
FROM THE MATERIAL DATA SHEET

A sheet of film, not a fistful of plastic.

Cannusafe is a precision-cut medical-grade polyethylene film (65 g/m^2) with a skin-friendly acrylic adhesive (30 g/m^2) — 95 g/m^2 of device material on a $140 \times 100 \text{ mm}$ sheet. The paper release liner is peeled off and discarded separately.

$\approx 1.33 \text{ g}$

per sheet (0.91 g film + 0.42 g adhesive). One sheet covers a full procedure with spares.

$\approx 0.13 \text{ g}$

per individual device (sheet of 10) — roughly one-fifteenth the weight of a single screw cap.

Plastic used to protect one operation.

A typical cataract procedure uses around five syringe–cannula junctions. Here is the plastic each approach adds to protect all of them.

Cannusafe — 1 sheet, all 5 junctions

1.33 g

Moulded clip ×5 — 1 g each

5.0 g · 3.8×

Screw cap ×5 — 2 g each

10.0 g · 7.5×

Even a single screw cap on the viscoelastic syringe alone (2 g) uses more plastic than a whole Cannusafe sheet — while leaving the other four junctions unprotected.

WORLDWIDE · 28 MILLION PROCEDURES A YE

What it adds up to.

103t

less plastic waste each year than a moulded 5-device approach

690t

CO₂e avoided per year — embodied production plus end-of-life

243t

plastic saved versus universal screw-cap adoption (~1,590 t CO₂e)

Cannusafe’s advantage comes from two things at once: far less mass per procedure, and the fact that thin-film converting is less energy-intensive than injection moulding. The screw-cap figure is consistent with the previously published estimate of roughly 48 tonnes of additional plastic from universal single-cap adoption.

Per year, global	Cannusafe	Moulded ×5	Screw cap ×5
Plastic waste	37 t	140 t	280 t
Embodied + end-of-life CO ₂ e	≈ 205 t	≈ 896 t	≈ 1,792 t
Cannusafe advantage	—	–103 t / –691 t CO ₂ e	–243 t / –1,587 t CO ₂ e

TRANSPARENCY

How the numbers were worked out.

MATERIAL WEIGHTS

Taken directly from the manufacturer's technical data sheet: 65 g/m² polyethylene carrier + 30 g/m² acrylic adhesive. The screw cap was weighed at ≈ 2 g; the moulded alternative is assumed at 1 g per syringe across five syringes.

EMISSION FACTORS — CRADLE TO GRAVE, INDICATIVE

PE film ≈ 2.5 , acrylic adhesive ≈ 3.5 , moulded PP ≈ 3.7 kg CO₂e/kg (resin ≈ 1.4 – 2.0 plus injection-moulding energy ≈ 1.1 – 4.4 per Arburg/EUROMAP 60.2). End-of-life clinical-waste incineration ≈ 2.70 kg CO₂e/kg (EEA/ETC full-oxidation factor) is applied to every option. Resin figures from Franklin Associates / American Chemistry Council life-cycle inventories.

WHY THE CONCLUSION IS ROBUST

The result is driven primarily by mass — a $3.8\times$ to $7.5\times$ difference — widened modestly by the higher per-kilogram footprint of moulding versus film converting. It does not hinge on any single emission factor.

OPEN ITEMS FOR A FULL LIFE-CYCLE ASSESSMENT

The paper-and-film release liner's coat-weight is not on the data sheet and is needed to close a complete inventory. For publication, each emission factor should be pinned to a dated database entry (for example ecoinvent or UK DESNZ conversion factors).

Cannusafe™

The universal intraocular cannula-securing and syringe-labelling device. Manufactured by a specialist French manufacturer under EU MDR.

FDA Class I exempt

International Patent WO2025/163287A1

First consignment targeted early 2027

Indicative analysis prepared May 2026. Figures depend on the stated assumptions and emission factors and are presented for discussion and educational purposes. Carbon and plastic estimates are not a substitute for a certified life-cycle assessment.