**S1 Table. Definition and units of model parameters for bioaccumulation model.**

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| **Parameter** | **Definitions and units** | **Source of model input** |
| **k1** | Rate constant for chemical release from plastic in GIT (-d) | 2.1 (Koelmans et al., 2016 ES&T) |
| **CPL** | Concentration in plastic (ng/g) | Measured value from experiment |
| **MPL** | Mass of plastic (g) | Measured value from experiment |
| **GRT** | Gut residence time (days) | 1.25 days (Decho and Luoma, 1991) |
| **IR** | Ingestion rate (g/g WW x –d) | Measured value from experiment |
| **S(PL)** | Mass fraction of plastic | Measured value from experiment |
| **kloss** | Loss rate into water (-d) | 0.04 PCB 77, 81 (based off of PCB52) and 0.03 PCB 126, 169 (based off of PCB118 and PCB153; Boese et al., 1997 ET&C) |
| **f(lipid)** | Lipid fraction | 0.182 (Chijimatsu et al., 2011 British Journal of Nutrition) |
| **Cb(0)** | Concentration of PCBs in animal at day 0 (ng/g) | Measured value from experiment |
| **w** | species wet weight (g) | Measured value from experiment |
| **Log Kow** | log octanol-water partition ratio | Lohmann, 2012 ES&T |
| **Log Kpw** | log plastic-water partition coefficient | Calculated using COSMOtherm & Koelmans et al., 2016 |