): 144	Peak 2: -125	7.6	7.33
Conductivity (mS/cm): 1.38	Peak 3: -102	7.5	7.19

Result quality: See result quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S2 PS 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 7 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 21 November 2022 12:16:26

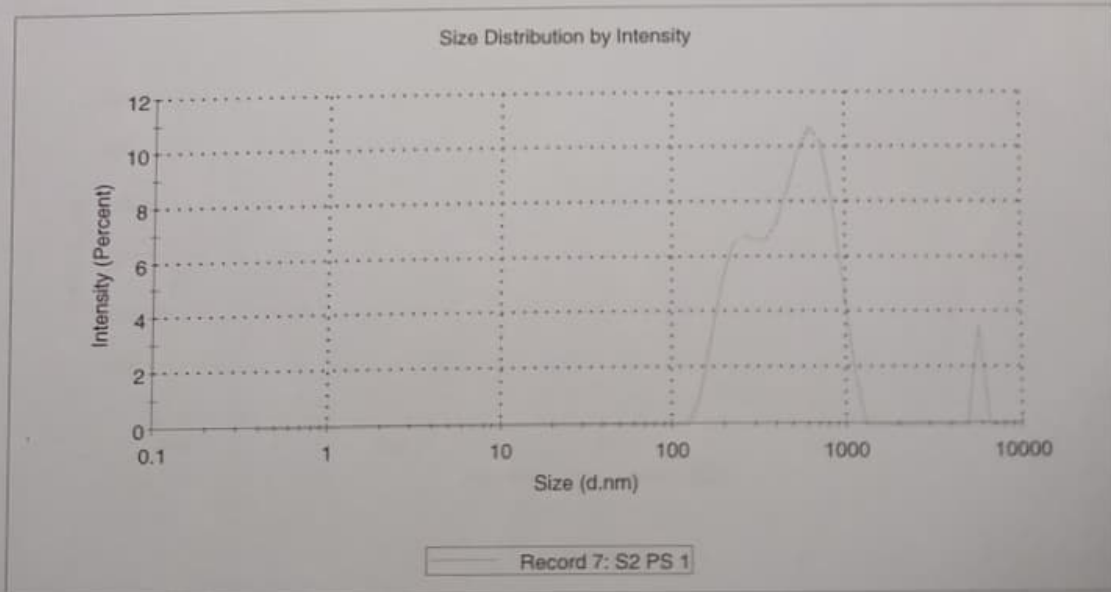
System

Temperature (°C): 25.0 Duration Used (s): 60
Count Rate (kcps): 367.2 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 10

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 669.4	Peak 1: 609.8	63.4	194.1
Pdl: 0.658	Peak 2: 252.1	33.3	59.96
Intercept: 0.780	Peak 3: 5560	3.2	6.104e-5

Result quality : Refer to quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S2 PS 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts	Dispersant Name: Water
Record Number: 7	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 21 November 2022 12:16:26

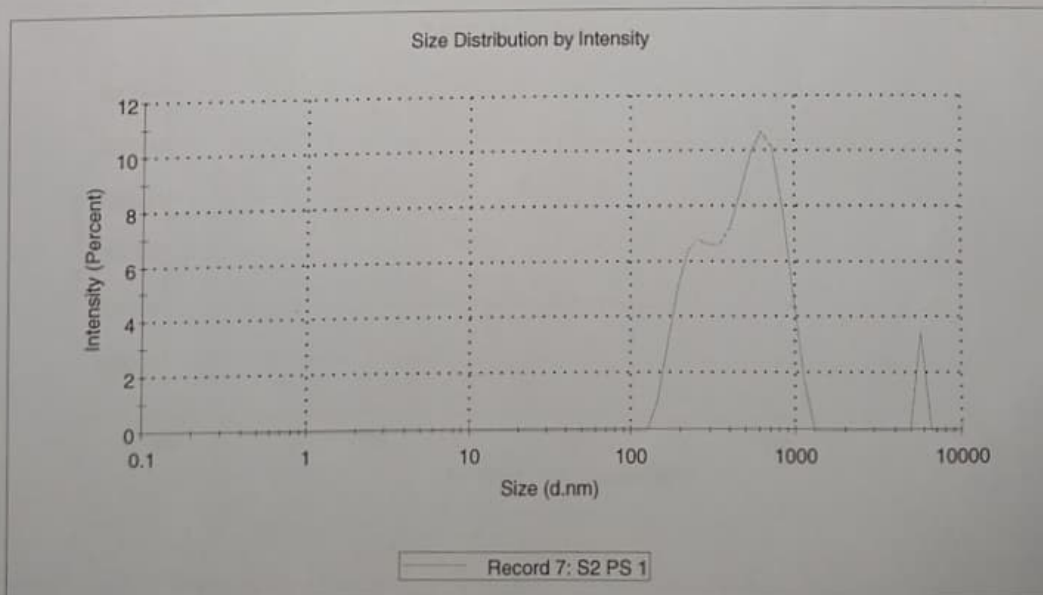
System

Temperature (°C): 25.0	Duration Used (s): 60
Count Rate (kcps): 367.2	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert...	Attenuator: 10

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 669.4	Peak 1: 609.8	63.4	194.1
Pdl: 0.658	Peak 2: 252.1	33.3	59.96
Intercept: 0.780	Peak 3: 5560	3.2	6.104e-5

