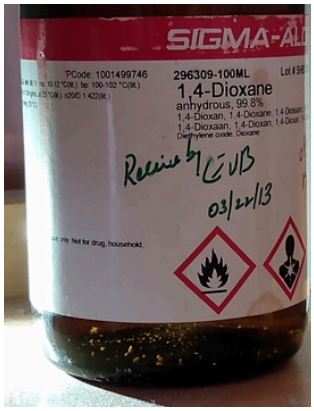
Peroxide Forming Chemicals

Safe Use, Handling, and Disposal

Peroxide forming chemicals are a class of compounds that can, over time, form shock-sensitive, explosive peroxide crystals. While commonplace in labs of all types, they can be extremely dangerous if mishandled or allowed to degrade. As such, they should only be stored in conjunction with a peroxide former management program. Since avoiding peroxide formers is often not an option, understanding their potential risks is paramount.

Dangers of Peroxide Formers



Crystallization in a bottle of 1,4-Dioxane

Peroxide crystals on or within chemical containers may or may not be visible, but are still extremely dangerous due to their instability. Even mild friction, impact, or agitation to the crystals can result in deflagration when the peroxide crystal detonates and ignites the organic vapors and liquid inside the container; a reaction that can be exacerbated by the oxygen found in the peroxides themselves.

Crystallization of small snowflake-like or glass wool-like precipitates inside or around the chemical container can be a sign of peroxide formation—as can discoloration or stratification. Since visual indicators are not always present, the only true way to know if peroxides have formed in containers is through professional testing and analysis.

Common Peroxide Formers

- 2-Butanol
- Tetrahydrofuran (THF)
- Ethyl Ether
- Diethyl Ether
- Diisopropyl Ether
- Vinyl Ethers
- 1,4-Dioxane
- Methyl Acetylene
- Methyl Isobutyl Ketone
- Potassium Amide
- Sodium Amide (Sodamide)
- Cumene
- Acrylic Acid
- Potassium Metal
- Dioxanes
- Cyclohexanol
- Cyclehexene
- Furan

**Not an exhaustive list*



Partner for Peroxide Formers Safety

If improperly managed, almost every aspect of peroxide former use can be highly hazardous—storing, handling, testing, denaturing, and shipping all come with risk and should only be performed by trained experts. Triumvirate Environmental's team of highly-skilled professionals is trained to handle peroxide forming chemicals on an as-needed basis, whether it's a one-time project or on a routine basis. We work to safely test, denature, and ship chemicals that have high levels of peroxides in, on, or around the bottle. Contact us today to learn more about how we can help you.

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