

Accident Summary: Exploding Refrigerator

This incident occurred many years ago and the details are unknown. However, the remains of the lab refrigerator below are consistent with a scenario that has occurred elsewhere. Normal refrigerators have a number of electrical components on the inside of the box which can act as an ignition source: the light bulb, the automatic defrost feature and the thermostat. When flammable liquids are placed in a normal refrigerator in an open container, or incompletely sealed container, the material will evaporate into the closed space and the concentration may reach the lower explosive limit. If one of the ignition sources noted above comes into play, it will cause an explosion/fire.

Relative to refrigerators, the terms “flammable storage”, or “lab-safe”, or “desparked” mean the same thing, i.e., the electrical ignition sources noted above are not within the storage compartment. All refrigerators used for chemical storage must be this type of unit. The term “explosion-proof refrigerator” more accurately refers to another type of unit which is quite expensive and very rarely needed in the lab environment. For more information on lab refrigerator see:

<http://www.ehs.ucsb.edu/units/units/labsfty/labrcs/chemistry/lchemrefrig.htm>



Remains of lab refrigerator after explosion due to inappropriate storage of flammable liquids in normal (“non-desparked”) unit.