

28 September 2025

Emeritus Professor, Sarah Dunlop sarah.dunlop@uwa.edu.au
Director, Plastics & Human Health Impact Mission, Minderoo Foundation
University of WA, 35 Stirling Highway, Perth WA 6009

Dear Sarah Dunlop

The presence of Polypropylene (PP) contamination limits recyclability of HDPE milk bottles. This Writer will write to anti-plastic interested parties, seeking the banning of high density polyethylene (HDPE) in all retail milk products sold in Australia.

Cardboard cartons have done the job, and will continue, but on a larger scale.

A lot of companies across Australia derive profits from manufacturing and/or supplying a variety of plastic products and will doubtless defend their income sources.

References:

- I. Philip Johnston's 1st letter to Sarah Dunlop dated 23 Sept 2025
- II. Sarah Dunlop's response email to Philip Johnston sent 24 Sept 2025
- III. Philip Johnston response email to Sarah Dunlop sent 24 Sept 2025
- IV. **Articles/reports re the dangers of plastics and the shortcomings associated with recycling in Australia and overseas**

Thank you for your email response (to my reference I. above) sent last Thurs 6:45pm.

I have endeavoured to read the three PDFs that you attached that aggregated to almost 9MB. I particularly focused on '**The benefits of removing toxic chemicals from plastics**' as you worked with five others – 4 from USA and your colleague, Christos Symeonides. The paper's willingness to extrapolate findings to estimate the effect across large global populations is worthwhile. Below is one such instance:

"....we calculate the fraction of cases attributable to estimated exposure levels..... the fraction of strokes attributable to BPA (bisphenol A) and then use baseline information for the year 2015 (baseline cases of stroke) to calculate the number of stroke cases attributable to BPA in that year. We value mortality associated with cardiovascular disease and stroke and all-cause mortality associated with DEHP (di(2-ethylhexyl) phthalate) for persons 55-to-64 using a Value per Statistical Life approach. "

Below is another extract from the above paper that endeavours to quantify the global costs of plastics.

Significance

Endocrine-disrupting and neurotoxic chemicals in plastics pose serious threats to human health.

By examining exposures to three toxic chemicals found in plastics and their estimated health impacts, we provide evidence of the health benefits of reducing chemical exposures in plastics. For the year 2015, we estimate that eliminating exposures to BPA and DEHP in countries constituting one-third of the world's population would have saved approximately 600,000 lives. Reducing PBDEs to threshold levels in 2015 for women giving birth in countries accounting for 20 percent of global births would have saved approximately 11.7 million Intelligence Quotient (IQ) points. We estimate that the economic benefit in 2015 of reductions in exposures to these chemicals is \$1.5 trillion 2015 PPP dollars.

I note that the Minderoo Foundation no longer concentrates on recycling, instead it focuses on upstream solutions such as -

- * identifying evidence for harm to human health; and
- * establishing a pathway to safe and sustainable materials.

I assume that 'upstream solutions' entails treating the *causes of*, rather than the damaging *effects of*,

plastics waste. Below are two pertinent extracts from one of the embedded threads that you provided in your email response sent 24 Sept 2025:

“Plastics and Human Health

Minderoo is advocating for stronger efforts to regulate plastics, incl the ongoing negotiation of the [Global Plastics Treaty](#), and supporting world-leading research into the effects of plastics on human health.”

“What are Sustainable Materials?

Sustainable materials are designed with human and environmental safety in mind, avoiding harmful chemical additives and enabling responsible end-of-life pathways, whether thru true circularity or safe biodegradation. This includes:

- Non-plastic substitutes, like moulded fibre packaging or **advanced paper-based packaging that can replace conventional plastics in key applications;**”

Below are extracts from my recent letter to you dated 23 Sept 2025 (1st Attachment):

“Woolworths and Aldi package 1 litre milk in cardboard cartons at their Lane Cove retail stores. Coles at Lane Cove only sells milk in 1 litre plastic bottles that would take up to 100 times longer for the plastic to ‘breakdown’, than for a cardboard carton to decompose. Milk containers do not need to exceed 1.5 litres.

Sales of milk should be restricted in size to 1.5 litre cardboard cartons. No need for 2 litre and 3 litre plastic milk containers that take an eternity to decompose and are not cost-effective to recycle. Rather buy a few 1.5 litre cardboard milk containers if you have a family to feed”

Below are extracts re associated recycling costs for plastic milk containers from [Plastic recycling is a minefield. Here's why it's so difficult and how we can make it easier](#) - 26 Jul 2023

ABC Environment reporter, [Nick Kilvert](#), enlisted comments from polymer chemist Professor Bronwyn Laycock:

Products branded with a number 2 are made from high density polyethylenes or HDPEs, **and include your cloudy milk bottles.**

"The problem is that you can't chemically recycle HDPEs very easily," says Professor Laycock, "because [the polymer is made of] very stable bonds of just carbon and hydrogen."

Which leaves mechanical recycling — melting and reshaping. But that comes with problems, says Professor Laycock.

"If you've got HDPE in a clean product stream (without any other plastic types in it), you can melt that fairly easily.

"But if you've got any sort of contamination, and that's common for polypropylene then it becomes much harder."

The upshot is your milk bottle may well end up being "down-cycled" to an impure or compromised plastic and used for say, a park bench, decking, or even a rubbish bin.

Yours sincerely



Philip J Johnston