

GUIDE TO NATURAL REFRIGERANTS AT THE 2016 AHR EXPO



Accelerate America/
shecco booth: 5877

GUIDE SUPPORTERS

NATURAL REFRIGERANTS AT THE 2016 AHR EXPO

This project was supported by



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WELCOME MESSAGE FROM THE PUBLISHER



MARC CHASSEROT

Publisher / Managing Director

The concept for this *Guide to Natural Refrigerants at the 2016 AHR Expo* – now in its second annual edition – is to connect forward-thinking customers to some of the most advanced companies displaying natural refrigerant technologies and services at the show.

Our company, shecco, as the leading publisher of worldwide news for CO₂, ammonia, hydrocarbons and water-based solutions in HVAC&R, designed the *Guide* as a simple tool to easily identify these companies and their products within the large exhibition hall.

The *Guide* is presented as a supplement to the December-January issue (#11) of *Accelerate America*. These two publications provide the best overview of the most progressive business leaders working with climate-friendly solutions in refrigeration and air conditioning in North America and other parts of the world.

The North American market offers an excellent business opportunity for suppliers and end users to drive growth by implementing future-proof technologies in refrigeration and air conditioning, many of which are well established in other areas of the world. Next year we hope to see even more companies offering innovative solutions!

ABOUT THIS GUIDE



MICHAEL GARRY

Editor

This *Guide to Natural Refrigerants at the 2016 AHR Expo* provides a complete listing of everything related to natural refrigerants at the 2016 AHR Expo, which takes place from January 25-27 at the Orange County Convention Center in Orlando, Fla.

The show will gather more than 2,000 exhibiting companies, including 90 providing products or services using carbon dioxide, ammonia, hydrocarbons or water as refrigerants. This represents an increase from last year's Expo, and is a testament to the market potential of climate- and ozone-friendly working fluids in North America.

By indicating all company booth locations and events relevant to CO₂, NH₃, R290, R600a and R718, the *Guide* will maximize the value of the Expo for people interested in – or already working with – natural refrigerants. In collaboration with our supporters, the *Guide* also provides a showcase for a range of state-of-the-art natural refrigerant systems and components on display in Orlando.

This publication is divided into the following sections:

ABOUT NATURAL REFRIGERANTS: Reviews the chemical, physical, technical and environmental properties of carbon dioxide, ammonia, hydrocarbons, water and air, the most commonly used natural working fluids.

EXCLUSIVE INTERVIEWS: Provides insight on the latest trends in technologies employing natural refrigerants from some of the leading industry providers.

EVENTS PLANNER: Outlines the Expo presentations dedicated to natural refrigerants, energy efficiency, and other topics, and highlights not-to-miss product launches.

PREMIUM PRODUCT & COMPANY DIRECTORY: Highlights some of the latest technologies using natural refrigerants, both on display by exhibitors and offered by companies in attendance only.

HALL MAPS: Shows the exhibit locations of all natural-refrigerant-relevant companies, providing participants with the information they need to create a tailored, self-guided tour throughout the exhibition space.



ACCELERATE

ADVANCING HVAC&R NATURALLY AMERICA

Brought to you by shecco, the worldwide experts in natural refrigerant news, **Accelerate America** is the first **monthly news magazine** written for and about the most progressive business leaders working with **natural refrigerant solutions** in all HVAC&R sectors.

Read Accelerate America online
<http://acceleratenam.com>

ACCELERATE

ADVANCING HVAC&R NATURALLY EUROPE

shecco media launches *Accelerate Europe*

Leading HVAC&R publisher, shecco media, launches a **FREE European quarterly news magazine** on natural refrigerant-based technologies to report about leadership and innovation within this fast growing market.

Read Accelerate Europe online
<http://accelerateeu.com>



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ABOUT NATURAL REFRIGERANTS

As a general differentiation, "natural refrigerants" are substances that exist naturally in the environment, while "non-natural refrigerants" or "synthetic refrigerants" are man-made chemicals. The most commonly used natural refrigerants today are ammonia (NH_3 , R717), carbon dioxide (CO_2 , R744), and hydrocarbons (HCs), such as propane (R290), isobutane (R600a) and propylene, also known as propene (R1270).

The precision of the term "natural refrigerants" is sometimes debated, given that, to be used as refrigerants, ammonia, carbon dioxide, and hydrocarbons also undergo an industrial purification and manufacturing process. However, today there is a well established distinction between substances whose chemical properties and safety

aspects have been studied in their entirety and fluorinated gases, which, given their chemical complexity and comparatively short period of usage, have confirmed and/or unknown negative effects on ozone depletion, global warming and ecological safety, and therefore, are subject to continued debate.



Carbon dioxide (ODP*= 0; GWP*= 1)

Carbon dioxide (chemical symbol CO_2 , refrigerant designation R744) is colorless, odorless and heavier than air. With a Global Warming Potential (GWP) of 1, CO_2 is the reference value for comparing a refrigerant's direct impact on global warming.

Carbon dioxide carries an A1 safety classification (the same as most fluorocarbon refrigerants), indicating that it has low toxicity and is nonflammable. CO_2 as a refrigerant is sourced as a by-product from a number of production methods. Although it is nontoxic, if enough carbon dioxide builds up in an enclosed space, it will begin to displace oxygen. Over a certain period of time, this can cause asphyxiation of those present. With a long atmospheric lifetime, CO_2 does not

lead to any by-product formation or decay products with serious environmental impact.

When used as a refrigerant, carbon dioxide typically operates at a higher pressure than fluorocarbons and other refrigerants. While this presents some design challenges, they can be overcome in systems designed specifically to use carbon dioxide. Carbon dioxide is compatible with some, but not all, commonly used refrigeration system lubricants. In particular, it is not suited for use with polyol ester (POE) and poly vinyl ether (PVE) lubricants and it only has limited applications with poly alkaline glycol (PAG) lubricants. It is generally regarded as a cheap and easily available refrigerant.



Ammonia (ODP= 0; GWP= 0)

Ammonia (chemical symbol NH_3 , refrigerant designation R717) is a colorless gas at atmospheric pressure. With zero ozone depletion and global warming potential, as well as a short atmospheric lifetime, it does not form any by-products or decomposition products with negative environmental impact. It is compatible with some, but not all, commonly used refrigeration system lubricants. In particular, it is not suited for use with polyol ester (POE) and poly vinyl ether (PVE) lubricants, and it has only limited applications with poly alkylene glycol (PAG) lubricants.

Despite its undisputed energy efficiency benefits, the use of ammonia is restricted in certain applications and geographic regions due to its toxicity. As a result, R717 is effectively prohibited from use inside occupied spaces but can be used in unoccupied areas or outside.

However, many advances have been made in recent years to minimize risks for human health, particularly for ammonia installations in populated areas. These advances include using ammonia in conjunction with other refrigerants, such as in secondary systems, in order to reduce and isolate an ammonia charge; using advanced safety equipment; deploying containment casings; or using ammonia absorption systems.

It is important to note that ammonia has a strong odor, making leaks easy to detect.

* ODP= ozone depletion potential and *GWP=global warming potential

INCREASE YOUR VISIBILITY TODAY.

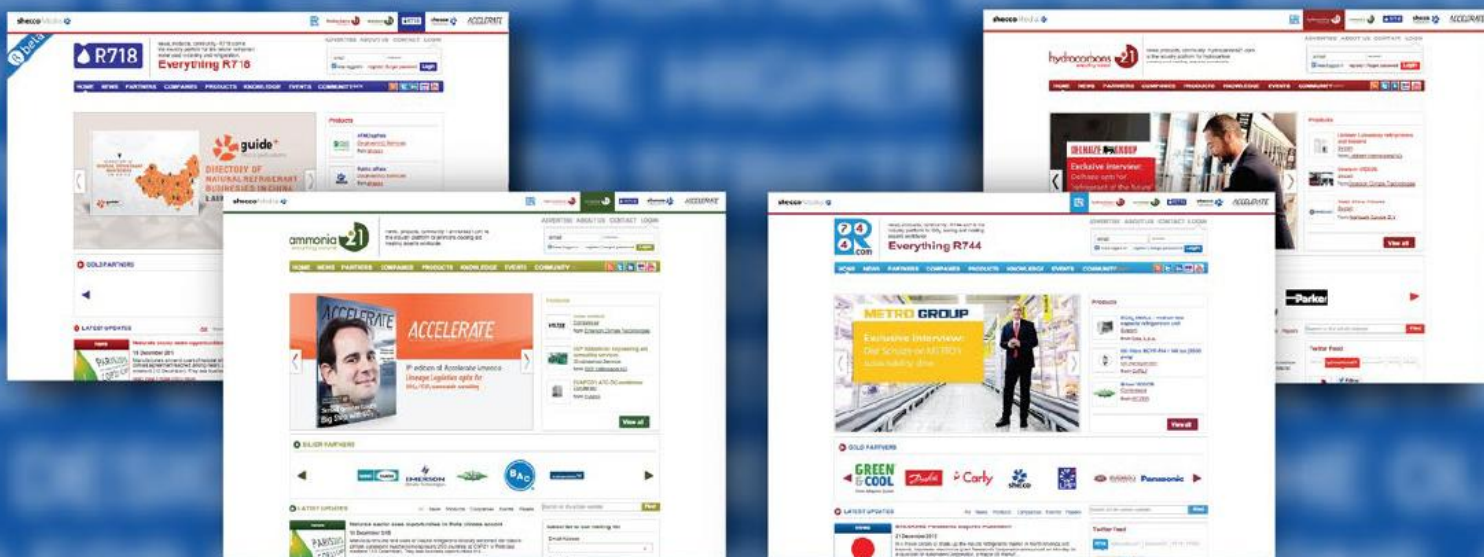
YOUR INDUSTRY NETWORK FOR NATURAL REFRIGERANTS

The world's only industry websites for the natural refrigerants carbon dioxide (CO₂, R744), hydrocarbons (HCs, R600a, R290 etc.), ammonia (NH₃, R717) and water (H₂O, R718). From the number one publisher of natural refrigerant information, our websites feature a unique mix of News, Products, and Events, attracting 10,000+ regular readers, including CEOs, Technical Directors, Refrigeration Engineers, End Users, Marketing and Sales Managers, Policy Experts and more.

JOIN AS A PARTNER TODAY TO SHOWCASE YOUR NATURAL REFRIGERANT PRODUCTS AND SERVICES.

Our 12-MONTH PARTNERSHIP PROGRAM offers logo visibility, articles showcasing your company, email newsletter campaigns, product pages with sales links, and social media coverage.

For benefits and pricing contact us at:
email: sales@shecco.com





Hydrocarbons (ODP= 0; GWP< 4)

With zero ozone-depleting characteristics and an ultra-low global warming impact, hydrocarbons (HCs) do not form any by-products or decomposition products in the atmosphere.

HC refrigerants can be applied either in systems designed specifically for their use, or as replacements in systems designed for a fluorocarbon refrigerant. This makes them a cost-competitive solution, and optimal for developing countries. If a hydrocarbon refrigerant is to be used in a system designed for a different refrigerant, it should be noted that modifications are probably required to ensure compatibility. Lubricant compatibility and the issues associated with hydrocarbons' flammability have to be addressed. Thus, the greatest potential for hydrocarbon refrigerants lies in new systems.

Hydrocarbon refrigerants are flammable and, as a result, carry an A3 safety classification, which means they have a low toxicity but are in the higher range of flammability. HCs are often subject to stricter safety requirements concerning the quantities permitted in occupied spaces.

Hydrocarbon refrigerants are fully compatible with almost all lubricants commonly used in refrigeration and air conditioning systems. One major exception to this rule are lubricants containing silicone and silicate (additives which are commonly used as antifoaming agents).



Water (ODP= 0; GWP= 0)

Water (chemical symbol H_2O , refrigerant designation R718) is one of the oldest refrigerants used for refrigeration applications. Also known as dihydrogen monoxide, R718 is an environmentally safe refrigerant with zero ozone depletion potential and zero global warming potential. It is odorless, colorless, nontoxic, nonflammable, non-explosive, easily available, and it is one of the cheapest refrigerants.

From an environmental and thermodynamic point of view, water is an ideal refrigerant for applications above $0^{\circ}C$. R718 has a higher latent

heat of evaporation (2,270kJ/ kg) than other natural refrigerants. This means that R718 absorbs significantly larger amounts of energy, in the form of heat, during a change of phase, from liquid to gas, without a change in temperature. An obvious limitation is the high freezing temperature at atmospheric pressure. In addition, water leads to corrosion and oxidation of many metals as it is more reactive than other refrigerants. Thus choosing the right materials for an the R718 system during the design phase requires special attention.



Air (ODP= 0; GWP= 0)

Air (refrigerant designation R729) is environmentally benign, cheap, totally safe and nontoxic. Environmental concerns about ozone depletion, global warming, and increasingly stringent legislation have renewed global interest in alternative refrigeration technology using air. However, air-cycle refrigeration systems is not new. It was used on refrigerated cargo ships around the turn of the 20th century.

