

# EU F-GAS REGULATION

THE EU F-GAS REGULATION, WHICH ENTERED INTO FORCE IN 2015, IS THE KEY LEGISLATIVE DRIVER FOR THE EUROPEAN HVAC&R INDUSTRY TO MOVE AWAY FROM HIGH GWP HFCs. THE REGULATION HAS INTRODUCED A COMBINATION OF MEASURES, TO CUT DOWN THE EMISSIONS OF F-GASES BY TWO THIRDS BY 2030. THIS WILL IN TURN GREATLY INCREASE THE ADOPTION OF HFC-FREE TECHNOLOGIES. ENSURING THAT THESE SYSTEMS ARE PROPERLY AND SAFELY HANDLED IS KEY TO MAKING THE TRANSITION A SUCCESS.

The HFC phase-down that will reduce HFCs placed on the EU market by 79% by 2030 is considered to be the backbone of the Regulation. Moreover, bans on certain HFCs in specific sectors will have a direct impact on the growth of the market for natural refrigerants. These include commercial refrigeration (both smaller plug-in units and centralised systems) that use HFCs with GWP > 150 as of 2022 as well as small AC units (portable and single split).

The Regulation intends to abolish the use of very high-GWP gases (GWP above 2,500) not only in new equipment but also in existing installations. As of 2020 it will be prohibited to service existing refrigeration equipment with HFCs that have a GWP of 2,500 or above, unless these refrigerants are recycled or reclaimed (until January 2030).

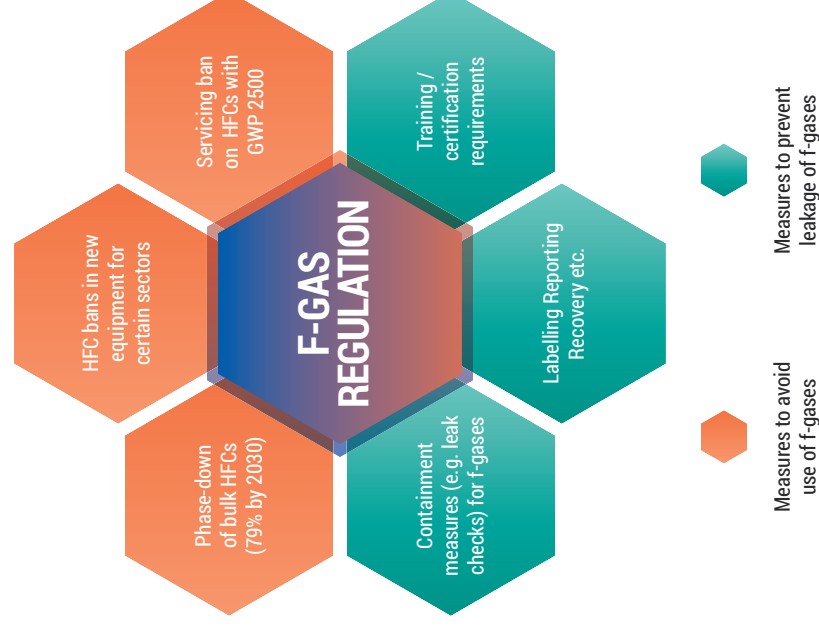
Other regulatory measures on HFCs include strengthened containment, labelling and end-of-life requirements.

The F-Gas Regulation requires mandatory training and certification for HVAC&R equipment using fluorinated refrigerants. However, it does not address safe handling of HFC replacements, such as CO<sub>2</sub>, ammonia and hydrocarbons. The EU-level legislation does not set

minimum training requirements for natural refrigerants, nor does it require that persons handling such equipment have certification that would be recognised across the EU. The Regulation only requires certification programmes and training to include “information on relevant technologies to replace or to reduce the use of fluorinated greenhouse gases and their safe handling”.

The Regulation mandates the European Commission to examine the EU legislation with regard to the training related to refrigerants to replace F-gases by 1 January 2017. In its evaluation in December 2016, the Commission came to a conclusion that the current legislative framework complemented by existing standards is appropriate to ensure safe handling of f-gas alternatives. It does not therefore consider it necessary to legislate the training on natural refrigerants at the EU-level.

Key elements of the F-Gas Regulation



# FRAMEWORK DIRECTIVE ON SAFETY AND HEALTH AT WORK

THE AIM OF THE FRAMEWORK DIRECTIVE IS TO INTRODUCE MEASURES TO ENCOURAGE IMPROVEMENTS IN THE SAFETY AND HEALTH OF WORKERS AT WORK. IT APPLIES TO ALL SECTORS OF ACTIVITY, BOTH PUBLIC AND PRIVATE, EXCEPT FOR SPECIFIC PUBLIC SERVICE ACTIVITIES, SUCH AS THE ARMED FORCES, THE POLICE OR CERTAIN CIVIL PROTECTION SERVICES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                               |
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| <p>The Framework Directive lays down general principles of the protection of workers at work, as well as provides general requirements for the training of employees. The employer is required to ensure that workers receive adequate safety and health training. This means that for equipment using any refrigerant, including hydrocarbons, ammonia and CO<sub>2</sub>, employers have to consider measures that will mitigate risks, including providing adequate training to its employees.</p> | <p>According to the Framework Directive, the employer shall ensure that each worker received health and safety training, in particular in the form of information and instructions specific to his workstation or job:</p> <ul style="list-style-type: none"><li>▶ On recruitment (before starting work);</li><li>▶ In the event of a transfer or a change of job;</li><li>▶ When work equipment is introduced for the first time or changed;</li><li>▶ When new technology is introduced.</li></ul> | <p>Training of workers must be repeated at suitable intervals. The duty to provide training also applies to the outside contractors. Training must be given by a competent person. Records should be kept in writing of the date and content of training activities and the participants.</p> |
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# ATEX DIRECTIVES RELEVANT TO HYDROCARBON TRAINING

THE EXPLOSIVE ATMOSPHERE DIRECTIVE 2014/34/EC AND THE SAFETY AND HEALTH PROTECTION OF WORKERS DIRECTIVE 1999/92/EC ADDRESS SAFETY REQUIREMENTS IN RELATION TO EXPLOSIVE ATMOSPHERES AND FOR IMPROVING THE SAFETY AND HEALTH PROTECTION OF WORKERS POTENTIALLY AT RISK FROM EXPLOSIVE ATMOSPHERES.

According to this Directive, employers are responsible for providing appropriate training to workers in relation to risks from explosive atmospheres. It does not specifically mention refrigerants but is relevant to all systems using flammable refrigerants. It applies, for example, to service engineers working with hydrocarbon systems. According to this Directive, employers must make sure that employees are properly informed about and trained to control or deal with the risks from the potentially explosive substances.

The non-binding guide to good practice for implementing the Directive prepared by the European Commission prescribes that employers must provide workers with training, which informs them of the explosion hazards at

the workplace and the protective measures taken. This training must explain how the explosion hazard arises and in what parts of the workplace it is present. The measures taken should be listed and their operation explained. The correct way of working with the equipment available must also be explained to workers. Employees must be instructed in safe work in or near hazardous places. This also involves explaining the meaning of any marking of hazardous places and specifying what mobile work equipment may be used there. Employees must also be instructed in what personal protective equipment they must wear at work. The available operating instructions should be covered during the training.

# PRESSURE EQUIPMENT DIRECTIVE RELEVANT TO CO<sub>2</sub> TRAINING

The Pressure Equipment Directive (PED) (2014/68/EU) provides a legislative framework for equipment and assemblies with a maximum allowable pressure greater than 0,5 bar. It concerns items such as vessels, heat exchangers, pressurised storage containers, piping, safety accessories and pressure accessories. It is especially relevant to equipment using

CO<sub>2</sub>. The Directive refers to the training required by notified bodies, third party organisations and user inspectorates conformity assessment and specifies that the personnel has sound technical and vocational training.

## EU STANDARD ON COMPETENCE OF PERSONNEL

European standard EN 13313, "Refrigerating systems and heat pumps - Competence of personnel" sets training requirements for all refrigerants, including natural working fluids.

This standard establishes procedures for achieving and assessing the competence of persons who design, construct, install, inspect, test and commission, maintain, repair, decommission and dispose of refrigerating systems and heat pumps with respect to health, safety, environmental protection and energy conservation requirements. It sets requirements for training, assessment, and maintenance of competence.

The standard does not apply to those persons who carry out work on the basis of instructions if they are supervised by a competent person or operate the system according to the operation manuals or who carry out work that does not affect the refrigerant circuit.

It also does not apply to persons carrying out work in a manufacturing process (from the initial design of the product to the complete manufacture of the product) provided the process is controlled and the methods used are checked by a competent person.

