

Double interview

Natural refrigerants are a popular topic: growing demand for initial and further training courses

Frankfurt (Main), 8 January 2018. Protecting the ozone layer, reducing greenhouse gases and F-gases phase-down: the current environmental policy framework conditions are boosting the demand for climate-friendly solutions in the refrigeration sector. However, the planning, installation and operation of systems with natural refrigerants demands special legal expertise and safety-engineering know-how. Dr. Ralf Catanescu, Principal at the Federal College of Refrigeration and Air Conditioning Technology (BFS) in Maintal and Prof. Dr. Alexander Krimmel, Director of the European Academy (ESaK) in Maintal explain how the changing market situation is influencing initial and further training courses.

1. What is your opinion: is there a growing need for training courses when it comes to natural refrigerants?

Prof. Krimmel (ESaK): Yes there certainly is. Recent environmental policy developments such as the European F-Gases Regulation or the Kigali Amendment to the Montreal Protocol have triggered a lively discussion on the market about the use of various refrigerants. Although this development had been foreseeable for quite some time, a great degree of uncertainty still prevails. We receive many enquiries particularly from installers and workers with regard to converting existing refrigeration systems and the future viability of new systems that are to be installed. Another sign of the increased interest in natural refrigerants are the topics stipulated by companies for course assignments and Bachelor's theses in the framework of cooperative degree courses, with one in four (20 to 25%) meanwhile looking at natural refrigerants.

Dr. Catanescu (BFS): In general, those attending our courses show great interest in this topic. After all, corresponding know-how will belong to the basic skills in future, given the growing practical relevance. The market already has by nature a fundamental level of information. In principle, the training program we provide is so broad that our graduates are familiar with all established refrigerant alternatives, whether natural refrigerants, synthetic refrigerants or blends, and are able to pursue respective developments in refrigeration and air-conditioning companies. Even so, there is currently still a high demand for special seminars and courses.

2. Status quo – which qualifications can be obtained with regard to natural refrigerants?

Prof. Krimmel (ESaK): The European Academy (EsaK) in Maintal is the only University of Cooperative Education to be specialised in the field of refrigeration and air-conditioning in German-speaking countries. The state-recognised academy offers two internationally accredited Bachelor degrees in "Refrigeration Engineering" and "Air-conditioning Engineering" in the framework of a cooperative programme (dual curriculum). Both 6-semester courses have a modular structure in line with current standards. The combination of theory and practice gives our graduates outstanding qualifications so that they can start working straightaway as skilled workers, regardless of whether the cooperating companies are actively involved with natural refrigerants or not. At the moment there is no special module for "Natural Refrigerants". However, since 2014 we have been offering an annual lecture event that looks at the challenges posed by natural refrigerants and how to handle them safely. The special lecture event – known as the "eurammon Day" – is one of the semester highlights for many students. Members of the initiative for natural refrigerants provide the audience with practical first-hand information about the current technical development of concepts, components and systems operating with natural refrigerants. Initially lasting just one day, the lecture event has meanwhile been extended to two days in view of the great echo and demand.

Dr. Catanescu (BFS): The Federal College of Refrigeration and Air Conditioning Technology has been providing a comprehensive range of initial and further training for skilled workers for more than 50 years, and offers a broad programme of modules and seminars to keep them up to date with the latest legislation and engineering developments. All courses give due consideration to natural refrigerants. In 1994 for example, our seminar programme already featured seminars on R290 (propane) in refrigeration systems. Furthermore, we currently offer additional seminars and special courses e.g. on CO₂ and NH₃.

3. How do the changed framework conditions influence the initial and further training courses – where do you see a need for action?

Dr. Catanescu (BFS): Basically, teaching of all kinds has to adapt constantly to the latest political and legislative requirements and to newest technical developments. However, the current changes coming with the F-Gases Regulation go way beyond the usual scope,

generating additional complexity in both technical and legal respects. Something has to be done here. The modular structure of our courses lets us react quickly to corresponding developments with a swift, straightforward process for adapting the contents of our courses to the changed framework conditions and growing demand. This ensures that course participants acquire the necessary new specialized know-how for this specific purpose.

Prof. Krimmel (ESaK): The new regulations and standards are indeed a challenge for our training and teaching. They are key aspects in the planning and sizing of new systems and also in the maintenance and/or conversion of existing refrigeration systems. Time-consuming familiarisation is needed just for correct documentation. Integrating these new contents in the existing syllabus therefore puts an extra load on both time and human resources. But there is no alternative. A conceivable and appropriate solution would be to introduce a separate module on natural refrigerants. Corresponding changes to the syllabus would have to wait until the current accreditation expires, and become part of reaccreditation in September 2021.

4. Role model or latecomer – how does German training on natural refrigerants rank in an international comparison?

Dr. Catanescu (BFS): The fundamentally high standard of training systems in Germany puts us in a very good position also in respect when compared with other countries. This is also revealed by the demand from neighbouring countries for our training courses. Furthermore, for quite some time now we have been offering several courses each year for GIZ (German Society for International Cooperation) with natural refrigerants as one of the main topics. Our seminars enable the participants to respond to the new environmental policy framework conditions in their countries and to develop viable solutions for the future – although the time frame stipulated by the political authorities for certain refrigerant prohibitions is extremely tight so operators are facing great problems in some cases. The great interest and positive international echo shows that the range we offer is very successful.

Prof. Krimmel (ESaK): Various international programmes e.g. by the UN (UNEP, UNIDO) are currently trying to promote the German training standards for refrigeration and air-conditioning engineering with special courses in order to establish the corresponding qualifications and standards abroad. This also includes countries with larger markets such as China and India. As far as Europe is concerned, the European Commission has

ascertained significant deficits for using and handling natural refrigerants, both in terms of equipment and with regard to qualified personnel. In Germany, specific efforts are being made to redress these deficits, e.g. by setting up new institutes and holding special courses with corresponding systems. Many young people are also attracted to possibilities for gaining experience abroad, which is possible through the international approach adopted by the institutes.

On an international scale, the ESaK works together with three official cooperation partners: the Norwegian University of Science and Technology in Trondheim, Norway, the Purdue University in West Lafayette, USA, and the Universidade Federal in Florianopolis, Brazil. ESaK students have the possibility of doing their Bachelor's thesis at one of the partner universities. These periods spent abroad are eligible for financial support from the BFS/ESaK Foundation and are an important aspect of international transfer of know-how where both the students and the companies are involved.

Pictures:

Picture 1:



Caption: Prof. Dr. Alexander Krimmel, Director of the European Academy (ESaK) in Maintal

Picture 2:



Caption: Dr. Ralf Catanescu, Principal at the Federal College of Refrigeration and Air Conditioning Technology (BFS) in Maintal

About eurammon

eurammon is a joint initiative of companies, institutions and individuals who advocate an increased use of natural refrigerants. As a knowledge pool for the use of natural refrigerants in refrigeration engineering, the initiative sees as its mandate the creation of a platform for information sharing and the promotion of public awareness and acceptance of natural refrigerants. The objective is to promote the use of natural refrigerants in the interest of a healthy environment, and thereby encourage a sustainable approach in refrigeration engineering. eurammon provides comprehensive information about all aspects of natural refrigerants to experts, politicians and the public at large. It serves as a qualified contact for anyone interested in the subject. Users and designers of refrigeration projects can turn to eurammon for specific project experience and extensive information, as well as for advice on all matters of planning, licensing and operating refrigeration plants. The initiative was set up in 1996 and is open to companies and institutions with a vested interest in natural refrigerants, as well as to individuals e.g. scientists and researchers.

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