



# Developing biodegradable materials

We are researching and testing alternative plastic materials that can degrade and leave no lasting environmental footprint.

## Uses of bioplastics

Compostable bioplastics can be used as viable substitutes for conventional non-degradable plastics in many applications. On interaction with water and microbes, biodegradable plastic films disintegrate and biodegrade to only carbon dioxide and water.

These environmentally friendly biodegradable plastics can be disposed of in industrial and home compost, and in some instances, in soil and waterways.

Products that benefit from biodegradability include food and soil contaminated plastics that are unable to be recycled. This includes coffee pods, fresh food packaging, shopping bags | and picnicware.



## Contract materials development

We are researching bioplastics capable of degrading into inert carbon dioxide and water, leaving no residual microplastics or lasting footprint. This will ultimately reduce the impact of single-use plastics.

We work with industry and academia to produce fit for purpose compostable plastics, plant-based plastic composites and improved technology for producing bioplastics from renewable resources. Our capabilities include materials development, materials evaluation and biodegradation testing.

## Materials testing

We test materials according to internationally recognised standards and test methods. This includes rheology, thermomechanical properties, moisture and oxygen transmission and mechanical testing. We also have a vast range of equipment to analyse materials on a molecular and nanoscale. Biodegradation for compost applications is conducted according to Australian Standards AS4736 and AS5810, and includes testing for disintegration, biodegradation and ecotoxicity. We can also evaluate our materials in field to assess their performance in real world conditions.

## Biodegradation innovation

We have identified solutions to enable bioplastics to capture a greater share of the single-use plastics market. These include biopolymer production at reduced cost, improved mechanical performance, faster degradation rates, improved oxygen barriers, single materials for value added recycling and balancing multiple performance targets. We are collaborating with industry to address existing challenges and are seeking partnerships to undertake further valuable R&D.

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**Contact us**  
1300 363 400  
+61 3 9545 2176  
csiroenquiries@csiro.au  
csiro.au

**For further information**  
CSIRO Manufacturing  
Pete Cass  
+61 3 9545 2428  
Pete.cass@csiro.au  
csiro.au/manufacturing