eurofins | Environment Testing

CASE STUDY

Fresh produce, hidden microplastics

Testing clamshell-packaged berries for microplastics contamination

Key Takeaway

Everyday clamshell packaging may be a source—not just a container for microplastics in fresh produce.

The Question

Produce sold in plastic clamshell containers is a near-universal grocery experience. But does that packaging shed particles into the food it holds? This case study set out to find out, using a validated oxidative digestion, density separation, and Raman identification workflow.

The Impact

Fresh raspberries and strawberries were tested straight out of their retail clamshell packaging. Both came back positive for microplastic contamination in the fruit tissue itself, suggesting that everyday packaging may be a source—not just a container for microplastics in fresh produce.

The Study

- ~40g of each fruit rinsed with particle-free (MAG) water
- Oxidative digestion + density separation to isolate particles from fruit tissue
- Raman spectroscopy identification, particle size range 20–500 µm
- Method blank run in parallel to monitor background contamination

The Results

Rasberry particle count	16 (PC 44%, PE 31%, PP 25%)
Strawberry particle count	30 (PE ~50%, then PET, PC, PP)
Method Blank (QC)	7
Dominant size range	20–80 µm
Dominant polymers	PC & PE (raspberry) PE & PET (strawberry)

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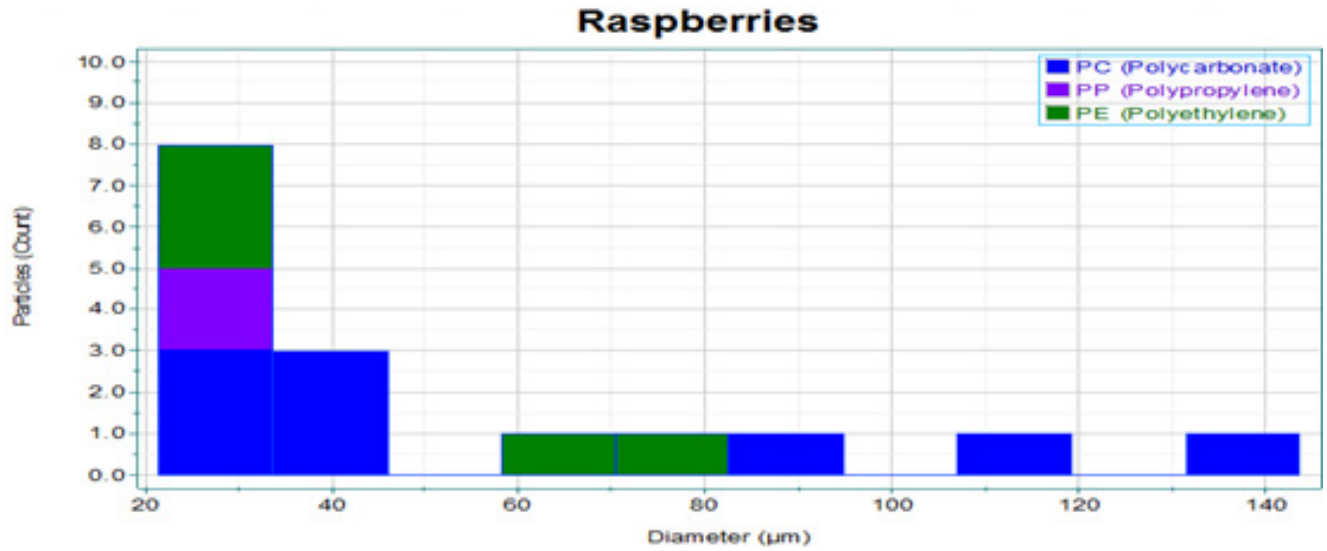

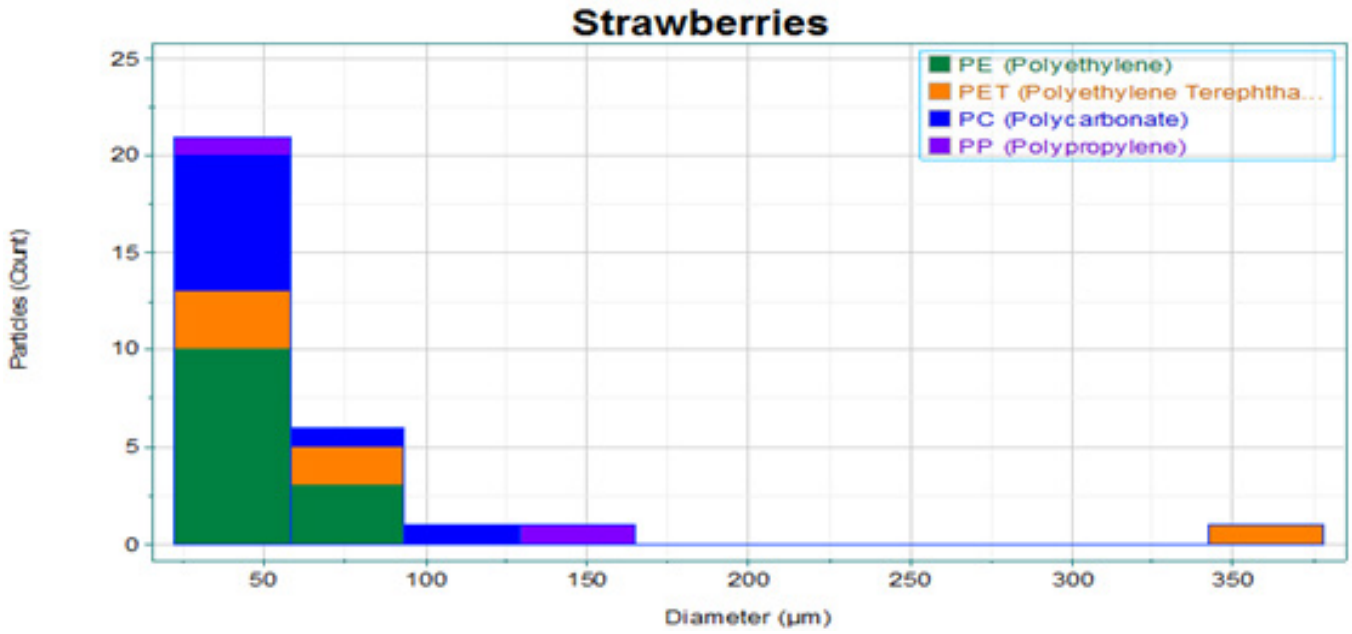

NOTE | Single package tested per fruit type—a proof-of-capability demonstration rather than a multi-batch market survey.