Air-cycle refrigeration works on the reverse Brayton or Joule cycle. Air as a refrigerant does not undergo phase change (condensation/ evaporation) at the temperature levels encountered in conventional

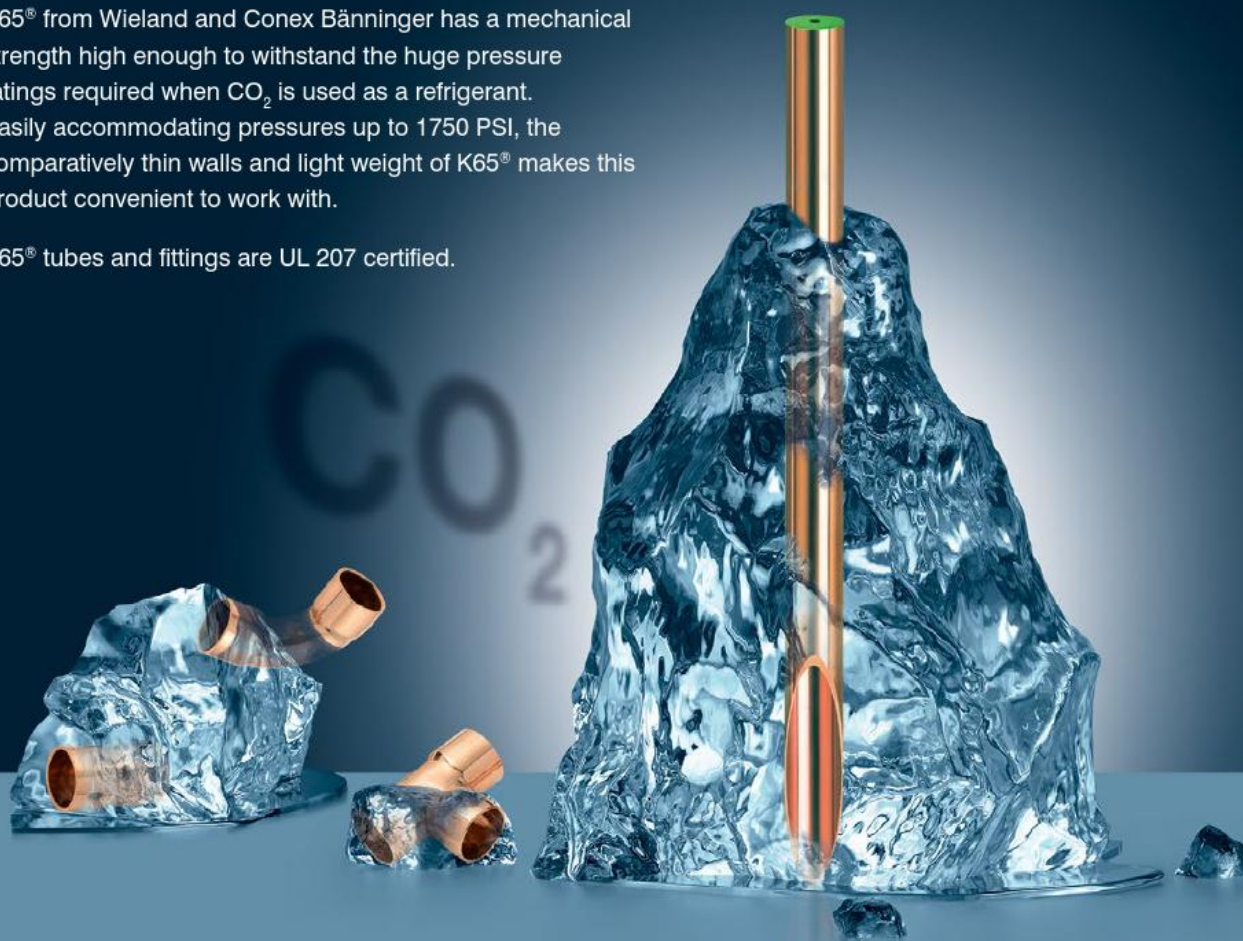
refrigeration applications. The COP value of air is low because of its light weight, but air-cycle cooling systems can provide relatively high-temperature heat recovery without the efficiency setback experienced by vapor compression systems.

Air has been used commercially for aircraft cooling for a long time. . Air has also been used as a refrigerant for residential and automobile air conditioning and cooling. In some refrigeration plants, air is used in the quick freezing of food products.

The tube system for high-pressure suitable for use with CO₂ refrigerants.

K65® from Wieland and Conex Bänninger has a mechanical strength high enough to withstand the huge pressure ratings required when CO₂ is used as a refrigerant. Easily accommodating pressures up to 1750 PSI, the comparatively thin walls and light weight of K65® makes this product convenient to work with.

K65® tubes and fittings are UL 207 certified.



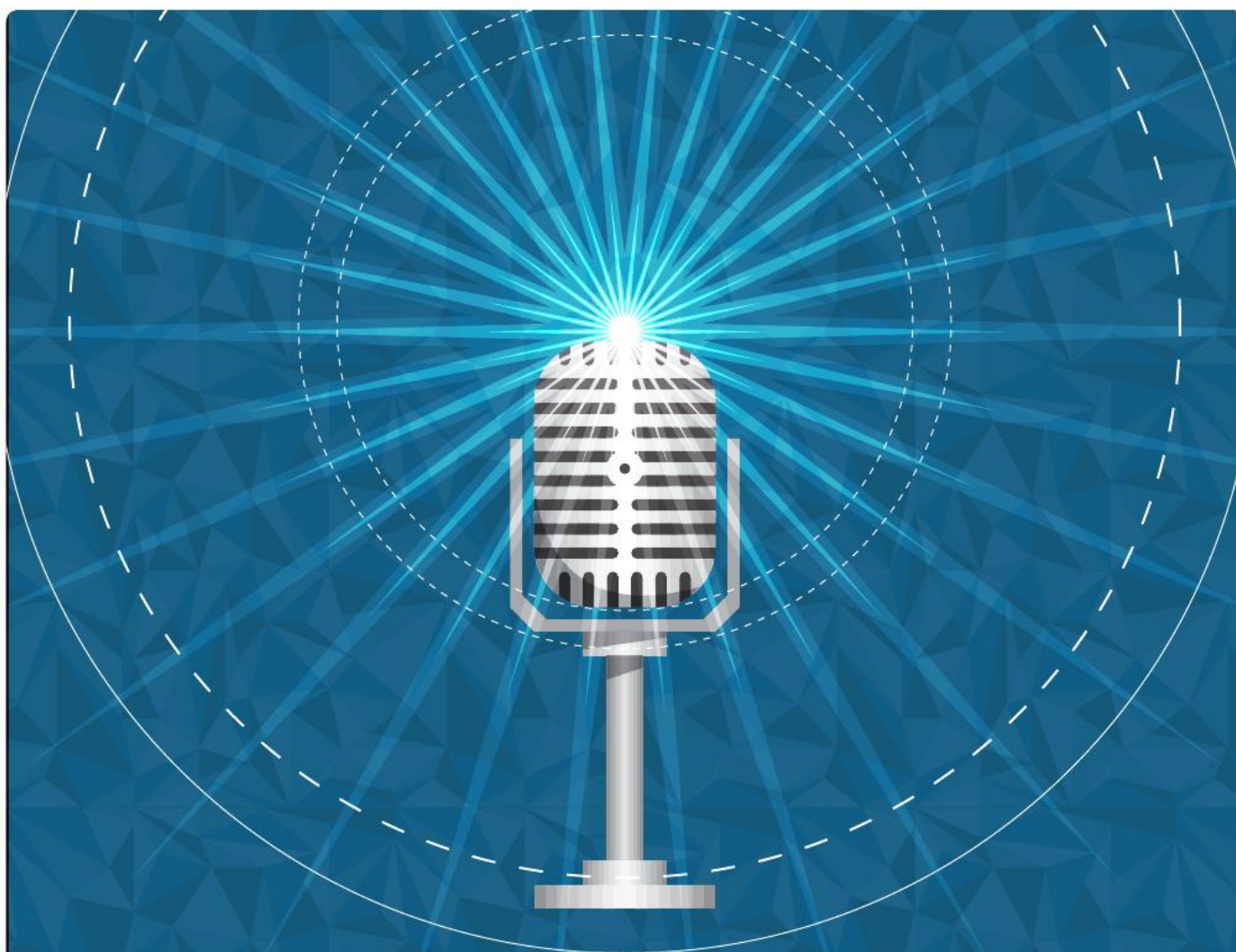
For more information visit us at
Stand 3595, AHR Expo, Orange County Convention Center, Orlando

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or email: info@wieland.de

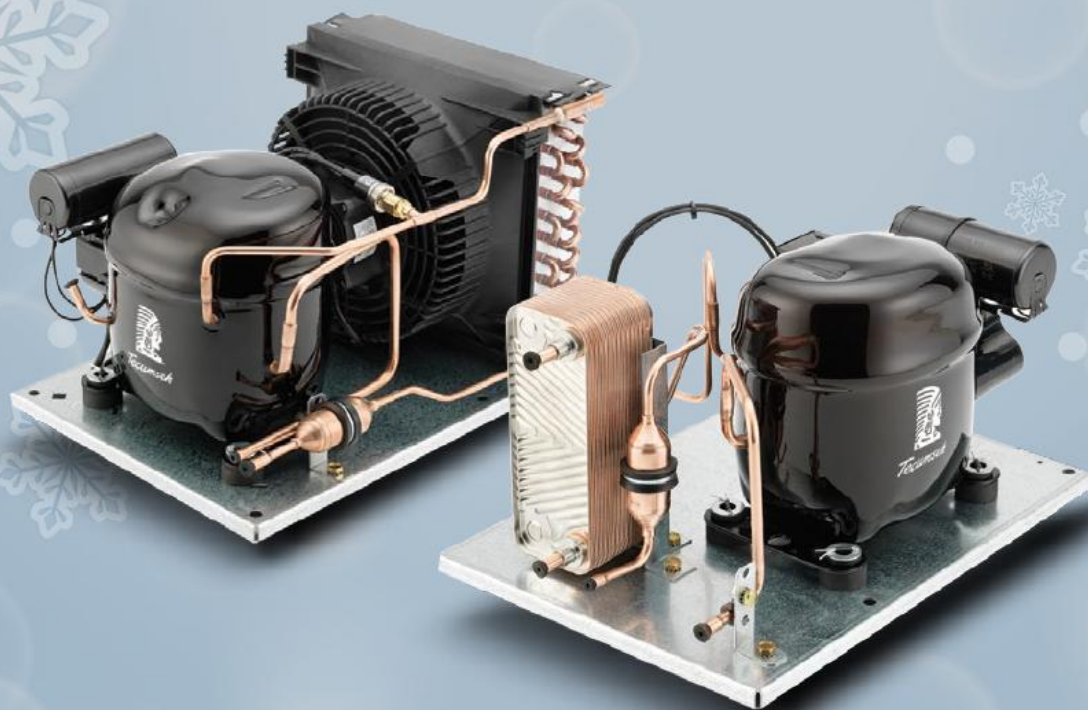


EXCLUSIVE INTERVIEWS

INDUSTRY LEADER INSIGHTS INTO THE LATEST NATURAL REFRIGERANT TECHNOLOGIES

In advance of 2016 AHR Expo, shecco Media interviewed Brandon France of Stellar and Douglas Schmidt of Embraco. In the following section of this *Guide*, these industry-leading companies discuss their products optimized for natural refrigerants and comment on how the natural refrigerant market has evolved in North America and elsewhere in the world.

BEING GREEN IS MORE THAN COOL.



Tecumseh's Celseon® line of air and water cooled indoor condensing units feature hydrocarbon-optimized compressors, and are available in models ranging from 1/5 to 1/2 HP. These R290 (propane) models deliver an increase in efficiency of 10 to 45 percent and lower energy consumption for the same cooling capacity. The combination of eco-friendly refrigerant and increased efficiency means a cooling system that is greener than ever.

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TECHNOLOGY



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Brandon France

Director of Packaged Solutions

Stellar



Contact info :

email : bfrance@stellar.net

Website : <http://Stellar.net>

As a fully integrated firm focused on design, engineering, construction and mechanical services, approximately how many systems using natural refrigerants have you installed in North America/worldwide?

Stellar has designed and installed thousands of ammonia systems and dozens of carbon dioxide systems throughout the world. This includes, but is not limited to, recirculation systems, direct expansion systems, cascade systems, distributed systems, and secondary systems for food & distribution, pharma and HVAC applications.

What natural refrigerant product(s) have you chosen to showcase at the AHR Expo, and why?

