PLASTIC CHEMISTRY

ALL ABOUT LOW VS. HIGH VALUE PLASTICS

As it turns out, one of the types of plastic that is responsible for the largest share of landfilled plastic waste is low-value plastic. Low-value plastics are generally single-use plastics - some of them are composed of different types of plastics fused together (called multilayered plastics). The key defining feature of low-value plastics is that they're nearly impossible to recycle.

Rather than helping us move towards a circular economy, low-value plastics are one of main reasons as to why we have to consistently produce more and more plastic materials instead of reusing existing products.

QUICK FACTS

When it comes to recycling plastics by type, around **80% of all plastic waste is considered to be low-value**. That's a huge problem once we consider how many of these plastics end up polluting the environment.

Low-value plastics **decrease in quality** each time they're recycled. Melting them down changes their molecular structure. In fact, the quality decreases far too much to make the product viable after recycling.

China enforced a ban on low-value plastic waste imports in 2018. This caused many Southeast Asian countries to act as "landfills". For example, Vietnam's plastic waste import **increased by 14%** from 2018 to 2019.

Low-value plastics are the **most common form** of mismanaged waste in developing countries. They generally won't end up in recycling facilities since waste pickers don't have incentive to pick up plastics with no financial value.

When sent to landfills or left as litter, low value plastics **cannot degrade**. Instead, they break up into smaller plastics called microplastics which can negatively impact various species, our waterways, etc.

One type of low-value plastic called thermoplastics are plastics that harden after being heated. Once they're moulded into their final shape, **they can't be remelted or recycled anymore.**

NEW SOLUTIONS

NEW RECYCLING METHODS

Researchers have actually proposed shredding plastics to recycle them instead of following the traditional melting process. Some nonprofits have even adopted this solution, like Planet Love Life (who make plastic bracelets).

REPURPOSING THE PLASTIC

Many organizations have explored how to repurpose low-value plastics before sending them to the landfill for good. Some of these new use cases include plastic lumber, wastewater adsorbents, and accessories, among other ideas.

IMPLEMENTING BANS

Since a significant portion of plastic waste is considered low-value, we could start phasing out this material. At the very least, it is possible to replace some low-value plastics with reusable or easily-recyclable material.

DESIGNED BY THE PLASTIC SHIFT

To learn more about the chemistry of plastics, visit www.theplasticshift.com

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