

Gases for Life

The industrial gases magazine



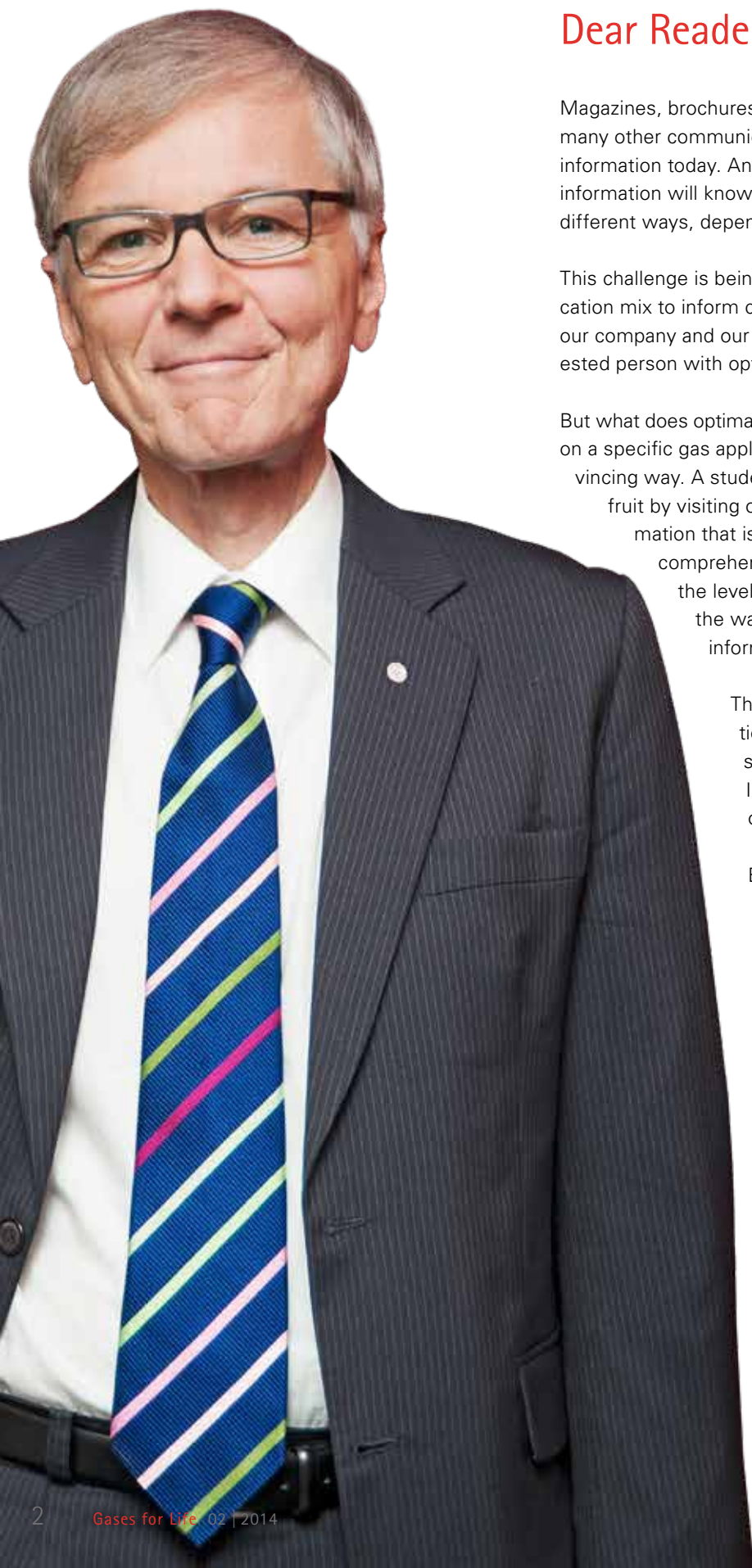
Communication via all channels:

Where is it, the world of gases?

Gas apps:
Bright ideas for
smart customers

Energy supply:
Without resistance

Interview:
Mariano Jiménez,
Metalmecánicas Herjimar



Dear Readers,

Magazines, brochures, newsletters, apps, the Internet – these and many other communication channels are available to us as sources of information today. Anyone involved in the business of disseminating information will know that the information has to be presented in very different ways, depending on the medium and the target group.

This challenge is being taken up by Messer. We use a broad communication mix to inform customers, applicants or the general public about our company and our “Gases for Life”. The aim is to provide any interested person with optimal information via their preferred medium.

