SAFETY ANALYSIS OF CO2 AS A REFRIGERANT IN SUPERMARKET REFRIGERATION

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ABSTRACT

In this study we analyse some safety aspects related to the usage of CO2 in supermarket refrigeration. The concentration levels in the supermarket’s shopping area and machine room that result from different accident scenarios are calculated for a selected practical example. The ventilation requirements in the supermarket under normal conditions and during a leakage accident are taken into consideration.

For the selected case, the analysis of the calculations’ results showed that CO2 does not enclose a health hazard for the customers and workers within the shopping area, whereas safety requirements expressed by efficient ventilation and proper alarm system must be installed in the machine room.