



ecofilament

transforming waste  
plastics into new  
products





With sustainability front and center in modern business practices, procurement processes need to incorporate smart, eco purchasing decisions. Eco Filament delivers the same high level of performance as regular filaments. Eco Filament is described as 'easy to print' and once components and parts produced using Eco Filament have served their purpose, they can be remanufactured again to produce new Eco Filament.

Plastics categorised as Type 7 have been used since their high level of engineering provides many benefits in terms of strength, durability and flexibility. However this high level of engineering has also presented many challenges for typical plastics recyclers due to contamination. The MICROfactorie technology employed in Eco Filament manufacturing has been tailored to work with these problematic plastics to extract maximum value using sustainable and circular methodologies and ideologies.

Eco Filament have been engineered to target problematic waste plastics as raw input materials.

## eco filament is manufactured from 100% waste plastics

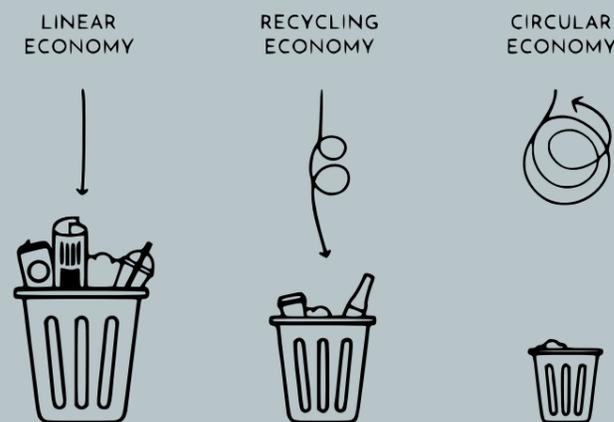
Kandui have partnered with The SMaRT Centre at UNSW, who have developed revolutionary MICROfactorie™ waste to product technologies. Kandui is the first company to become an official MICROfactorie™ licensee, using smart, innovative technologies to remanufacture waste into new products.

The Kandui MICROfactorie™ includes an impressive 3D printing department, manufacturing PETG, ABS Eco Filament and 3D printed parts from waste plastics.

Recycled filament is made using advanced MICROfactorie technologies to remanufacture raw materials sourced from recycled plastic. This plastics can come from a number of sources, including bottles, e-waste or other recyclable scraps. These recyclable components are then loaded into the system where they are ground, heated, then cooled to form Eco Filaments.

Kandui is committed to solving waste problems through innovative technologies. A 'circular economy' model is adopted, which employs not only waste management, but reuse, recycling and responsible manufacturing. In turn, reducing emissions and increasing efficient use of natural resources.

only **13%** of all plastics used in Australia is recycled.  
(National Waste Report 2020)



PETG is manufactured from 100% recycled PETG. The material consists of three different components terephthalic acid, ethylene glycol and cyclohexane dimethanol. Compared to PET, PETG can provide an easier printing process, more transparent and less brittleness.

### PETG Eco Filament

Colour: Clear/transparent  
Spool: 1 kg  
Diameter: 1.75mm  
Temperature: 220 - 250°C  
Retail: TBC  
Wholesale: TBC



ABS is manufactured from 100% recycled ABS waste. The material consists of three different main monomers Acrylonitrile, 1,3-Butadiene and Styrene. Compared to PLA, ABS can maintain its mechanical durability when operating at relatively high pressure and temperatures.

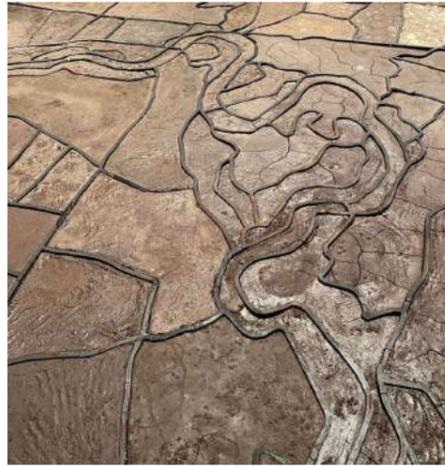
### ABS Eco Filament

Colour: Black  
Spool: 1 kg  
Diameter: 1.75mm  
Temperature: 220 - 250°C  
Retail: TBC  
Wholesale: TBC

**84%** of plastic used is sent straight to landfill.  
(Australian Bureau of Statistics 2020)



Batch of 3D printed components made from 100% recycled printing filament. Eco Filament.



The Biennale of Sydney 12 March - 13 June 2022. Rivers, wetlands and other salt and freshwater ecosystems feature in the 23rd Biennale of Sydney (2022), titled rivus. Included is Gal Weinstein's Murray-Darling Basin, 2022 creation.

All the map outline pieces you see in the photos are 3D printed components from e-waste plastics and old redundant core flute signs were used as backing.

Through Kandui's partnership with the SMaRT Centre @unsw, they played a role in remanufacturing the map components to assisting with the installation, which included joining the map outline pieces and filling with coffee grounds.

On average, Australians use 130kg of plastic per person each year. Less than 13% of that is recycled. More distressing, up to 130,000 tonnes of plastic will find its way into our waterways and into the ocean. Once in the ocean, it endangers our marine wildlife. Sadly, it has now begun to enter the food chain and end up on our plates.

Plastic is an incredibly versatile material, made to be strong and durable. Unfortunately, most plastics are made to be used once before being discarded. Kandui is harnessing the versatility and durability of plastics to manufacture 3D Eco Filament, that can then be remanufactured to keep the materials in use for longer periods of time and ultimately a circular product.