Result quality : Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: S2 ZP 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts Dispersant Name: Water
Record Number: 8 Dispersant RI: 1.330
Date and Time: 21 November 2022 12:18:13 Viscosity (cP): 0.8872
Dispersant Dielectric Constant: 78.5

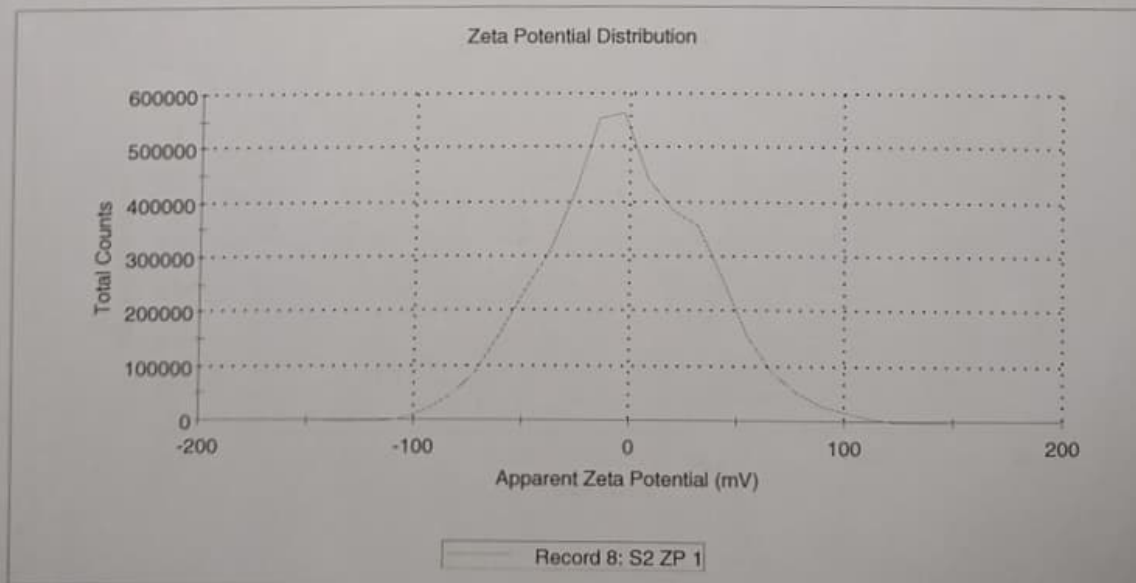
System

Temperature (°C): 25.0 Zeta Runs: 50
Count Rate (kcps): 134.5 Measurement Position (mm): 2.00
Cell Description: Clear disposable zeta cell Attenuator: 8

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): -2.02	Peak 1: -2.02	100.0	36.8
Zeta Deviation (mV): 36.8	Peak 2: 0.00	0.0	0.00
Conductivity (mS/cm): 1.70	Peak 3: 0.00	0.0	0.00

Result quality: See result quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S9 ps 1
SOP Name: 12-5 Size SOP.sop
General Notes:
File Name: project samples.dts
Record Number: 3
Material RI: 1.59
Material Absorbtion: 0.010
Dispersant Name: Water
Dispersant RI: 1.330
Viscosity (cP): 0.8872
Measurement Date and Time: 21 November 2022 12:00:04

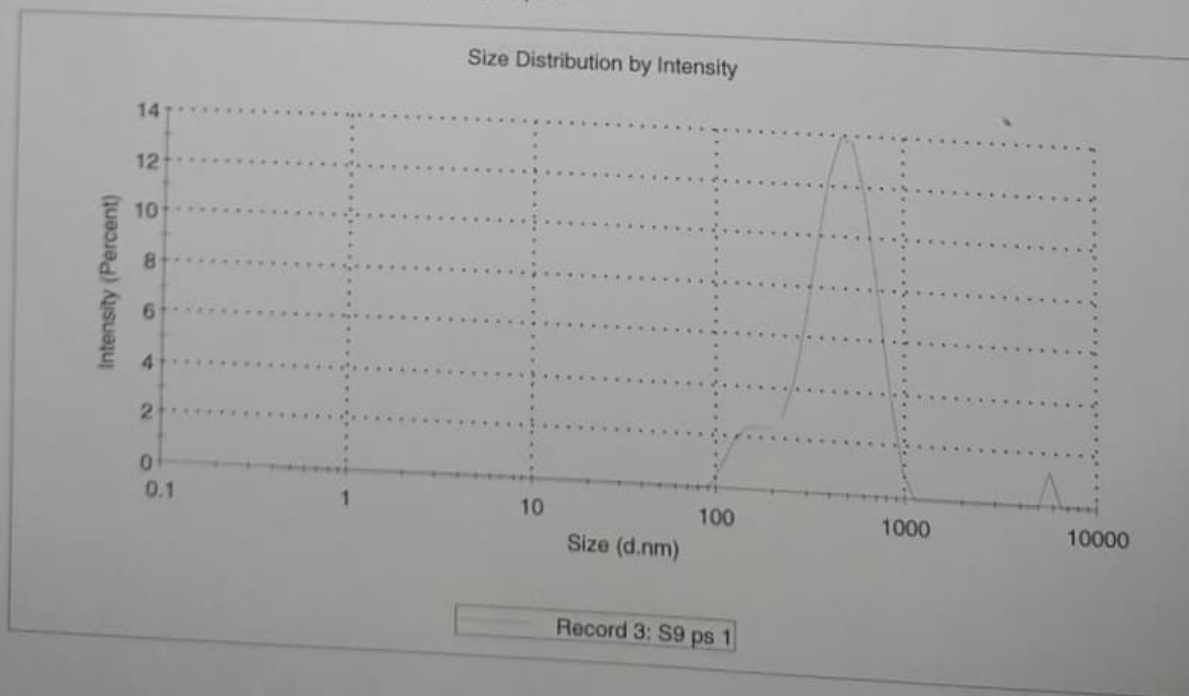
System

Temperature (°C): 25.0
Count Rate (kcps): 213.5
Cell Description: Glass cuvette with round apert...
Duration Used (s): 70
Measurement Position (mm): 4.65
Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 539.5	Peak 1: 475.9	88.5	167.0
Pdl: 0.564	Peak 2: 150.6	10.2	28.61
Intercept: 0.832	Peak 3: 5560	1.3	8.632e-5

