



Microplastics Analytical Report

Prepared for

Attn: Customer

Address

Generated Date and Time

Job Number

EAE MP 25-XXX

Job Notes

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Client: XXX**Project: XXX**

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Definitions/Glossary

| | |
|------|---------------------------------|
| MPs | Microplastics |
| MDL | Minimum Detection Limit |
| ABS | Acrylonitrile butadiene styrene |
| PA | Polyamide |
| PU | Polyurethane |
| POM | Polyoxymethylene |
| PMMA | polymethylmethacrylate |
| PTFE | Polytetrafluoroethylene |
| PE | Polyethylene |
| PP | Polypropylene |
| PC | Polycarbonate |
| PS | Polystyrene |
| PVC | Polyvinyl chloride |
| PET | Polyethylene terephthalate |
| PO | Polyolefin |
| PLA | Polylactic Acid |
| Rub | Rubber |
| nRub | Natural Rubber |
| tRub | Tire Rubber |
| gRub | Glove Rubber |

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Microplastics Analytical Report

Methodology:

Microplastics Analysis: The microplastics (MPs) analysis is performed utilizing the Agilent 8700 Laser Direct Infrared Spectroscopy (LDIR) Chemical Imaging System. To confirm a positive identification, a High-Quality Index (HQI) of 60% or higher is required. This technique is suitable for analyzing particles that range from 20-500 μm in size.

Potable water:

Sample preparation: Potable water samples are filtered through a 0.8 μm gold coated filter. The filter is then mounted onto microscope platform and analyzed using the LDIR.

Non-potable water:

Sample preparation: Non-potable water samples need to go through oxidation step for organic matters removal and density separation for inorganic removal step. Then the sample is filtered through a 0.8 μm gold coated filter. The filter is then mounted onto microscope platform and analyzed using the LDIR. If request, detailed method can be provided.

Quality Control Summary

Quality control measures are carried out to ensure the reliability and accuracy of the analytical process. Glassware is carefully cleaned, dried, and stored to avoid contamination. High-quality water is filtered to remove MP particles and stored in sealed, labeled containers to keep it clean. Laboratory blanks (LBs) are tested regularly to check for contamination, while laboratory fortified blanks (LFBs) are spiked with known microplastic particles to confirm method precision and accuracy. The process is further checked by monitoring recovery rates and performing duplicate analyses to ensure consistent and reliable results.

Library Database

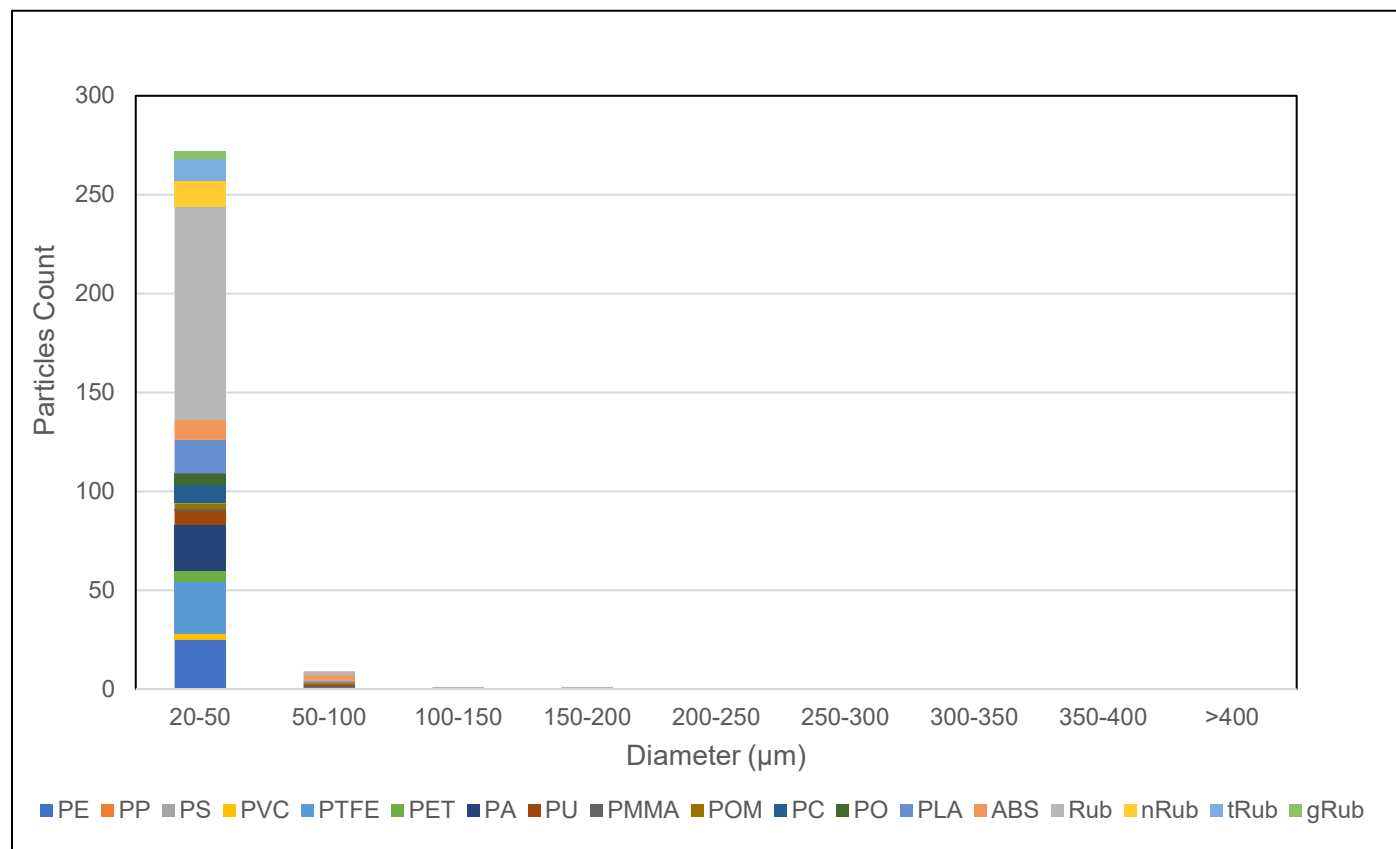
The library used in Agilent Clarity software is verified for the following polymers: polyethylene (PE), polypropylene (PP), polystyrene (PS), polyvinyl chloride (PVC), polytetrafluoroethylene (PTFE), polyethylene terephthalate (PET), polyamide (PA), polyurethane (PU), polymethylmethacrylate (PMMA), polyoxymethylene (POM), polycarbonate (PC), polyolefin (PO), polylactic acid (PLA), Acrylonitrile butadiene styrene (ABS), rubber (Rub), natural rubber (nRub), tire rubber (tRub), and glove rubber (gRub). Note: Upon request, we can generate a new spectrum of MP particle and enrich the current library if new pure particles are provided.

