

Executive Summary

This executive summary provides an overview analysis of the greenhouse gas (GHG) emissions associated with Lupin Healthcare (UK) Limited's Luforbec 100/6mcg pMDI. This 'Cradle to Grave' assessment focuses on the embodied GHG emissions of raw materials, the transport of these materials, the manufacture/processing, distribution, use of the inhaler and its disposal.

Luforbec 100/6 pMDI is used to deliver the active pharmaceutical ingredients (APIs) beclometasone dipropionate and formoterol fumarate to the lungs through an aerosol propellant.

Luforbec 100/6 pMDI production is shared between two manufacturing sites. Lupin's primary manufacturing site, where Lupin anticipates the majority of product will be produced is in Indore (India), however production currently takes place in Coral Springs (USA). For this reason, the LCA study includes the emissions arising from production in Indore, as well as modelled emissions for the production in the USA. In both scenarios, the products are then transported to the UK, where they are further distributed by the company's third-party distributor. The packaging materials are predominantly sourced from India, with the API's sourced from Italy and Spain. All emissions arising from production include products manufactured in India and the USA.

The breakdown of life cycle carbon emissions for Luforbec manufactured in each location is shown in the following table:

Process	Emissions per one 100/6mcg pMDI (gCO ₂ e)	
	Indore (India)	Coral Springs (USA)
Raw materials – embodied	263.45	263.45
Raw materials transport	103.31	603.23
Manufacture	421.46	234.06
Product distribution	9.64	429.55
Usage	7,852.38	7,852.38
Disposal	2,765.69	2,765.69
Total gCO₂e	11,415.92	12,148.41
gCO₂e per actuation	95.13	101.24

The highest emissions arise from Luforbec manufactured in the USA. This is predominantly because the raw materials travel a higher distance to the factory in Coral Springs, which are then flown to England as the finished product. In comparison, the finished product at Indore is transported to England by ship, a much less carbon intensive transport method. In both scenarios, the majority of emissions arise from the use phase, due to the propellant's global warming potential when released into the atmosphere.

Lupin Healthcare (UK) Limited, in conjunction with Carbon Footprint Ltd, has assessed the **Cradle to Grave** carbon emissions associated with Luforbec 100/6 pMDI. By completing this assessment, Lupin Healthcare (UK) Limited has qualified to use the Carbon Footprint Standard branding.