Result quality : Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: S9 ZP 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts

Dispersant Name: Water

Record Number: 4

Dispersant RI: 1.330

Date and Time: 21 November 2022 12:01:10

Viscosity (cP): 0.8872

Dispersant Dielectric Constant: 78.5

System

Temperature (°C): 25.0

Zeta Runs: 50

Count Rate (kcps): 150.2

Measurement Position (mm): 2.00

Cell Description: Clear disposable zeta cell

Attenuator: 8

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): -26.7	Peak 1: 0.00	0.0	0.00
Zeta Deviation (mV): 0.00	Peak 2: 0.00	0.0	0.00
Conductivity (mS/cm): 7.85	Peak 3: 0.00	0.0	0.00
Result quality: See result quality report			

Zeta Potential Distribution

Record 4: S9 ZP 1

Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S 13 PS 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 13 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 21 November 2022 12:41:15

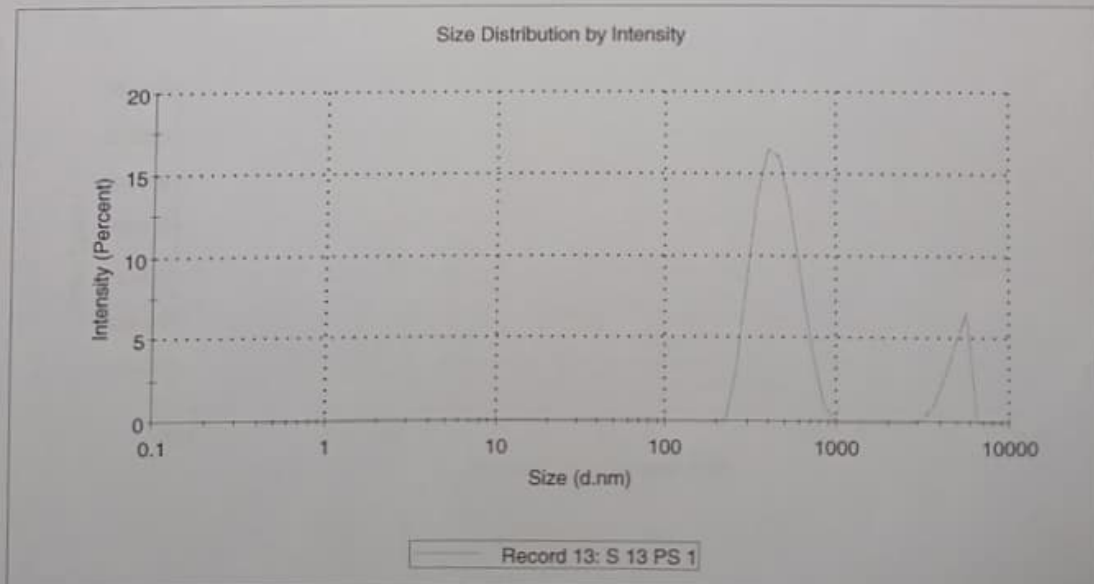
System

Temperature (°C): 25.0 Duration Used (s): 60
Count Rate (kcps): 274.9 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.nm)
Z-Average (d.nm): 582.1	Peak 1: 448.9	84.7	125.1
Pdl: 0.471	Peak 2: 4902	15.3	676.4
Intercept: 0.794	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: S 13 ZP 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts

Dispersant Name: Water

Record Number: 14

Dispersant RI: 1.330

Date and Time: 21 November 2022 12:42:35

Viscosity (cP): 0.8872

Dispersant Dielectric Constant: 78.5

System

Temperature (°C): 25.0

Zeta Runs: 50

Count Rate (kcps): 75.1

Measurement Position (mm): 2.00

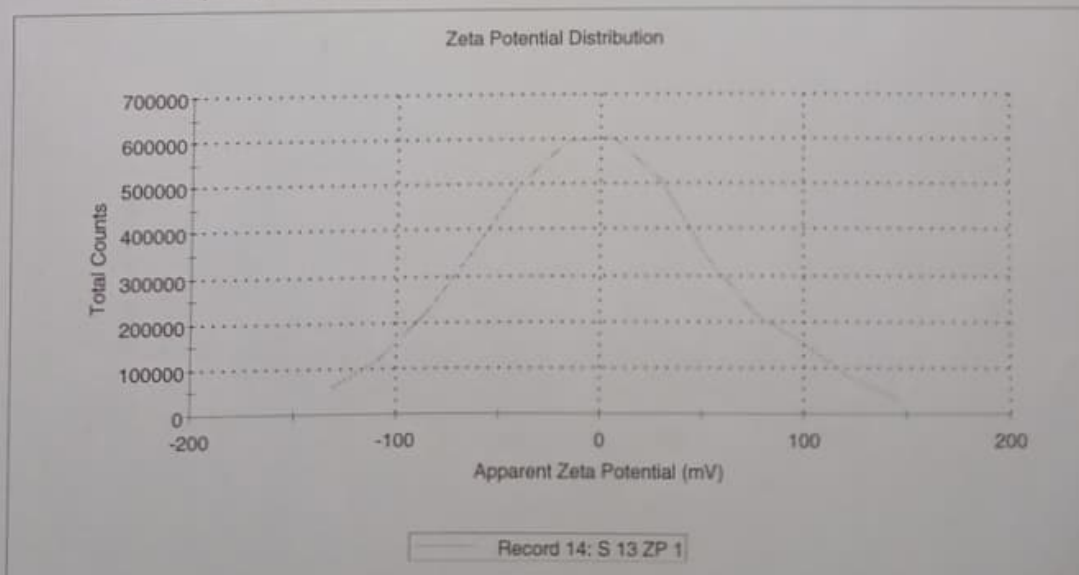
Cell Description: Clear disposable zeta cell

Attenuator: 8

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): -2.67	Peak 1: -2.26	100.0	57.6
Zeta Deviation (mV): 61.3	Peak 2: 0.00	0.0	0.00
Conductivity (mS/cm): 1.91	Peak 3: 0.00	0.0	0.00

Result quality: See result quality report



Size Distribution Report by Intensity

v2.2

Selected



Sample Details

Sample Name: F1 NANO 1
SOP Name: 12-5 Size SOP.sop
General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 45 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 14 September 2022 14:57:47

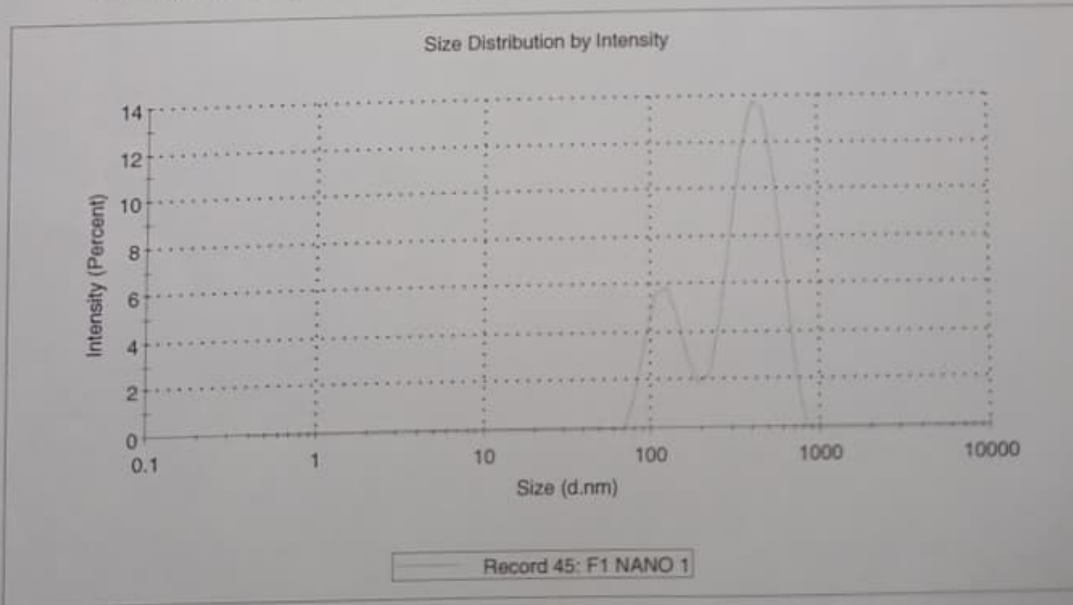
System

Temperature (°C): 25.0 Duration Used (s): 180
Count Rate (kcps): 37.7 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 11

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 329.8	Peak 1: 416.4	74.3	122.4
Pdl: 0.604	Peak 2: 124.6	25.7	29.67
Intercept: 0.941	Peak 3: 0.000	0.0	0.000

Result quality: Refer to quality report



Zeta Potential Report

v2.3

Schubert



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Sample Details

Sample Name: F1 NANO 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts	Dispersant Name: Water
Record Number: 46	Dispersant RI: 1.330
Date and Time: 14 September 2022 14:59:27	Viscosity (cP): 0.8872
Dispersant Dielectric Constant: 78.5	

System

Temperature (°C): 25.0	Zeta Runs: 18
Count Rate (kcps): 19.1	Measurement Position (mm): 2.00
Cell Description: Clear disposable zeta cell	Attenuator: 11

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): -47.1	Peak 1: 0.00	0.0	0.00
Zeta Deviation (mV): 0.00	Peak 2: 0.00	0.0	0.00
Conductivity (mS/cm): 5.17	Peak 3: 0.00	0.0	0.00
Result quality: Good			

Zeta Potential Distribution

Record 46: F1 NANO 1

Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: F3 NANO P.S 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts	Dispersant Name: Water
Record Number: 9	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorption: 0.010	Measurement Date and Time: 12 September 2022 15:10:40