## BEST PRACTICE INITIATIVES AT NATIONAL LEVEL

WHILE CERTIFICATION AND MINIMUM TRAINING REQUIREMENTS FOR NATURAL REFRIGERANTS ARE NOT DIRECTLY MANDATED AT THE EU-LEVEL, SOME GOVERNMENTS HAVE INTRODUCED INITIATIVES TO RAISE AWARENESS AND ENSURE SAFE HANDLING OF HFC-FREE EQUIPMENT AT THE NATIONAL LEVEL. THESE RANGE FROM INFORMATION CENTRES, FINANCIAL INCENTIVES TO TRAINING PROVIDERS TO MANDATORY MINIMUM TRAINING REQUIREMENTS, FORMAL GUIDELINES, CURRICULA AND OTHERS. TO ESTABLISH AND RUN THESE INITIATIVES, GOVERNMENTS USUALLY COLLABORATE WITH UNIVERSITIES, TRAINING CENTRES, ASSOCIATIONS AS WELL AS COMPANIES.

The section below outlines some examples of best practice initiatives that are either already underway or currently under consideration in different EU member states. Besides the examples outlined other countries are also looking at ways to support natural refrigerants training - Spain and the United Kingdom plan to include the aspects of natural refrigerants in their national training qualifications while national training organisations in Finland intend to improve the training on alternative refrigerants.

### Denmark

In 2005, the Danish Environmental Protection Agency has set up an “HFC-free Centre” (<http://www.hfc-fri.dk/>), which is financed by the government. The Centre offers consultancy services that are free of charge (up to 5 hours of engineering consultancy) for the refrigeration industry and installers to help them implement alternative technologies, such as using CO<sub>2</sub>, ammonia and hydrocarbons. Enquiries and questions may be directed to the knowledge centre via telephone or e-mail or by visiting the centre during its opening hours.

### Germany

As part of Germany’s Climate Action Programme 2020, the government is considering measures that would reinforce and facilitate the implementation of the F-Gas Regulation at national level. To this end, the government is preparing measures that would improve the uptake of natural refrigerants training. These could include financial support for training facilities and on-the-job practical training on natural refrigerants, which would help familiarise trainees and professionals with the technology. In addition, the government intends to set up an information portal and helpdesk on natural refrigerants.

In order to overcome the lack of trained engineers and technicians that are able to handle natural refrigerants, Germany is considering introducing mandatory practical training on natural refrigerants as part of initial vocational training, which would be prepared by the German Federal Association of Guilds.

## Estonia

Estonia has launched a project to promote f-gas alternatives and help companies to make informed decisions about new technology purchases. During the first stage of the project, the website covering information about natural refrigerants was created (<http://www.klab.ee/f-gaasid/alternatiivid/>) and physical education material about the natural refrigerants was also developed. In addition, the project mapped the best practices on natural refrigerant technologies in the EU member states. In the second stage of the project the training facility for natural refrigerants-based technology will be established in one of the universities in Estonia. The training facility will aim to attract not just Estonian technicians but also Latvians and Lithuanians.

## Belgium

The initiatives concerning the training on natural refrigerants in the Flemish region of Belgium are incorporated in the Flemish reduction plan of HFC emissions 2015-2020. In particular, the Flemish government is adapting the existing professional qualification curricula, which form the basis of the education of refrigeration technicians in every school, to incorporate information in HFC-free technologies. As a result of this every school in the future will be obliged to adapt their trainings and pay the necessary attention to natural refrigerant-based technologies.

Besides the theoretical training on natural refrigerants, the Flemish government has started a dialogue with schools/training centers and industry to identify the necessary steps that should be taken to increase the availability of practical training on HFC-free technology in schools and beyond. The government with the industry is looking into how to eliminate the existing bottlenecks (financial aspect and expertise) and achieve that schools do the necessary investments. At the moment there are two universities that provide practical training on CO<sub>2</sub> - UCLL high school in Houthalen-Helchteren and AP high school in Antwerpen.

## The Netherlands

In the Netherlands, the government has worked closely with the Dutch association for refrigeration and air handling (NVKL) to establish a safe working environment for natural refrigerants in the industry. Three practice guidelines, for each CO<sub>2</sub>, hydrocarbons and ammonia, were formulated and are formalised within the legislation. These guidelines prescribe to Dutch companies the training requirements for handling natural refrigerants in a formal way.

Using the guidelines as a basis, the NVKL developed goals and study requirements for books and exams on natural refrigerants, which are used by educational institutes and examination bodies.

Furthermore, the NVKL established a central training center "GO", which has so far provided 500 training certificates for ammonia to technicians since 2011. Training for hydrocarbons and CO<sub>2</sub> started in 2016 and so far 100 technicians have been certified. In order to obtain the certificate, technicians must undergo 2 - 4 day training courses, followed by a final exam, which is based on the Dutch guidelines for natural refrigerants.



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# Directory

# PREMIUM DIRECTORY

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|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Bitzer</b></p> <p>Germany</p> <p><a href="http://www.kaeltetischer.de/cf-training.html">http://www.kaeltetischer.de/cf-training.html</a></p> <p><a href="mailto:academy@bitzer.de">academy@bitzer.de</a></p> <p>Components manufacturer</p> <p>Servicing, repair, maintenance</p> <p>Theoretical training</p> <p>Practical training</p> <p>Presence / Course on site</p> <p>CO<sub>2</sub> NH<sub>3</sub> HC</p> |
|    | <p><b>Carel industries Spa</b></p> <p>Germany</p> <p><a href="http://www.carel.com">http://www.carel.com</a></p> <p>Components manufacturer</p> <p>Theoretical training</p> <p>CO<sub>2</sub> HC</p>                                                                                                                                                                                                                   |
|   | <p><b>Officine Mario Dorin Spa</b></p> <p>Germany</p> <p><a href="http://www.dorin.com">http://www.dorin.com</a></p> <p><a href="mailto:dorin@dorin.com">dorin@dorin.com</a></p> <p>Components manufacturer</p> <p>Theoretical training</p> <p>Practical training</p> <p>CO<sub>2</sub> NH<sub>3</sub> HC</p>                                                                                                          |
|  | <p><b>Embraco Europe Srl</b></p> <p>Germany</p> <p><a href="http://www.embraco.com">http://www.embraco.com</a></p> <p>Components manufacturer</p> <p>Theoretical training</p> <p>Practical training</p> <p>Presence / Course on site</p> <p>Online course / e-learning</p> <p>HC</p>                                                                                                                                   |

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|   | <b>Frigo-Consulting</b>           | <a href="http://frigoconsulting.com">http://frigoconsulting.com</a>                | <div>End-user</div> <div>Consulting, contracting, engineering</div> <div>Research institute</div> <div>Private training institute</div>  | <div>CO<sub>2</sub> NH<sub>3</sub></div> <div>HC H<sub>2</sub>O</div> |
|                                                                                      | Germany                           | <a href="mailto:s.bangerter@frigoconsulting.ch">s.bangerter@frigoconsulting.ch</a> | <div>Theoretical training</div> <div>Practical training</div> <div>Presence / Course on site</div> <div>Online course / e-learning</div> |                                                                       |
| <b>co<sub>2</sub>Academy</b>                                                         | <b>CO<sub>2</sub> Academy</b>     | <a href="http://www.co2academy.com">http://www.co2academy.com</a>                  | <div>Consulting, contracting, engineering</div> <div>Private training institute</div>                                                    | <div>CO<sub>2</sub></div>                                             |
|                                                                                      | Germany                           | <a href="mailto:info@co2academy.com">info@co2academy.com</a>                       | <div>Theoretical training</div> <div>Practical training</div>                                                                            |                                                                       |
|  | <b>Huayi Compressor Barcelona</b> | <a href="http://www.huayicompressor.es">http://www.huayicompressor.es</a>          | <div>Components manufacturer</div>                                                                                                       | <div>HC</div>                                                         |
|                                                                                      | Germany                           | <a href="mailto:info@huayicompressor.es">info@huayicompressor.es</a>               | <div>Practical training</div>                                                                                                            |                                                                       |

