



LAB N° 0699 L



Test Report n. 25LA12123 of the day 24/06/2025

Sample matrix:

Sample description:

Customer:

Sampling by:

Delivered by:

Sample receipt date:

Analysis start date:

Analysis end date:

Materials

Vitamin C 125 LOT 250139 - C125 250139 2 - Exp. Date 1/3/2027 - 250 ML #

ECOSUPP HEALTH LTD

HAREHEV ST. N.4

TEL-AVIV - IL

Customer

Courier

06/06/2025

09/06/2025

23/06/2025



Test Report n. 25LA12123 of the day 24/06/2025

25LA12123/01 DLS

Chemical Analytical Results

Parameter <i>Analytical Methods</i>	U.M.	Results	Uncertainty »
DLS - Size distribution			
Polydispersity index ISO 22412:2017		0.237	
Size peak ISO 22412:2017	nm	206	±20
Z-Average ISO 22412:2017	nm	176	±15

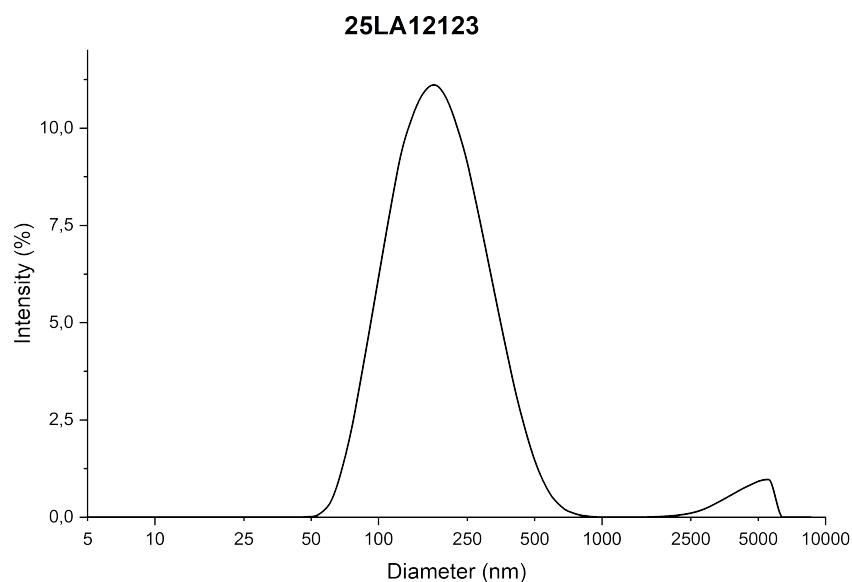


Figure 1. Intensity size distribution.

Notes: DLS analysis:

ALGORITHM

Algorithm used: Cumulants for Z-Average and Pdl / General Purpose for Size peak

Type of mean: Scattered light intensity-weighted harmonic

Type of scale: Logarithmic

Particle size range covered: 0.6 nm - 6000 nm

MEASUREMENT CONDITIONS

Concentration: Not declared by costumer

Dilution: 1:3125 in UPW

Duration used: 70 s

Temperature: 20 °C

Nr. of replicates: 4



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25LA12123/01 DLS

SUSPENSION CONDITIONS

Sample homogeneity: Not declared by costumer

Particle shape: Not declared by costumer

Dispersant name: Ultrapure water

Filtered (Y/N): No

Dispersant viscosity: 1.0031 cP

Dispersant refractive index: 1.33

Dispersing agent: N.A.

Sonication (Y/N): No

OTHER INFO

Wavelenght: 633 nm

Angle: 173°

Type of cuvette: standard disposable plastic

Procedure: The sample was diluted 1:3125 in ultrapure water and analyzed.

Particles larger than the instrumental limit (6000 nm) are detected in the sample, therefore their size cannot be determined correctly.



