

Further, if you are relying on the destruction capability of subsequent incineration, you are ignoring data which indicates that dioxins may actually be formed by the incineration process. Thus, by incinerating you may guarantee that dioxin molecules are split apart but you have not guaranteed that they will not recombine to create equal or more dioxins and furans.

The commonly held belief that with a high enough temperature and dwell time, dioxin production by incineration can be controlled or minimized is fast crumbling. One of the landmark studies (Hasselriis, 1984) showing a correlation between high temperature and dioxin formation has been shown to have been falsified. Usual testing for destruction efficiency does not test the products of incomplete combustion which may form dioxins in after-burner areas. The Barry Commoner theory of after combustion chamber dioxin formation has recently been supported by two studies. One study presented at the Fifth International Symposium on Dioxin (Vogg and Steiglitz) found that fly ash from incinerators contains the precursors for increased dioxin and furan production. Another study performed on a Prince Edward Island Incinerator in Canada further showed that most of the dioxin was being formed in the chimney or pollution control devices, not in the furnace.

The point of all of this is that it appears that the dioxins and furans are formed upon cooling when the appropriate hydrocarbons and halogens are present. Thus no amount of temperature or dwell time will prevent dioxins from forming or reforming after combustion. I'm sure you are aware of these findings.

It is doubtful that at the incinerator site the combustion will take place in the absence of halogens, in fact since chlorinated organics are the most commonly incinerated hazardous waste, it is almost guaranteed. How can we be assured that the benzene rings or their breakdown products will not simply reform dioxins during incineration? It is ludicrous to go to the trouble of dechlorinating dioxins, only to create more by subsequent incineration.

But even before incineration, I am not convinced that the proposed dechlorination will remove all of the available halogens and thus prevent the dechlorinated dioxin molecule from acting as a "magnet" and reattracting halogens. Have studies been done on this possibility? How stable is the glycol surrogate dioxin molecule? How toxic is it?

If indeed all of these questions can be answered and do indicate true detoxification is taking place, why can't the process be repeated over and over until the level is as low as the process can make it. Then perhaps the material should be glassified and stored above ground.