# # DIRECTORY

| COMPANY                                   | COUNTRY        | WEBSITE                                                                                                 | TYPE                                                                                                                     | TRAINING                                                                                              | REFRIGERANTS                       |
|-------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>[cF] Training - Fischer Kälteklima</b> | Germany        | <a href="http://www.kaeltefischer.de/cf-training.html">http://www.kaeltefischer.de/cf-training.html</a> | Consulting, contracting, engineering                                                                                     | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>3T Services Limited</b>                | United Kingdom | <a href="http://www.3tservices.co.uk">http://www.3tservices.co.uk</a>                                   | Consulting, contracting, engineering<br>Training institute<br>Certification body                                         | Theoretical training<br>Practical training<br>Presence / Course on site                               | HC                                 |
| <b>A</b>                                  |                |                                                                                                         |                                                                                                                          |                                                                                                       |                                    |
| COMPANY                                   | COUNTRY        | WEBSITE                                                                                                 | TYPE                                                                                                                     | TRAINING                                                                                              | REFRIGERANTS                       |
| <b>A-comfort #505</b>                     | Denmark        | <a href="http://www.a-comfort.dk">http://www.a-comfort.dk</a>                                           | System manufacturer<br>Components manufacturer<br>Consulting, contracting, engineering<br>Servicing, repair, maintenance | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Advansor</b>                           | Denmark        | <a href="http://www.advansor.dk">http://www.advansor.dk</a>                                             | System manufacturer                                                                                                      | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning | CO <sub>2</sub>                    |
| <b>AEFYT</b>                              | Spain          | <a href="http://www.aefytonline.com">http://www.aefytonline.com</a>                                     | Association                                                                                                              | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>AF Consulting</b>                      | Sweden         | <a href="http://www.afconsult.com">http://www.afconsult.com</a>                                         | Consulting, contracting, engineering                                                                                     | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub>                    |
| <b>AFP</b>                                | France         | <a href="http://ofpc.fr">http://ofpc.fr</a>                                                             | Training institute                                                                                                       | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub>                    |
| <b>AFPA</b>                               | France         | <a href="https://www.afpa.fr">https://www.afpa.fr</a>                                                   | University<br>Training institute                                                                                         | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC |



| COMPANY                                      | COUNTRY        | WEBSITE                                                                                                 | TYPE                                                       | TRAINING                                                                                                                         | REFRIGERANTS                                               |
|----------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>AFPI formation</b>                        | France         | <a href="http://www.afpi-acmformation.com/">http://www.afpi-acmformation.com/</a>                       | Training institute                                         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>A-Gas (with Cool Concerns)</b>            | United Kingdom | <a href="http://www.agas.com">http://www.agas.com</a>                                                   | Refrigerant supplier                                       | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> HC                                         |
| <b>AJI Training (by I-I-ICE)</b>             | United Kingdom | <a href="http://www.ajitraining.co.uk">http://www.ajitraining.co.uk</a>                                 | Consulting, contracting, engineering<br>Training institute | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | NH <sub>3</sub>                                            |
| <b>Alfa Laval</b>                            | Sweden         | <a href="http://www.alfalaval.com">http://www.alfalaval.com</a>                                         | Components manufacturer<br>Wholesale, sales, marketing     | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIF |
| <b>AMF (Matal Training Association)</b>      | France         | <a href="http://www.matal-formation.fr">http://www.matal-formation.fr</a>                               | Training institute                                         | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning                            | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Ammonia Partnership AB</b>                | Sweden         | -                                                                                                       | Association                                                | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIF |
| <b>APIEF</b>                                 | Portugal       | <a href="http://www.apief.pt">http://www.apief.pt</a>                                                   | Vocational / professional school                           | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Arctic Circle Ltd</b>                     | United Kingdom | <a href="http://www.acl-online.com">http://www.acl-online.com</a>                                       | System manufacturer<br>Components manufacturer             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> HC                                         |
| <b>AREA</b>                                  | Belgium        | <a href="http://area-eur.be">http://area-eur.be</a>                                                     | Association                                                | Theoretical training<br>Online course / e-learning                                                                               | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Artesis Plantijn Hogeschool Antwerpen</b> | Belgium        | <a href="https://www.ap.be">https://www.ap.be</a>                                                       | University                                                 | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>Association Française du Froid</b>        | France         | <a href="http://www.association-francaise-du-froid.fr">http://www.association-francaise-du-froid.fr</a> | Association                                                | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |

| COMPANY                                                            | COUNTRY        | WEBSITE                                                                                                                                                                 | TYPE                                                                                          | TRAINING                                                                                              | REFRIGERANTS                                            |
|--------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>Association Suisse du Froid</b>                                 | Switzerland    | <a href="http://www.asf-froid.ch/formation-continue-fr201.html">http://www.asf-froid.ch/formation-continue-fr201.html</a>                                               | Association                                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub>                                         |
| <b>Atecyr</b>                                                      | Spain          | <a href="http://www.atecyr.org/eATECYR/formacion/cursos/index.php">http://www.atecyr.org/eATECYR/formacion/cursos/index.php</a>                                         | Association                                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub>                         |
| <b>ATF ASSOCIAZIONE TECNICI DEL FREDDO</b>                         | Italy          | <a href="http://www.associazioneatf.org">http://www.associazioneatf.org</a>                                                                                             | Association                                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC                      |
| <b>Ausbildungszentrum Innung der Feinwerktechnik Mittelfranken</b> | Germany        | <a href="http://www.innung-feinwerktechnik-mfr.de">http://www.innung-feinwerktechnik-mfr.de</a>                                                                         | Vocational / professional school                                                              | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC                      |
| <b>B</b>                                                           |                |                                                                                                                                                                         |                                                                                               |                                                                                                       |                                                         |
| <b>Bavarian Environment Agency</b>                                 | Germany        | <a href="http://www.lfu.bayern.de/analytik_stoffe/f_gase/cooperation_israel/index.htm">http://www.lfu.bayern.de/analytik_stoffe/f_gase/cooperation_israel/index.htm</a> | Certification body                                                                            | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub> NH <sub>3</sub> HC H <sub>2</sub> O     |
| <b>BORRESEN COOLTECH AS</b>                                        | Norway         | <a href="http://www.borresen.no">http://www.borresen.no</a>                                                                                                             | Wholesale, sales, marketing                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub> HC H <sub>2</sub> O AIR |
| <b>Budapest Technical University</b>                               | Hungary        | <a href="http://www.bme.hu">http://www.bme.hu</a>                                                                                                                       | University                                                                                    | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC                      |
| <b>Bundesfachschule Kälte</b>                                      | Germany        | <a href="http://bfs.trialserver.xyz">http://bfs.trialserver.xyz</a>                                                                                                     | Vocational / professional school                                                              | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC                      |
| <b>Business Edge</b>                                               | United Kingdom | <a href="http://www.businessedgeitd.co.uk/index.html#.V2oTxGrLw">http://www.businessedgeitd.co.uk/index.html#.V2oTxGrLw</a>                                             | Components manufacturer<br>Vocational / professional school<br>Servicing, repair, maintenance | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> HC H <sub>2</sub> O AIR                 |

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| COMPANY                                                                       | COUNTRY        | WEBSITE                                                                                                                                                   | TYPE                                                                                                                                             | TRAINING                                                                                                                         | REFRIGERANTS                                               |
|-------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Carrier</b>                                                                | Germany        | <a href="http://www.carrier.com">http://www.carrier.com</a>                                                                                               | Components manufacturer                                                                                                                          | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>Celcia</b>                                                                 | Sweden         | <a href="http://celcia.se">http://celcia.se</a>                                                                                                           | Training institute                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |
| <b>CEMAFROID</b>                                                              | France         | <a href="http://www.cemafroid.fr">http://www.cemafroid.fr</a>                                                                                             | Association                                                                                                                                      | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Center of knowledge and technologies transfer for HVAC&amp;R</b>           | Russia         | <a href="http://hvaccenter.ru">http://hvaccenter.ru</a>                                                                                                   | Research institute                                                                                                                               | Theoretical training<br>Online course / e-learning                                                                               | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Centre des formations Industrielles (CFI)</b>                              | France         | <a href="http://www.cfi-formations.fr">http://www.cfi-formations.fr</a>                                                                                   | Training institute                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>CENTRO SERVIZI per IMPIANTISTI e MANUTENTORI srl (with Assogrigoristi)</b> | Italy          | <a href="http://www.centroserviziimpiantisti.it">http://www.centroserviziimpiantisti.it</a>                                                               | Association<br>Training institute                                                                                                                | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Centro Studi Galileo</b>                                                   | Italy          | <a href="http://www.centrogalileo.it">http://www.centrogalileo.it</a>                                                                                     | Training institute                                                                                                                               | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>CFTRN-Johnson Control</b>                                                  | France         | <a href="http://www.johnsoncontrols.com/fr_fr/buildings/our-solutions/training">http://www.johnsoncontrols.com/fr_fr/buildings/our-solutions/training</a> | System manufacturer<br>Training institute                                                                                                        | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub>                            |
| <b>ChillAir (UK) Training Academy</b>                                         | United Kingdom | <a href="http://www.refrigerationtraining.org">http://www.refrigerationtraining.org</a>                                                                   | Training institute                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning                            | CO <sub>2</sub>                                            |
| <b>Chlodmex</b>                                                               | Poland         | -                                                                                                                                                         | System manufacturer<br>Refrigerant supplier<br>Servicing, repair, maintenance<br>Components manufacturer<br>Consulting, contracting, engineering | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O     |

