

FDN(wh)Y Me?

As an aid to laboratories in avoiding FDNY Violation Orders (VO) and Summonses (SUM), EH&S distributes monthly FDNY inspection findings which resulted in a VO or SUM citation to an actual laboratory on either the Morningside or Medical Center campus. These real-life scenarios are meant to assist the research community in ensuring that such conditions do not exist in Columbia University laboratories.

March, 2021 - Store No Flammable Flashing Below 100°F

The Fire Department of the City of New York (FDNY) commonly issues violation orders (VO) for improperly storing flammable materials below ambient temperatures, or simply put, storing flammable liquids in non-rated refrigeration units. This regulation exists to preserve fire and life safety within the laboratory. Flammable liquids with a flash point of less than 100°F pose a significant fire and explosion hazard if stored within non-rated or conventional/household refrigerators. For this reason, flammable materials with a flash point less than 100°F, if necessary to be stored below ambient temperature, must be stored in explosion-proof or flammable storage refrigerators.



Flammable liquids, if not properly contained will release flammable vapors into the environment. In small amounts this release does not pose a hazard as the fumes will dissipate in a well-ventilated space or be vented into a fume hood. In a refrigerator, however, flammable vapors are contained and unable to dissipate. Over time, these vapors can accumulate to the point known as the Lower Explosive Limit (LEL) and if met with an ignition source can result in explosive combustion.

Conventional refrigerators are not rated for flammable liquid storage and therefore have exposed ignition sources. A broken or improperly closed flammable liquid container could release flammable vapors, reaching the LEL. Explosion proof and flammable storage refrigerators are designed with no exposed ignition sources which removes the possibility of explosion.

Environmental Health & Safety diligently applies stickers to all non-rated refrigerators that read, "Store No Flammables Flashing Below 100°F" to remind researchers of this rule. A newly-developed version of the sticker now includes pictures of the types of flammable liquid containers that should not be found in general purpose refrigerators.

There is some relief from FDNY that marks a clear delineation for this rule. If the laboratory can verify that the chemical has a flash point of greater than 100°F, the VO will not be issued. The simplest method of proving this would be to have the material's SDS printed and readily available. EH&S has also seen labs share flammable storage refrigeration if space permits. For larger quantities of flammable liquid storage below ambient temperatures, explosion proof or flammable storage refrigeration must be purchased. Please also bear in mind that environmental rooms are essentially walk-in refrigerators and therefore no flammable liquids can be stored inside. In fact, no hazardous materials should be used and/or stored in environmental rooms due to the lack of ventilation.

For any questions related to refrigeration, proper storage, or any other FDNY compliance related question, feel free to reach out to labsafety@columbia.edu.