We will be showcasing our low-charge refrigeration packaged equipment (i.e. chillers), which utilize a natural refrigerant (such as ammonia or carbon dioxide), and a secondary refrigerant (such as glycol). Our product line offers a wide variety of standard units as well as the ability to design custom units to meet our customers' specific needs, with operating ranges from -50°F to +50°F. Our goal with each of our units is to supply the highest efficiency and lowest charge system available, while offering a low installation cost, shorter lead time, and reduced footprint.

What are the key product features and how do they help end users to save energy and money and to change the market?

There is a growing demand around the world to delist the use of high-GWP HFCs (such as R22, R404A, R507A, etc.) and switch to natural refrigerants such as CO₂ and ammonia. Ammonia in particular is an excellent choice as it is not only environmentally friendly, with zero global warming potential (GWP) and zero ozone depletion potential (ODP), it's also energy efficient, and readily available. Along with this demand, there is a desire in the industrial ammonia refrigeration industry to reduce refrigerant charge. Our packaged chillers offer a very low refrigerant charge to TR ratio (less than 1 pound/TR) and utilize secondary refrigerants to provide cooling for process loads. By using a secondary refrigerant, the ammonia is isolated to the machine room, reducing the overall risk to the facility and the cost of risk management.

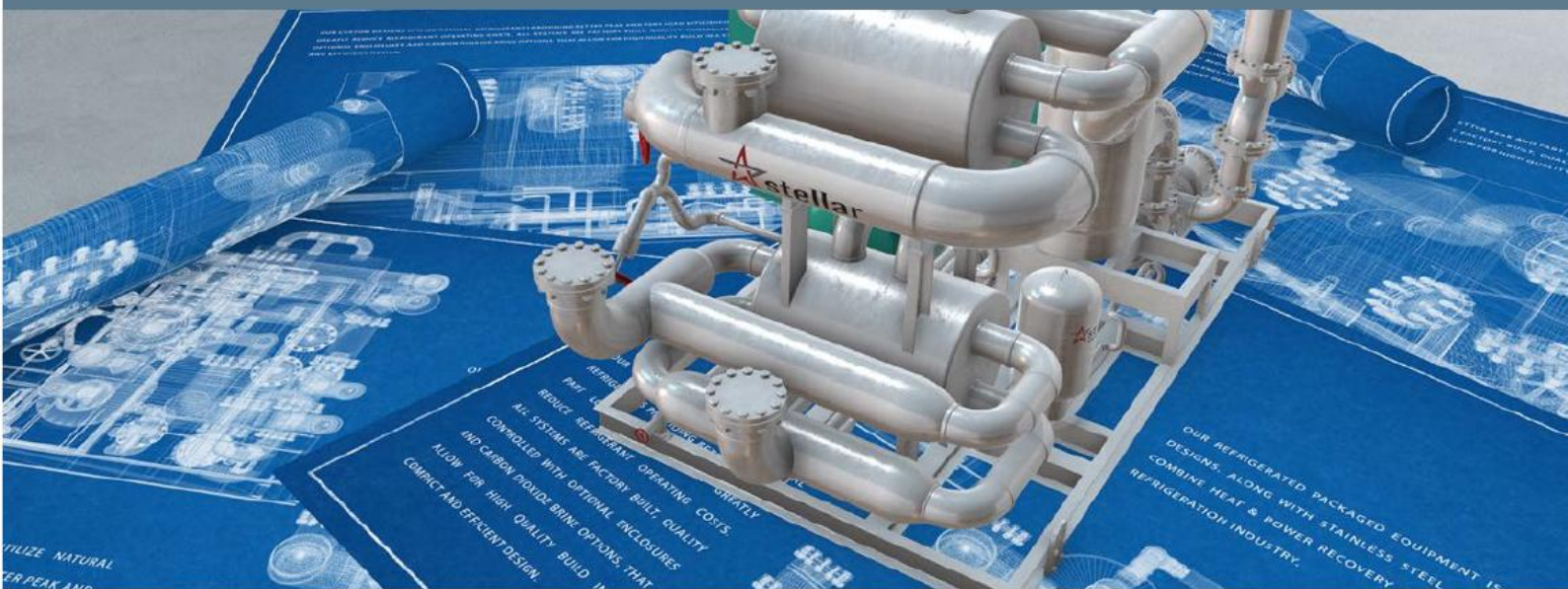
Where are your products and services available? Have you expanded to other world regions?

Over the past 30 years Stellar has expanded from our Jacksonville, Fla., headquarters, and now operates nearly 50 support locations and offices throughout the United States and across the globe. We are positioned to offer our products and services around the world. Please feel free to contact me (bfrance@stellar.net), or visit Stellar.net for additional information.



THE UNDISPUTED LEADER IN NATURAL REFRIGERANTS

PACKAGED REFRIGERATION EQUIPMENT | CHILLERS



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- Carbon dioxide brine options
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- Variable frequency drives
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- Nationwide service contracts

CUSTOM PACKAGED SYSTEMS

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- 0 ODP, 0 GWP
- Industrial equipment
- 100-1500 TR range
- Water or evaporative cooled
- Less than 1 pound/TR



PHONE: 904.260.2900
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JACKSONVILLE, FL 32257

For more information on Stellar's Refrigeration Packaged Equipment, contact Brandon France, Director of Packaged Solutions, at **904.899.9295** or **bfrance@stellar.net**.



Douglas Schmidt

Commercial Sales Manager, North America Region

Embraco



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Website : <http://www.embraco.com>
www.naturalrefrigerants.info

What natural refrigerant product(s) have you chosen to showcase at the AHR Expo, and why?

This year, Embraco is proud to be showcasing several compressor models and a complete sealed system—all featuring hydrocarbons (R290 and R600a). This includes our smallest displacement, EM, up to our NT family as well as our Fullmotion (variable capacity) products. The two most exciting products, however, are the sealed system and the EM3 compressor.

What are the key product features and how do they help end users to save energy and money, and to change the market?

The EM3 compressor family will be manufactured in our Monterrey, Mexico, plant and deliver breakthrough levels of energy efficiency. This product was designed to bring solutions to the North American markets and targeted at the pending DOE and EPA regulation changes. The sealed system, called Embraco Plug n' Cool, will deliver a list of significant benefits to small/medium OEMs and open new markets for HCs. In regard to OEMs, by providing a compact sealed system, Embraco enables cooler and freezer manufacturers to avoid the large capital investment in their facility necessary for safe handling of HC refrigerants. Another significant feature of Plug n' Cool is that it's scalable, meaning that the 150g charge limit is no longer a barrier to applications. Multiple Plug n' Cool systems can be applied in large cases, thereby introducing HCs to new markets like grocers and convenience stores.

How do you see the market for natural refrigerant products and systems evolving in Central and South America?

So far these markets haven't shown much movement on their own toward natural refrigerants. Often times the businesses in these regions are inadvertently disrupted by the political climate, which seems to retard innovation in new refrigerants. As it is now, there are not any regulations to promote the phase out of HFCs. The main positive force toward NatRefs comes from the specifiers of equipment. This group of beverage manufacturers and quick-serve food providers are beginning to influence the market. However, as a market statement, the movement is slow.

What influence have regulations either in the U.S. or in other regions (e.g. EU F-Gas Regulation) had on your business?

Of course, this process started many years ago, and was seen more recently in the EU with the plan to ban F gases (>150 GWP) in domestic equipment by 2015 and commercial equipment by 2022. However, the latest and most relevant to North America were the combination of the EPA's and DOE's regulations phasing out HFCs and reducing the allowable energy consumption for commercial equipment, respectively. The effect of these and several other government actions has created a tremendous drive for change in the market. While the ban on HFCs for some applications won't come until 2019 or 2020, many OEMs have learned that HCs in particular can bring energy savings to help them comply with the very near 2017 deadline from the DOE. Embraco was a leader in this initiative, having worked with natural refrigerants for decades, and was prepared to respond by focusing most of its new compressor development on these gases. Today we offer the most complete line of optimized HC (R-290 and R-600a) options delivering the highest efficiency.

TECHNOLOGY that evolves consciously

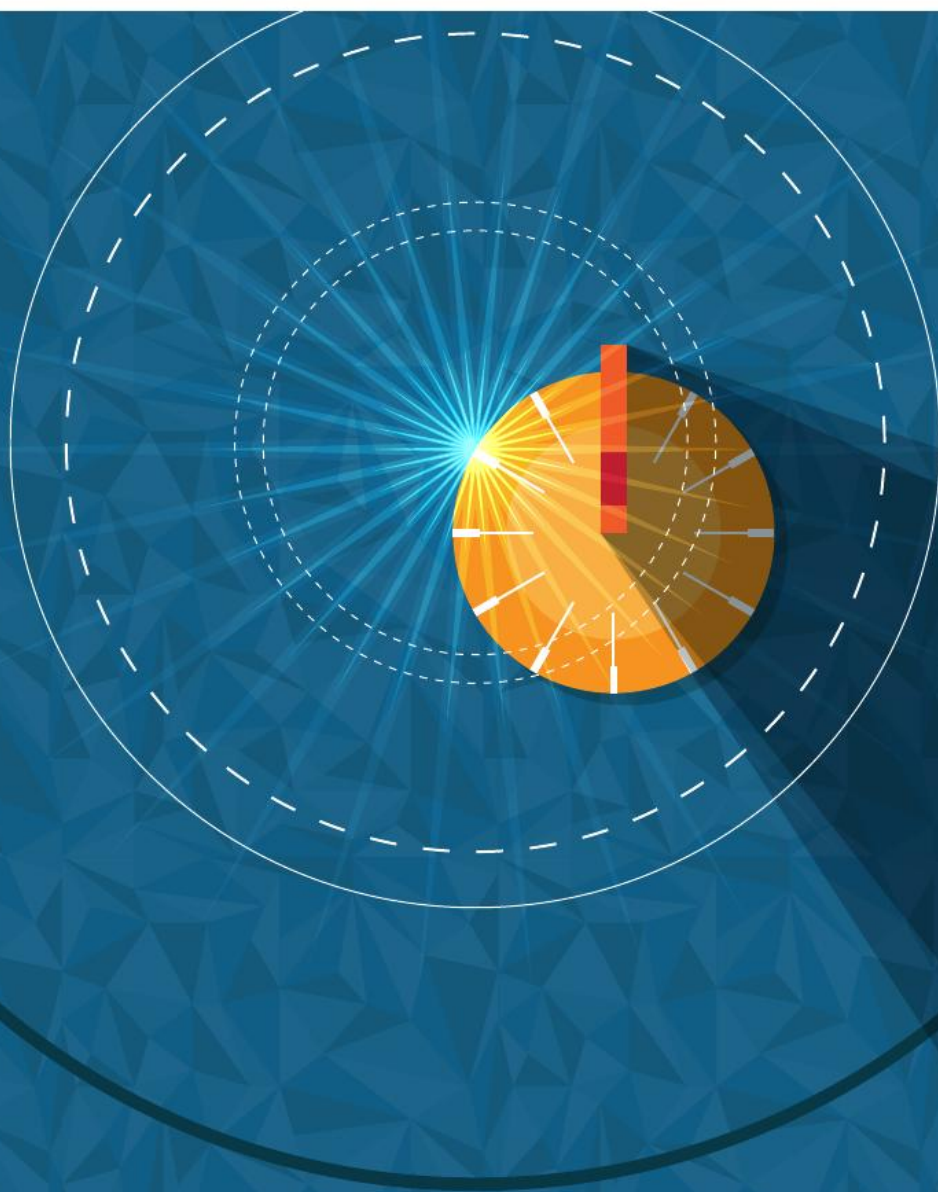
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JAN 25 - 27 ORLANDO

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STAND: 2459

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CHANGE **ON.**



EVENTS PLANNER

Monday, Jan 25th | Tuesday, Jan 26th | Wednesday, Jan 27th

The following Events Planner highlights presentations, educational programs and product launches related to energy efficiency or natural refrigerant-based technology, taking place during the 2016 AHR Expo. With this planner, participants are able to plan their attendance and easily locate the presentation locations.