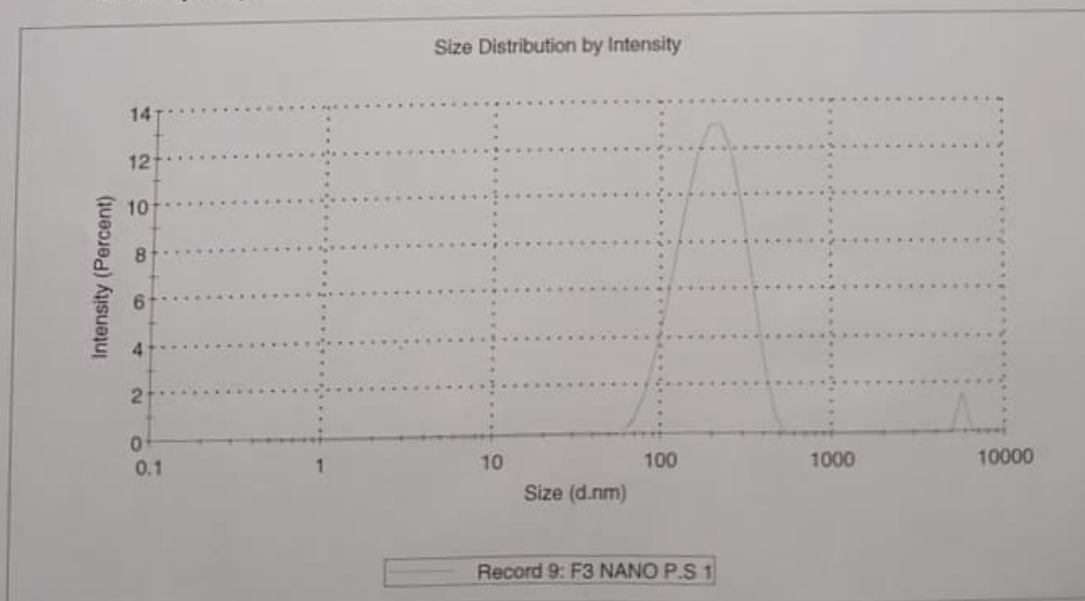
System

Temperature (°C): 25.0	Duration Used (s): 250
Count Rate (kcps): 24.5	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert...	Attenuator: 11

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 219.4	Peak 1: 205.7	98.4	81.13
Pdl: 0.536	Peak 2: 5560	1.6	0.000
Intercept: 0.907	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report



Size Distribution Report by Intensity

v2.2

selected



Sample Details

Sample Name: S7 NANO PS 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts	Dispersant Name: Water
Record Number: 21	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 12 September 2022 16:53:47

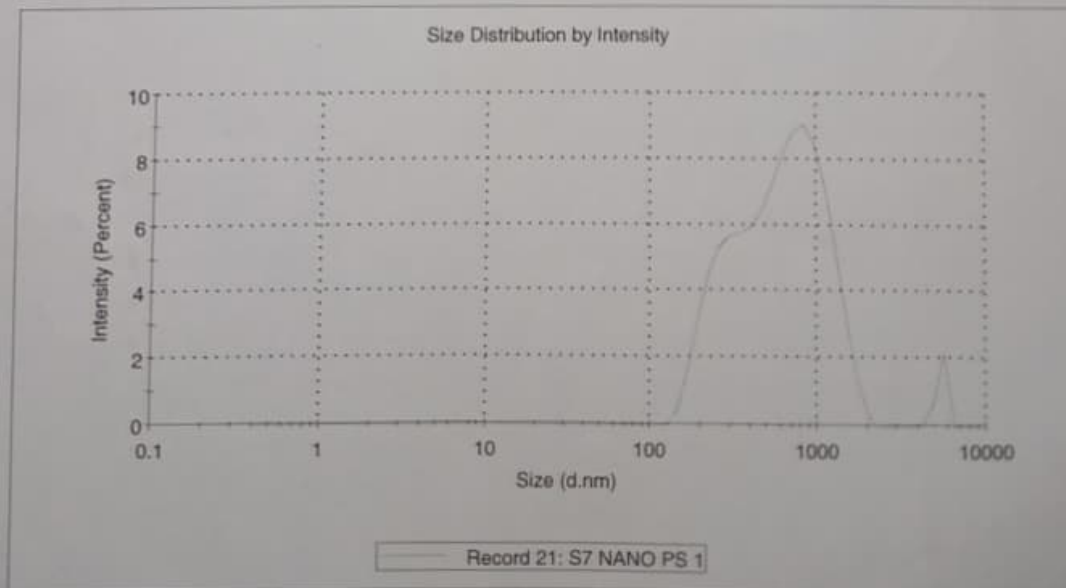
System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 174.1	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert...	Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 565.6	Peak 1: 665.7	97.1	373.3
Pdl: 0.458	Peak 2: 5374	2.9	326.0
Intercept: 0.825	Peak 3: 0.000	0.0	0.000

Result quality : Good



Size Distribution Report by Intensity

v2.2

Malvern



Sample Details

Sample Name: S3 NANO 1
SOP Name: 12-5 Size SOP.sop
General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 37 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 14 September 2022 12:42:51

