IS 16591(Part 1): 2016 – Plastics — Mixtures of Polypropylene(PP) and Polyethylene (PE) Recyclate Derived From PP and PE Used for Flexible and Rigid Consumer Packaging

Recyclates derived from polypropylene (**PP**) and polyethylene (**PE**) are increasingly being used in both flexible and rigid consumer packaging. These materials are typically sourced from post-consumer waste (**PCR**) or post-industrial waste (**PIR**), and their use helps to reduce the environmental footprint of packaging by promoting circularity and reducing the need for virgin plastic production.

Polypropylene (PP) and **Polyethylene (PE)** are among the most commonly used thermoplastics in packaging, and their recyclate forms are becoming increasingly important in sustainable packaging systems. **Recyclates** refer to the material that has been recovered from used plastic products through mechanical or chemical **recycling** processes and is then **reused** to create new products.

The main advantage of using recyclates are:

- **Reduced Virgin Plastic Use**
- **Better Circularity**

Overall, the use of recyclate from PP and PE in consumer packaging is a key step toward creating more **sustainable packaging solutions**, aligning with global efforts to reduce plastic waste and promote recycling.

IS 16591(Part 1) lays out guidelines for the formulation and performance of mixtures containing recycled PP and PE in these types of packaging. The standard is applicable to mixtures of **recycled PP and PE plastics** used in the manufacturing of **flexible and rigid packaging** for consumer products and ensure they are safe, effective, and suitable for their intended purpose in packaging. The recycled PP and PE mixture must meet specific **mechanical and physical properties** to ensure that the packaging made from it is durable, **safe**, and functional. This includes characteristics like **tensile strength**, **impact resistance**, **flexibility**, and **thermal stability**. The standard also ensures that the recycled material does **not leach harmful substances or contaminants** that could migrate into food or other products. It includes guidelines for testing the material's **melt flow index**, **density**, and **specific gravity**, among other properties, to confirm compliance with the required performance standards.

IS 16591(Part 1) aims to maximize the lifespan of the recyclates and minimize waste in the packaging industry.