Topics included in this planner are: HC Refrigerant Safety, CO₂ Measurements That Make Sense, and the 14th AHR Expo Innovation Awards 2016.

the microgroove™ advantage

NON-INVASIVE PRESSURE EXPANSION

Burr OAK Tool Inc. will deliver four unique seminars on manufacturing tools and processes for heat exchangers at the AHR Expo, Booth #3831

Monday, January 25

- 11:00 a.m. OAK Product Innovations
- 1:30 p.m. New Technology Seminar, Theatre C
- 3:00 p.m. MicroGroove Tubes versus MicroChannel
- 5:00 p.m. Evolution of Coil and Tube Manufacturing

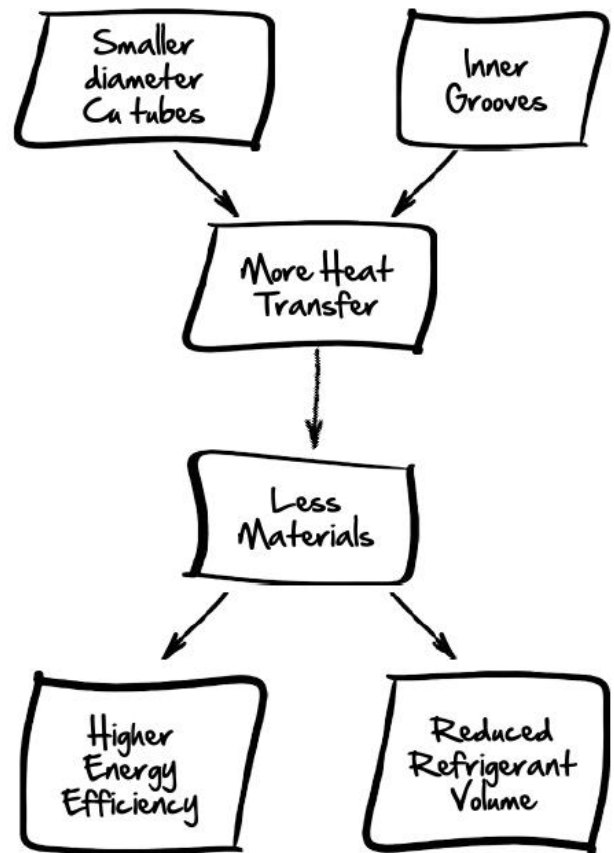
Tuesday, January 26

- 11:00 a.m. MicroGroove Tubes versus MicroChannel
- 1:00 p.m. Non-invasive Pressure Expansion (OAK Phoenix Expander)
- 3:00 p.m. Evolution of Coil and Tube Manufacturing
- 5:00 p.m. OAK Product Innovations

Wednesday, January 27

- 11:00 a.m. Evolution of Coil and Tube Manufacturing
- 1:00 p.m. Non-invasive Pressure Expansion (OAK Phoenix Expander)

MicroGroove technology is taking a huge step forward with the introduction of new equipment for pressure expansion from Burr OAK Tool Inc. The new OAK Phoenix pressure expansion technology produces superior high-efficiency heat exchangers using small-diameter MicroGroove tubing.



 Join us on LinkedIn
via microgroove.net

2016 AHR EXPO ORLANDO

MicroGroove – Booth #1293

Burr OAK Tool Inc. – Booth #3831

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For more information visit:
www.microgroove.net

TIME*	Monday, January 25 th	Tuesday, January 26 th	Wednesday, January 27 th
8:00AM – 11:30AM	TIME : 8:30AM - 11:30AM Title: Energy Management Best Practices (code 70) Presenter: ASHRAE Location: Room S330D TIME : 8:30AM - 11:30AM Title: Air-to-Air Energy Recovery Applications: Best Practices (code 67) Presenter: ASHRAE Location: Room S330A	TIME : 8:00AM - 10:00AM Title: Global Trends in the HVAC industry Presenter: BSRIA Ltd. Location: Room S320C	
9:00AM – 12:00 NOON	TIME : 9:00AM - 12:00 NOON Title: HC Refrigerant Safety Presenter: RSES / RSES Journal Location: Room S320D TIME : 9:00AM - 12:00 NOON Title: NAECA and Not Afraid: Meeting and Exceeding New Energy Efficiency Standards Presenter: Radiant Professionals Alliance (RPA) Location: Room S320E TIME : 9:30AM - 10:30AM Title: How To Commission an Economizer in 12 Steps Presenter: National Balancing Council (NBC) Location: Room S320C	TIME : 11:00AM - 11:20AM Title: Innovation in Refrigeration Live on the AHR Show Floor (E360 Webinar) Presenter: Emerson Climate Technologies Location: Booth 3404 TIME : 11:00AM - 11:20AM Title: Flammable Refrigerant Services: Compliance and How to Retrofit Your Lab Presenter: Intertek Location: Theater B - Room N320F TIME : 11:30AM - 11:50AM Title: CO₂ Measurements That Make Sense Presenter: Vaisala Location: Theater C - Room N320E	TIME : 11:30AM - 11:50AM Title: Thermocraft R290 Refrigeration Condensing Unit Presenter: Elco Location: Theater B - Room N320F
1:00PM – 2:00PM	TIME : 1:00PM - 1:20PM Title: BITZER CM-RC Compressor Protection & Diagnostic Module Presenter: BITZER US, Inc. Location: Theater C - Room N320E	TIME : 1:00PM Title: 14th AHR Expo Innovation Awards 2016 Location: Theater A TIME : 1:00PM - 2:00PM Title: How To Measure & Rate HVAC Operating System Efficiency Presenter: National Balancing Council (NBC) Location: Room S320A	TIME : 1:30PM - 1:50PM Title: New Generation Refrigerants - Commercial Coolers Applications in European Perspective Presenter: Luvata Location: Theater B - Room N320F
2:00PM – 9:00PM	TIME : 2:45PM - 5:45PM Title: Complying with Standard 90.1-2013: HVAC/Mechanical (code 73) Presenter: ASHRAE Location: Room S330C TIME : 4:30PM - 4:50PM Title: The Energy Management Starter (EMS) Presenter: Franklin Control Systems Location: Theater B - Room N320F TIME : 6:00PM - 9:00PM Title: Chillin' With Sporlan Tailgate Party Presenter: Parker Hannifin Sporlan Location: Rosen Centre Hotel Grand Ballroom B, 9840 International Dr. Orlando FL 32819	TIME : 3:30PM - 3:50PM Title: HPWH - Higher Efficiency With CO₂ Presenter: Franklin Control Systems Location: Room S330C TIME : 4:00PM - 4:20PM Title: New CO₂ Controller Built-In Data Logger Presenter: CHC System Co. Location: Theater A - N320G	

* Timing may vary slightly, please consult official technical program on www.ahrexpo.com



CAREL Retail Sistema: your control solution provider for natural refrigerant systems.

Cutting edge solutions for the full control of CO₂ transcritical and subcritical systems with special attention to energy saving, ease of use and costs reduction.





PREMIUM PRODUCT AND COMPANY DIRECTORY

The following Premium Product Directory is a selection of some of the latest natural refrigerant-based technologies on display at the 2016 AHR Expo, offered by industry supporters of this Guide. The Company Directory lists all companies offering products or services for natural refrigerants at the AHR Expo. These directories allow participants to find, arranged alphabetically and by booth number, systems and components for household, commercial, and industrial applications.



**BALTIMORE AIRCOIL
COMPANY**

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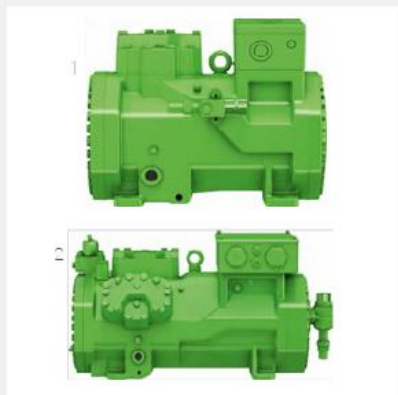


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CARBON
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www.baltimoreaircoil.com/3014

EXHIBITORS



1: BITZER subcritical CO₂ compressor of the CME series. 2: BITZER transcritical CO₂ compressor of the CKH series

BITZER – www.bitzerus.com

BITZER TRANSCRITICAL & SUBCRITICAL CO₂ COMPRESSORS



BITZER has developed new reciprocating compressors for subcritical and transcritical CO₂ applications. The eight new subcritical CME models and the five new transcritical CKH compressors represent a significant addition to our already well-known CO₂ compressor range and, in addition to a high strength standstill pressure of 100 bar (1450 psi), offer the highest efficiency and proven operating reliability that the market expects of a BITZER compressor. Having introduced CO₂ compressors in the 90s, BITZER continues to be an industry leader in offering compressors for natural refrigerants, including ammonia and HCs.

Booth: 2253 / Contact person at the booth: KURT BICKLER



CAREL – www.carel.com

CAREL HEOS SISTEMA



The CAREL HEOS Sistema is the winner of the AHR Expo Innovation Award, Refrigeration category. It is the most technologically advanced, high-efficiency solution for the management of refrigerated cases and cold rooms for the food retail industry. HEOS features remote showcases with variable-speed BLDC compressors cooled by a water loop. Each unit, fitted with its own BLDC compressor, can adapt its operating pressure in real time, allowing the compressor to operate in the most energy-advantageous conditions. It brings energy savings up to 25% when compared with a traditional solution. Heos Sistema is also available for natural refrigerants.

Booth: 2257



Danfoss – www.danfoss.com

AK-PC 781

Capacity controller for transcritical CO₂ booster systems



Danfoss is making it easier to adopt natural refrigerants, from designing components that minimize hydrocarbon charges to enabling modular transcritical CO₂ systems with new valves and controllers.

AK-PC 781 is a complete regulating unit for capacity control of compressors and condensers in refrigeration systems. It enables environmentally friendly and energy-saving systems through COP optimization, heat reclaim, oil management, and gas-pressure control. Together with a complete Danfoss package including a system manager, variable frequency drives, sensors, case controllers and valves, the AK-PC 781 is part of Danfoss leading-edge solutions for transcritical CO₂ refrigeration.

Booth: 2404 / Contact person at the booth: CHRIS BROWN



Baltimore Aircoil Company – www.baltimoreaircoil.com

TRILLIUMSERIES™ CO₂ HYBRID CONDENSER



BAC's TrilliumSeries™ CO₂ Hybrid Condenser has received an honorable mention in the 2016 AHR Expo Innovation Award Refrigeration Category. TrilliumSeries CO₂ Hybrid Condensers incorporate the patented Dry-Coil Adiabatic™ design to enable appreciably lower system condensing temperatures and pressures compared to those of traditional air-cooled CO₂ gas coolers, resulting in up to 44% peak and annual system energy reductions. The hybrid TrilliumSeries Condenser is a proven energy-saving solution to air-cooled equipment for traditional refrigerants, and is now available to support natural 0-GWP transcritical CO₂ systems. Transcritical CO₂ systems with TrilliumSeries Condensers can operate subcooled, year-round, in virtually all climate zones worldwide.

Booth: 3014 / Contact people at the booth: PHIL HOLLANDER and PAUL NOREEN



Guntner – www.guntnerus.com

ADIABATIC COOLING SYSTEM (ACS)



Guntner is proud to showcase the new GMM-GHM Adiabatic Cooling System. Guntner's global patent on our continuously metered approach actively determines the precise amount of water needed for maintaining fully wetted operation while minimizing water usage and eliminating the need for expensive recirculation and water treatment systems. Paired with direct drive electrically commuted (EC) motors, Guntner's eco-friendly solution optimizes resource consumption for unparalleled return on investment. Visit Guntner at the AHR Expo booth #3291 to learn how German engineering is applied globally to manage water and energy use across dry, adiabatic, and evaporative products.

Booth: 3291 / Contact person at the booth: GLENN COMISAC or MIKE SILVERSTEIN



Dorin – www.dorin.com

CD500 RANGE - TRANSCRITICAL FLAGSHIP COMPRESSORS



The real innovation in 2016 is coming from the **CD Series**, the **CO₂ transcritical piston compressors**, now reaching the top level globally with the masterpiece from Dorin: the **CD500 Range**, a dedicated 6-piston compressor for industrial as well as commercial applications. This is a natural choice for those systems integrating refrigeration and heat pump operations (displacement from 39.8 to 53.2 m³/h, nominal motor power from 50 to 80 Hp). **CD500 Range** as well as CD400 Range, is also available in a double-stage version, pioneering in the field again.

Booth: 4335 / Contact person at the booth: GIACOMO PISANO



shecco — www.publications.shecco.com

GUIDE TO NATURAL REFRIGERANTS TRAINING IN NORTH AMERICA



The reference tool for those looking for guidance on how to select the right training providers, knowledge sources and partners to build their business case around a safe, efficient and compliant use of the refrigerants CO₂, NH₃ and hydrocarbons. The first two editions available in 2016: GUIDE to Training in North America and GUIDE to Training in Europe.

Booth: 5877



shecco — www.shecco.com



MARKET DEVELOPMENT SERVICES

shecco's Market Development team provides a wide range of research, consulting and business development services to help you grow your business. Our quantitative and qualitative in-depth market and policy analysis delivers conclusions to help you make the right business decisions, whether you need to reach a new market or improve customer understanding, find new partners or verify the viability of your products. shecco also supports its partners with tailored ad hoc or continued communication and marketing campaigns to turn knowledge into actionable strategies.

Booth: 5877

NON - EXHIBITING COMPANY



Alfa Laval AXP X-treme pressure-brazed plate heat exchanger (left),
Alfa Laval TK20 semi-welded plate heat exchanger (right).