But what does optimal mean? For professional users, detailed information on a specific gas application has to be put together in a clear and convincing way. A student who wants to find out more about freezing fruit by visiting our gasesforlife.de website expects to find information that is presented in an exciting and, at the same time, comprehensible way. What matters to a potential applicant is the level of professionalism and employee orientation in the way we present ourselves. So providing optimal information is many things – but certainly not easy.

This issue gives you an overview of our communication activities. It also presents information and stories on every aspect of our “Gases for Life”. I hope you find it interesting – because that is also one of our communication objectives.

Best wishes,

A handwritten signature in blue ink, appearing to read 'Stefan Messer'.

Stefan Messer



Cover Story

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Where is it, the world of gases?

Cover photo: Benjamin Auweiler of Corporate Communications is the face behind our Facebook presence.

The applications for gases are extremely varied, as are the requirements in terms of their properties. This is reflected in the diversity of communication channels that Messer uses to keep its customers optimally informed. Whether the aim is to present the Messer brand, describe product properties or highlight special application technologies, the content has to be delivered in a clear and convincing way that is appropriate to the specific medium.



Practical Focus

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Bright ideas for smart customers

Messer offers a number of helpful apps for users of smartphones and tablets. Their uses include converting units of volume and quantity, selecting the right shielding gas for welding, finding an appropriate pressure regulator and reordering cylinder gases.



Interview

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Mariano Jiménez

Our first interview in this new series is with Mariano Jiménez, Managing Director and owner of Metalmecánicas Herjimar. We talk to him about shipbuilding projects, about quality and service, and about what makes an optimal supplier of gases.

Good for you and the environment

This magazine not only brings you interesting articles and interviews – it is also kind to the environment. "Gases for Life" is printed on 100% recycled paper.



If you want to stop reading "Gases for Life" please cancel your subscription rather than simply throwing the magazines away. You can do this by sending a short e-mail to angela.bockstegers@messergroup.com. We would kindly ask you to dispose of any magazines that you have finished reading as waste paper.

We will gladly send you additional copies of "Gases for Life" and are always happy to get new readers. In both cases, all that is required is a quick e-mail to angela.bockstegers@messergroup.com.

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Moorish atmosphere: wellness bath in the centre of Barcelona

Spain: CO₂ for pH value

Arab bathing culture

Messer in Spain supplies carbon dioxide for water treatment at a wellness bath in the centre of Barcelona. The building in the Born district is a reconstructed Arab bath house. It is historical, architectural evidence of the Moorish presence on the Iberian Peninsula, which lasted more than 800 years. The CO₂ is used to regulate the pH value of the water. This method of controlling the pH value is gentler on the skin and at the same time more environmentally friendly than the conventional use of mineral acids.

Marion Riedel, Messer Ibérica de Gases

Germany: New brand name

Laser gases to be called Lasline in future

Messer will sell gases for laser material processing under the brand name Lasline in future. When naming its product lines, Messer uses brand names which combine a synonym for the area of application and the suffix -line. Examples include Ferroline for shielding gases used in plain steel welding, Inoxline for shielding gases used in high-alloy steel welding, Aluline for shielding gases used in aluminium welding, Labline for laboratory and test gases, Traceline for gas mixtures with minimal traces of admixtures, Topline for top-precision gas mixtures, Tecline for technical gas mixtures and Pharmaline for gases used in the pharmaceutical industry. Customers can thus find all the gases for their applications under one brand name.

Dr. Bernd Hildebrandt, Messer Group

Austria: Dry ice inhibits methane production

Explosion prevention with CO₂ snow

To facilitate maintenance work on a biogas tank belonging to chemical company Jungbunzlauer in the Lower Austrian village of Wulzeshofen, CO₂ snow was used to stop the production of explosive methane gas. The biomass in the fermentation tank, where the gas is produced from a mixture of sugar beet and maize waste, was covered with a ten-centimetre-thick layer of dry ice. The dry ice stops the biological fermentation process and is then transformed into gaseous carbon dioxide in the ambient heat. This displaces the methane near the top of the tank. The safe CO₂ atmosphere allowed the welding work to be carried out with self-contained breathing apparatus and without the risk of explosion.