| COMPANY                                              | COUNTRY        | WEBSITE                                                                                                                                                                                                 | TYPE                                                                                                                                                     | TRAINING                                                                                                                         | REFRIGERANTS                                                    |
|------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>CIAT</b>                                          | France         | <a href="http://www.ciat.fr">http://www.ciat.fr</a>                                                                                                                                                     | System manufacturer<br>Consulting, contracting, engineering<br>Training institute                                                                        | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                                 |
| <b>CIBSE</b>                                         | United Kingdom | <a href="http://www.cibse.org">http://www.cibse.org</a>                                                                                                                                                 | Certification body<br>Course materials and guide books                                                                                                   | Theoretical training<br>Online course / e-learning                                                                               | CO <sub>2</sub> , NH <sub>3</sub>                               |
| <b>CIPFP Catarroja</b>                               | Spain          | <a href="http://www.fpcatarroja.com">http://www.fpcatarroja.com</a>                                                                                                                                     | Vocational / professional school                                                                                                                         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                                 |
| <b>CIT Cork (Cork Institute of Technology)</b>       | Ireland        | <a href="http://www.cit.ie">http://www.cit.ie</a>                                                                                                                                                       | University                                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | NH <sub>3</sub>                                                 |
| <b>CITB - skills Awards</b>                          | United Kingdom | <a href="http://www.citb.co.uk/awards/qualifications-and-courses/utilities-engineering/refrigeration/">http://www.citb.co.uk/awards/qualifications-and-courses/utilities-engineering/refrigeration/</a> | Vocational / professional school<br>Training institute                                                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | NH <sub>3</sub>                                                 |
| <b>CLAUGER #105</b>                                  | France         | <a href="http://www.clauger.com">http://www.clauger.com</a>                                                                                                                                             | Components manufacturer<br>Consulting, contracting, engineering<br>Servicing, repair, maintenance                                                        | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | NH <sub>3</sub>                                                 |
| <b>Clima Mobil Service EOOD</b>                      | Bulgaria       | <a href="http://www.clima-mobil.com">http://www.clima-mobil.com</a>                                                                                                                                     | Components manufacturer<br>Refrigerant supplier<br>Consulting, contracting, engineering<br>Servicing, repair, maintenance<br>Wholesale, sales, marketing | Theoretical training<br>Practical training<br>Presence / Course on site<br>Offline / Long distance<br>Online course / e-learning | CO <sub>2</sub> , NH <sub>3</sub> , HC<br>H <sub>2</sub> O, AIR |
| <b>CNAM</b>                                          | France         | <a href="http://www.cnam.fr">http://www.cnam.fr</a>                                                                                                                                                     | University                                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> , NH <sub>3</sub> , HC                          |
| <b>Cofrico (training for their staff only)</b>       | Spain          | <a href="http://www.cofrico.com">http://www.cofrico.com</a>                                                                                                                                             | System manufacturer                                                                                                                                      | Practical training<br>Presence / Course on site                                                                                  | CO <sub>2</sub> , NH <sub>3</sub>                               |
| <b>Confederación Nacional de Instaladores, C N I</b> | Spain          | <a href="http://www.cni-instaladores.com">http://www.cni-instaladores.com</a>                                                                                                                           | Association                                                                                                                                              | Practical training<br>Presence / Course on site<br>Online course / e-learning                                                    | CO <sub>2</sub> , NH <sub>3</sub>                               |
| <b>Cool Concerns Ltd</b>                             | United Kingdom | <a href="http://www.coolconcerns.co.uk/training-services.php">http://www.coolconcerns.co.uk/training-services.php</a>                                                                                   | Consulting, contracting, engineering<br>Training institute                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> , HC                                            |

| COMPANY                  | COUNTRY        | WEBSITE                                                                           | TYPE                                                   | TRAINING                                                                | REFRIGERANTS                       |
|--------------------------|----------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------|
| <b>Coolmark #516</b>     | Netherlands    | <a href="http://www.coolmark.nl">http://www.coolmark.nl</a>                       | Components manufacturer<br>Wholesale, sales, marketing | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>COPROTEC – Colmar</b> | France         | <a href="http://www.coprotec-elearning.com">http://www.coprotec-elearning.com</a> | Training institute                                     | Theoretical training<br>Online course / e-learning                      | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>COSTIC</b>            | France         | <a href="http://www.costic.com">http://www.costic.com</a>                         | Research institute                                     | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>Crownship</b>         | United Kingdom | <a href="http://www.crownship.com">http://www.crownship.com</a>                   | Training institute                                     | Theoretical training<br>Practical training<br>Presence / Course on site | NH <sub>3</sub>                    |
| <b>CRYOlogic</b>         | Greece         | <a href="http://www.cryologic.gr">http://www.cryologic.gr</a>                     | Consulting, contracting, engineering                   | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub>                    |
| <b>CSKK #350</b>         | Switzerland    | -                                                                                 | System manufacturer<br>Servicing, repair, maintenance  | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub>                    |
| <b>CTA #228</b>          | Switzerland    | <a href="http://www.cta.ch">http://www.cta.ch</a>                                 | System manufacturer                                    | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |

D/E/F

| COMPANY                               | COUNTRY | WEBSITE                                             | TYPE                                                                             | TRAINING                                                                                                                         | REFRIGERANTS                       |
|---------------------------------------|---------|-----------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Danfoss</b>                        | Denmark | <a href="http://danfoss.com">http://danfoss.com</a> | System manufacturer<br>Servicing, repair, maintenance                            | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Danish Technological Institute</b> | Denmark | <a href="http://www.dti.dk">http://www.dti.dk</a>   | Consulting, contracting, engineering<br>Research institute<br>Training institute | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub>    |

| COMPANY                                            | COUNTRY        | WEBSITE                                                                                                                                                     | TYPE                                                                   | TRAINING                                                                                                                         | REFRIGERANTS                       |
|----------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>DCI Refrigeration</b>                           | United Kingdom | <a href="http://www.dciarefrigeration.co.uk">http://www.dciarefrigeration.co.uk</a>                                                                         | Consulting, contracting, engineering<br>Servicing, repair, maintenance | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>De'Longhi Appliances S.r.l. #397</b>            | Italy          | <a href="http://www.delonghi.com">http://www.delonghi.com</a>                                                                                               | System manufacturer                                                    | Practical training<br>Presence / Course on site                                                                                  | HC                                 |
| <b>DEF - university of Florence</b>                | France         | <a href="http://www.unifi.it">http://www.unifi.it</a>                                                                                                       | University                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>DIT Dublin (Dublin Institute of Technology)</b> | Ireland        | <a href="http://www.dit.ie">http://www.dit.ie</a>                                                                                                           | University                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | HC                                 |
| <b>Eastleigh College</b>                           | United Kingdom | <a href="http://www.eastleigh.ac.uk/careers/refrigeration-and-air-conditioning/">http://www.eastleigh.ac.uk/careers/refrigeration-and-air-conditioning/</a> | University                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> HC                 |
| <b>Ecole des Mines</b>                             | France         | <a href="http://www.mines-paristech.fr">http://www.mines-paristech.fr</a>                                                                                   | University                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>Education centre G0°</b>                        | Netherlands    | <a href="http://www.opleidingscentrum-go.nl">http://www.opleidingscentrum-go.nl</a>                                                                         | Training institute                                                     | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Edupoli</b>                                     | Finland        | <a href="http://www.edupoli.fi">http://www.edupoli.fi</a>                                                                                                   | Vocational / professional school                                       | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>EINDHOVEN CENTER FOR SUSTAINABLE ECFS</b>       | Netherlands    | <a href="https://educationguide.tue.nl">https://educationguide.tue.nl</a>                                                                                   | University                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Ellis Training and Consultancy</b>              | United Kingdom | <a href="http://www.ellistraining.co.uk">http://www.ellistraining.co.uk</a>                                                                                 | Training institute                                                     | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>ENEA</b>                                        | Italy          | <a href="http://www.enea.it/it">http://www.enea.it/it</a>                                                                                                   | Association                                                            | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>Energi &amp; Kylanalys</b>                      | Sweden         | <a href="http://www.ekanalys.se">http://www.ekanalys.se</a>                                                                                                 | System manufacturer                                                    | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |



| COMPANY                                               | COUNTRY        | WEBSITE                                                                                                                                                     | TYPE                                                                                                                         | TRAINING                                                                                                                         | REFRIGERANTS                       |
|-------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Energy Training Hub</b>                            | United Kingdom | <a href="http://energytraininghub.co.uk/courses/refrigeration-training-courses/">http://energytraininghub.co.uk/courses/refrigeration-training-courses/</a> | Training institute                                                                                                           | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> HC                 |
| <b>ENGIE Axima (former GDF SUEZ)</b>                  | France         | <a href="http://www.aximaref.com">http://www.aximaref.com</a>                                                                                               | Training institute                                                                                                           | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning                            | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>ENTROPYCS (ENTROPY Cooling Solutions)</b>          | Netherlands    | <a href="http://www.Entropycs.net">http://www.Entropycs.net</a>                                                                                             | Consulting, contracting, engineering<br>Training institute                                                                   | Theoretical training<br>Practical training<br>Presence / Course on site<br>Offline / Long distance                               | NH <sub>3</sub>                    |
| <b>EPTA Spa</b>                                       | Italy          | <a href="http://www.eptarefrigeration.com">http://www.eptarefrigeration.com</a>                                                                             | System manufacturer<br>Consulting, contracting, engineering<br>Servicing, repair, maintenance<br>Wholesale, sales, marketing | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>ESS Ltd.</b>                                       | Ireland        | <a href="http://www.essltd.ie">http://www.essltd.ie</a>                                                                                                     | Consulting, contracting, engineering                                                                                         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | NH <sub>3</sub>                    |
| <b>Fachschule für Kälte- und Klimatechnik München</b> | Germany        | <a href="http://www.hamec.de">http://www.hamec.de</a>                                                                                                       | Vocational / professional school<br>Training institute                                                                       | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>FEMEVAL</b>                                        | Spain          | <a href="http://www.femeval.es">http://www.femeval.es</a>                                                                                                   | Association                                                                                                                  | Theoretical training<br>Presence / Course on site<br>Online course / e-learning                                                  | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>FIMED, S.L.</b>                                    | Spain          | <a href="http://www.fimed.es">http://www.fimed.es</a>                                                                                                       | Association<br>Vocational / professional school<br>Training institute                                                        | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning                            | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Friginor</b>                                       | Sweden         | <a href="http://www.friginor.se/index.html">http://www.friginor.se/index.html</a>                                                                           | System manufacturer                                                                                                          | Theoretical training<br>Practical training<br>Presence / Course on site<br>Offline / Long distance<br>Online course / e-learning | CO <sub>2</sub>                    |
| <b>Frigo Polska #232</b>                              | Poland         | <a href="http://www.frigopolska.pl/index.php?lang=e">http://www.frigopolska.pl/index.php?lang=e</a>                                                         | Consulting, contracting, engineering<br>Servicing, repair, maintenance                                                       | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |

# G/H

| COMPANY                                                         | COUNTRY        | WEBSITE                                                                                         | TYPE                                                     | TRAINING                                                                                           | REFRIGERANTS                       |
|-----------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------|
| <b>GCM - Kaeltesysteme GmbH</b>                                 | Germany        | <a href="http://www.gcm-kaelte.de">http://www.gcm-kaelte.de</a>                                 | System manufacturer                                      | Theoretical training<br>Offline / Long distance                                                    | NH <sub>3</sub> HC                 |
| <b>GEA Bock</b>                                                 | Germany        | <a href="http://www.gea.com">http://www.gea.com</a>                                             | Components manufacturer                                  | Theoretical training<br>Practical training<br>Presence / Course on site                            | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>GEFEN - Alfortville</b>                                      | France         | <a href="http://www.gefen.org">http://www.gefen.org</a>                                         | Training institute                                       | Theoretical training<br>Presence / Course on site                                                  | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Georgian Association of Refrigerating, Cryogenic and Air</b> | Georgia        | <a href="http://www.garcae.org.ge">http://www.garcae.org.ge</a>                                 | Association                                              | Theoretical training<br>Practical training<br>Presence / Course on site                            | NH <sub>3</sub>                    |
| <b>GIZ</b>                                                      | Germany        | <a href="http://www.giz.de/proklima">http://www.giz.de/proklima</a>                             | Development agency                                       | Theoretical training<br>Practical training<br>Presence / Course on site                            | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Green &amp; Cool #133</b>                                    | Sweden         | <a href="http://www.greenandcool.com/en/">http://www.greenandcool.com/en/</a>                   | System manufacturer<br>Servicing, repair, maintenance    | Theoretical training<br>Practical training<br>Presence / Course on site                            | CO <sub>2</sub>                    |
| <b>Grimsby Institute</b>                                        | United Kingdom | <a href="http://www.grimsby.ac.uk">http://www.grimsby.ac.uk</a>                                 | University                                               | Theoretical training<br>Presence / Course on site                                                  | NH <sub>3</sub> HC                 |
| <b>GTC Fluides et Energies</b>                                  | France         | <a href="http://www.lasalle-troyes.fr">http://www.lasalle-troyes.fr</a>                         | Vocational / professional school<br>Training institute   | Theoretical training<br>Practical training<br>Presence / Course on site                            | NH <sub>3</sub>                    |
| <b>GTS</b>                                                      | Netherlands    | <a href="http://www.gastreatmentsservices.com/en/">http://www.gastreatmentsservices.com/en/</a> | Consulting, contracting, engineering<br>Engineering firm | Theoretical training<br>Practical training<br>Presence / Course on site<br>Offline / Long distance | CO <sub>2</sub>                    |
| <b>H.A.L. Training</b>                                          | United Kingdom | <a href="http://hal-training.co.uk">http://hal-training.co.uk</a>                               | Training institute                                       | Theoretical training<br>Practical training<br>Presence / Course on site                            | NH <sub>3</sub> HC                 |

| COMPANY                                                           | COUNTRY        | WEBSITE                                                                                                                                                               | TYPE                                                                                          | TRAINING                                                                                                                         | REFRIGERANTS                                               |
|-------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>H.Seabra #95</b>                                               | Portugal       | <a href="http://hseabra.seabraglobal.com/en/">http://hseabra.seabraglobal.com/en/</a>                                                                                 | Consulting, contracting, engineering<br>Servicing, repair, maintenance                        | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub>                            |
| <b>Hall Training Centre<br/>(part of North West Kent College)</b> | United Kingdom | <a href="http://www.northkent.ac.uk/commercial-courses/the-hall-training-centre.aspx">http://www.northkent.ac.uk/commercial-courses/the-hall-training-centre.aspx</a> | Vocational / professional school<br>Training institute                                        | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | NH <sub>3</sub>                                            |
| <b>Hansen Technologies</b>                                        | Denmark        | <a href="http://www.hantech.com">http://www.hantech.com</a>                                                                                                           | Consulting, contracting, engineering                                                          | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | NH <sub>3</sub>                                            |
| <b>Hawco Ltd</b>                                                  | United Kingdom | <a href="http://www.hawco.co.uk">http://www.hawco.co.uk</a>                                                                                                           | Components manufacturer                                                                       | Theoretical training<br>Practical training                                                                                       | CO <sub>2</sub>                                            |
| <b>HRP Ltd</b>                                                    | United Kingdom | <a href="http://www.hrponline.co.uk">http://www.hrponline.co.uk</a>                                                                                                   | Wholesale, sales, marketing                                                                   | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> HC                                         |
| <b>HRP Technical training</b>                                     | United Kingdom | <a href="https://www.hrponline.co.uk">https://www.hrponline.co.uk</a>                                                                                                 | Wholesale, sales, marketing<br>Training institute                                             | Theoretical training<br>Online course / e-learning                                                                               | HC                                                         |
| <b>HSR Fachhochschule rapperswil</b>                              | Switzerland    | <a href="http://www.hsr.ch">http://www.hsr.ch</a>                                                                                                                     | University                                                                                    | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Hungarian Climate Protection<br/>Authority #489</b>            | Hungary        | -                                                                                                                                                                     | Certification body                                                                            | Theoretical training<br>Online course / e-learning                                                                               | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>HUURE GROUP OY</b>                                             | Finland        | <a href="http://www.huurre.com">http://www.huurre.com</a>                                                                                                             | System manufacturer<br>Consulting, contracting, engineering<br>Servicing, repair, maintenance | Theoretical training<br>Presence / Course on site<br>Offline / Long distance<br>Practical training<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |
| <b>HYSAVE</b>                                                     | United Kingdom | <a href="http://www.hysave.com">http://www.hysave.com</a>                                                                                                             | Components manufacturer                                                                       | Theoretical training<br>Presence / Course on site<br>Offline / Long distance<br>Practical training<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |

# I/J/K

| COMPANY                                                                    | COUNTRY        | WEBSITE                                                                                                                               | TYPE                                     | TRAINING                                                                                                                         | REFRIGERANTS                                               |
|----------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>IES Llombai</b>                                                         | Spain          | <a href="http://iesllombai.edu.gva.es">http://iesllombai.edu.gva.es</a>                                                               | Vocational / professional school         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>IES Salvador Victoria</b>                                               | Spain          | <a href="http://iesmonre.educa.aragon.es">http://iesmonre.educa.aragon.es</a>                                                         | Vocational / professional school         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>IES Xebic</b>                                                           | Spain          | <a href="http://iesxebic.edu.gva.es">http://iesxebic.edu.gva.es</a>                                                                   | Vocational / professional school         | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                                            |
| <b>IFFEN (Institute Français de Formation en Energie)</b>                  | France         | <a href="http://iffen.fr">http://iffen.fr</a>                                                                                         | Training institute                       | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> HC                                         |
| <b>IIR</b>                                                                 | France         | <a href="http://www.iffir.org">http://www.iffir.org</a>                                                                               | Association                              | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>IKKE gGmbH Informationszentrum für Kälte-, Klima und Energietechnik</b> | Germany        | <a href="http://www.i-k-k-e.com">http://www.i-k-k-e.com</a>                                                                           | Training institute                       | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>INSA (Institut national des sciences appliquées)</b>                    | France         | <a href="https://www.insa-lyon.fr">https://www.insa-lyon.fr</a>                                                                       | University                               | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Institut Français du Froid Industriel (IFFI)</b>                        | France         | <a href="http://iffi.cnam.fr">http://iffi.cnam.fr</a>                                                                                 | Research institute<br>Training institute | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Invensor GmbH</b>                                                       | Germany        | <a href="http://www.invensor.com">http://www.invensor.com</a>                                                                         | System manufacturer                      | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | H <sub>2</sub> O                                           |
| <b>IOR (The Institute of Refrigeration)</b>                                | United Kingdom | <a href="http://www.ior.org.uk/ior_filter_technical.php?r=34EM3M4NAE">http://www.ior.org.uk/ior_filter_technical.php?r=34EM3M4NAE</a> | Association                              | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |

| COMPANY                                  | COUNTRY     | WEBSITE                                                                                         | TYPE                                                                                | TRAINING                                                                                                   | REFRIGERANTS                                         |
|------------------------------------------|-------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>ITE N.V. #349</b>                     | Belgium     | <a href="http://www.ite-tools.com/en">http://www.ite-tools.com/en</a>                           | Components manufacturer                                                             | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub> HC                                   |
| <b>Jaume I University of Castellón</b>   | Spain       | <a href="https://ujiapps.uji.es">https://ujiapps.uji.es</a>                                     | Research institute<br>University                                                    | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub> HC                                   |
| <b>Kältetechniklehrgänge Bremerhaven</b> | Germany     | <a href="http://www.kaeltelehrgaenge-brhv.de">http://www.kaeltelehrgaenge-brhv.de</a>           | Vocational / professional school<br>Training institute                              | Theoretical training<br>Practical training<br>Presence / Course on site                                    | NH <sub>3</sub>                                      |
| <b>KEK IVEPE</b>                         | Greece      | <a href="http://www.ivepe.gr/el/">http://www.ivepe.gr/el/</a>                                   | Training institute                                                                  | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub> NH <sub>3</sub>                      |
| <b>Kelvin srl</b>                        | Italy       | <a href="http://www.kelvinitaly.it">http://www.kelvinitaly.it</a>                               | System manufacturer                                                                 | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub>                                      |
| <b>KHLIM</b>                             | Belgium     | <a href="http://www.khlim.be">http://www.khlim.be</a>                                           | University                                                                          | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub> NH <sub>3</sub> HC                   |
| <b>Klima-Therm Academy</b>               | Poland      | <a href="http://www.klima-therm.pl/en/182/academy">http://www.klima-therm.pl/en/182/academy</a> | Servicing, repair, maintenance<br>Research institute<br>Wholesale, sales, marketing | Theoretical training<br>Practical training<br>Presence / Course on site                                    | HC                                                   |
| <b>Koulutuskeskus Salpaus</b>            | Finland     | <a href="http://www.salpaus.fi/Sivut/default.aspx">http://www.salpaus.fi/Sivut/default.aspx</a> | Vocational / professional school                                                    | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub>                                      |
| <b>KTH</b>                               | Sweden      | <a href="http://www.kth.se">http://www.kth.se</a>                                               | University                                                                          | Theoretical training<br>Online course / e-learning<br>Presence / Course on site<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC                   |
| <b>KWA Business consultants</b>          | Netherlands | <a href="http://www.kwa.nl">http://www.kwa.nl</a>                                               | Consulting, contracting, engineering                                                | Theoretical training<br>Practical training<br>Presence / Course on site                                    | CO <sub>2</sub> NH <sub>3</sub> H <sub>2</sub> O AIR |



| COMPANY                                   | COUNTRY | WEBSITE                                                                                                 | TYPE               | TRAINING                                                                | REFRIGERANTS                       |
|-------------------------------------------|---------|---------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------|------------------------------------|
| <b>LA RPF Formation</b>                   | France  | <a href="http://larpfformation.fr/category/co2/">http://larpfformation.fr/category/co2/</a>             | Training institute | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub>                    |
| <b>LEZIN-FORMATION - Montauban</b>        | France  | <a href="http://www.lezin-formation.com/">http://www.lezin-formation.com/</a>                           | Training institute | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub>                    |
| <b>Lycée Branly - Boulogne</b>            | France  | <a href="http://lycee-branly.org">http://lycee-branly.org</a>                                           | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée d'Alzon - Nîmes</b>              | France  | <a href="http://www.dalzon.com">http://www.dalzon.com</a>                                               | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée la Fontaine des eaux - Dinan</b> | France  | <a href="http://www.lycees-dinan.fr">http://www.lycees-dinan.fr</a>                                     | University         | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> HC                 |
| <b>Lycée La Martinière</b>                | France  | <a href="http://www.lamartinieremonplaisir.org">http://www.lamartinieremonplaisir.org</a>               | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée La Providence - Amiens</b>       | France  | <a href="http://www.la-providence.net">http://www.la-providence.net</a>                                 | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée Maximilien Perret</b>            | France  | <a href="http://www.maxp.fr">http://www.maxp.fr</a>                                                     | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée Mermoz</b>                       | France  | <a href="http://www.lycee-mermoz.net/joomla/index.php">http://www.lycee-mermoz.net/joomla/index.php</a> | University         | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Lycée Raspail - Paris</b>              | France  | <a href="http://www.ldmraspail.fr">http://www.ldmraspail.fr</a>                                         | University         | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub>                    |
| <b>Lycée Saint Joseph - Troyes</b>        | France  | <a href="http://lasalle-troyes.fr">http://lasalle-troyes.fr</a>                                         | University         | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub>                    |



| COMPANY                                                               | COUNTRY     | WEBSITE                                                                   | TYPE                                                                                                                                             | TRAINING                                                                | REFRIGERANTS                                               |
|-----------------------------------------------------------------------|-------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Maskinmesterskolen København</b>                                   | Denmark     | <a href="http://www.msk.dk">http://www.msk.dk</a>                         | Vocational / professional school                                                                                                                 | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Matal Formation</b>                                                | France      | <a href="http://www.matal-formation.fr">http://www.matal-formation.fr</a> | Association<br>Training institute                                                                                                                | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> NH <sub>3</sub>                            |
| <b>Mbassi #224</b>                                                    | Italy       | -                                                                         | Consulting, contracting, engineering                                                                                                             | Theoretical training<br>Presence / Course on site                       | CO <sub>2</sub> HC                                         |
| <b>Multiconsult</b>                                                   | Norway      | <a href="http://www.multiconsult.no">http://www.multiconsult.no</a>       | Consulting, contracting, engineering                                                                                                             | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub>                            |
| <b>National Technical University of Athens (Metsovio Polytechnio)</b> | Greece      | -                                                                         | University                                                                                                                                       | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |
| <b>NC01 #153</b>                                                      | Netherlands | <a href="http://www.ncoi.nl/">http://www.ncoi.nl/</a>                     | Training institute                                                                                                                               | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub><br>HC H <sub>2</sub> O     |
| <b>Nestlé</b>                                                         | Switzerland | <a href="http://www.nestle.com">http://www.nestle.com</a>                 | End-user                                                                                                                                         | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>NORD</b>                                                           | Russia      | <a href="http://www.nord-sm.ru">http://www.nord-sm.ru</a>                 | System manufacturer<br>Refrigerant supplier<br>Servicing, repair, maintenance<br>Components manufacturer<br>Consulting, contracting, engineering | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub>                                            |
| <b>Norddeutsche Kälte-Fachschule</b>                                  | Germany     | <a href="http://www.nkf-springe.de">http://www.nkf-springe.de</a>         | Certification body<br>Vocational / professional school                                                                                           | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> H <sub>2</sub> O           |
| <b>NTB - Interstaatliche Hochschule für Technik Buchs</b>             | Switzerland | <a href="http://www.ntb.ch/studium">http://www.ntb.ch/studium</a>         | University                                                                                                                                       | Theoretical training<br>Practical training<br>Presence / Course on site | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIR |



# O/P

| COMPANY                                        | COUNTRY        | WEBSITE                                                                                                                           | TYPE                                                   | TRAINING                                                                     | REFRIGERANTS                                               |
|------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>NTNU #79</b>                                | Norway         | <a href="https://www.ntnu.edu">https://www.ntnu.edu</a>                                                                           | University                                             | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Oy Combi Cool #355</b>                      | Finland        | <a href="http://www.combicool.fi/en">http://www.combicool.fi/en</a>                                                               | Components manufacturer<br>Wholesale, sales, marketing | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub> HC                                         |
| <b>Parker Hannifin</b>                         | Switzerland    | <a href="http://www.parker.com">http://www.parker.com</a>                                                                         | Components manufacturer                                | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub>                                            |
| <b>Polar Pumps Ltd</b>                         | United Kingdom | <a href="http://www.polarpumps.co.uk">http://www.polarpumps.co.uk</a>                                                             | Servicing, repair, maintenance                         | Theoretical training<br>Presence / Course on site                            | NH <sub>3</sub> HC                                         |
| <b>Pole Cristal</b>                            | France         | <a href="http://www.pole-cristal.fr/nos-prestations/formation/">http://www.pole-cristal.fr/nos-prestations/formation/</a>         | University<br>Training institute                       | Theoretical training<br>Presence / Course on site<br>Offline / Long distance | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIF |
| <b>Polytechnic University of Valencia</b>      | Spain          | <a href="http://www.ite.upv.es">www.ite.upv.es</a>                                                                                | University                                             | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub> HC                                         |
| <b>Polytechnical University of Catalonia</b>   | Spain          | <a href="http://www.upc.edu/?set_language=en">http://www.upc.edu/?set_language=en</a>                                             | University                                             | Theoretical training<br>Practical training                                   | CO <sub>2</sub>                                            |
| <b>Practical Refrigeration Training Centre</b> | United Kingdom | <a href="http://www.prtc.co.uk">http://www.prtc.co.uk</a>                                                                         | Training institute                                     | Theoretical training<br>Presence / Course on site                            | NH <sub>3</sub> HC                                         |
| <b>PROFROID</b>                                | France         | <a href="http://www.profrroid.com/profrroid/cms/7128/accueil.dhtml">http://www.profrroid.com/profrroid/cms/7128/accueil.dhtml</a> | System manufacturer                                    | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub>                                            |
| <b>PTC+</b>                                    | Netherlands    | <a href="http://www.ptcplus.com/">http://www.ptcplus.com/</a>                                                                     | Training institute<br>Business development             | Theoretical training<br>Presence / Course on site                            | CO <sub>2</sub> NH <sub>3</sub> HC                         |

# R/S

| COMPANY                                     | COUNTRY        | WEBSITE                                                                                                     | TYPE                                                       | TRAINING                                                                                                                         | REFRIGERANTS                                            |
|---------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>RD&amp;T</b>                             | United Kingdom | <a href="http://www.rdandt.co.uk">http://www.rdandt.co.uk</a>                                               | Research institute                                         | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | NH <sub>3</sub> HC                                      |
| <b>Re/genT BV</b>                           | Netherlands    | <a href="http://www.re-gent.nl">http://www.re-gent.nl</a>                                                   | Consulting, contracting, engineering<br>Research institute | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> HC                                      |
| <b>Red Dragon Air Conditioning</b>          | United Kingdom | <a href="http://www.red-dragon-airconditioning.com">http://www.red-dragon-airconditioning.com</a>           | Training institute                                         | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | HC                                                      |
| <b>Refcom - can't find info on training</b> | United Kingdom | <a href="http://www.refcom.org.uk">http://www.refcom.org.uk</a>                                             | Training institute                                         | Theoretical training<br>Presence / Course on site<br>Offline / Long distance<br>Online course / e-learning<br>Practical training | CO <sub>2</sub> NH <sub>3</sub> H <sub>2</sub> O HC AIR |
| <b>REFTEC</b>                               | Switzerland    | <a href="http://www.reftec.ch/Berufsbildung.htm">http://www.reftec.ch/Berufsbildung.htm</a>                 | Consulting, contracting, engineering                       | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> HC                                      |
| <b>Sächsische Kältefachschule</b>           | Germany        | <a href="http://www.kaelteschule-sachsen.de">http://www.kaelteschule-sachsen.de</a>                         | Vocational / professional school                           | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                      |
| <b>Sainsbury's</b>                          | United Kingdom | <a href="http://www.j-sainsbury.co.uk">http://www.j-sainsbury.co.uk</a>                                     | End-user                                                   | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub>                                         |
| <b>Scantec #462</b>                         | Austria        | -                                                                                                           | Consulting, contracting, engineering                       | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub>                         |
| <b>SCHKT</b>                                | Czech Republic | <a href="http://www.chlazení.cz/o-schkt/info-in-english">http://www.chlazení.cz/o-schkt/info-in-english</a> | Association                                                | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                      |

| COMPANY                                             | COUNTRY        | WEBSITE                                                                                                                           | TYPE                                 | TRAINING                                                                                                                         | REFRIGERANTS                       |
|-----------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>SCM Frigo</b>                                    | Italy          | <a href="http://www.scmfrigo.com">http://www.scmfrigo.com</a>                                                                     | System manufacturer                  | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>SERC Lisbon</b>                                  | Ireland        | <a href="http://www.serc.ac.uk/Pages/default.aspx">http://www.serc.ac.uk/Pages/default.aspx</a>                                   | Training institute                   | Theoretical training<br>Presence / Course on site                                                                                | NH <sub>3</sub>                    |
| <b>Sneffcca / Cristal Formation</b>                 | France         | <a href="http://www.sneffcca.com">http://www.sneffcca.com</a>                                                                     | Association                          | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | CO <sub>2</sub>                    |
| <b>Sole Trader</b>                                  | United Kingdom | -                                                                                                                                 | Consulting, contracting, engineering | Theoretical training<br>Practical training<br>Presence / Course on site                                                          | HC                                 |
| <b>South Eastern Regional College</b>               | United Kingdom | <a href="http://www.serc.ac.uk">http://www.serc.ac.uk</a>                                                                         | Vocational / professional school     | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning<br>Offline / Long distance | CO <sub>2</sub> HC                 |
| <b>SP technical research institute of Sweden</b>    | Sweden         | <a href="http://www.sp.se/en/Sidor/default.aspx">http://www.sp.se/en/Sidor/default.aspx</a>                                       | Research institute                   | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Star Learning solutions (Star refrigeration)</b> | United Kingdom | <a href="http://www.i-know.com">http://www.i-know.com</a>                                                                         | Training institute                   | Theoretical training<br>Online course / e-learning                                                                               | CO <sub>2</sub>                    |
| <b>SuperSmart</b>                                   | Europe wide    | <a href="http://www.supersmart-super-market.info/training-interest">http://www.supersmart-super-market.info/training-interest</a> | University                           | Theoretical training<br>Offline / Long distance<br>Presence / Course on site                                                     | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>SWEP #199</b>                                    | Sweden         | <a href="http://www.swep.net/">http://www.swep.net/</a>                                                                           | Components manufacturer              | Theoretical training<br>Presence / Course on site<br>Online course / e-learning                                                  | CO <sub>2</sub> NH <sub>3</sub> HC |

