



Introduction: Plastics released to the environment are scattered, damaging the landscape and trapping wildlife. The urban drainage function is impaired due to inflow of plastics into waterways and rivers, and even oceanic runoff. Another problem is that the plastic is miniaturized in the process of moving through the environment and diffuses into the environment as so-called microplastics (herein after MPs). The importance of improving waste management as a source of emissions is also mentioned in the national action plan for the reduction of marine plastics, and the MARINE Initiative, which is designed to support measures in developing countries. On the other hand, there is still much uncertainty about the risk factors associated with plastics released into the environment.

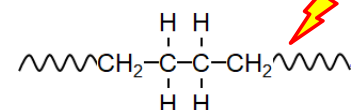


How are the plastics degraded in the environment?/ How do they migrate?

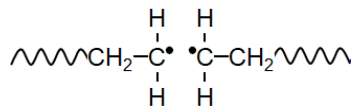
*When do they adsorb or release the chemicals?/ When are they call *Microplastics*?*

Fundamental Mechanisms of Polymer Degradation in the Environment

PE, PP, PS, PVC



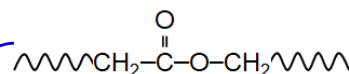
Generation of oligomers with radicals



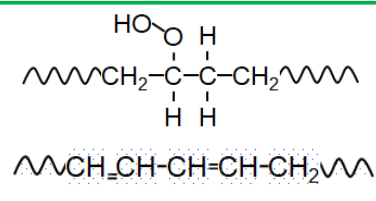
Successive chain degradation by radicals

Polyester, Polyamide

Faster rate of deterioration (hydrolysis)



Generation of unstable (degradable) oligomers with unsaturated bond or side chain



Mineralization

Plastic Fate Model in the Environment

