Tel No:+97126654546 | Fax No:+97126654182 | Email: training@cmc-me.com | www.cmc-me.com

RE051:
New Developments in Lower GWP Refrigerants & Future of Refrigerants

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Training Description:

This training course explores the latest advancements in low Global Warming Potential (GWP) refrigerants and their impact on the future of refrigeration and air conditioning systems. The training course equips participants with a comprehensive understanding of the regulatory landscape, technological innovations, and practical considerations for adopting these new refrigerants.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Gain a thorough understanding of the environmental impact of refrigerants and the concept of Global Warming Potential (GWP).
- ✓ Explore the regulatory landscape driving the transition to low GWP refrigerants, including international agreements and national policies.
- ✓ Examine the thermodynamic properties and performance characteristics of various low GWP refrigerant alternatives.
- ✓ Analyze the safety considerations and system compatibility requirements associated with new refrigerants.
- ✓ Discuss the design and operational adaptations necessary for adopting low GWP refrigerants in various applications (e.g., commercial refrigeration, air conditioning systems, heat pumps).
- ✓ Explore the latest research and development trends in low GWP refrigerant technologies.
- ✓ Develop strategies for selecting and implementing low GWP refrigerants in real-world projects.

Training Designed for:

This course is intended for HVAC/R engineers and technicians, building designers and consultants, Facility and maintenance managers, Manufacturers and distributors of refrigeration equipment, Policymakers and regulators in the HVAC/R industry and anyone interested in the future of sustainable cooling technologies

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ Environmental Impact of Refrigerants and Regulatory Landscape
  - Introduction to climate change and the role of refrigerants in greenhouse gas emissions.
  - Understanding GWP and its impact on global warming.
  - International agreements and regulations driving the phase-out of high GWP refrigerants (e.g., Montreal Protocol, Kigali Amendment).
  - National and regional policies promoting the adoption of low GWP alternatives.

DAY TWO:

- Properties and Performance of Low GWP Refrigerants
  - Classification of refrigerants by type and GWP.
  - Thermodynamic properties of common low GWP refrigerant alternatives (e.g., HFC-32, HFOs, CO2, Ammonia).
  - Performance comparison of low GWP refrigerants with traditional refrigerants in different applications.
  - Challenges and opportunities associated with the efficiency and capacity of low GWP options.

DAY THREE:

- Safety Considerations and System Compatibility
  - Flammability and toxicity classifications of low GWP refrigerants.
  - Safe handling practices and regulatory requirements for new refrigerants.
  - System compatibility considerations: material selection, lubricant compatibility, and component modifications.
  - Leak detection and service procedures for low GWP refrigerants.

DAY FOUR:

- Design and Operational Adaptations for Low GWP Systems
  - Design modifications for air conditioning and refrigeration systems using low GWP refrigerants (e.g., component sizing, control systems, oil management).
  - Service and maintenance considerations for low GWP systems.
  - Training and certification requirements for technicians working with new refrigerants.
  - Case studies of successful implementation of low GWP refrigerants in various applications.

DAY FIVE:

- Future of Refrigerants and Emerging Technologies
  - Exploring cutting-edge research and development in low GWP refrigerant technologies.
  - Natural refrigerants and their potential role in the future of sustainable cooling.
  - Long-term strategies for achieving net-zero emissions in the HVAC/R sector.
  - Regulatory updates and industry trends for the future of refrigerants.
- Course Conclusion
- POST-TEST and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

Aisha Relativo - Training & Career Development Manager
aisha@cmc-me.com / training@cmc-me.com
Tel.: +971 2 665 3945 or +971 2 643 6653 | Mob.: +971 52 2954615