Herbert Herzog, Messer Austria

Slovenia: Nitrogen cooling for ice cream

Maximum chocolate effect

Messer in Slovenia has developed a cooling process for the chocolate coating on Maxim ice creams for ice cream producer Ljubljanske mlekarne. At normal temperatures, the chocolate does not harden sufficiently for further processing and packaging of the end product. Chocolate mixture accumulates on the conveyor belt and along the packaging line. This necessitates a time-consuming shut-down and cleaning operation. Product adhering to the machinery and equipment is thus also lost as cleaning waste. After completing a series of tests, the Messer experts installed a cooling chamber in the production line. This sprays liquid nitrogen over the chocolate coating. The process is also suitable for other types of multilayered ice cream.

Alenka Mekiš, Messer Slovenija



Experts and ice cream connoisseurs (from left): Gregor Rupnik, Tjaša Šoštarko and Gaja Vlaj (Ljubljanske mlekarne) with Dejan Šibila (Messer Slovenija)

Vietnam: New cold grinding process

More spice in nutmeg

The Messer Group has developed a cold grinding process for nutmeg at Messer's highly specialized cold grinding test centre near Krefeld. Nutmeg requires special grinding mills and particularly high process standards on account of its high oil content. The product is cooled for the grinding

process by having liquid nitrogen sprayed on it. Liquid nitrogen has already been used for a number of years in pepper grinding, where it prevents the high temperatures that would otherwise be generated in the grinding mill. As a result, the essential oils are preserved.

Oliver Dietrich, Messer Group



Oliver Dietrich, Manager Application Technology Industry at Messer in Germany, explains the possibilities of cryogenic grinding to Caroline Blauvac from the Gases for Life editorial team.

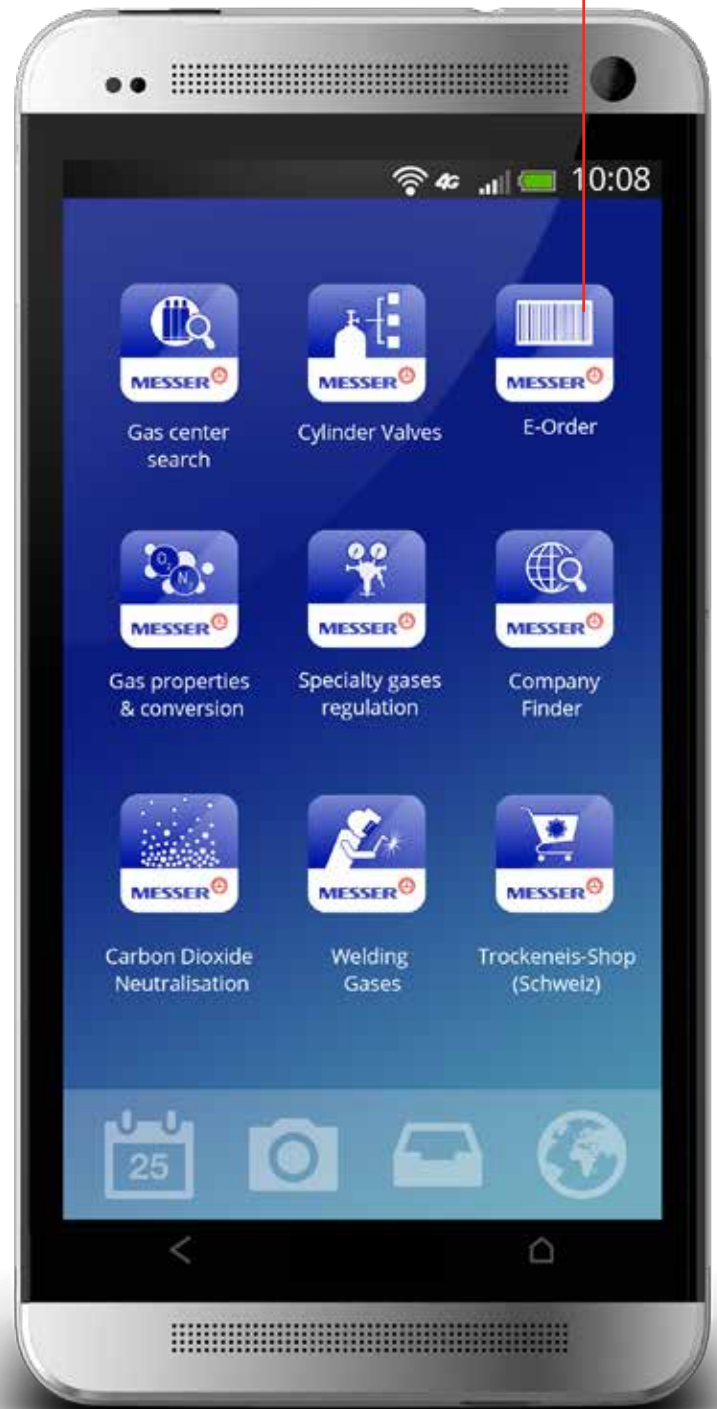
Bright ideas for smart customers

Smartphones, tablets and apps not only facilitate more mobile working; in many respects they also make it easier and less complicated. Messer therefore offers a number of apps which create tangible additional benefits when it comes to handling gases.

