

## *Supplementary information*

# **Polyvinyl chloride microplastic detection by single particle inductively coupled plasma mass spectrometry for the characterization of model microplastics**

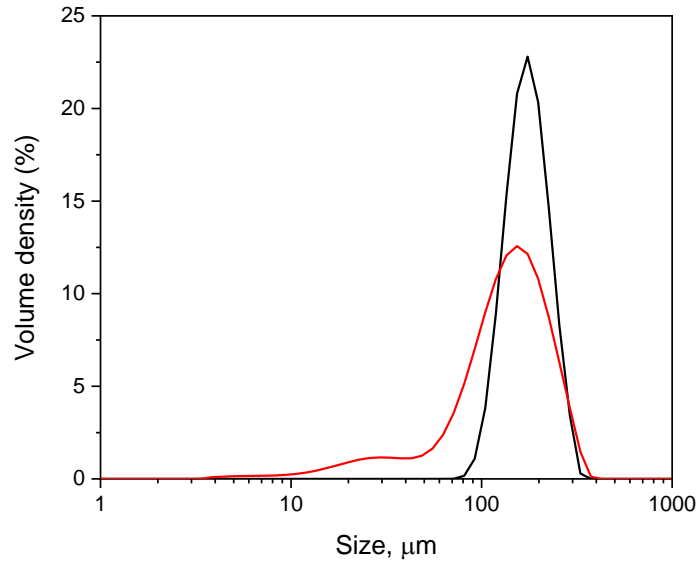
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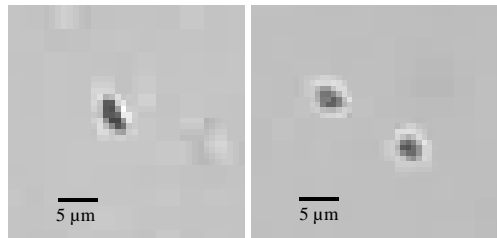
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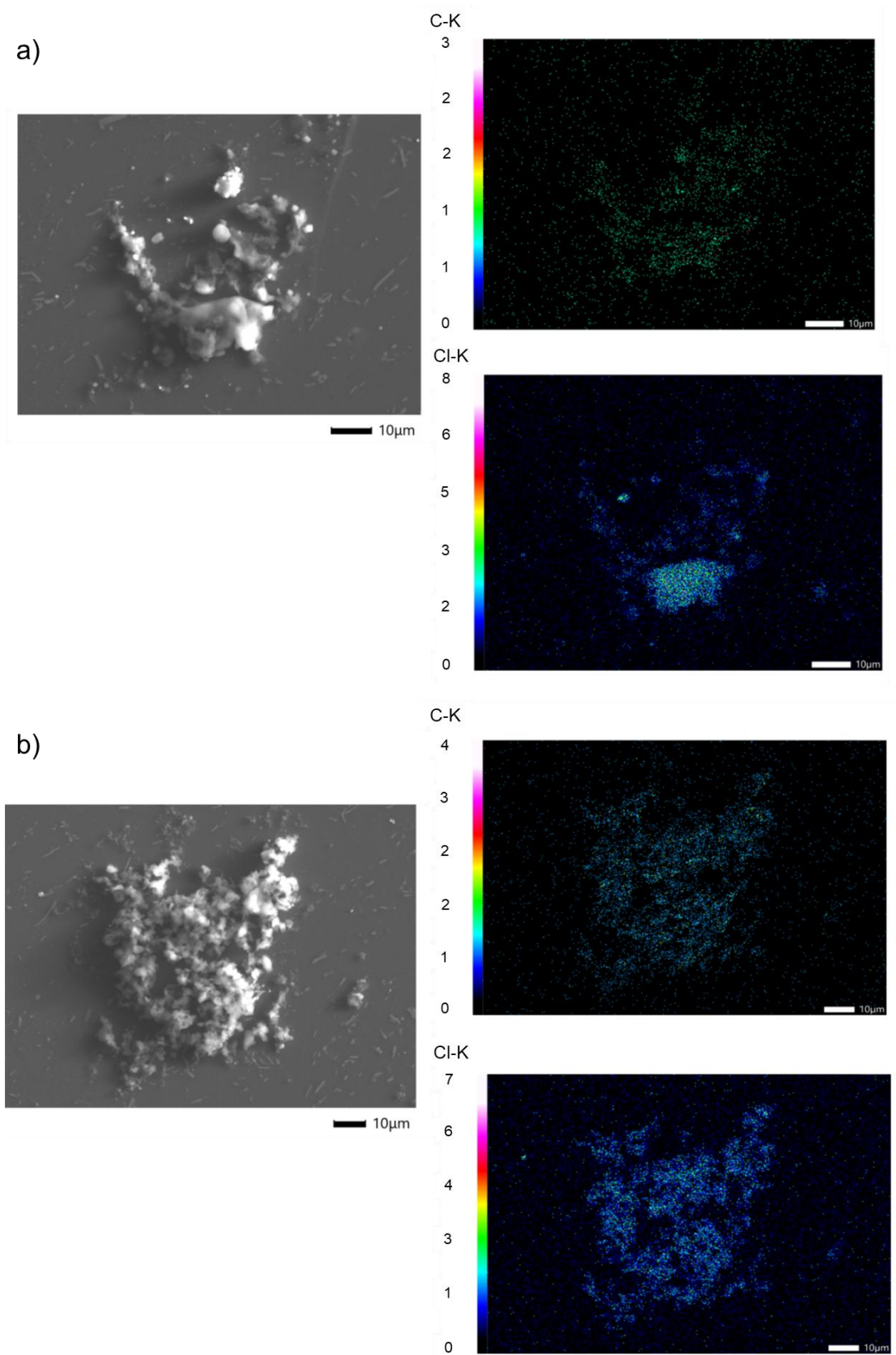
- Figure S1. Laser diffraction size distributions obtained for original raw PVC material (black) and after cryogenic grinding process (red).
- Figure S2. PVC particles from isolated fraction < 3 µm captured by CCD DIA camera.
- Figure S3. PVC particles from isolated fraction < 3 µm analyzed by FE-EPMA and WDS; a) x1300, b) x1000. Carbon and chlorine detection.
- Figure S4. <sup>35</sup>Cl SP-ICP-MS time scan obtained for ultrapure water. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).
- Figure S5. <sup>35</sup>Cl SP-ICP-MS time scan obtained for 3% acetic acid. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).
- Figure S6. <sup>35</sup>Cl SP-ICP-MS time scans obtained for PVC drain pipes migration assays with ultrapure water for 72 hours; a) 20°C; b) 40°C; c) 60°C. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).