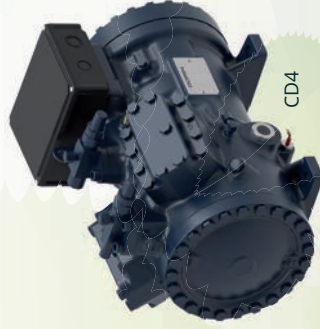
# T/U/V/W/X

| COMPANY                                                                       | COUNTRY        | WEBSITE                                                                                                                                                         | TYPE                                                                   | TRAINING                                                                                                                         | REFRIGERANTS                                               |
|-------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Taiga Training</b>                                                         | United Kingdom | <a href="http://www.taigatraining.co.uk">http://www.taigatraining.co.uk</a>                                                                                     | Consulting, contracting, engineering<br>Servicing, repair, maintenance | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | HC                                                         |
| <b>Technical College of Jutland</b>                                           | Denmark        | <a href="http://www.djhhadsten.dk">http://www.djhhadsten.dk</a>                                                                                                 | Vocational / professional school                                       | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>TECSISEL, LDA</b>                                                          | Portugal       | <a href="http://www.tecsisel.pt">http://www.tecsisel.pt</a>                                                                                                     | System manufacturer<br>Consulting, contracting, engineering            | Theoretical training<br>Presence / Course on site<br>Offline / Long distance<br>Practical training<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub> HC<br>H <sub>2</sub> O AIF |
| <b>TEPSE</b>                                                                  | Greece         | <a href="http://www.tepse.gr/55687285.el.aspx">http://www.tepse.gr/55687285.el.aspx</a>                                                                         | Training institute                                                     | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> NH <sub>3</sub>                            |
| <b>Test- und Weiterbildungszentrum<br/>Wärmepumpen und Kältetechnik (TWK)</b> | Germany        | <a href="https://www.twk-karlsruhe.de/Kurse/R744">https://www.twk-karlsruhe.de/Kurse/R744</a>                                                                   | Training institute                                                     | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub>                                            |
| <b>tlk-thermo gmbh</b>                                                        | Germany        | <a href="http://www.tlk-thermo.de">http://www.tlk-thermo.de</a>                                                                                                 | Consulting, contracting, engineering                                   | Theoretical training<br>Presence / Course on site                                                                                | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>Training World</b>                                                         | United Kingdom | <a href="http://www.trainingworld.co.uk">http://www.trainingworld.co.uk</a>                                                                                     | Training institute                                                     | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | NH <sub>3</sub>                                            |
| <b>TÜV Austria Akademie</b>                                                   | Austria        | <a href="https://www.tuv-akademie.at">https://www.tuv-akademie.at</a>                                                                                           | Training institute                                                     | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub> NH <sub>3</sub> HC                         |
| <b>UCLL highschool</b>                                                        | Belgium        | <a href="https://www.ucll.be/studeren/navorming/koeltechnieken-co2-als-koelmiddel">https://www.ucll.be/studeren/navorming/koeltechnieken-co2-als-koelmiddel</a> | University                                                             | Theoretical training<br>Presence / Course on site<br>Practical training                                                          | CO <sub>2</sub>                                            |
| <b>UNEP</b>                                                                   |                | <a href="http://web.unep.org">http://web.unep.org</a>                                                                                                           | International Organisation                                             | Theoretical training<br>Offline / Long distance<br>Online course / e-learning                                                    | CO <sub>2</sub> NH <sub>3</sub> HC                         |

| COMPANY                                | COUNTRY     | WEBSITE                                                                           | TYPE                             | TRAINING                                                                                              | REFRIGERANTS                       |
|----------------------------------------|-------------|-----------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Université Grenoble</b>             | France      | <a href="http://www.univ-grenoble-alpes.fr">http://www.univ-grenoble-alpes.fr</a> | University                       | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Université Marne la vallée</b>      | France      | <a href="http://www.u-pem.fr">http://www.u-pem.fr</a>                             | University                       | Theoretical training<br>Practical training<br>Presence / Course on site                               | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Université Rouen</b>                | France      | <a href="http://www.univ-rouen.fr">http://www.univ-rouen.fr</a>                   | University                       | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub> HC                 |
| <b>University of Agder #445</b>        | Norway      | <a href="http://www.uia.no/en">http://www.uia.no/en</a>                           | University                       | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>University of Food Technologies</b> | Bulgaria    | <a href="http://uft-plovdiv.bg">http://uft-plovdiv.bg</a>                         | University                       | Theoretical training<br>Practical training<br>Online course / e-learning                              | CO <sub>2</sub> NH <sub>3</sub> HC |
| <b>Vestfrost Solutions</b>             | Denmark     | <a href="http://www.vestfrostsolutions.com">http://www.vestfrostsolutions.com</a> | System manufacturer              | Theoretical training<br>Practical training<br>Presence / Course on site                               | HC                                 |
| <b>Walter Wettstein AG</b>             | Switzerland | <a href="http://www.wvag.ch">http://www.wvag.ch</a>                               | System manufacturer              | Theoretical training<br>Presence / Course on site                                                     | CO <sub>2</sub> NH <sub>3</sub>    |
| <b>Xabec</b>                           | Spain       | <a href="http://www.xabec.es">http://www.xabec.es</a>                             | Vocational / professional school | Theoretical training<br>Practical training<br>Presence / Course on site<br>Online course / e-learning | CO <sub>2</sub> HC                 |

# THE FUTURE IS OUR HISTORY

CO<sub>2</sub> technology is DORIN



CD4



CD 500



CD2

**Dorin CD Range** results from almost two decades of experience and more than 20.000+ running **transcritical compressors** on the field.

**Reliability** and **Efficiency** make these compressors the Natural Solution for Sustainable Global Market.

Dorin naturally goes on broadening the **CD Range** with following compressors **Newest** on the global market:

**CD500**, the **largest 6 piston**, **39.85- 98.58 m<sup>3</sup>/h**

**CD4**, the **newest 4 piston**, **4.67 to 9.21 m<sup>3</sup> /h**

**CD2**, the **smallest 2 piston**, **1.60 to 4.60 m<sup>3</sup> /h**

## **DORIN DYNAMIC INNOVATION**

goes on meeting customers' requirements globally!

### COME AND MEET US IN

**China Refrigeration (Shanghai, CN)** 12-14/04/2017

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# About the authors





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Publisher / CEO

Marc Chasserot is the CEO of shecco, with over 10 years' experience in the HVAC&R sector. In 2006, he founded the industry leading website for CO2 cooling and heating experts worldwide: [www.R744.com](http://www.R744.com). This was followed by three platforms for hydrocarbons, water and ammonia. He has chaired and organised numerous international workshops for policy and industry experts to discuss how to bring natural refrigerants faster to market, known as 'ATMOsphere'.



**Nina Masson**  
Chief Strategy Advisor for Special Projects

Nina has been working with shecco for more than 10 years in various roles. Today, as Chief Strategy Advisor for Special Projects, she is responsible for EU and UN projects for natural refrigerants and sustainable HVAC&R solutions. She holds two Masters' degrees in Business Management and in Environmental Management. Nina has been the lead author on various publications and has also served as an independent expert for UN and EU agencies on policy analysis, capacity building, renewable energies and energy efficiency.



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Klára holds a Master's degree in International Relations from the University of Economics in Bratislava, Slovakia. She is an expert on following legislative and market developments with an impact on the heating and cooling industry at national, European and international levels, and informs decision-makers about the latest trends in the field of natural refrigerants.

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Former Deputy Manager of Market Development

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Former Junior Policy Analyst at shecco

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**Anti Gkizelis**

Market Researcher



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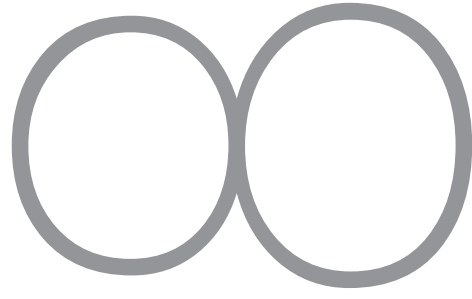
**NATURAL...  
YES WE CAN!  
There's always  
a solution.**

- ▶ Low charge
- ▶ High efficiency
- ▶ Custom made
- ▶ Swiss made  
(quality, precision, durability)
- ▶ Long-term solutions

- Museum in City center – Nestlé Museum, Vevey (CH), 2x 110 kW, NH3
- District heating at high altitude – City of Saas-Fee (CH), 1x 650 kW, NH3
- Biopharma – BioArk, Visp (CH), 1x150 kW + 1x 220 kW, NH3
- Industrial plant – BASF Suisse SA, Monthey (CH), 1 x 650 kW, NH3
- Dairy – Cremo SA, 4 production center (CH), 7x650 kW + 4x 350 kW, NH3
- IQF Tunnel Freezer – Pitteloud Fruits SA, Sion (CH), 1 x 320 kW, CO<sub>2</sub> transcritical
- Sport Arena – Armasuisse, Payerne (CH), 2x 40 kW, CO<sub>2</sub>







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sustain our atmosphere

## Natural Refrigerants Faster to Market

shecco is a global market accelerator helping companies to bring their climate-friendly solutions faster to market. In the heating, air conditioning and refrigeration (HVAC&R) sector, we specialise on the Natural Refrigerants CO<sub>2</sub>, ammonia, hydrocarbons, water and air. Through our activities we reach a global network of 50,000+ expert individuals.

We offer a suite of products and services across multiple countries, industries and stakeholder groups, in three areas:

### MEDIA

Industry platforms, magazines, webinars, Social Media and tailored PR services - for an effective outreach in online and print media.

### EVENTS

Conferences, workshops and networking events - your meeting place to discuss important topics with the right decision makers.

### MARKET DEVELOPMENT

Market research & consulting, public affairs, special projects & global campaigns - tailored services for building your business case.

### WE WORK WITH 150+ CLIENTS AROUND THE WORLD SEEKING TO ADVANCE THE BUSINESS CASE FOR

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Get in touch with shecco's Market Development team to learn more about the market for natural refrigerants in Japan or find out how we can help you in gathering market intelligence and proactively building your business with our tailored market development services, to get your technology faster to market.

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