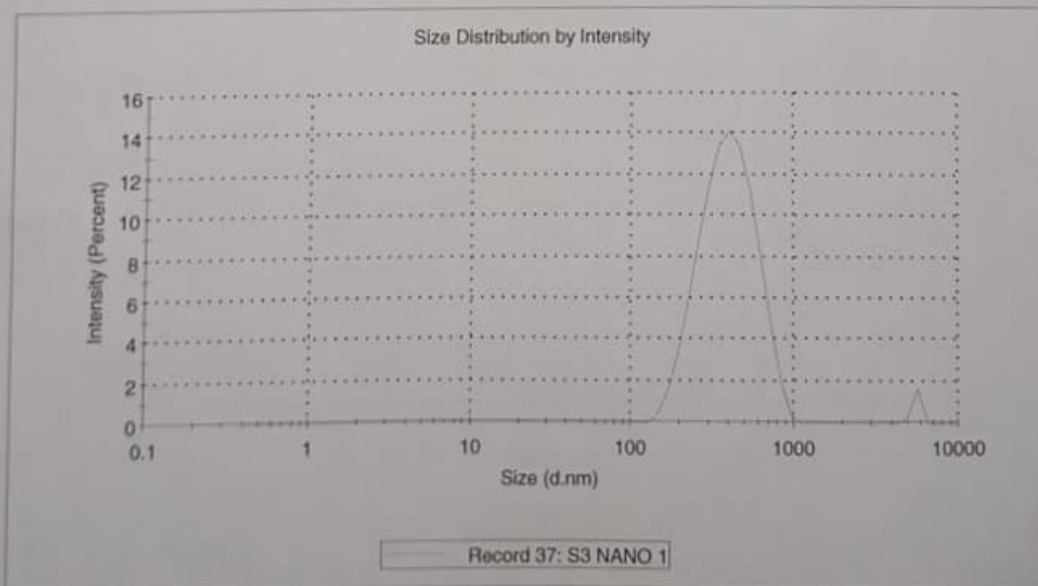
System

Temperature (°C): 25.0 Duration Used (s): 60
Count Rate (kcps): 298.2 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 433.7	Peak 1: 412.6	98.1	154.0
PdI: 0.365	Peak 2: 5478	1.9	234.7
Intercept: 0.817	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report



Size Distribution Report by Intensity

v2.2

Subtotal



Sample Details

Sample Name: S3 NANO 1
SOP Name: 12-5 Size SOP.sop
General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 37 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 14 September 2022 12:42:51

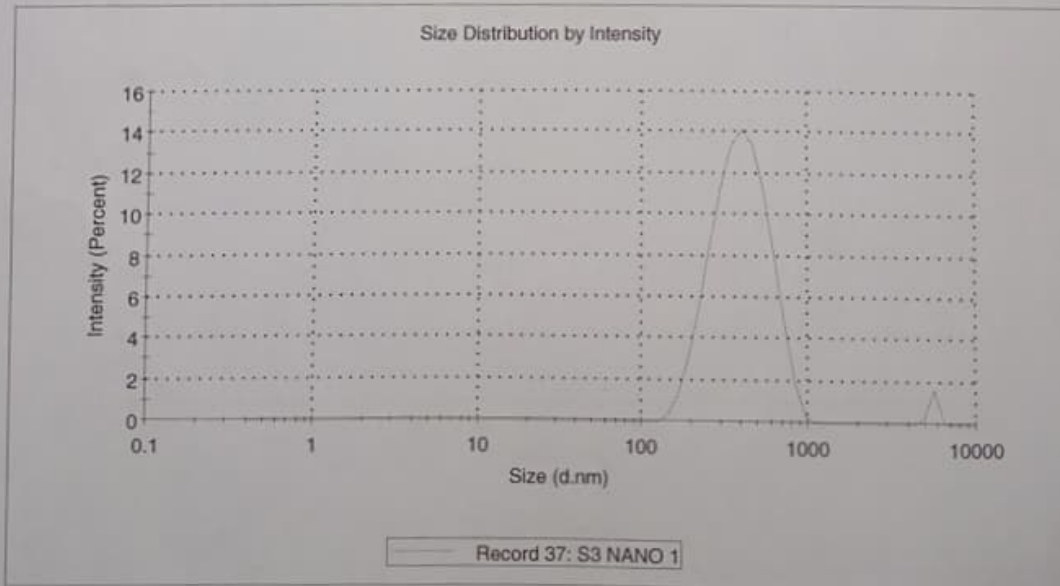
System

Temperature (°C): 25.0 Duration Used (s): 60
Count Rate (kcps): 298.2 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 433.7	Peak 1: 412.6	98.1	154.0
Pdl: 0.365	Peak 2: 5478	1.9	234.7
Intercept: 0.817	Peak 3: 0.000	0.0	0.000

Result quality: Refer to quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S10 NANO 1
SOP Name: 12-5 Size SOP.sop
General Notes:

File Name: project samples.dts
Record Number: 47
Material RI: 1.59
Material Absorbtion: 0.010
Dispersant Name: Water
Dispersant RI: 1.330
Viscosity (cP): 0.8872
Measurement Date and Time: 14 September 2022 15:04:29