Alfa Laval — www.alfalaval.com

ALFA LAVAL AXP X-TREME PRESSURE BRAZED PLATE HEAT EXCHANGER AND TK20 SEMI-WELDED PLATE HEAT EXCHANGER



Alfa Laval is a leading global provider within the key technologies of heat transfer, separation and fluid handling. Our mission: to optimize the performance of our customers' processes. Time and time again.

Alfa Laval offers a complete line of heat exchangers for use with natural refrigerants. Our brazed, fusion-bonded and semi-welded plate heat exchangers are suitable for use with CO₂, NH₃ and other refrigerants. Operating as gas coolers, condensers, sub coolers, oil coolers and evaporators, Alfa Laval's wide range of capacities, sizing expertise and available inventory assure the proper equipment is selected and delivered.

Contact person: **DAN AIKEN**, Refrigeration Director

+1 708-498-2267 / dan.aiken@alfalaval.com

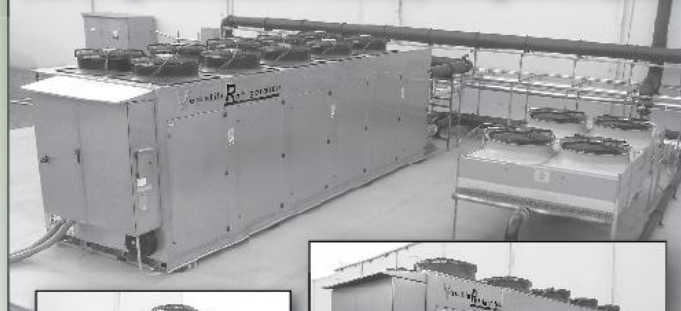
Alternative to Traditional Refrigerants Hydracarbon R1270 Chillers

The Frigadon HYCOOL® Secondary Refrigeration System Provides A Non-toxic Environmentally Friendly Option

The Frigadon HYCOOL® Secondary Refrigeration System is designed to meet the environmental concerns of today and the future.

- Non-toxic heat transfer fluids
- Built-in safety features
- New techniques and state-of-the art technologies
- Increased life expectancy of the system
- Centrally located mechanical unit engineered to provide flexibility of serving several buildings
- Installation costs are less expensive and require less time than complex ammonia or freon systems
- Existing refrigeration systems can be readily converted

Retrofit of the CA Facility at Auvil Fruit Company
with a Frigadon HYCOOL® Secondary Refrigeration System



No Engine
Room Required



Retrofit Services
35,000 Bins at Auvil Fruit

**Versatile
Refrigeration**

U.S.A. INC.

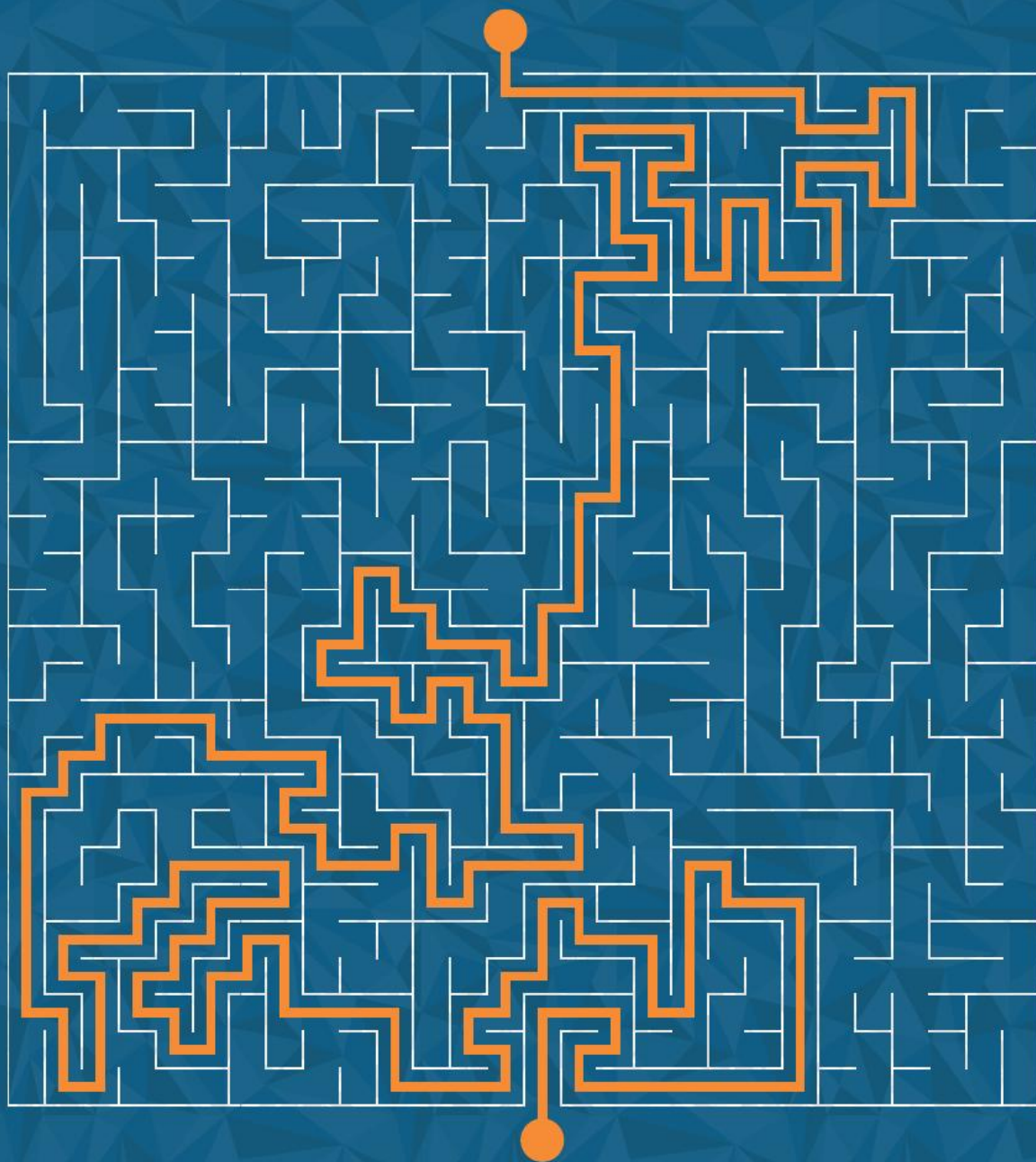
In the Northwest Call ... 509-969-4577
or Email ... info@versatilerefrigeration.com

**Versatile
Refrigeration**

INTERNATIONAL INC.

In Canada Call ... 250-210-2015
or Email ... info@versatilerefrigeration.com

www.VersatileRefrigeration.com



FIND YOUR WAY AROUND THE 2016 AHR EXPO

Increasingly every year, more companies are offering products and services related to natural refrigerants. These hall maps are designed as a tool to help visitors easily find companies providing solutions for CO₂, ammonia, hydrocarbons and water.

Companies include: system manufacturers, engineering and training firms, refrigerant suppliers and component suppliers.

COMPANY LISTING* 1. Organized alphabetically

Company's name	Nat.Ref.	Booth	Hall Sections / page
A-Gas Americas	CO ₂ NH ₃ HC	2397	5/ p.39
Accelerate America/ shecco	CO ₂ NH ₃ HC H ₂ O	5877	6/ p.41
Acme Engineering Products	CO ₂ NH ₃ HC	1336	3/ p.34
AGRAMKOW	CO ₂ HC	3174	6/ p.40
Alfa Laval Kathabar	NH ₃	3426	2/ p.32
Bacharach	CO ₂ NH ₃ HC	4435	4/ p.37
Badger Meter	CO ₂	3038	3/ p.35
Baltimore Aircoil Company (BAC)	CO ₂ NH ₃	3014	1/ p.31
Best	HC	3162	6/ p.40
Bitzer	CO ₂ NH ₃ HC	2253	3/ p.35
Blissfield	CO ₂ NH ₃	4335	4/ p.37
Brainerd Compressor	CO ₂ NH ₃ HC	2646	3/ p.35
BVA	CO ₂ NH ₃ HC	3074	5/ p.39
Carel	CO ₂	2257	3/ p.35
ComStar International	CO ₂ HC	3761	6/ p.40
Conbraco Industries	NH ₃	2453	3/ p.35
Conex Universal (IBP Group)	CO ₂	3595	6/ p.40
CPS Products	CO ₂ NH ₃ HC	3004	1/ p.31
Critical Environment Technologies	CO ₂ NH ₃	1237	3/ p.34
Danfoss	CO ₂ NH ₃ HC	2404	1/ p.31
DEHON	CO ₂ NH ₃ HC	2959	5/ p.39
Dorin	CO ₂ NH ₃ HC	4335	4/ p.37
E Instruments International	CO ₂ HC	2669	5/ p.39
Ebm-papst	HC	4629	2/ p.33
Elco	HC	2084	5/ p.38
Embraco	HC	2459	5/ p.39
Emerson Climate Technologies	CO ₂ HC	3404	2/ p.32
Errecinque	CO ₂ NH ₃ HC	3665	6/ p.40
Espa Sogutma Elemanlari San ve Tic	NH ₃ HC	2996	5/ p.39
EVAPCO	NH ₃	4425	2/ p.33
Frascold USA	CO ₂ NH ₃ HC	2487	5/ p.39
GALCO SA - Climalife	HC	2959	5/ p.39
Galileo TP	HC	3147	4/ p.36
Garden City Ammonia Program (GCAP)	CO ₂ NH ₃	2994	5/ p.39
GrayWolf Sensing Solutions	CO ₂ NH ₃	5424	2/ p.33
Grundfos	CO ₂ NH ₃ H ₂ O	4619	2/ p.33
Guntner U.S.	CO ₂ NH ₃	3291	6/ p.40
Hangzhou ELK	HC	5233	4/ p.37
INFICON	CO ₂ NH ₃ HC	2644	3/ p.35
InvenSor	H ₂ O	5892	6/ p.41
ITE	NH ₃ HC	2964	5/ p.39
Johnson Controls / Unitary Products	CO ₂ NH ₃ HC	1139	3/ p.34
Johnson Controls / Unitary Products	CO ₂ NH ₃ HC	1231	3/ p.34
Kaori	CO ₂	1865	5/ p.38
Keeprite Refrigeration	CO ₂ NH ₃ HC	4704	2/ p.33
LG Electronics	CO ₂ NH ₃ HC	4644	4/ p.37
Luvata	CO ₂ NH ₃ HC	4442	4/ p.37
MA-Line	CO ₂ HC	3838	4/ p.36
Mastercool	CO ₂ HC	2631	3/ p.35
Microgroove	CO ₂	1293	5/ p.38
Milwaukee/Hammond Valve Co.	CO ₂ NH ₃ HC	1808	1/ p.30
Modine Coils	CO ₂ NH ₃ HC	2523	1/ p.31
Modine Manufacturing	CO ₂ NH ₃ HC	2519	1/ p.31
MTH Pumps	NH ₃	2549	3/ p.35
Mueller Industries	CO ₂	2829	1/ p.31
Multistack	CO ₂	4684	6/ p.41
Munters Corporation	H ₂ O	3042	3/ p.35
Nanjing Wonfulay Precision Machinery Co.	HC	5264	6/ p.41
Nano Environmental Technology (NET)	CO ₂ NH ₃ HC	1170	5/ p.38
National Compressor Exchange	CO ₂ NH ₃ HC	2674	5/ p.39

*This information was compiled using the AHR Expo website, but we do not warrant that this list is complete

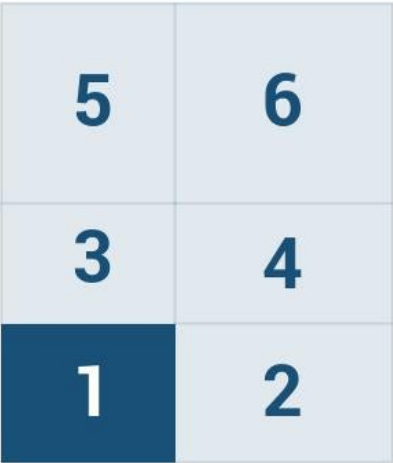
Ningbo Sino- Resource Imp. & Exp.	HC	4954	4/ p.37
NINHUA	HC	2484	5/ p.39
Onda	NH ₃ HC	1444	3/ p.34
Panasonic	CO ₂ HC	2284	5/ p.38
Parker Hannifin - Sporlan	CO ₂ NH ₃ HC	2442	3/ p.35
REFCO Manufacturing	CO ₂ HC	3642	4/ p.36
Ritchie Eng. Co. - YELLOW JACKET	CO ₂ NH ₃	4238	4/ p.36
Robinair/TIF	CO ₂	3709	2/ p.32
RSES/RSES Journal	CO ₂ NH ₃ HC	3807	2/ p.32
Saginomiya America	CO ₂ NH ₃	1844	3/ p.34
SANDEN International	CO ₂	1644	3/ p.34
Sanhua International	CO ₂ HC	2657	3/ p.35
SAPA Aluminium Precision Tubing	CO ₂	3151	4/ p.36
Schneider Electric	CO ₂ HC	1404	1/ p.30
Sensata Technologies	CO ₂ NH ₃ HC	2034	3/ p.34
Shanghai Aohong Chemical Co.	HC	5261	6/ p.41
Sierra Monitor Corporation	CO ₂ NH ₃ HC	1159	5/ p.38
Sporlan - Parker Hannifin	CO ₂ NH ₃ HC	2442	3/ p.35
SPX Cooling Technologies	CO ₂ NH ₃ HC	2614	1/ p.31
SPX FLOW	CO ₂ NH ₃ HC	2936	3/ p.35
Stellar	CO ₂ NH ₃	3094	5/ p.39
Superior-A Sherwood Company	CO ₂ NH ₃ HC	3534	4/ p.36
SWEP North America	CO ₂ NH ₃ HC	4038	4/ p.36
Tecogen	H ₂ O	2510	1/ p.31
Tecumseh	HC	2431	3/ p.35
Tranter	CO ₂ NH ₃	4878	6/ p.41
Vaisala	CO ₂ NH ₃	1334	3/ p.34
WEH Technologies	CO ₂	5595	6/ p.41
Westermeyer Industries	CO ₂	2825	1/ p.31
Wieland Copper Products/Thermal Solutions	CO ₂ NH ₃	4978	6/ p.41
YELLOW JACKET - Ritchie Eng. Co.	CO ₂ NH ₃	4238	4/ p.36
Zhejiang Maidi	HC	3674	6/ p.40

