Introduction Microplastics, the small polymers with a diameter less than 5 mm, are emerging contaminants with increasing concerns. According to the study by Geyer et al. (2017), the abundant categories in worldwide non-fiber plastic production include PE (36%), PP (21%), and PVC (12%), followed by polyethylene terephthalate (PET), polyurethane (PUR) and polystyrene (PS) (each less than 10%). Polyester (most of which is PET) consists of 70% of all polyester/polyamide/acrylic (PP&A) fiber production. These seven groups account for 92% of the plastics ever generated annually. Nylon is a generic designation of synthetic polymers composed of polyamides, which is a thermoplastic material that can be processed into fibers, films, or shapes. Nylon polymers can be mixed with a wide variety of additives to form different properties and have a variety of commercial applications in fabric and fibers (clothing and rubber reinforcement), shapes (molded parts for cars, electrical equipment), and films (food packaging). Roughly 42% of the non-fiber plastics are used for packaging, which is predominantly composed of PE, PP, and PET. The building and construction sector, which used 69% of all produced PVC, is the second-largest consuming sector, using 19% of all non-fiber plastics (Geyer et al., 2017). Many studies have been conducted to examine the environmental implications of microplastics using various assessment methods and analytical procedures (Mai et al., 2018). Chen and Chen (2020) employed the Fourier-transform infrared (FTIR) spectrometer to quantify the microplastics in coastal areas by particle counting. Loder et al. (2015) utilized the focal plane array detector-based micro-FTIR imaging to measure the size and number of investigated microplastics. Yu et al. (2019) applied thermogravimetric analysis (TGA) coupled with FTIR spectroscopy to quantify the microplastics of polyvinyl chloride (PVC) and polystyrene (PS). Fischer and Scholz-Bottcher (2017) characterized the common types of microplastics in environmental samples from the Baltic Sea using pyrolysis-gas chromatography-mass spectrometry (GC/MS) methodology. Lin et al. Environmental Technology & Innovation 23 (2021) 101798 2017; Costa and Barletta, 2015; Bellasi et al., 2020). Without a doubt, immediate action is deemed necessary to control microplastic pollution in terrestrial ecosystems, especially to characterize and quantify the microplastics of interest.