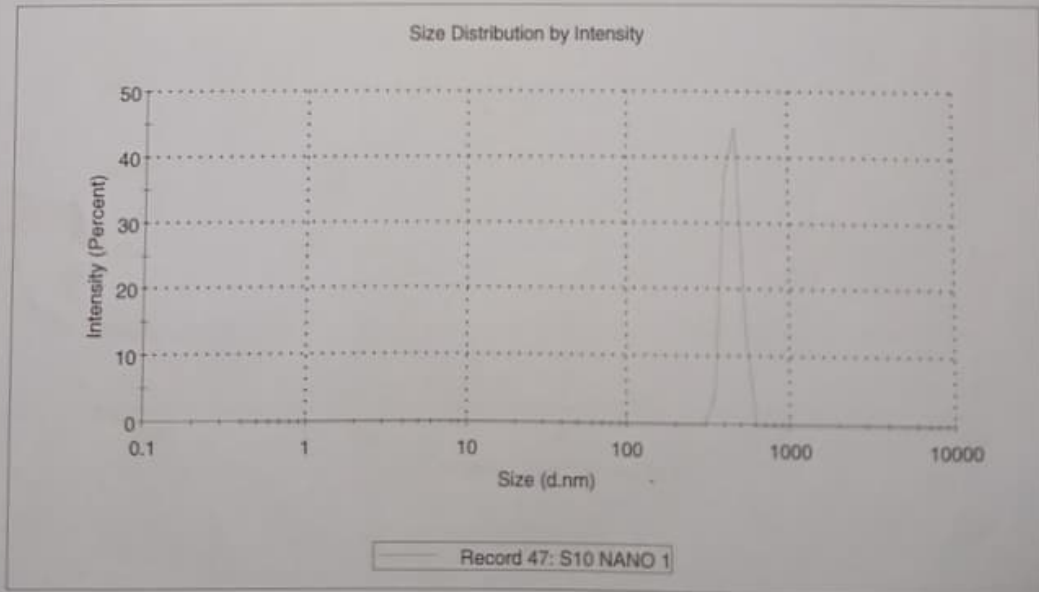
System

Temperature (°C): 25.0
Count Rate (kcps): 298.2
Cell Description: Glass cuvette with round apert...
Duration Used (s): 60
Measurement Position (mm): 4.65
Attenuator: 11

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 1674	Peak 1: 439.9	100.0	49.42
Pdl: 1.000	Peak 2: 0.000	0.0	0.000
Intercept: 1.02	Peak 3: 0.000	0.0	0.000

Result quality: Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: S10 NANO 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts	Dispersant Name: Water
Record Number: 48	Dispersant RI: 1.330
Date and Time: 14 September 2022 15:06:58	Viscosity (cP): 0.8872
	Dispersant Dielectric Constant: 78.5

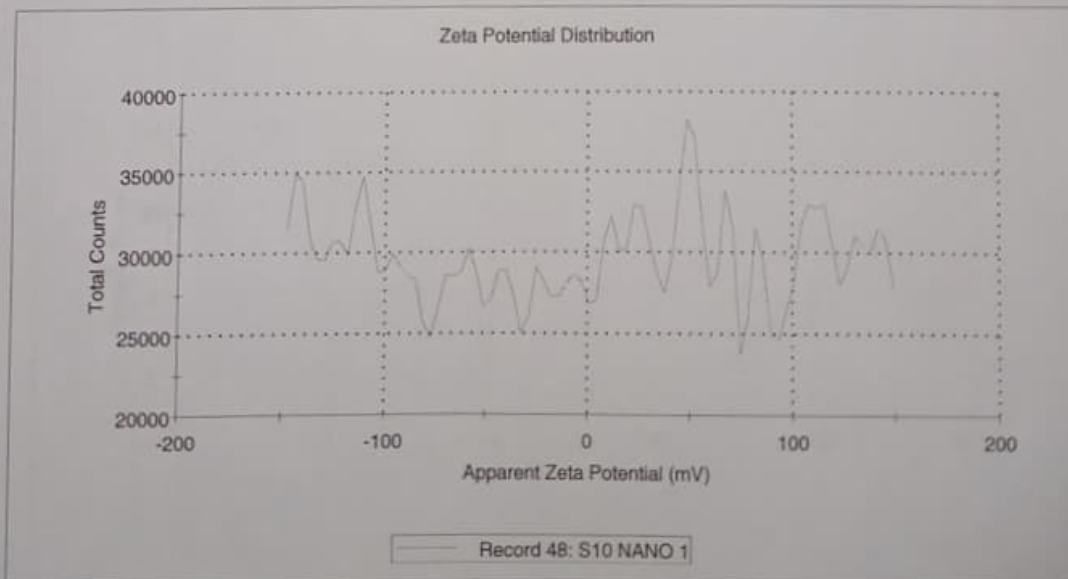
System

Temperature (°C): 25.0	Zeta Runs: 50
Count Rate (kcps): 57.2	Measurement Position (mm): 2.00
Cell Description: Clear disposable zeta cell	Attenuator: 9

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): -0.369	Peak 1: 48.7	7.9	7.03
Zeta Deviation (mV): 146	Peak 2: -90.7	7.8	8.36
Conductivity (mS/cm): 4.77	Peak 3: 26.2	7.4	7.26

Result quality: See result quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S9 NANO 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts	Dispersant Name: Water
Record Number: 51	Dispersant RI: 1.330
Material RI: 1.59	Viscosity (cP): 0.8872
Material Absorbtion: 0.010	Measurement Date and Time: 14 September 2022 15:21:46

