

Hot and bothered

Prep rooms

During the recent spell of hot weather, we have been receiving queries from concerned technicians about high temperatures in their chemical stores. The main problem is usually poor building design, which was addressed in a previous article [1] which includes issues such as the chemical store having no outside wall or the 'make up' air being drawn from a warm prep-room. The longer, hotter and more frequent spells of hot weather that will surely come as a result of climate change suggest the situation will only get worse.

It is worth pointing out that there is no maximum temperature in law for a chemical store – surprising to many people. The legislation covering the storage of chemicals, DSEAR [2] and COSHH [3], addresses the outcomes and leaves the details of how they are achieved up to the organisation.

But high chemical store temperatures are not desirable: it can lead to two main problems from a health and safety perspective.

- 1) Increased evaporation of flammable substances could give rise to an explosive atmosphere.
- 2) Increased evaporation of hazardous substances could give rise to an atmosphere that is harmful to breathe.

In both these cases, the issue is excessive vapour in the atmosphere. This can be addressed in two fundamental ways: by reducing the evaporation (reducing the temperature for instance) or by increasing the ventilation. Reducing the temperature is preferable as it will lead to a longer lifespan of chemicals and prevent 'ballooning' of some bottles amongst other things, but realistically, increasing ventilation is usually a significantly easier (and cheaper) way of achieving the same end, at least as far as air quality is concerned.

Doors

On a not entirely unrelated matter, having doors open is generally an excellent way of improving overall ventilation, and this is even more important nowadays as a mitigation against COVID-19.

However, we have had a few queries recently from people who have been told that they should (or at least could) have prep room doors open to improve the ventilation (and provide some cooling). There are some problems with this. First of all, it is quite likely that prep room doors could be fire doors – in which case they cannot be kept open. Even if not, there is a significant problem with security in having the prep room door kept open. Even though the more hazardous materials and equipment are kept securely, there is still plenty of opportunity for a casual 'visitor' to obtain something that could result in a nasty accident.

SSERC strongly recommends that prep room doors should be kept closed. <<

References

- [1] Chemical Store Temperatures, **Bulletin 233**.
- [2] The Dangerous Substances and Explosive Atmospheres Regulations, 2nd Edition.
- [3] The Control of Substances Hazardous to Health Regulations, 6th Edition.

