Supporting Information to:

Expanded Polystyrene Is Not Chemically Degraded by Mealworms

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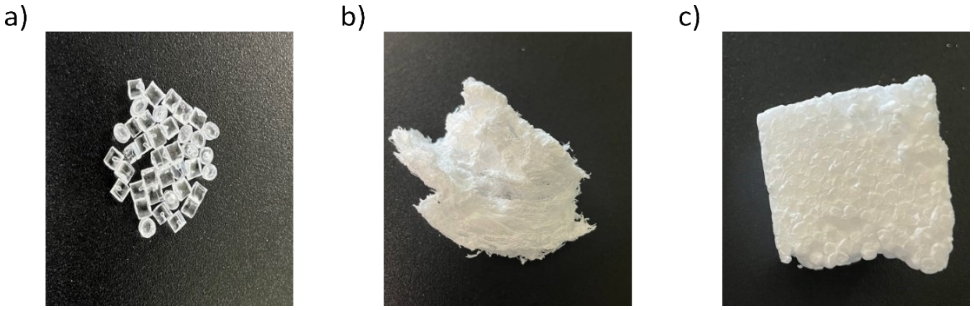

Figure S1. (a) Pure polystyrene beads (Sigma Aldrich order no:182427), (b) pure expanded polystyrene derived from beads as described in Materials and Methods, (c) commercial expanded polystyrene (Amazon).

Figure S2. Individual rearing of mealworms on bran diet.

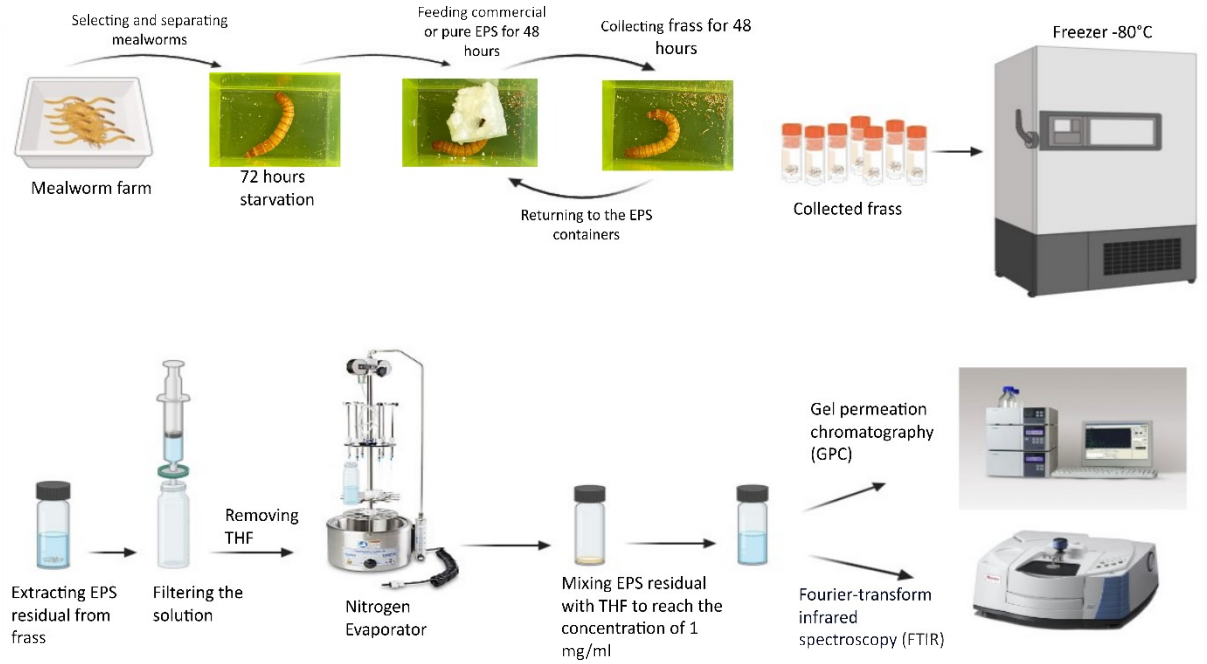

Figure S3. Schematic of sample preparation for GPC and FTIR analysis of frass from mealworms fed pure or commercial EPS. Mealworms were starved for 72 hours, then fed EPS for 48 hours. They were moved to clean containers for 48 hours to collect frass, then returned to EPS containers for another 48 hours of feeding. This cycle was repeated for 2 months to collect 50 mg of frass, and stored at -80°C. Then, the polymer was extracted from the frass and studied by GPC and FTIR.

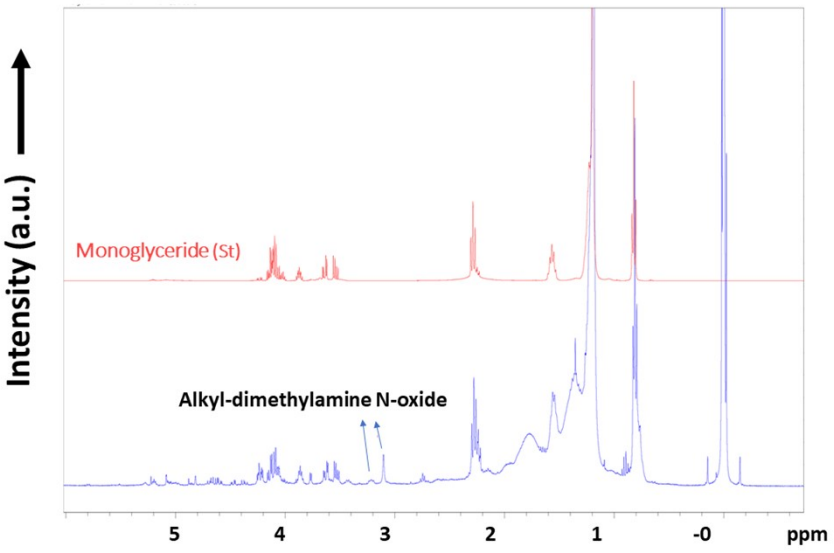

Figure S4: ^{1}H NMR spectra of additives extracted from commercial EPS. Red: standard monoglyceride (St) spectrum. Blue: spectrum of extracted materials, highlighting peaks corresponding to alkyl-dimethylamine N-oxide.