2. Organized by booth number

Company's name	Nat.Ref.	Booth	Hall Sections / page
Johnson Controls / Unitary Products	CO ₂ NH ₃ HC	1139	3/ p.34
Sierra Monitor Corporation	CO ₂ NH ₃ HC	1159	5/ p.38
Nano Environmental Technology (NET)	CO ₂ NH ₃ HC	1170	5/ p.38
Johnson Controls / Unitary Products	CO ₂ NH ₃ HC	1231	3/ p.34
Critical Environment Technologies	CO ₂ NH ₃	1237	3/ p.34
Microgroove	CO ₂	1293	5/ p.38
Vaisala	CO ₂ NH ₃	1334	3/ p.34
Acme Engineering Products	CO ₂ NH ₃ HC	1336	3/ p.34
Schneider Electric	CO ₂ HC	1404	1/ p.30
Onda	NH ₃ HC	1444	3/ p.34
SANDEN International	CO ₂	1644	3/ p.34
Milwaukee/Hammond Valve Co.	CO ₂ NH ₃ HC	1808	1/ p.30
Saginomiya America	CO ₂ NH ₃	1844	3/ p.34
Kaori	CO ₂	1865	5/ p.38
Sensata Technologies	CO ₂ NH ₃ HC	2034	3/ p.34
Elco	HC	2084	5/ p.38
Bitzer	CO ₂ NH ₃ HC	2253	3/ p.35
Carel	CO ₂	2257	3/ p.35
Panasonic	CO ₂ HC	2284	5/ p.38
A-Gas Americas	CO ₂ NH ₃ HC	2397	5/ p.39
Danfoss	CO ₂ NH ₃ HC	2404	1/ p.31
Tecumseh	HC	2431	3/ p.35
Parker Hannifin - Sporlan	CO ₂ NH ₃ HC	2442	3/ p.35
Conbraco Industries	NH ₃	2453	3/ p.35
Embraco	HC	2459	5/ p.39
NINHUA	HC	2484	5/ p.39
Frascold USA	CO ₂ NH ₃ HC	2487	5/ p.39
Tecogen	H ₂ O	2510	1/ p.31
Modine Manufacturing	CO ₂ NH ₃ HC	2519	1/ p.31
Modine Coils	CO ₂ NH ₃ HC	2523	1/ p.31

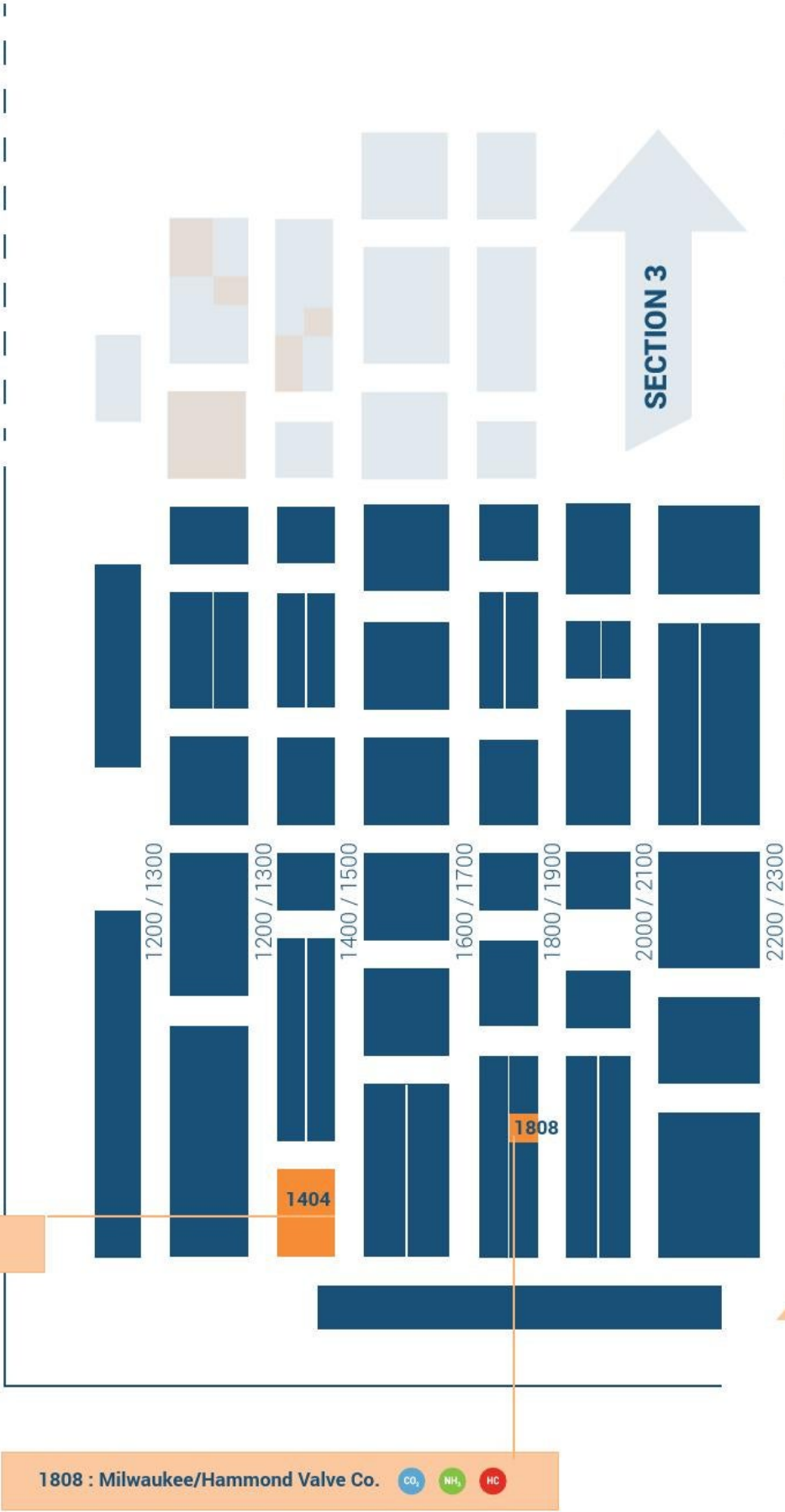
MTH Pumps	NH ₃	2549	3/ p.35
SPX Cooling Technologies	CO ₂ NH ₃ HC	2614	1/ p.31
Mastercool	CO ₂ HC	2631	3/ p.35
INFICON	CO ₂ NH ₃ HC	2644	3/ p.35
Brainerd Compressor	CO ₂ NH ₃ HC	2646	3/ p.35
Sanhua International	CO ₂ HC	2657	3/ p.35
E Instruments International	CO ₂ HC	2669	5/ p.39
National Compressor Exchange	CO ₂ NH ₃ HC	2674	5/ p.39
Westermeyer Industries	CO ₂	2825	1/ p.31
Mueller Industries	CO ₂	2829	3/ p.35
SPX FLOW	CO ₂ NH ₃ HC	2936	3/ p.35
DEHON	CO ₂ NH ₃ HC	2959	5/ p.39
GALCO SA - Climalife	HC	2959	5/ p.39
ITE	NH ₃ HC	2964	5/ p.39
Garden City Ammonia Program (GCAP)	CO ₂ NH ₃	2994	5/ p.39
Espa Sogutma Elemanlari San ve Tic	NH ₃ HC	2996	5/ p.39
CPS Products	CO ₂ NH ₃ HC	3004	1/ p.31
Baltimore Aircoil Company (BAC)	CO ₂ NH ₃	3014	1/ p.31
Badger Meter	CO ₂	3038	3/ p.35
Munters Corporation	H ₂ O	3042	3/ p.35
BVA	CO ₂ NH ₃ HC	3074	5/ p.39
Stellar	CO ₂ NH ₃	3094	5/ p.39
Galileo TP	HC	3147	4/ p.36
SAPA Aluminium Precision Tubing	CO ₂	3151	4/ p.36
Best	HC	3162	6/ p.40
AGRAMKOW	CO ₂ HC	3174	6/ p.40
Guntner U.S.	CO ₂ NH ₃	3291	6/ p.40
Emerson Climate Technologies	CO ₂ HC	3404	2/ p.32
Alfa Laval Kathabar	NH ₃	3426	2/ p.32
Superior-A Sherwood Company	CO ₂ NH ₃ HC	3534	4/ p.36

Conex Universal (IBP Group)	CO ₂	3595	6/ p.40
REFCO Manufacturing	CO ₂ HC	3642	4/ p.36
Errecinque	CO ₂ NH ₃ HC	3665	6/ p.40
Zhejiang Maidi	HC	3674	6/ p.40
Robinair/TIF	CO ₂	3709	2/ p.32
ComStar International	CO ₂ HC	3761	6/ p.40
RSES/RSES Journal	CO ₂ NH ₃ HC	3807	2/ p.32
MA-Line	CO ₂ HC	3838	4/ p.36
SWEP North America	CO ₂ NH ₃ HC	4038	4/ p.36
YELLOW JACKET - Ritchie Eng. Co.	CO ₂ NH ₃	4238	4/ p.36
Blissfield	CO ₂ NH ₃	4335	4/ p.37
Dorin	CO ₂ NH ₃ HC	4335	4/ p.37
EVAPCO	NH ₃	4425	2/ p.33
Bacharach	CO ₂ NH ₃ HC	4435	4/ p.37
Luvata	CO ₂ NH ₃ HC	4442	4/ p.37
Grundfos	CO ₂ NH ₃ H ₂ O	4619	2/ p.33
Ebm-papst	HC	4629	2/ p.33
LG Electronics	CO ₂ NH ₃ HC	4644	4/ p.37
Multistack	CO ₂	4684	6/ p.41
Keeprite Refrigeration	CO ₂ NH ₃ HC	4704	2/ p.33
Tranter	CO ₂ NH ₃	4878	6/ p.41
Ningbo Sino- Resource Imp. & Exp.	HC	4954	4/ p.37
Wieland Copper Products/Thermal Solutions	CO ₂ NH ₃	4978	6/ p.41
Hangzhou ELK	HC	5233	4/ p.37
Shanghai Aohong Chemical Co.	HC	5261	6/ p.41
Nanjing Wonfulay Precision Machinery Co.	HC	5264	6/ p.41
GrayWolf Sensing Solutions	CO ₂ NH ₃	5424	2/ p.33
WEH Technologies	CO ₂	5595	6/ p.41
Accelerate America/shecco	CO ₂ NH ₃ HC H ₂ O	5877	6/ p.41
InvenSor	H ₂ O	5892	6/ p.41