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25LA12123/02 TEM

Chemical Analytical Results

Parameter	U.M.	Results
<i>Analytical Methods</i>		
Sample preparation:		
ISO21363:2020		
Substrate		400 Mesh C Coated Cu Grid
ISO21363:2020		Dispersion
Sample type		
ISO21363:2020		
Sample condition		Liquid Turbid Dispersion
ISO21363:2020		Dil. 1:400 in UPW
Pre-treatment		
ISO21363:2020		
Sample division/splitting		None
ISO21363:2020		
Grid pre-treatment		Alcian Blue 1%
ISO21363:2020		
Deposition		Grid on Drop
ISO21363:2020		
Incubation		5 min
ISO21363:2020		
Washing		Ultrapure water (UPW)
ISO21363:2020		
Staining		Ammonium molybdate 1%
ISO21363:2020		
Grid drying		Air - ISO 7 Clean Room
ISO21363:2020		
Placement method		Drop on Grid
ISO21363:2020		
Drying method		Air - ISO 7 Clean Room
ISO21363:2020		
Instrument factors:		
ISO21363:2020		
Operator		Anna Luise
ISO21363:2020		
Analysis dates		09/06/2025 - 17/06/2025
ISO21363:2020		
Instrument manufacturer		JEOL
ISO21363:2020		
Instrument model		JEM 2100 Plus
ISO21363:2020		
Operating voltage		200 kV
ISO21363:2020		
Beam current		5 µA
ISO21363:2020		



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25LA12123/02 TEM

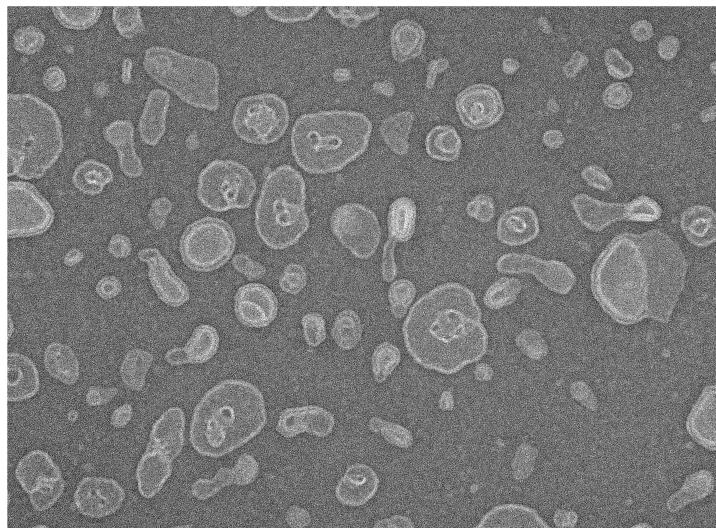
Chemical Analytical Results

Parameter	U.M.	Results
<i>Analytical Methods</i>		
Objective lens excitation		3.63 V
ISO21363:2020		
Diffraction aperture		Excluded
ISO21363:2020		
Calibration standards		Certified reference materials
ISO21363:2020		
Calibration procedure		Davide Ruffato
ISO21363:2020		
Most recent calibration date		22/04/2024
ISO21363:2020		
Image capture and particle analysis:		
ISO21363:2020		
Camera software		Image Capture V. 7.0.1.198
ISO21363:2020		
Measurement conditions		nm/pixel
ISO21363:2020		
Magnitude		30x - 60000x
ISO21363:2020		
nm/pixel		212.724 - 0.106362
ISO21363:2020		
Frame size		4096x3540 pixels
ISO21363:2020		
Number of collected frames		70
ISO21363:2020		
Number of analyzed frames		30
ISO21363:2020		



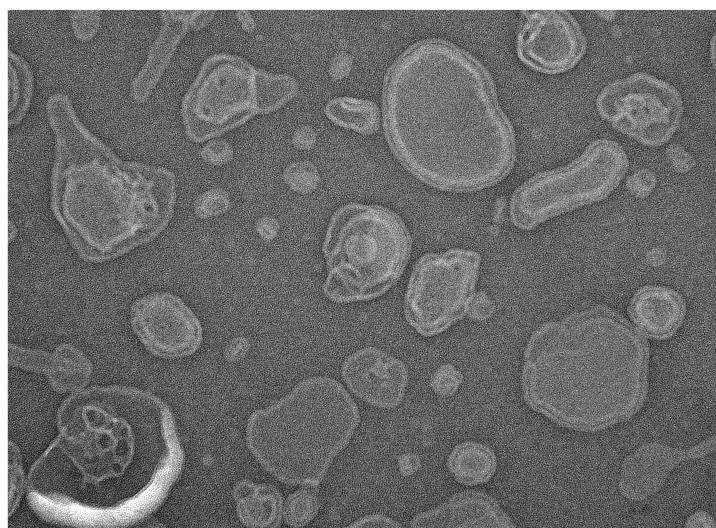
Test Report n. 25LA12123 of the day 24/06/2025

