**Table 1.** Raman band assignments of standard plastics and sampled microplastics

|  |  |  |  |
| --- | --- | --- | --- |
| Polymer | Raman bands (cm-1) of sampled MPs | Raman bands (cm-1) of plastic standards | Bond assignment |
| Polyethylene  (LDPE) | 2928.90  1442.63  1293.13  1172.35  1069.69 | 2884.50  1441.90  1296.25  1124.36  1060.97 | –CH2– stretch (d)  –CH2– wag (d)  –CH2– twist (d)  C–C stretch (d)  C–C stretch (d) |
| Polypropylene (PP) | 2886.50  1451.79  1325.16  1150.51  805.23 | 2889.14  1458.89  1328.97  1153.82  808.67 | –CH3 stretch (c)  –CH2– deformation (b)  C–C stretch (c)  –CH3 rock (c)  –CH2–rock (b) |
| Polyvinyl chloride  (PVC) | 2892.78  1436.72  1360.33  693.92 | 2852.09  1430.19  1319.11  632.64 | C–H stretch (i)  –CH2– bend (i, e)  unknown group (i)  C–Cl |
| Poly-ethylene terephthalate  (PET) | 1753.59  1602.3  1302.58  846.1  693.92 | 1725.34  1614.52  1288.21  855.40  628.46 | C=O stretch (g, h)  Natural aromatic compounds in organic chemistry - Embibe ExamsC=C (h)  C–C  C=C (g)  Natural aromatic compounds in organic chemistry - Embibe Exams (g) |
| Polystyrene  (PS) | 1612.87  1015.03  622.43 | 1604.24  1001.75  621.10 | phenyl ring stretch (a, b)  C–C in-plane ring deformation +,  C–H out-of-plane deformation (a)  in-plane ring deformation (a, b) |
| Poly (methyl methacrylate) (PMMA) | 1679.85  1512.10  1154.13  835.31 | 1723.71  1447.51  1181.31  808.67 | C–O–C symmetric stretch (a)  –CH2– deformation (b)  C–C–C–C stretch (b)  C=O stretch (a) |
| Polyamide-6,  nylon-6 (PA-6) | 2895.67  1680.05  1440.22  1383.02  1094.93 | 2900.2  1633.39  1441.9  1430.49  928.73 | –CH2– stretch (e)  unknown group (e)  –CH2– (e, f)  –CH2– bend (e, f)  –CH2– twist (f) |

*(a) Hu et al. 2012, (b) Bruckmoser et al. 2015, (c) Gopanna et al. 2018, (d) Daniel and Wiebeck 2019,*

*(e) Gündoğdu 2018, (f) Milani 2015, (g) Käppler et al. 2015, (h) Alexiou et al. 2020, (i) Solodovnichenko et al. 2016*