Messer's first Android app was developed and released in 2012. Now the Messer Group has eight apps in the Google Play Store. These include tools such as a converter which clearly presents the properties of the most important industrial and specialty gases and facilitates the conversion of units of volume and quantity. Another app on the subject of welding gases offers users specific recommendations regarding the most suitable shielding gases for different materials and requirements. Anyone searching for a pressure regulator for a particular specialty gas will find it with the aid of the Specialty gases regulation app, which generates a list of suitable pressure regulators based on the data entered. In the last issue (page 5, Eco-efficient high speed computer) we already featured an app on the subject of wastewater neutralisation. It provides information on efficient and environmentally friendly processes using carbon dioxide (CO₂).



Dirk Theißen, European cylinder logistics manager at Messer in Germany, also makes use of the digital information offer.





Reordering via barcode scan

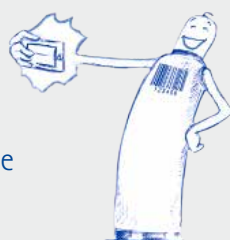
The "Easy Order" app, which is currently in an advanced test phase, will in future make it very easy to reorder cylinder gases by scanning the barcode: first you start the smartphone's camera

from the app and take a picture of the barcode on the existing gas cylinder. The app then takes you directly to the product page where you can order the required quantity. The technical and safety data for the products can also be retrieved there.



1. Register

<http://my.messergroup.com>

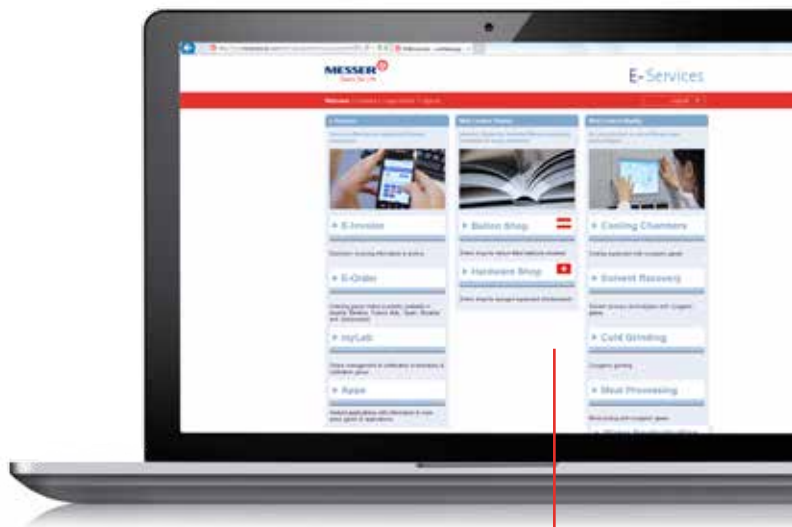


2. Scan barcode



3. Select quantity

4. Go to checkout



Web portal my.messergroup.com

An overview of all available apps can be found on the web portal **my.messergroup.com**. It also provides information on technologies such as freezing with liquid nitrogen, cryogenic waste gas cleaning and cryogenic grinding techniques. Apps for other mobile operating systems such as Apple's iOS or Microsoft Windows Phone are being developed. Once completed, the links will also be provided on this page.

At **my.messergroup.com**, Messer provides a balloon shop via which customers in Austria can make online purchases of balloons and the necessary balloon gas for their next party. Messer in Switzerland is also using the website to provide a hardware shop for autogenous material. Besides pressure regulators and filler metals, customers in Switzerland can also order cylinder trailers or protective clothing. Customers in every country who still receive their invoices by post can also register for electronic invoicing here.

Laboratory portal **myLab**

Messer provides the myLab portal for registered users for the purpose of managing process and calibration gases. Here they can access comprehensive information regarding the products bought so far and retrieve the specifications and safety data sheets for standard products as well as the certificates for individual gas mixtures. The portal also provides information on the period of stability of calibration gases and offers the possibility of quick reordering.

Benjamin Auweiler, Messer Group

More information coming soon at my.messergroup.com.