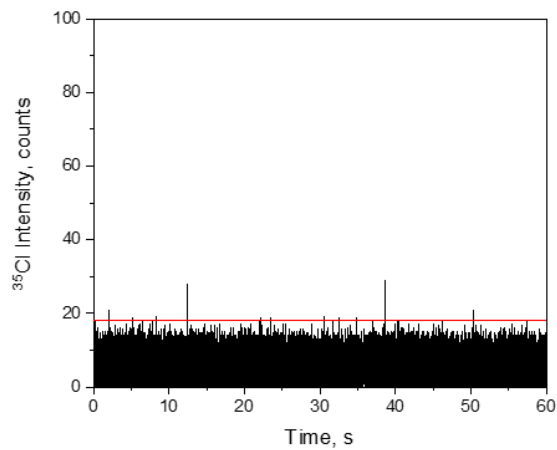
**Figure S1.** Laser diffraction size distributions obtained for original raw PVC material (black) and after cryogenic grinding process (red).



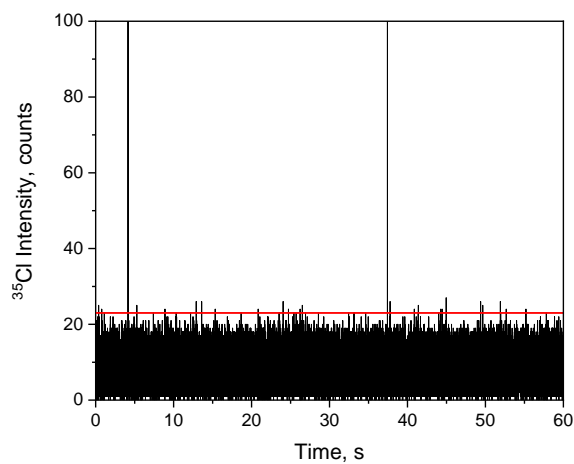
**Figure S2.** PVC particles from isolated fraction  $< 3 \mu\text{m}$  captured by CCD DIA camera.



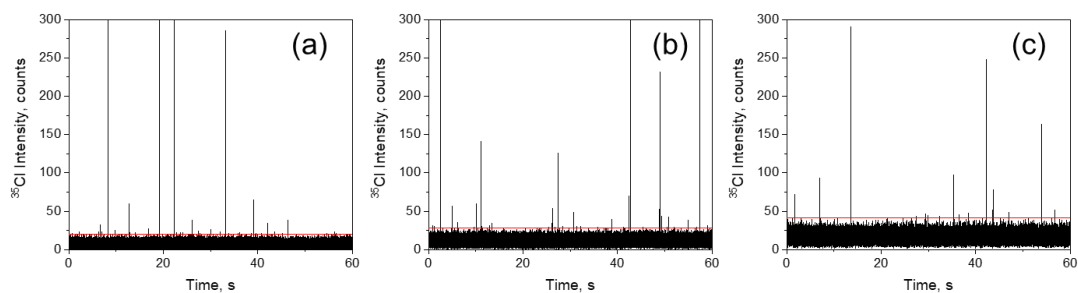
**Figure S3.** PVC particles from isolated fraction <math>< 3 \mu\text{m}</math> analyzed by FE-EPMA and WDS; a) x1300, b) x1000. Carbon and chlorine detection.



**Figure S4.**  $^{35}\text{Cl}$  SP-ICP-MS time scan obtained for ultrapure water. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).



**Figure S5.**  $^{35}\text{Cl}$  SP-ICP-MS time scan obtained for 3% acetic acid. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).



**Figure S6.**  $^{35}\text{Cl}$  SP-ICP-MS time scans obtained for PVC drain pipes migration assays with ultrapure water for 72 hours; a) 20°C; b) 40°C; c) 60°C. Red line: critical value for identification of particle events ( $\alpha = 2.867 \times 10^{-7}$ ;  $5\sigma$ ).