25LA12123/02 TEM



25LA12123_dil 1-400 in UPW_007.tif
Cal: 0.319087 nm/pix
15:36 6/10/2025
Camera: NANOSPRIT12, Exposure: 400 (ms) x 5 drift frames, Gain: 20, Bin: 1
Gamma: 1.00, No Sharpening, Normal Contrast
100 nm
HV=200kV
Direct Mag: 20000 x

Figure 2. Representative TEM micrograph at 20000x of the sample.



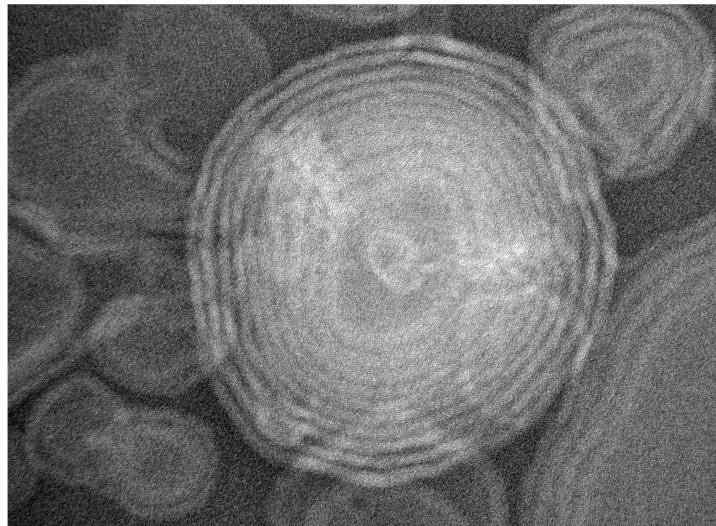
25LA12123_dil 1-400 in UPW_017.tif
Cal: 0.255269 nm/pix
15:54 6/10/2025
Camera: NANOSPRIT12, Exposure: 400 (ms) x 5 drift frames, Gain: 20, Bin: 1
Gamma: 1.00, No Sharpening, Normal Contrast
100 nm
HV=200kV
Direct Mag: 25000 x

Figure 3. Representative TEM micrograph at 25000x of the sample.



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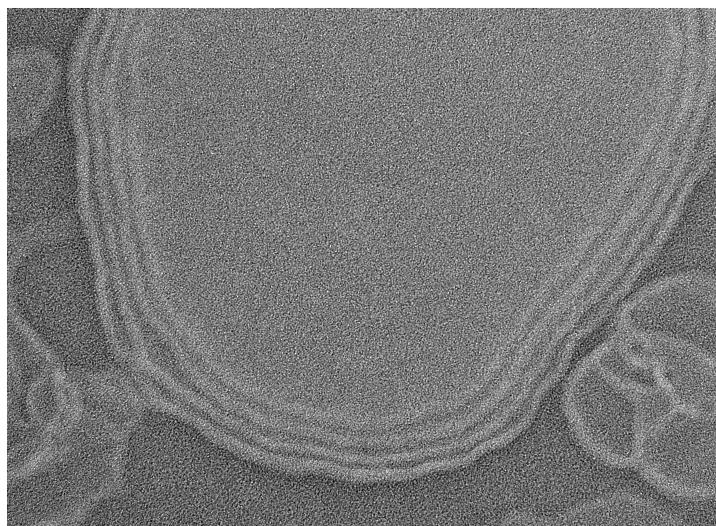
25LA12123/02 TEM



25LA12123.dil 1-400 in UPW_023.tif
Cal: 0.106362 nm/pix
16:07 6/10/2025
Camera: NANOSPRIT12, Exposure: 400 (ms) x 5 drift frames, Gain: 20, Bin: 1
Gamma: 1.00, No Sharpening, Normal Contrast

50 nm
HV=200kV
Direct Mag: 60000 x

Figure 4. Representative TEM micrograph at 60000x of the sample.



