



## PVC Environmental Credentials Report

*PVC films play an important role in keeping fresh food healthy and fresh, protecting consumers by keeping their fresh food from early spoilage and free from contamination. PVC food wrap is an extremely cost effective packaging solution and entirely food safe.*

*Contrary to some popular misconceptions, PVC food wrap has a low life cycle impact on the environment. PVC film is easily recyclable and is currently recycled in Australia. There is a post-consumer soft plastics integrated collection & recycling system currently being trailed in Australia that is scalable and can handle PVC films.*

### Food Protection

High strength PVC films provide excellent protection for packaged foods from transport, handling, display and customer contact and potential contamination and infection. This has become even more critical during the current pandemic.

It is estimated that food waste from improper packing is five to ten times more harmful to the environment than the packaging forgone (CEFLEX 2017).

It is estimated that a paper bag would have to be reused 43 times to have a lower climate change impact than the equivalent plastic. (Green Alliance UK)

### Share of Waste Stream

12,000 tonnes of PVC food films are distributed and used in Australia each year, while an estimated 352,000 tonnes of soft plastics of all types enter the waste stream annually (Australian Institute of Packaging).

Only 1,000 tonnes of soft plastic are recovered post-consumer for recycling each year. PVC food films represent a concentration of 3% of total soft plastics in Australia. At that rate, only 3 tonnes of PVC film presents in the annual recycled materials stream.

Australia's annual total waste of both rigid and soft plastics is 1.1 million tonnes. PVC food films represent a concentration of 1% of annual plastic waste.

20 million tonnes of waste product goes to Landfill each year and PVC food films represent a concentration of 0.06% of annual landfill waste. (Waste Management Association of Australia).

### Packaging to Pack Weight Ratio

Due to its innate high strength, PVC films are amongst the lightest gauge (thickness) packaging materials in common usage. PVC films commonly used in Australia are between 12µm (0.012mm) and 15µm (0.015mm) thick – weighing approximately 2.2grams per 450g pack size – a packing ratio of 1:200. A tonne of PVC film is enough to wrap 45,000 packs – 200 tonnes of product.

## Life Cycle Environmental Cost

PVC creates the lowest CO2 emissions in its manufacture of all plastic types at 1 tonne/ 1 tonne of material. This is half the emissions rate of LDPE, HDPE, EVA and PP (Walmart Materials Scorecard 2007, ICA databases).

Embedded energy recoveries in recycled PVC are amongst the highest of all plastic types at 80% - comparable to steel slab.

## Behavior of PVC in Landfill and Litter

Flexible PVC films contain around 30% organic plasticizers (epoxidated soybean oil for example) which quickly and naturally degrade in landfill leaving a stable PVC matrix.

This material presents a much lower environmental threat than plastic materials that degrade and fragment and potentially enter water courses and the marine environment, particularly from uncontrolled disposal/ littering. (UNEP Biodegradable Plastics & Marine Litter).

The specific density of PVC is over 30% higher than plastics such as LDPE and PPE, so the volume per tonne is over 30% less – meaning that the landfill space taken by the 12,000 tonnes of PVC wrap is equivalent to only 9,000 tonnes of other film types.



## Recyclability

As for most plastic categories PVC is fully recyclable. Re-melting clean, homogeneous PVC and adding plasticizers and modifiers produces a feed stock that can then be extruded or molded into an extensive range of finished goods.

At Integrated Packaging's Kirrawee manufacturing site our in-process scrap is granulated and feed back into our extruders, making up approximately 3% of the material used in finished films.

Conventional MRFs do not have the capability to accept soft plastic recycle as it gets caught in machinery and causes failures and/or damage (Australian Institute of Packaging).

Integrated Packaging resells the PVC process scrap that we are unable to recover to a number of recyclers, who process the material into other PVC goods, including gym mats, shoe soles, road signs and bumper pads.



## Integrated Packaging PVCs Film Food Safety Credentials

Integrated Packaging PVC food films far exceed the FSANZ Food safety Regulations for their intended use as food contact packaging.

### Embedded Quality

Integrated Packaging has maintained HACCP certification for food safety systems at its Sydney based plant for the past 9 years. Integrated Packaging has maintained ISO9001 certification for quality systems at its Sydney based plant for the past 10 years.

### Selection of raw material suppliers

Integrated Packaging carefully selects best quality materials from best practice suppliers to ensure consistent product quality and food safety. New suppliers and materials are subject to rigorous acceptance trailing and testing.

### Selection of additives

Integrated Packaging maintains world best practice for food safety by implementing European and US Health authority directives ahead of regulation.

One of our many innovations with our range of Australian made PVC films was the removal of phenol and phtalate based additives as soon as they were identified by the European Union as substances of concern to human health.