***Supplementary Information for***

Quantification of Microplastics in North-Western Mediterranean Harbours: Seasonality and Biofilm-related Metallic Contaminants

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Tables S1 to S3

**Table S1.** Trace metal mass-related concentrations in biofilm extracted from microplastics at the different sites (TLN: Toulon, GEN: Genova and OLB: Olbia), seasons (W: winter and S: summer), zones. F = ANOVA’s Fisher statistics and p = p-value. <DL : Under detection limits.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Site** | **Pb** | **Fe** | **Cu** | **V** | **Cd** | **As** |
| *mg.kg-1* | *mg.kg-1* | *mg.kg-1* | *mg.kg-1* | *µg.kg-1* | *µg.kg-1* |
| TLN-W-TW | **TLN** | 1.82 | 22.0 | 2.54 | 1.53 | 2.6 | 862 |
| TLN-W-TE | <DL | 181.8 | 46.03 | 1.98 | 2821.3 | 400 |
| TLN-S-TW | 0.66 | 7.8 | 15.06 | 1.11 | 23.6 | 444 |
| TLN-S-TE | 2.08 | 71.3 | 2.57 | 1.09 | 9.98 | 504 |
| GEN-W-TW | **GEN** | 11.72 | 89.8 | 6.00 | 2.15 | <DL | 185 |
| GEN-W-TE | 3.78 | 37.6 | 12.74 | 0.40 | <DL | <DL |
| GEN-W-TO | 7.97 | 187.2 | 23.32 | 1.25 | <DL | <DL |
| GEN-S-TW | 1.34 | 10.0 | 3.25 | 0.70 | 5.2 | 273 |
| GEN-S-TE | 1.89 | 5.2 | 3.25 | 0.51 | 1.0 | 211 |
| OLB-W-TW | **OLB** | 3.79 | 80.4 | 0.73 | 0.31 | 1.7 | 258 |
| OLB-W-TE | 12.98 | 25393.3 | 29.58 | 21.50 | 176.0 | 969 |
| Analysis of variance | H=4.06 | H=2.00 | H=0.06 | H=0.65 | H=2.00 | H=4.31 |
| p=0.131 | p=0.367 | p=0.968 | p=0.720 | p=0.367 | p=0.115 |

**Table S2.** Bioconcentration factors (BCF) of trace metals in biofilm extracted from microplastics at the different sites (TLN: Toulon, GEN: Genova and OLB: Olbia), seasons (W: winter and S: summer), zones (TW: west, TE: east and TO: outer transect). <DL : Under detection limits.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Pb** | **Fe** | **Cu** | **V** | **Cd** | **As** |
| *L.kg-1* | *L.kg-1* | *L.kg-1* | *L.kg-1* | *L.kg-1* | *L.kg-1* |
| TLN-W-TW | 5.19E+04 | 7.44E+03 | 2.83E+04 | 8.57E+02 | 3.24E+02 | 6.63E+02 |
| TLN-W-TE | <DL | 6.14E+04 | 5.11E+05 | 1.11E+03 | 3.53E+05 | 3.08E+02 |
| TLN-S-TW | 1.89E+04 | 2.62E+03 | 1.67E+05 | 6.23E+02 | 2.94E+03 | 3.42E+02 |
| TLN-S-TE | 5.93E+04 | 2.41E+04 | 2.86E+04 | 6.10E+02 | 1.25E+03 | 3.88E+02 |
| GEN-W-TW | 3.35E+05 | 3.03E+04 | 6.67E+04 | 1.21E+03 | <DL | 1.42E+02 |
| GEN-W-TE | 1.08E+05 | 1.27E+04 | 1.42E+05 | 2.23E+02 | <DL | <DL |
| GEN-W-TO | 2.28E+05 | 6.32E+04 | 2.59E+05 | 6.99E+02 | <DL | <DL |
| GEN-S-TW | 3.84E+04 | 3.38E+03 | 3.61E+04 | 3.93E+02 | 6.56E+02 | 2.10E+02 |
| GEN-S-TE | 5.41E+04 | 1.77E+03 | 3.61E+04 | 2.84E+02 | 1.20E+02 | 1.62E+02 |
| OLB-W-TW | 1.08E+05 | 2.72E+04 | 8.08E+03 | 1.73E+02 | 2.13E+02 | 1.99E+02 |
| OLB-W-TE | 3.71E+05 | 8.58E+06 | 3.29E+05 | 1.21E+04 | 2.20E+04 | 7.45E+02 |

**Table S3.** Trace metal surface-related concentrations in biofilm extracted from microplastics and macroplastics in Genova. H = Kruskal-Wallis χ2 statistics, F = ANOVA’s Fisher statistics and p = p-value.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Type** | **Pb** | **Fe** | **Cu** | **V** | **Cd** | **As** |
| *ng.cm-2* | *ng.cm-2* | *ng.cm-2* | *ng.cm-2* | *pg.cm-2* | *ng.cm-2* |
| GEN-W-TW | Microplastics | 56.8 | 434.7 | 29.1 | 10.4 | <DL | 0.9 |
| GEN-W-TE | Microplastics | 23.8 | 236.6 | 80.1 | 2.5 | <DL | <DL |
| GEN-W-TO | Microplastics | 40.8 | 959.4 | 119.6 | 6.4 | <DL | <DL |
| GEN-S-TW | Microplastics | 14.6 | 108.7 | 35.3 | 7.6 | 57.0 | 3.0 |
| GEN-S-TE | Microplastics | 37.6 | 104.1 | 64.6 | 10.1 | 19.1 | 4.2 |
| GEN-MACRO1 | Macroplastics | 0.8 | 25.5 | 6.6 | 0.7 | 5.5 | 0.3 |
| GEN-MACRO2 | Macroplastics | 2.4 | 5.2 | 1.8 | 0.4 | 10.2 | 0.2 |
| GEN-MACRO4 | Macroplastics | 4.0 | 36.7 | 42.3 | 1.2 | <DL | 0.2 |
| GEN-MACRO6 | Macroplastics | 1.0 | 106.3 | 5.1 | 1.2 | 2.4 | 1.0 |
| Analysis of variance | H=6.00 | H=4.86 | F=6.46 | F=15.77 | H=3.00 | H=13.13 |
| p<0.05 | p<0.05 | p<0.05 | p<0.05 | p=0.083 | p=0.077 |