

# **Microplastics in gentoo penguins from the Antarctic region**

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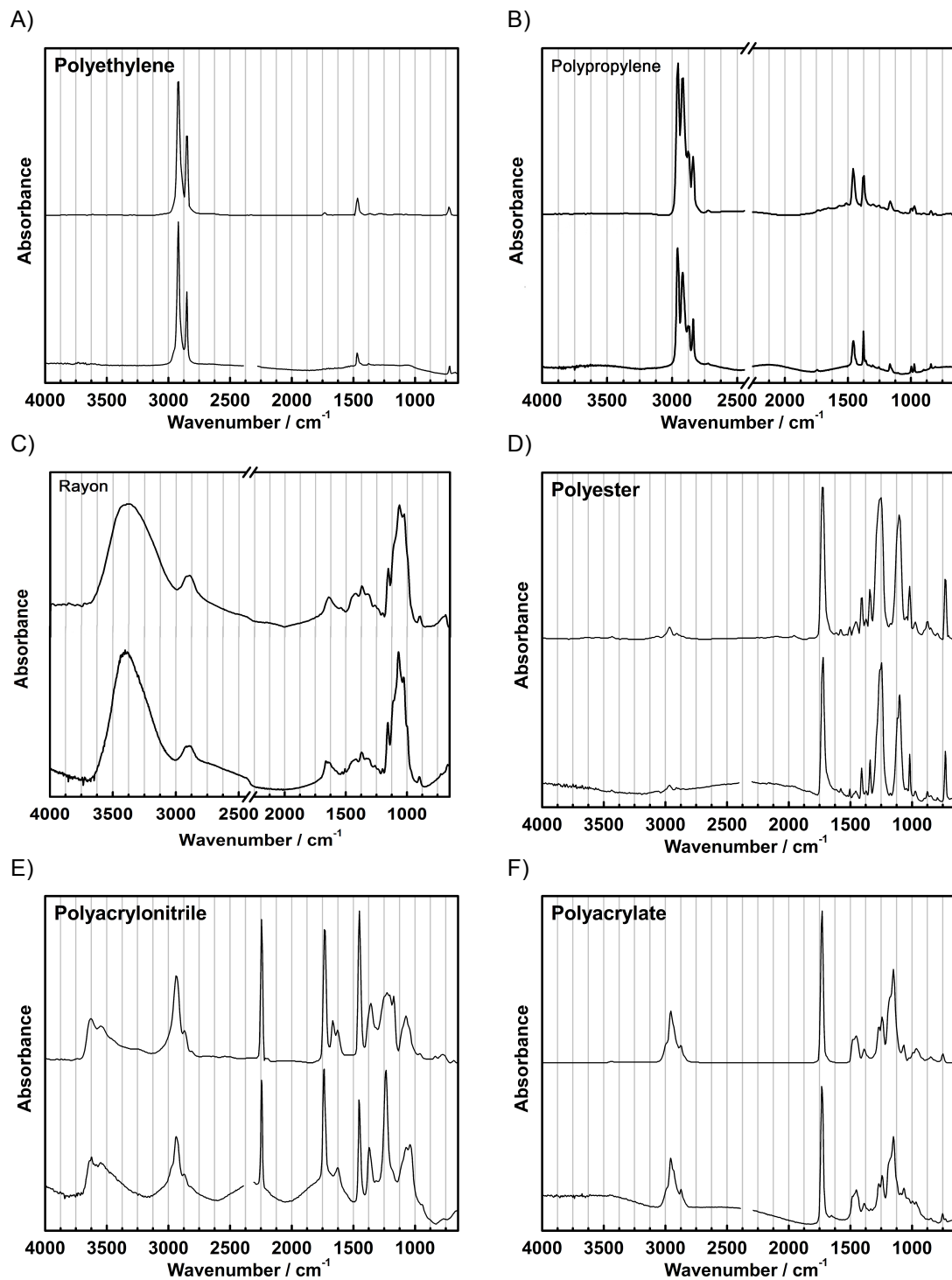
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Table 1S – Infrared characteristic bands ( $\text{cm}^{-1}$ ) of the identified polymers. Adapted from: Hummel, 2002. ( $\nu$  – stretching;  $\delta_{\text{as}}$  – asymmetric bending;  $\delta_{\text{s}}$  – symmetric bending; intensity band: vs – very strong; s – strong; m – medium; w – weak).

| Polymer                           | Characteristic band ( $\text{cm}^{-1}$ ) | Assignment  |
|-----------------------------------|--|---|
| Polyethylene                      | 2918 vs, 2850 s                          | $\nu_{\text{as}}(\text{CH}_2)$ , $\nu_{\text{s}}(\text{CH}_2)$                    |
|                                   | 1472 w                                   | $\delta_{\text{as}}(\text{CH}_2)$   |
| Polypropylene                     | 2960 vs, 2877 m                          | $\nu_{\text{as}}(\text{CH}_3)$ , $\nu_{\text{s}}(\text{CH}_3)$                    |
|                                   | 2918 s, 2838 m                           | $\nu_{\text{as}}(\text{CH}_2)$ , $\nu_{\text{s}}(\text{CH}_2)$                    |
|                                   | 1460 m                                   | $\delta_{\text{as}}(\text{CH}_3)$   |
|                                   | 1377 m                                   | $\delta_{\text{s}}(\text{CH}_3)$  |
| Semi-synthetic cellulose<br>Rayon | 3650-3000 s                              | $\nu(\text{OH})$  |
|                                   | 2990-2820 w                              | $\nu(\text{CH})$  |
|                                   | 1425, 1372, 1320 m                       | $\delta(\text{CH})$   |
|                                   | 1200-1000 vs                             | $\delta(\text{C-OH}) + \delta(\text{C-C}) + \nu(\text{C-O-C}) + \nu(\text{C-OH})$ |
| Polyester                         | 2966 w                                   | $\nu(\text{CH})$  |
|                                   | 1720 vs                                  | $\nu(\text{C=O})$   |
|                                   | 1408 m                                   | $\delta(\text{ring})$   |
|                                   | 1340 m                                   | $\delta(\text{CH})$   |
|                                   | 1261/1246 s, 1117/1102 s                 | $\nu(\text{COC})$   |
|                                   | 1018 m, 728 m                            | $\delta(\text{CH ring})$  |
| Polyacrylonitrile                 | 2935 m, 2870 m                           | $\nu_{\text{as}}(\text{CH}_2)$ , $\nu_{\text{s}}(\text{CH}_2)$                    |
|                                   | 2243 vs                                  | $\nu(\text{CN})$  |
|                                   | 1731 s                                   | $\nu(\text{C=O})$   |
|                                   | 1451 s                                   | $\delta(\text{CH}_2)$   |
| Polyacrylate                      | 2960-2870 w                              | $\nu(\text{CH})$  |
|                                   | 1731 vs                                  | $\nu(\text{C=O})$   |
|                                   | 1270 w, 1242 w, 1150 s                   | $\nu(\text{COC})$   |

Fig. 1S – Infrared spectra of the microplastic samples (below) and the respective polymer (synthetic and semi-synthetic) reference spectra (top) identified as: A) Polyethylene; B) Polypropylene; C) Rayon (Semi-synthetic cellulose); D) Polyester; E) Polyacrylonitrile; F) Polyacrylate and G) similar to poly(ethylacrylate:st:acrylamide).



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