25LA12123.dil 1-400 in UPW_030.tif
Cal: 0.106362 nm/pix
16:36 6/10/2025
Camera: NANOSPRIT12, Exposure: 400 (ms) x 5 drift frames, Gain: 20, Bin: 1
Gamma: 1.00, No Sharpening, Normal Contrast

50 nm
HV=200kV
Direct Mag: 60000 x

Figure 5. Representative TEM micrograph at 60000x of the sample.

Notes:

Report digitally signed in accordance with Legislative Decree n.82 March, 7th 2005 and subsequent amendments and additions.

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25LA12123/03 TEM - LENGTH and WITH LIPOSOMES

Chemical Analytical Results

Parameter Analytical Methods	U.M.	Results	Uncertainty »
Data analysis - Raw data triage: ISO21363:2020			
Particles measurement software/method ISO21363:2020		ImageJ/Manual Procedure	
Data analysis software ISO21363:2020		Microsoft Excel	
Data analysis - LENGTH Fitting distributions to data: ISO21363:2020			
Length mode calculation software ISO21363:2020		OriginPro	
Length Fitting model ISO21363:2020		Lognormal	
Length Fitting parameter values ISO21363:2020		Adj. R-Square: 0.98182	
Number of analyzed particles - Length ISO21363:2020		517	
LENGTH Dimensional parameters: ISO21363:2020			
Length Minimum diameter ISO21363:2020	nm	35.0	±6.3
Length First quartile ISO21363:2020	nm	62.1	±3.6
Length Median ISO21363:2020	nm	85.1	±4.7
Length MAD ISO21363:2020	nm	29.2	±1.1
Length Average ISO21363:2020	nm	103.7	±4.7
Length Standard deviation ISO21363:2020	nm	57.9	±2.1
Length Third quartile ISO21363:2020	nm	128.9	±5.8
Length Maximum diameter ISO21363:2020	nm	401	±95



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25LA12123/03 TEM - LENGTH and WITH LIPOSOMES**Chemical Analytical Results**

Parameter Analytical Methods	U.M.	Results	Uncertainty »
Length Mode ISO21363:2020	nm	67.1	±8.6
Length D10 ISO21363:2020	nm	49.1	±2.1
Length D50 ISO21363:2020	nm	85.1	±4.7
Length D90 ISO21363:2020	nm	181.7	±7.2
Data analysis - WIDTH Fitting distributions to data: ISO21363:2020			
Width mode calculation software ISO21363:2020		OriginPro	
Width Fitting model ISO21363:2020		Lognormal	
Width Fitting parameter values ISO21363:2020		Adj. R-Square: 0.98819	
Number of analyzed particles - Width ISO21363:2020		517	
WIDTH Dimensional parameters: ISO21363:2020			
Width Minimum diameter ISO21363:2020	nm	21.5	±4.3
Width First quartile ISO21363:2020	nm	46.7	±3.2
Width Median ISO21363:2020	nm	62.2	±4.3
Width MAD ISO21363:2020	nm	17.8	±1.0
Width Average ISO21363:2020	nm	71.5	±4.0
Width Standard deviation ISO21363:2020	nm	38.5	±1.6
Width Third quartile ISO21363:2020	nm	84.7	±5.1
Width Maximum diameter ISO21363:2020	nm	358	±85



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25LA12123/03 TEM - LENGTH and WITH LIPOSOMES

Chemical Analytical Results

Parameter Analytical Methods	U.M.	Results	Uncertainty »
Width Mode ISO21363:2020	nm	50.5	±8.4
Width D10 ISO21363:2020	nm	36.3	±1.5
Width D50 ISO21363:2020	nm	62.2	±4.3
Width D90 ISO21363:2020	nm	120.3	±6.2

