

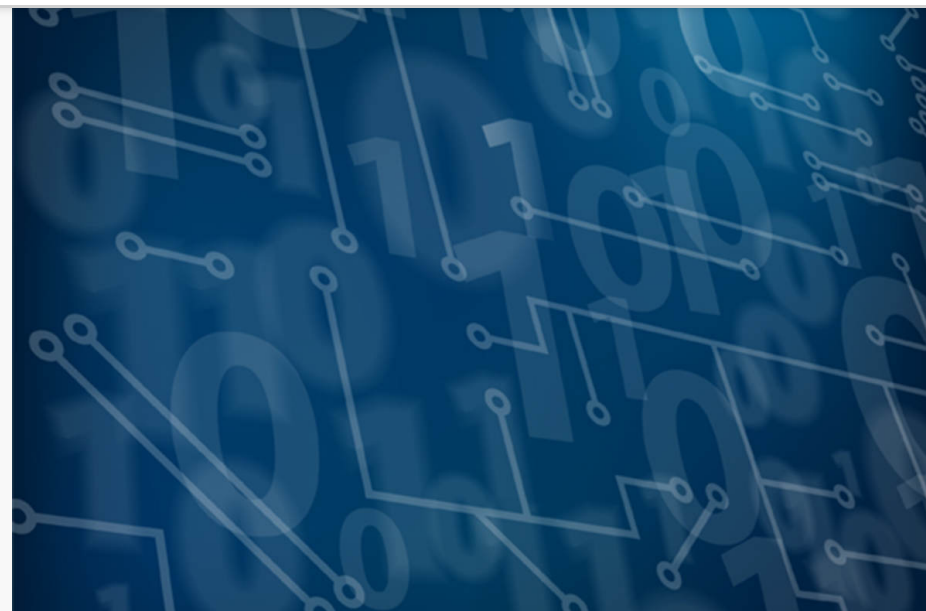
## Mass Balance: A New Approach to Calculating Recycled Content

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# Mass Balance: A New Approach to Calculating Recycled Content

There is not enough recycled plastic available in the marketplace today to meet recycled content demands, but a new approach to measurement for chemical recycling provides a solution.

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June 3, 2019

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But it's not the only such "patch". The quantity of plastic particles floating off the coast of Japan reportedly increased 10 times between the 1970s and 1980s, and 10 times every 2-3 years over the 1990s.[1] In fact, the quantity of marine debris is increasing in oceans around the world, so much so that, if unabated, estimates are that there will be more plastic in the ocean than fish by weight by 2050.[2]

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Plastic materials – fishing lines, bottles, bags, etc., even the microbeads found in certain household cleaning products – wind up in waterways and injure and kills fish, seabirds, and other marine mammals. These plastic bits may also be imbued with certain other chemicals or can pick up pollutants. These materials in turn can get into the human food chain.

Several cities have banned single use plastic bags and state legislatures are taking action; for instance, the State of California assembly is presently discussing the proposed AB-1080 California Circular Economy and Plastic Pollution Reduction Act, which is focused on plastic pollution.

Many of the biggest brands are responding.

According to a recent Closed Loop Partners study, 37 of the world's largest consumer brands and retailers (like Walmart, Danone, Unilever) have made commitments to use recycled plastics in their packaging within the next 10 years, which will require an increase in supply of recycled content by about 200 – 300 percent.[3]

Although mechanical recycling, which is available in many municipalities, is great for recycling something like clear PET -- chop it, wash it, re-melt it, sell it – it doesn't work as well for mixed plastics. Mixing plastic types affects the quality of the output, which sometimes doesn't meet manufacturer performance requirements.

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What does all of this mean?

There is not enough recycled plastic available in the marketplace today to meet all these new demands. We need new solutions, and we need them fast.

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plastic.

But how can you measure how much recycled content is in the output? Because many of these materials will be added to existing chemical processes that mix new and reused when scaled – basically, it'll be part of a blend, indistinguishable from new resin.

That's the problem that UL, alongside several members of the Ellen MacArthur Foundation's CE100, took on in a collaborative project, the results of which are captured in a 32-page white paper. In summary, the report concludes this: in the same way that you can't easily distinguish organic cotton versus conventional once that

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Based on these findings, we're incorporating mass balance accounting methodology into our existing recycled content standard, UL 2809, to enable companies to take credit for using recycled content resulting both from a mechanical recycling process and a chemical recycling process.

Why is that important?

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enable those same brands to understand where to make additional improvements across their supply chains. And that's transformational.

To learn more, you can view the full [Mass Balance white paper](#).

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[2] World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company, The New Plastics Economy — Rethinking the future of plastics (2016, <http://www.ellenmacarthurfoundation.org/publications>).

[3] Closed Loop Partners, Accelerating Circular Supply Chains for Plastics: A Landscape of Transformational Technologies that Stop Plastic Waste, Keep Materials in Play and Grow Markets (2019, [http://www.closedlooppartners.com/wp-content/uploads/2019/04/CLP\\_Circular\\_Supply\\_Chains\\_for\\_Plastics.pdf](http://www.closedlooppartners.com/wp-content/uploads/2019/04/CLP_Circular_Supply_Chains_for_Plastics.pdf)).

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