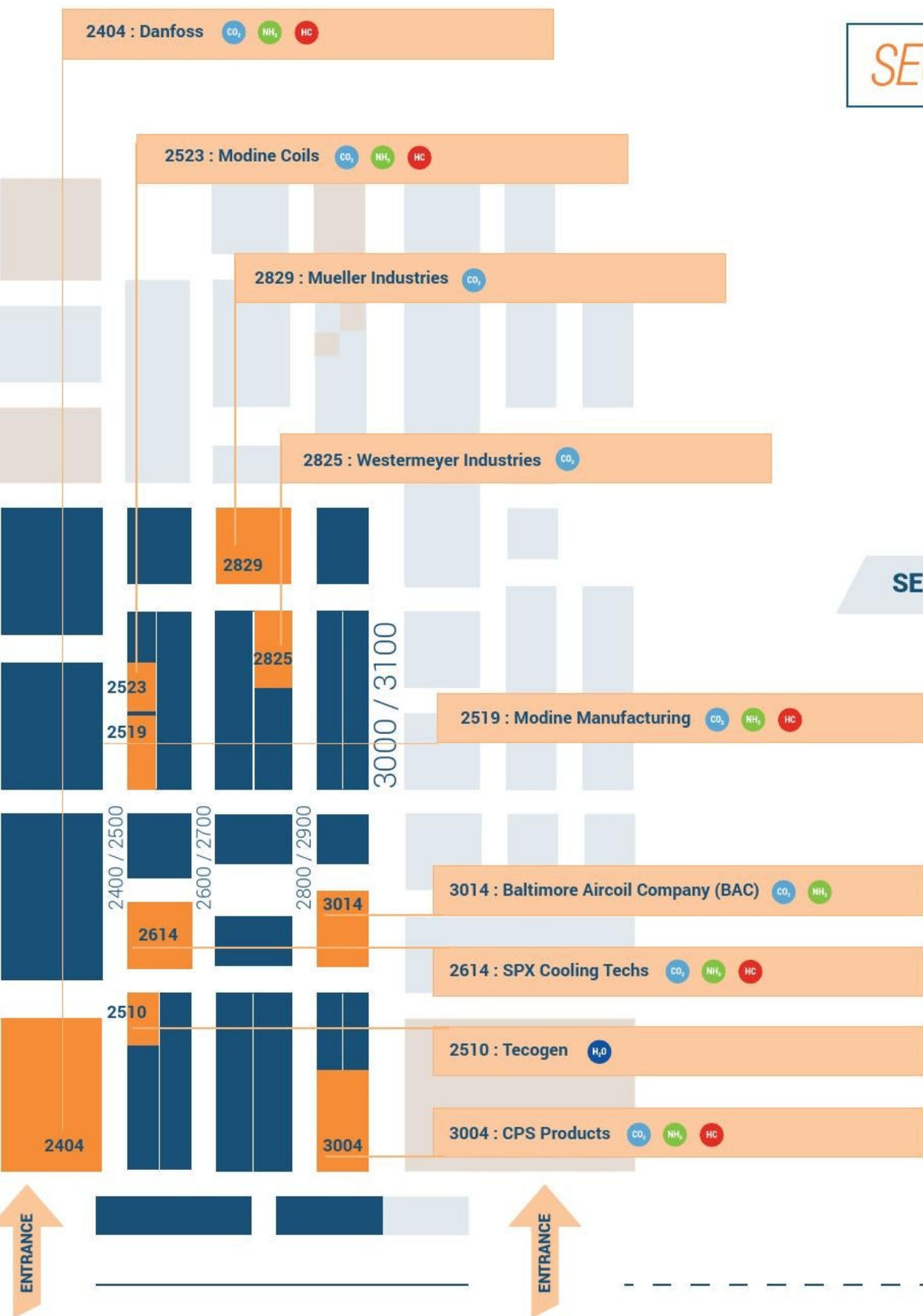


Orange County Convention Center,
Exhibit Hall (level 1) divided into six
sections

SECTION 1



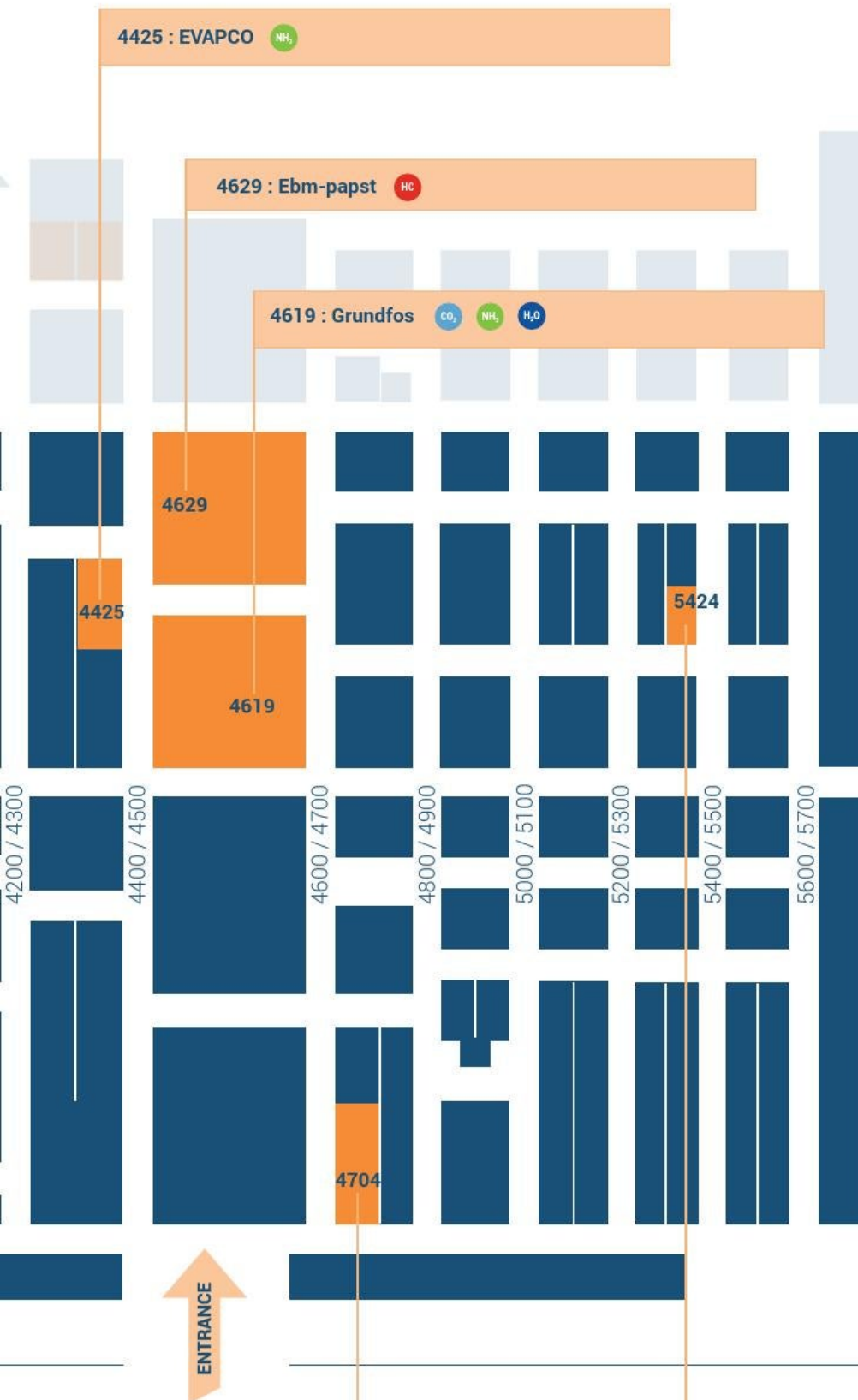
SECTION 1

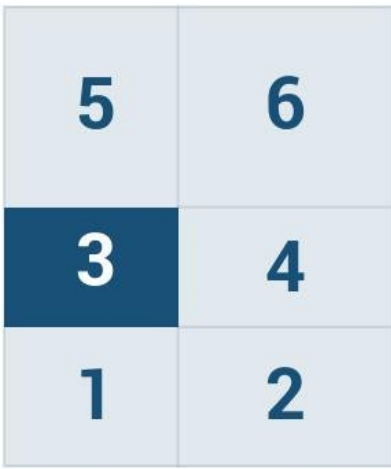


SECTION 2

SECTION 2

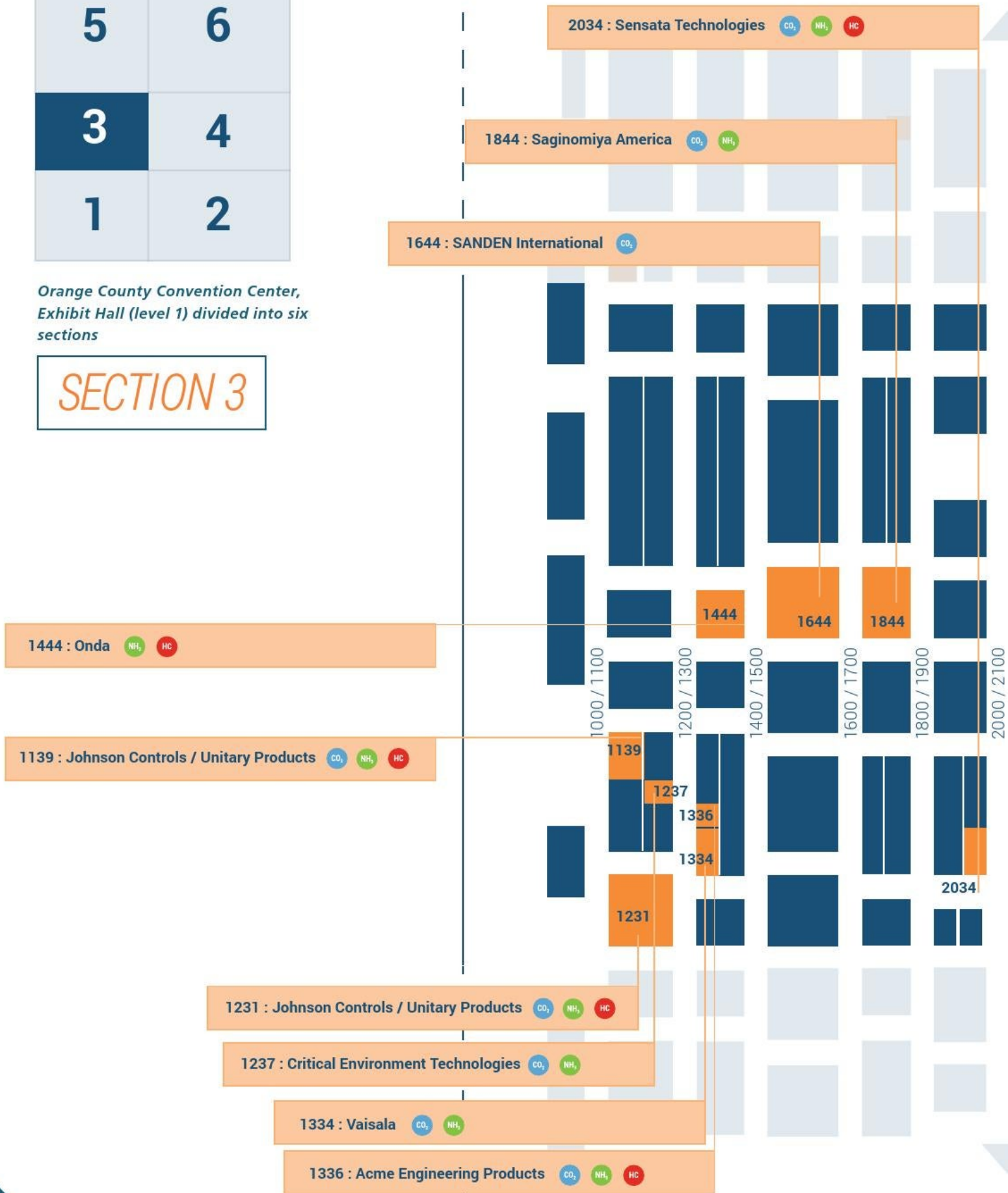
SECTION 2





Orange County Convention Center,
Exhibit Hall (level 1) divided into six
sections

