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Safe Ammonia System Design in Large Applications

Safety Starts in Design Phase

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Ammonia

- NH_3 is efficient and safe in practical use
- Strong track record in many industries
- NH_3 is cheap and has a no GWP
- Well educated workforce on all levels
- All components are available in the market.
- More than 100 years of experience with NH_3
- Full product range of components and units for NH_3
- Solutions used in all parts of industrial refrigeration and A/C markets

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Ammonia

Global Ammonia Market to Reach 174 Million Metric Tons by 2015, According to New Report by Global Industry Analysts, Inc.

GIA announces the release of a comprehensive global report on Ammonia market. The global market for Ammonia is forecast to reach 174 million metric tons by the year 2015, propelled by burgeoning growth from end-use markets including fertilizers and industrial applications. Emergence of new markets such as biofuels, AdBlue for NOx emissions and spurt of capacity expansions across developing countries is also expected to drive market growth worldwide.

Introduction

All safety starts in the design phase
-Components compliant with code of good practice and standards
-Support has to be according to standard and code of good practice
Consider if all valves are really needed or just nice to have
-Many valves are used just in case
-Place the valves so they can be properly serviced without too much hassle
-Place safety valves so they can be properly serviced easily

Installing the system

Installation shall be carried out so that there is no un-necessary stress on any part of the system

Ensure that bridges over pipes enables crossing to avoid stress on pipes, cladding and insulation

When pipes go through walls and sealing, ensure that the humidity membrane is healthy

Cost Analysis

It does not cost more to do a proper job than a poor job if the materials are the same

A good maintenance program is more expensive than no maintenance, but when the problems start to come the cost are even or more for the non-maintained system

Well maintained systems are more safe than non-maintained systems

Some examples

Examples

Example

Conclusions

From experience visiting sites in the US it is found that with good code of practice ammonia is a viable solution in large industrial refrigeration systems provided code of good practice

Training is required to have a good efficiency and a well maintained and safe plant regardless the refrigerant

It is sometimes a bit underestimated what impact damaged insulation has on the total performance especially on low temperature systems

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Thank you very much for your attention

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