

Visycell®

Lifecycle analysis

2026



Sustainable packaging solutions

Visycell is an Australian-made, fibre-based thermal insulation and shock protectant that offers a more sustainable alternative to expanded polystyrene (EPS). Visycell is made from recycling cardboard offcuts and designed to be recycled through kerbside collections.

When compared to an EPS equivalent, Visycell has lower greenhouse gas emissions, lower water use, and fewer negative impacts on the aquatic environment from microplastics.

Benefits of Visycell compared to an EPS equivalent

We engaged an independent certified practitioner to conduct a life cycle analysis (LCA) to assess the difference in environmental impact of a cardboard box lined with Visycell compared to its EPS equivalent¹.

For a meal kit delivery packaging system², the LCA estimated that using Visycell results in:

41% less greenhouse gas emissions	50% less water consumed	91% lower impact on the aquatic environment from microplastics ⁴
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For a seafood hog box packaging system³, the LCA estimated that using Visycell results in:

41% less greenhouse gas emissions	14% less water consumed	87% lower impact on the aquatic environment from microplastics ⁴
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Work with us to keep plastic out of our environment and reduce your greenhouse gas emissions

EPS, in multiple forms, has been identified as a problematic and unnecessary single-use plastic by the Australian Packaging Covenant Organisation (APCO)⁵, and plastic packaging bans continue to be expanded throughout Australia and New Zealand⁶. EPS is not recyclable through kerbside collection systems and as a fragmentable and lightweight material, easily disperses into the environment. This resulted in over 20,000 tonnes of EPS not being recovered in 2022-23, likely ending up in landfill or in the environment⁷.

Visycell, a fibre-based packaging system, has been developed as a more sustainable alternative to EPS as both a thermal insulator and shock protectant. Visycell is made primarily from recycling cardboard offcuts and after use, is designed to be recyclable through kerbside collection.

Visy, one of Australia's largest recyclers, recycles paper and cardboard from businesses and household kerbside recycling bins at its paper recycling facilities across Australia. The collected material is then turned back into paper, cardboard boxes and Visycell packaging.

1. The LCA compared data from a lifecycle analysis of a cardboard box lined with Visycell (based on data sourced from AusLCI v2.42, and energy consumption and production data sourced in relation to the Visycell manufacturing machinery) against its EPS box equivalent (based on data sourced from AusLCI v2.42 and for region specific resin sourcing, Carbon Minds). The functional unit used for the LCA comparison was based on one packaging system (box and lid) for a similar volume of product to be delivered with consistent thermal properties. Results were presented as cradle to grave, excluding filling, storage and consumer use phases.

2. For a "meal kit delivery packaging system" the LCA compared an EPS packaging system with a weight of 520g and dimensions of 580 x 385 x 335mm compared against a Visycell equivalent with a box weight of 749g, insulation weight of 1391.6g and dimensions of 500 x 385 x 236mm.

About Visy's Visycell lifecycle analysis

Visy's third-party peer reviewed LCA compared the environmental impact of Visycell to an EPS equivalent. This LCA assessed the environmental impacts from all the stages of the life cycle of Visycell and EPS, from raw material extraction through to disposal.

Your customers will welcome your commitment to:

- Powering the circular economy
- Diverting waste away from landfill
- Reducing use of virgin plastic
- Reducing greenhouse gas emissions
- Reducing water use
- Keeping jobs, remanufacturing and supply chains local
- Reducing the impact on the aquatic environment from microplastics

The LCA found that Visycell results in lower emissions compared to its EPS equivalent, because most of the emissions from EPS boxes comes from the production of the virgin EPS resin itself. In contrast, Visycell is made in Australia from recycled and recyclable materials, mostly cardboard clippings that are a waste product from the corrugation and cardboard making process.

Recyclable

Made with recycled content and designed to be recycled again in the kerbside bin

Reliable

We deliver unwavering quality and precision throughout the production and supply process

Innovative

Using cutting edge technology to design products that cater to your every need



Add the Re+ symbol to your products

It represents that the product is made by Visy in Australia, is made using some recycled content, and is designed to be recyclable in Australian kerbside bins.

Find out more about the Visy Re+ logo by contacting marketing@visy.com.au

3. For a "hog box packaging system" the LCA compared an EPS packaging system with a weight of 640g and dimensions of 770 x 385 x 200mm compared against a VisyCell equivalent with a box weight of 1609g, insulation weight of 1,280g and dimensions of 750 x 360 x 210mm.

4. Expressed as PDF (Potentially disappeared fraction of species): a metric used to express the potential loss of species due to a pressure, such as land occupation, eutrophication, climate change or other impact drivers (such as plastic pollution).

5. Action plan for problematic and/or unnecessary single-use plastic packaging (Australian Packaging Covenant Organisation, APCO) August 2023.

6. Current status of plastic legislation (September 2024) National Retail Association.

7. Australian Packaging Consumption & Recovery Data 2022-23, Version 1: December 2024, Australian Packaging Covenant Organisation (APCO).



More recycling, less landfill



Visy is Australia's largest vertically integrated recycler and remanufacturer.

We collect materials from households and businesses and turn them into sustainable packaging solutions, diverting valuable material from landfill and driving a circular economy for packaging.

Contact a specialist

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