SECTION 3



SECTION 3

SECTION 5

SECTION 4

SECTION 1

2257 : Carel 

2253 : Bitzer   

2453 : Conbraco Industries 

2549 : MTH Pumps 

2657 : Sanhua International  

2646 : Brainerd Compressor   

2644 : INFICON   

3042 : Munters Corporation 

3038 : Badger Meter 

2936 : SPX Flow   

2631 : Mastercool  

2431 : Tecumseh 

2442 : Parker Hannifin Sporlan   

2257

2657

2253

2453

2549

2646

2644

3000 / 3100

3042

3038

2936

2431

2631

SECTION 6

3151 : SAPA Aluminium Precision Tubing 

3147 : Galileo TP 

4238 : YELLOW JACKET - Ritchie Eng. CO. NH₃ HC

3838 : MA-Line CO₂ HC

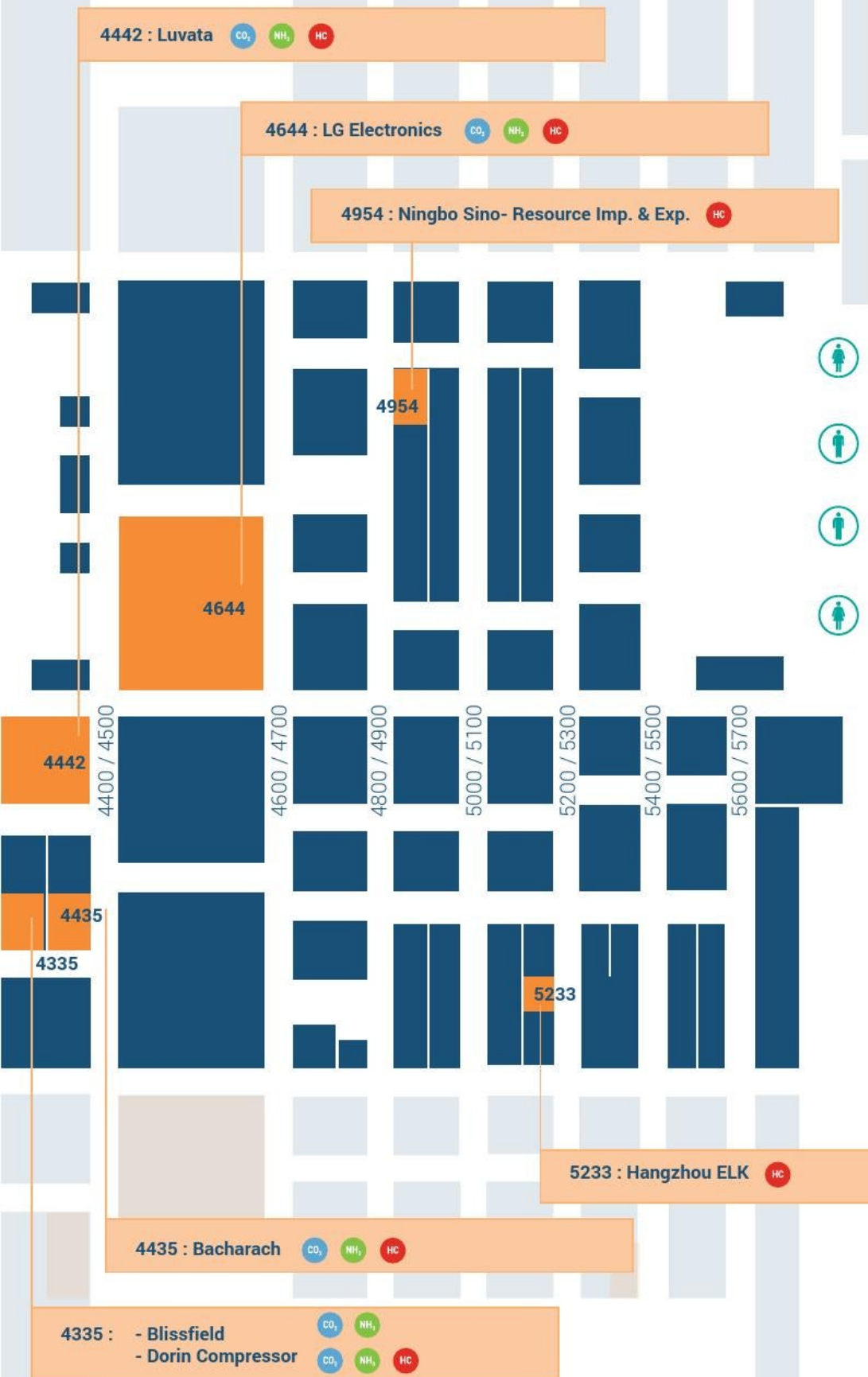
3534 : Superior-A Sherwood Company CO₂ NH₃ HC

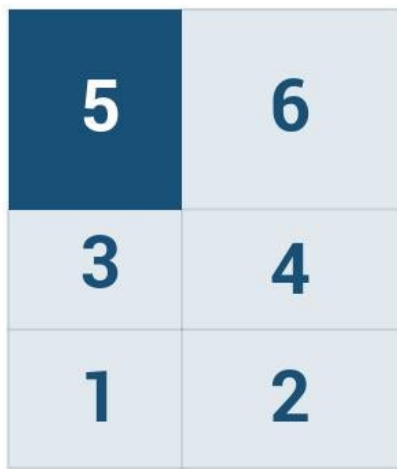
3642 : REFCO Manufacturing  

4038 : SWEP North America   

SECTION 2

SECTION 4





Orange County Convention Center,
Exhibit Hall (level 1) divided into six
sections

SECTION 5

2284: Panasonic

CO₂

HC

2084 : Elco

HC

1170 : Nano Environmental Technology (NET)

CO₂

NH₃

HC

1865 : Kaori

CO₂

1159 : Sierra Monitor Corporation

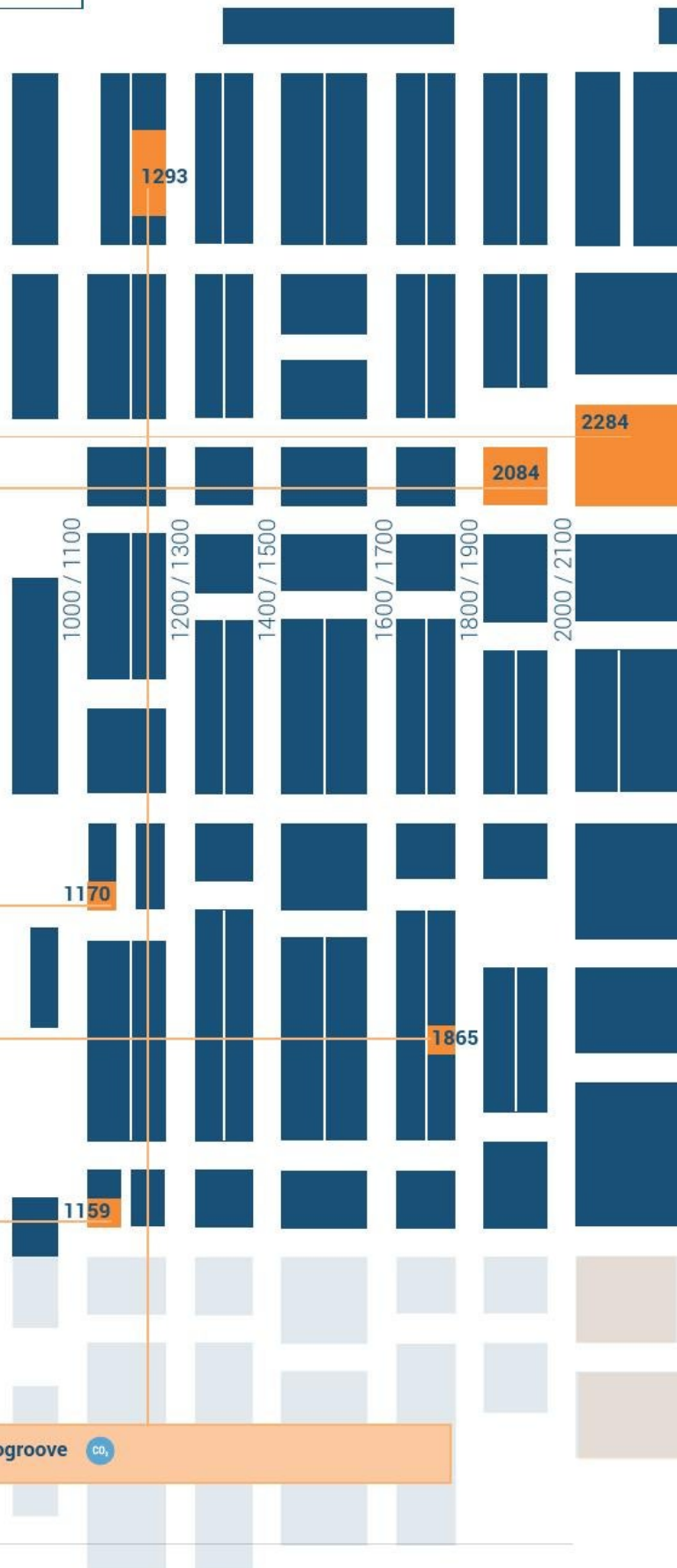
CO₂

NH₃

HC

1293 : Microgroove

CO₂



2284

2084

1170

1865

1159

1293 : Microgroove

CO₂

2397: A-Gas Americas

CO₂ NH₃ HC

SECTION 5

2996 : Espa Sogutma Elemanlari San ve Tic

NH₃ HC

3095 : Stellar

CO₂ NH₃

2994 : GCAP

NH₃

2487 : Frascold USA

CO₂ NH₃ HC

2484 : NINHUA

HC

SECTION 6

3074 : BVA

CO₂ NH₃ HC

2674 : National Compressor Exchange

CO₂ NH₃ HC

2669 : E Instruments International

CO₂ HC

2964 : ITE

NH₃ HC

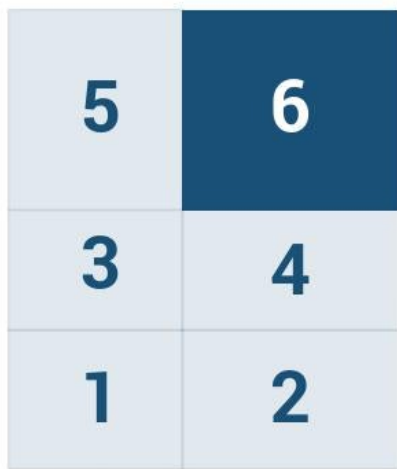
2459 : Embraco

HC

2959 : - GALCO SA - Climalife
- DEHON

HC
CO₂ NH₃ HC

SECTION 3



Orange County Convention Center,
Exhibit Hall (level 1) divided into six
sections

SECTION 6

3595 : Conex Universal (IBP Group) CO₂

3291 : Guntner U.S. CO₂ NH₃

SECTION 5

3674 : Zhejiang Maidi HC

3174 : AGRAMKOW CO₂ HC

3665 : Errecinque CO₂ NH₃ HC

3162 : Best HC

3761 : ComStar International CO₂ HC

3000 / 3100

3891

3595

3174

3674

3162

3761

3665

SECTION 6

4684 : Multistack

CO₂

4878 : Tranter

CO₂

NH₃

5595 : WEH Technologies

CO₂

5892 : InvenSor

H₂O

4978 : Wieland Copper Products/Thermal Solutions

CO₂

NH₃

5877 : Accelerate America/shecco

CO₂

NH₃

HC

H₂O

AIR

5264 : Nanjing Wonfulay

HC

5261 : Shanghai Aohong

HC

SECTION 4

ABOUT THE AUTHORS



MARC CHASSEROT

Publisher / Managing Director
shecco

Marc holds degrees (including two Masters) in Economics, Politics, and Marketing. He has studied at the London School of Economics, INSEAD Singapore, Sciences Po Paris, and the College of Europe. He has specialized in natural refrigerants since 2003. He is an active member of ASHRAE. He founded the leading industry platforms R744.com, hydrocarbons21.com, ammonia21.com and R718.com. Since 2007 Marc is co-founder and Managing Director of shecco, an independent market development company specializing in bringing natural refrigerants faster to market and with offices in New York, Brussels, Berlin and Tokyo.



MICHAEL GARRY

Editor, *Accelerate America*
shecco

Michael Garry helped launch *Accelerate America* in November 2014 and has overseen its editorial direction since then. He is also North American Editor for shecco Media. Previously, he led the coverage of sustainability, supply chain and retail technology for Supermarket News. During his more than 30 years as a business journalist he has become well known and respected throughout the North America food retailing and consumer goods industries. A Phi Beta Kappa graduate of M.I.T with a Bachelor of Science in Political Science, he is the author of "Game of My Life: NY Mets," in which 25 baseball players recall their most memorable game.



FRANZISKA MENTEN

Author / Key Account Manager
shecco

Franziska has 10+ years of work experience in marketing, sales and events and over five years of professional experience in the field of climate-friendly technologies with a concentration in natural refrigerants. Together with shecco, she co-founded beatPlus GmbH, a German-based creative agency for branding & design, digital solutions and events for green projects. Franziska holds a Master's degree in Business and Economics from Humboldt University in Berlin and a degree in Management from Bordeaux Business School.



MEHDI BOUHJAR

Head of Design
shecco

As far as he can remember, Mehdi has always loved drawing, building, design, and crafting things. As soon as he got the opportunity, he chose to pursue a career as a graphic designer. Identifying and understanding the user's needs and finding the right visual solution is fascinating to him. Over the past 7 years Mehdi has had the opportunity to hone his skills in various businesses in Europe, Canada and Australia. These experiences have allowed him to really understand and apply the creative process. He is applying this knowledge every day.



Natural Refrigerants Faster to Market

shecco is a market development specialist helping companies worldwide to bring their climate-friendly solutions faster to market.

Within the HVAC&R (heating, ventilation, air conditioning and refrigeration) industry we specialize in the natural refrigerants CO₂, hydrocarbons, ammonia, air and water.

shecco offers a variety of services in three areas:

- 1) media & publications, including magazines, online industry platforms and a catalogue of dedicated research reports;
- 2) business development, including market research, consultancy and public affairs services, as well as special international projects; and
- 3) events, including international conferences and national workshops.

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