

Peroxide Forming Chemicals

Lab Safety Awareness Week

Some common laboratory solvents fall into a category called peroxide forming chemicals. Under certain conditions such as oxidation or concentration, these chemicals may form shock-sensitive explosive peroxide crystals. Shocks as minimal as unscrewing a cap containing peroxide residues may be enough to trigger detonation, which highlights the importance of proper dating, disposal, and inspection of potential peroxide forming chemicals.

While this hazard is not currently defined by GHS guidelines and may not be noted on the chemicals SDS, it is of great importance that labs are aware of this potential hazard and handle peroxide forming chemicals with care and consideration!

Class	Characteristics	Common Example
Class A	May autoxidize and form explosive levels even in unopened containers and without concentration	Tetrafluoroethylene
Class B	Can form explosive levels of peroxides, but typically require concentration. Most of these are volatile enough that repeated opening of their container can allow for concentration via	Di-ethyl ether and Tetrahydrofuran
Class C	Risk of peroxide formation is relatively low, but decomposition can initiate explosive polymerization of the bulk monomer	Acrylonitrile

Essential Habits for Peroxide Former Safety

- Label all containers of peroxide formers with the date they were received and opened
- Be aware of expiration dates and follow proper disposal policies
- Regularly inspect your chemical inventory and dispose of old, expired, damaged, or unneeded chemicals
- Maintain an accurate chemical inventory
- Ensure that personnel are trained and follow all rules and regulations for safety handling hazardous chemicals

