Chemical Recycling 101

Turning plastic trash into air pollution

In recent years, plastics industry lobbyists have been promoting an old incineration method as a new way to solve the plastic pollution crisis. They are calling the process "chemical recycling" and "advanced recycling," even though it is not "advanced" and nothing gets recycled. These misleading terms were created by the plastics industry to greenwash plastics incineration technologies. The plastic trash that enters a so-called "chemical recycling" facility is burned, creating harmful air pollution, contaminated oil, and toxic ash.

By deceptively presenting plastics incineration as an environmentally sound solution, the plastics industry seeks to justify its plans to triple plastics production by 2050.

This misleading practice is greenwashing at its worst

What is "chemical recycling?"

The terms "chemical recycling" and "advanced recycling" generally refer to technologies that seek to break down or "deconstruct" plastic into its chemical building blocks. Most facilities use what are called "pyrolysis and gasification," processes that burn plastic trash and turn it into harmful air pollution and chemical wastes.

Some of the outputs created by "chemical recycling" facilities are burned again later as hazardous waste or as heavily contaminated industrial fuels, releasing additional toxic air pollution. **This is not recycling.**

The plastics industry lobby is trying to convince state and federal lawmakers, as well as the Environmental Protection Agency (EPA), that burning plastics in "chemical recycling" facilities should not count as incineration.

They want to change the classification of "chemical recycling" from incineration to "manufacturing" or "recycling," or to redefine plastic trash as "not solid waste," as a way to evade air pollution controls.

Such a determination would leave companies free to emit unlimited amounts of harmful air pollution without any monitoring, reporting, or control technologies.

In addition, if reclassified, many of these facilities would qualify for subsidies and tax breaks. Already more than two dozen states have passed laws promoting "chemical recycling."

What are the health impacts of burning plastic?

Plastics are the biggest category of "petrochemicals." They are made by combining fossil fuels (oil, gas, and coal) with hundreds of toxic chemicals.

Incinerating plastic creates climate-warming gases and releases toxic pollution that can impact health. These pollutants include dioxins, benzene, formaldehyde, particulate matter, and heavy metals, such as mercury and arsenic.

Exposure to this pollution increases the risk of cancer, birth defects, reproductive system damage, developmental issues, cardiovascular problems, respiratory impairment, hormonal irregularities, and neurological problems.

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The mission of Moms Clean Air Force is to protect children from air pollution and climate change. We envision a safe, stable, and equitable future where all children breathe clean air. We fight for Justice in Every Breath, recognizing the importance of equitable solutions in addressing air pollution and climate change. www.momscleanairforce.org

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How does "chemical recycling" harm communities?

Many "chemical recycling" incinerators are located in communities of color and in low-income neighborhoods that are already overburdened by other sources of air pollution. Changing the laws so that these incinerators can emit harmful pollution without limits in disproportionately impacted communities is environmental racism.

In addition to air pollution and toxic waste, "chemical recycling" incinerators produce large amounts of heavily contaminated pyrolysis oils, which can be made into highly toxic fuels. A 2023 investigation showed just how dangerous these fuels really are: A Chevron refinery in Pascagoula, Mississippi, received EPA approval to use the pyrolysis oils derived from incinerating plastic as ingredients to make jet and boat fuel. Air pollution produced from burning the jet fuel is *expected to cause cancer in one in every four people* exposed over a lifetime. The boat fuel ingredient is even more toxic: *every person exposed over a lifetime* would be expected to get cancer. This risk level is one million times higher than what EPA usually considers acceptable for new chemicals and six times higher than the chances of lung cancer from a lifetime of smoking.

What can EPA and Congress do to protect us?

For nearly three decades, EPA has required the same pollution-control standards for pyrolysis and gasification incinerators as it has for other incinerators. **This must continue.**

Since these "chemical recycling" facilities burn plastic trash, which is solid waste, they meet the legal definition of incinerators under the Clean Air Act. There is no reason to reclassify these incinerators. We are pleased that in 2023 EPA withdrew a 2020 proposal that sought to remove these facilities from federal incinerator rules. We urge EPA to take the next logical steps: Affirm that pyrolysis and gasification "chemical recycling" incinerators are indeed incinerators, and begin to enforce the Clean Air Act rules at noncompliant facilities.

In addition, EPA and Congress must not fall for the false distinction between "chemical recycling" that is "plastics-to-fuel" (burning plastic trash in an incinerator, and then burning the outputs again as a fuel) and that which is "plastic-to-plastic" (using some of the incinerated plastic as feedstock for new chemicals or plastics). No matter what is produced at the end of the process, "chemical recycling" pyrolysis is a heavily polluting incineration technology that needs to remain under Clean Air Act incinerator rules.

Photo right: Brightmark "advanced recycling" facility in Ashley, Indiana. May 2022. Credit: The Last Beach Cleanup

We urge EPA and Congress:

- Do not exempt "chemical recycling" from air pollution rules. Do not reclassify "chemical recycling" technologies as "recycling" or "manufacturing." Do not reclassify plastic trash as "not solid waste."
- Affirm that "chemical recycling" pyrolysis and gasification will remain classified as solid waste incineration and thus subject to clean air requirements.
- Enforce Clean Air Act incinerator rules at all "chemical recycling" facilities.
- Support policies that reduce plastic production and waste.

Turning plastic trash into hazardous waste and air pollution is not a solution to the plastics crisis. Please join us in saying no to this plastics industry greenwashing.

Learn more and take action: **www.momscleanairforce.org/issues/plastics**

Full list of sources: momscleanairforce.org/sources-chemical-recycling

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