



[excerpt from sustainableminds.com](http://sustainableminds.com)



PVC is a plastic everyone is trying to replace now due to toxicity of chlorine in the product. We were surprised to see the Okala mPts values were so low. Just wondering if you have any feedback on this?

[Philip White](#) responds:

First, let's take a look at the values that Okala assigns to Polyvinyl chloride polymer (PVC), then I'll comment on those results.

Material	Unit	Okala mPts.	CO₂ eq. lbs.
Polyvinyl chloride (PVC)	lb	50.402	1.962
Ethylene vinyl acetate (EVA)	lb	31.297	2.128
Polycarbonate (PC)	lb	106.55	7.617

PVC is potentially problematic on a number of levels, as is discussed in the Okala design guide.

- A. Greenpeace claims (with no published evidence, to my knowledge) that dioxin is produced in the production of PVC and that dioxin is contained in PVC.
- B. The vinyl monomer is undoubtedly carcinogenic, but there is none of the vinyl monomer available in PVC.
- C. PVC can contain phthalates and lead as additives, which are toxic. These are problems created by the additives, not the PVC.
- D. The most significant problem with chlorine in the PVC occurs if the PVC is burned with other hydrocarbons (like wood or paper) below 700 degrees Centigrade. In these conditions, it can make Dioxins and Furans, which are highly toxic substances. Likewise, if a very small amount of salt or blood is burned with paper or wood, the same amount of dioxins are produced. If they are burned above the 700 degrees Centigrade, the dioxins are oxidized (destroyed).

That is my understanding of the problems of pure PVC and why the Okala impact values of PVC are not higher than you might expect. If the process inventory data showed dioxin (or vinyl monomer or lead or phthalate additives) being emitted in the production or use of the PVC, the values would be much higher. But the process inventory does not contain such emissions.

PVC is controversial, but I try to abide by the facts.