Plastic pipes are polluting drinking water systems after wildfires – it's a risk in urban fires, too

While the two articles linked here specifically point to recently-recognized toxicity issues with plastic drinking water pipes, and focus on one toxic, benzene, they only hint at an underlying issue, which is, as the first article says,

"Plastics are ubiquitous in drinking water systems. They are often less expensive to install than metal alternatives, which hold up against high heat but are vulnerable to corrosion."

What goes unmentioned is that plastic pipes (like plastics in general) throughout their life cycle (that is, from manufacture, during use, after disposal and -- as the first article here says -- when burned) emit toxic substances.

PVC pipe, for instance, is a polyvinyl chloride product, and emits Vinyl Chloride, one of the first carcinogens named in the Clean Air Act (as amended in 1970).

They have been approved, by EPA and other agencies not because they are "safe" (a term so ambiguous as to be essentially meaningless in science and regulatory process), but (as with virtually all regulated substances) they have been determined to present only a low or "acceptable" risk under legal definition -- or, in the common disclaimer on pesticides and other products, "when used according to label instructions."

In other words, "acceptable" according to standards typically arrived at through compromise of positions held by health and environmental advocates and those of chemical manufacturers and dealers.

(Zero emissions, the only "safe" level as commonly understood, is ordinarilly imposible to achieve by either technology or negotiations, which is why environmental and occupational or public health advocates often seek a complete ban on prduction and sake of some toxic products.)

The "risks" and "hazards" of plastics (these are technical terms with significant regulatory implications) are intrinsic to the broad field of "chlorine chemistry" (another term worth googling; try for instance "Greenpeace chlorine chemistry" and one example more or less at random from that search,

https://www.downtoearth.org.in/coverage/health/killer-chlorine-28392).

(I do not advise immersion in the ongoing wrangling about risk assessment, hazard analysis, cost-benefit analysis and related terminology, but they are basic to any understanding of regulatory processes dealing with toxics.)

I first became aware of these issues while engaged in the worldwide struggles to regulate pesticides and incineration, especially the struggle leading to adoption of the Stockholm Convention on Persistent Organic Pollutants (see many papers on my website at http://michaelgregory.org/contents.html, especially those at

http://michaelgregory.org/pdfs/mg469.pdf).

One of the main lessons to be learned from those struggles is that many plastics (and other chlorine-containing substances) when burned, unless burned at the extremely high temperatures required by EPA for specifically-designated "hazardous waste incinerators" produce dioxins (the particular focus of the Stockholm Convention).

So, just some of the thoughts brought to mind by these two articles ....

https://theconversation.com/plastic-pipes-are-polluting-drinking-water-systems-after-wildfires-its-a-risk-in-urban-fires-too-150923?

https://theconversation.com/the-coronavirus-pandemic-might-make-buildings-sick-too-136373