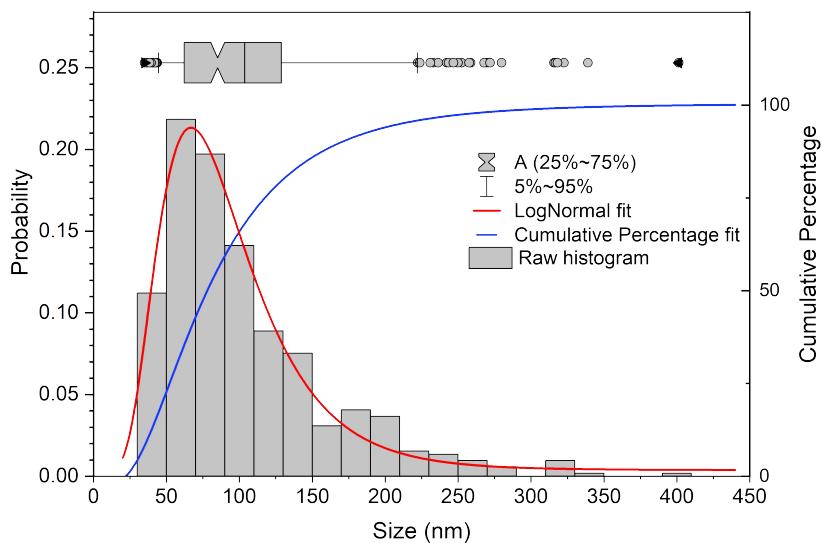


Figure 6. Liposomes length size distribution graph.



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25LA12123/03 TEM - LENGTH and WITH LIPOSOMES

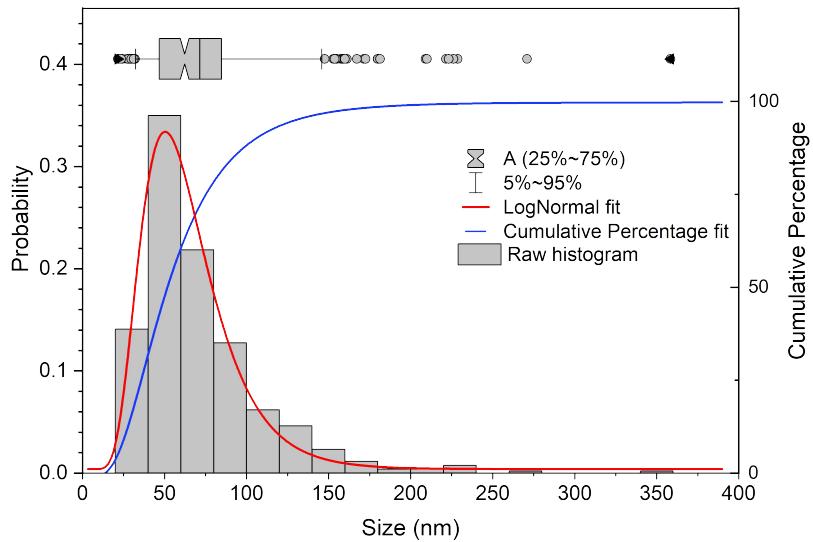


Figure 7. Liposomes width size distribution graph.

Notes:



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25LA12123/04 TEM - MEMBRANES THICKNESS**Chemical Analytical Results**

Parameter Analytical Methods	U.M.	Results	Uncertainty »
Data analysis - Raw data triage: ISO21363:2020			
Particles measurement software/method ISO21363:2020		ImageJ/Manual Procedure	
Data analysis software ISO21363:2020		Microsoft Excel	
Data analysis - Fitting distributions to data: ISO21363:2020			
Mode calculation software ISO21363:2020		OriginPro	
Fitting model ISO21363:2020		Normal	
Fitting parameter values ISO21363:2020		Adj. R-Square: 0.99875	
Number of analyzed particles ISO21363:2020		104	
Dimensional parameters: ISO21363:2020			
* Minimum diameter ISO21363:2020	nm	4.2	±1.6
* First quartile ISO21363:2020	nm	5.6	±2.2
* Median ISO21363:2020	nm	6.2	±3.3
* MAD ISO21363:2020	nm	0.62	±0.80
* Average ISO21363:2020	nm	6.3	±2.7
* Standard deviation ISO21363:2020	nm	0.94	±0.48
* Third quartile ISO21363:2020	nm	6.9	±3.8
* Maximum diameter ISO21363:2020	nm	8.9	±2.1



