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Ammonia Refrigeration

This one-day course examines the usage of ammonia as a refrigerant. The different types of single-stage and two-stage ammonia systems, the reason/need for accumulators and intercoolers in ammonia refrigeration and the basics of the liquid recirculation system operation are also covered.

CHARACTERISTICS

Objective: Identify the characteristics of an ammonia refrigeration system.

SUBTOPICS:

- Ammonia Sources, Uses & Chemical Characteristics
- Hazardous Material Concerns/Effects
- Materials & Safety

SINGLE STAGE AMMONIA SYSTEMS

Objective: Summarize the primary components in single-stage ammonia refrigeration systems and describe their functions.

SUBTOPICS:

- Positive-Displacement Systems
- Refrigeration Loads
- Primary, Secondary Refrigeration System
- Components

TWO STAGE AMMONIA SYSTEMS

Objective: Define the primary and secondary components of a two-stage refrigeration system and describe component functions.

SUBTOPICS:

- Compression Ratio & Compressor Capacity
- Two-Stage System, Performance & Components
- Booster Desuperheater & Intercooler
- Complex Two-Stage Systems

SUCTION ACCUMULATORS AND INTERCOOLERS

Objective: Examine why suction accumulators are needed and describe the functions.

SUBTOPICS:

- Need for Suction Accumulators
- Accumulator Design
- Liquid/Vapor Separation
- Intercoolers Types & Alternatives

LIQUID OVERFEED (RECIRCULATION) SYSTEMS

Objective: Explain the functions performed by and advantages and disadvantages of recirculation systems.

SUBTOPICS:

- Recirculation Systems-Design & Function
- Advantages & Disadvantages