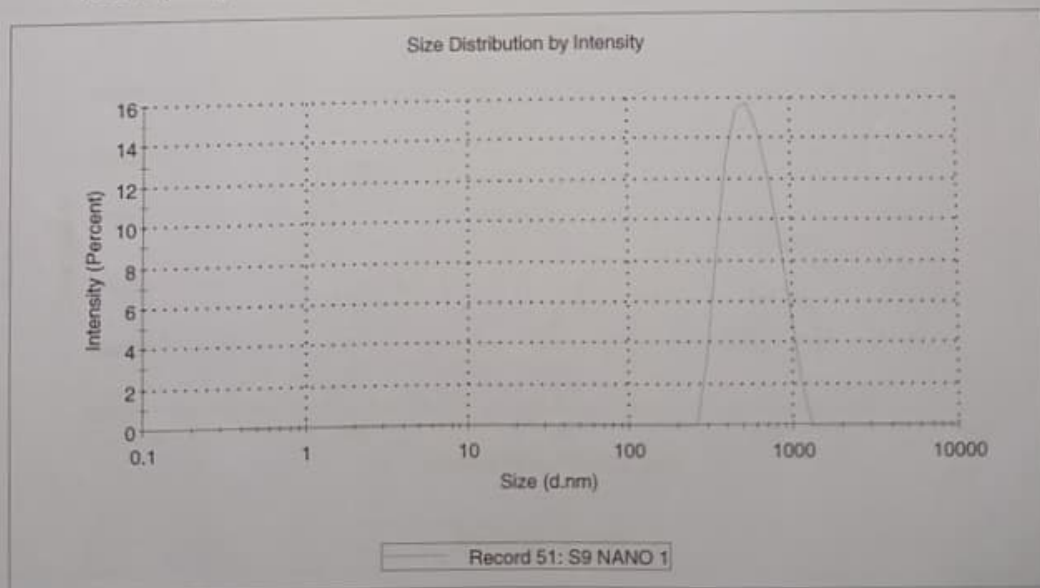
System

Temperature (°C): 25.0	Duration Used (s): 60
Count Rate (kcps): 205.0	Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert...	Attenuator: 10

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 1200	Peak 1: 577.0	100.0	191.7
Pdi: 0.933	Peak 2: 0.000	0.0	0.000
Intercept: 0.892	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report



Zeta Potential Report

v2.3



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Sample Details

Sample Name: S9 NANO 1

SOP Name: Zeta potential test sample for project.sop

General Notes: This SOP is also suitable for most samples of conductivity less than 5 mS.

File Name: project samples.dts	Dispersant Name: Water
Record Number: 52	Dispersant RI: 1.330
Date and Time: 14 September 2022 15:25:00	Viscosity (cP): 0.8872
	Dispersant Dielectric Constant: 78.5

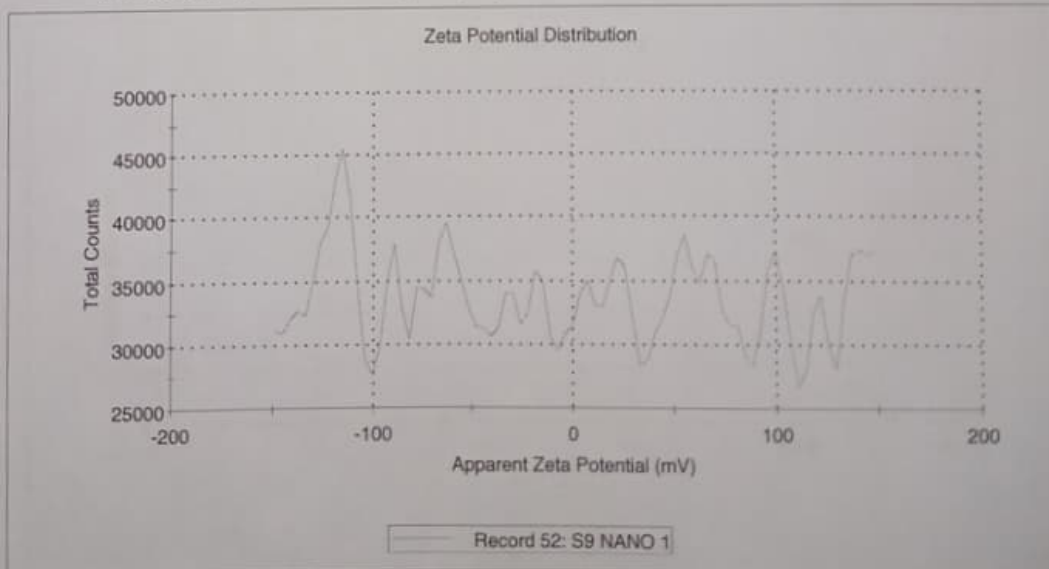
System

Temperature (°C): 25.0	Zeta Runs: 50
Count Rate (kcps): 143.0	Measurement Position (mm): 2.00
Cell Description: Clear disposable zeta cell	Attenuator: 8

Results

	Mean (mV)	Area (%)	St Dev (mV)
Zeta Potential (mV): 0.0900	Peak 1: -117	11.5	9.96
Zeta Deviation (mV): 146	Peak 2: -56.6	9.7	9.41
Conductivity (mS/cm): 3.01	Peak 3: 48.6	9.4	9.38

Result quality: See result quality report



Size Distribution Report by Intensity

v2.2



Sample Details

Sample Name: S4 NANO 1

SOP Name: 12-5 Size SOP.sop

General Notes:

File Name: project samples.dts Dispersant Name: Water
Record Number: 57 Dispersant RI: 1.330
Material RI: 1.59 Viscosity (cP): 0.8872
Material Absorbtion: 0.010 Measurement Date and Time: 14 September 2022 15:49:02

System

Temperature (°C): 25.0 Duration Used (s): 80
Count Rate (kcps): 111.4 Measurement Position (mm): 4.65
Cell Description: Glass cuvette with round apert... Attenuator: 9

Results

	Size (d.nm):	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 994.7	Peak 1: 410.2	45.8	137.7
Pdl: 0.849	Peak 2: 1250	38.6	379.5
Intercept: 0.795	Peak 3: 5242	15.6	450.5

Result quality : Refer to quality report

