



Ammonia alarms in refrigeration plants

When Ammonia is used as a refrigerant in a "brine system" special requirements are needed.

When is gas detection needed?

The use of ammonia in refrigeration plants is regulated by the European Refrigeration Standard (EN378: 2008), where the requirement is that all plants with a charge > 50 kg must have installed gas detection systems in machinery rooms and other areas where there is a risk to personal safety or of reaching practical limits.

In large installations with a charge of > 500 kg ammonia, detection of ammonia must also be made in the secondary circuit. This applies both to open or pressurised (closed) systems

What is an alarm system?

A gas detection system consists of a chain - from discovery of the risk to the corrective action!
It is important to think through the measures to be taken at each alert level, and plan for the appropriate staff to be informed, such as service personnel, the individual responsible for safety and rescue services.

Design and installation

When planning an installation, it is necessary to know the type of "brine", system pressure, temperature and the type of system, open or pressurised (closed) systems.

Appropriate alarm levels

Alarm levels will depend on individual requirements and cannot be given as generalisations.

- Measuring equipment normally has a measurement range of 0 to 100 ppm.
- System pressure is typically between 0 to 10 bar.

Alarm level function

Generally only leakage alarm is sent to the maintenance personnel.

Operation and maintenance manuals

Under current regulations the alarm system is to be inspected by an authorised representative at least once a year and the results must be recorded in the logbook.

To keep in mind:

Equipment for detection of ammonia in "brine" is qualified equipment that requires careful maintenance to work properly.