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25LA12123/04 TEM - MEMBRANES THICKNESS

Chemical Analytical Results

Parameter Analytical Methods	U.M.	Results	Uncertainty »
* Mode ISO21363:2020	nm	6.1	±7.9
* D10 ISO21363:2020	nm	5.16	±0.22
* D50 ISO21363:2020	nm	6.2	±3.3
* D90 ISO21363:2020	nm	7.7	±4.4

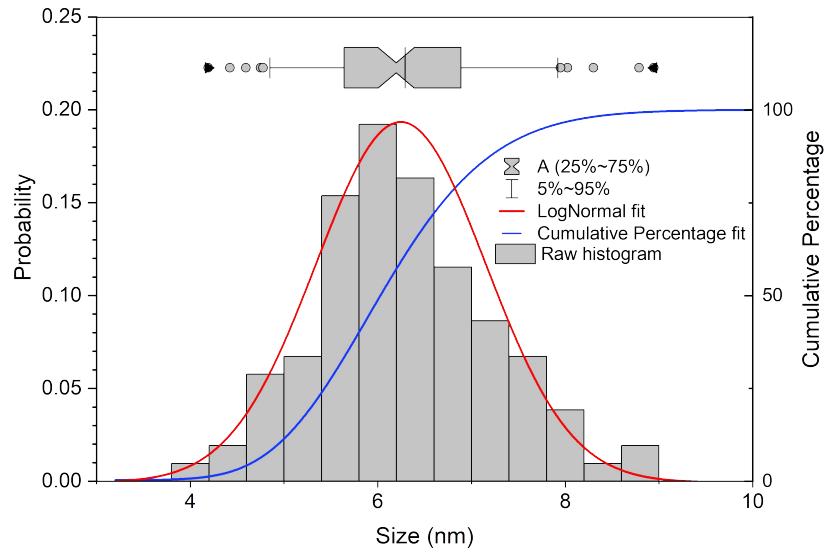


Figure 8. Membranes thickness size distribution graph.

Notes:

* test not accredited by ACCREDIA

» expanded uncertainty U, coverage factor K=2 (confidence level 95%), unless otherwise specified.

¤ confidence interval, coverage factor K=2 (confidence level 95%) UNI EN ISO 8199:2018, unless otherwise specified.

N.A. Not Applicable

U.M. Unit of Measurement

information provided by the customer. Where sample information are provided by the customer and sampling is performed by the customer as well, all the sampling details are to be considered customer's responsibility. Where sampling is not performed by the laboratory, all the results are to be considered related to the sample as received and the laboratory declines all responsibility on results calculated using sampling information provided by the Customer.

This TEST REPORT refers only to tested samples and can not be partially reproduced unless written approval of the laboratory. / Samples storage time: samples are stored for 30 days after certificate's issue (except for perishable products which are disposed at the end of the analysis or on the date of expiry). Longer storages are allowed only on specific request. / Records storage time: copies of the certificate and of the analysis' records are stored by the laboratory for 4 years, unless otherwise specified; all the documents concerning products authorisation are stored for 10 years. / Unless otherwise specified, judgements of compliance/non compliance eventually reported apply



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exclusively to analysed parameters and relate on the comparison of the result with Reference values without considering measure's confidence interval.

Note: Test performed at ECSIN - EciamRicert laboratory | Corso Stati Uniti 4 - 35127 - Padova (PD) - Italy

Person in Charge of Physico-Chemical
Characterization Tests
Dr. Michela Zanella

End of test report n° 25LA12123