Client Sample ID: XXX
Matrix: Water
Lab Sample ID: EAE MP 25-XXX
Analysis Batch: 40804
Sample Volume Analyzed (L): 1
Date Collected: 01/02/2025
Date Analyzed: 01/15/2025

Table 1. Total numbers of Microplastics Particles Detected

| Microplastics | Result (MPs/L) |
|---------------------------------------|----------------|
| Polyethylene (PE) | 26 |
| Polypropylene (PP) | 1 |
| Polystyrene (PS) | 2 |
| Polyvinyl Chloride (PVC) | 3 |
| polytetrafluoroethylene (PTFE) | 5 |
| Polyethylene Terephthalate (PET) | 6 |
| Polyamide (PA) Nylon | 2 |
| Polyurethane (PU) | 8 |
| Polymethyl Methacrylate (PMMA) | 1 |
| Polyoxymethylene (POM) | 4 |
| Polycarbonate (PC) | 9 |
| Polyolefin (PO) | 6 |
| Polylactic Acid (PLA) | 18 |
| Acrylonitrile butadiene styrene (ABS) | 1 |
| Rubber (Rub) | 10 |
| Natural Rubber (nRub) | 8 |
| Tire Rubber (tRub) | 7 |
| Glove Rubber (gRub) | 4 |

Figure 1: Microplastics particle size distribution (Sample)



Method Blank

Lab Sample ID: EAE MP 25-XXX

Matrix: Water

Analysis Batch: 40804

Date Analyzed: 01/15/2025

Volume analyzed (L): 1

Table 2. Method blank results

| Microplastics | Result (MPs/L) |
|---------------------------------------|----------------|
| Polyethylene (PE) | - |
| Polypropylene (PP) | - |
| Polystyrene (PS) | - |
| Polyvinyl Chloride (PVC) | 1 |
| polytetrafluoroethylene (PTFE) | 2 |
| Polyethylene Terephthalate (PET) | - |
| Polyamide (PA) Nylon | - |
| Polyurethane (PU) | - |
| Polymethyl Methacrylate (PMMA) | - |
| Polyoxymethylene (POM) | - |
| Polycarbonate (PC) | - |
| Polyolefin (PO) | - |
| Polylactic Acid (PLA) | - |
| Acrylonitrile butadiene styrene (ABS) | - |
| Rubber (Rub) | 2 |
| Natural Rubber (nRub) | - |
| Tire Rubber (tRub) | - |
| Glove Rubber (gRub) | - |

Laboratory Control Sample**Lab Sample ID:** EAE MP 25-XXX**Matrix:** Water**Analysis Batch:** 40804**Date Analyzed:** 01/15/2025**Volume analyzed (L):** 1

Table 3. Laboratory control sample results

| Analytes | Spiked added | % Rec |
|--------------------|--------------|-------|
| Polyethylene (PE) | 50 | 98 |
| Polypropylene (PP) | 30 | 97 |
| Polyamide (PA) | 30 | 98 |

Client: XXX**Project: XXX****Sample Summary**

| Lab Sample ID | Client Sample ID | Matrix | Collected Date | Received Date |
|---------------|------------------|--------|----------------|---------------|
| EAE MP 25-XXX | XXX | Water | 01/02/2025 | 01/05/2025 |
| | | | | |
| | | | | |

Client: XXX**Project: XXX****Method Summary**

| Lab Sample ID | Client Sample ID | Method | Protocol | Laboratory |
|---------------|------------------|---------------------|----------|------------|
| EAE MP 25-XXX | XXX | Potable/Non-potable | Lab SOP* | DH** 404 |

*Lab SOP = Standard Operating Procedure

**DH = Davis Hall