China: Gases and oxyfuel for glass production

Efficient clarity of vision



Having fun with digital photography (left to right): Gabriel Shao, Meggie Cheng, Shelly Zhao and Chloe Zhuo of Messer Griesheim Investment (China) Co., Ltd.

Messer in China has begun fitting the furnaces of CDGM Glass with oxyfuel technology. The world's largest manufacturer of optical glass opened a new factory in the central Chinese city of Chengdu in 2012. Messer has signed a five-year contract with CDGM for the supply of protective gases made from liquid nitrogen and hydrogen as well as liquid oxygen. In Chengdu, for the first time in China, three furnaces for optical glass have been fitted with oxyfuel technology, consisting of Oxipyr burners and fully automatic burner

control systems made in China. The use of these pure oxyfuel burners improves the combustion efficiency. The Oxipyr burners being used have an adjustable flame with flameless combustion technology that has been adapted specifically for the furnaces. Fuel consumption in the retrofitted furnaces has been reduced by more than 60 per cent. A substantial reduction in harmful emissions, easier furnace operation and the possibility to increase production are welcome side effects. Oxipyr burners are due to be installed in a further fourteen CDGM furnaces.

Jasmine Yan, Messer China

Liquid nitrogen and hydrogen improve quality and efficiency in the manufacture of high-quality optical glass.



www.istockphoto.com/rzdeb

People Focus

6 questions for

Gordan Klinčić

Gordan Klinčić has been working for Montkemija since 1985. The Croatian gas company has been part of Messer since 1992. His area of responsibility at Messer in Croatia is cylinder gas filling, especially oxygen.



1. My biggest professional challenge at Messer so far has been ...
... the introduction of a universal quality management system for the production and filling of gases.
2. What typifies Messer for me is ...
... that all workers' rights are respected and – particularly important for us in Croatia – that wages and salaries are paid regularly. Before privatisation we feared for our jobs. But now we are all happy to be part of Messer.
3. My strong points ...
... are responsibility, efficiency and good communication with my superiors and colleagues.
4. I have a weakness for ...
I don't really have a weakness for anything in particular, but there are things that have a profound effect on me – such as child poverty or cruelty to animals.
5. What fascinates you about gases and gas applications?
I never fail to be surprised by the sheer diversity of applications. I am most impressed by their use in the food industry and in medicine. Gases save lives.
6. The most important invention of the last century is ...
I find the speed of developments in the automotive and space industries particularly fascinating.

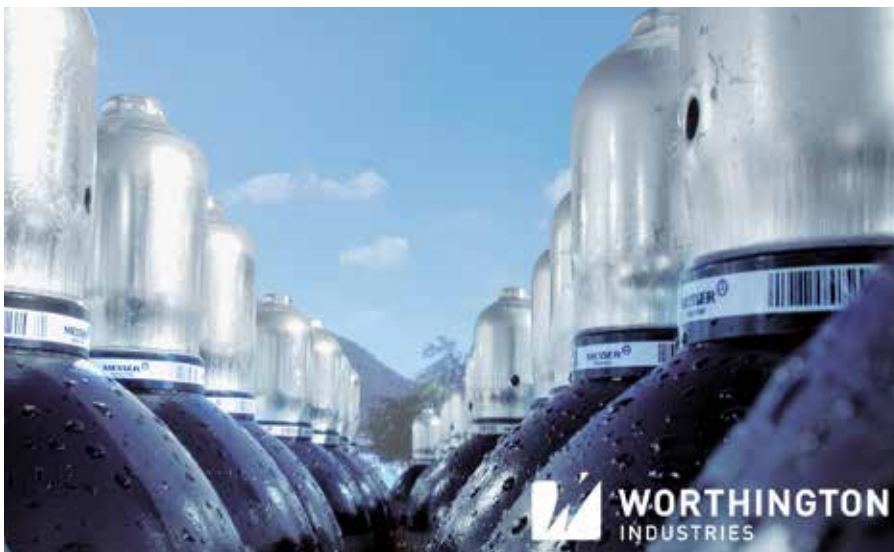
Slovakia/Germany: Gases centres

Strong sales partners

Choosing the right sales partners is crucial to success in the cylinder gases sector. Messer in Slovakia recently celebrated the twentieth anniversary of a strong partnership with Zvartep in Banská Bystrica. To mark this occasion, a celebration was held on 13 March in the historic centre of the old mining town, in which the managing directors of both companies and numerous important trading partners took part. Dušan Šimo and Michal Pal'a, the managing directors of Zvartep and Messer in Slovakia, praised the spirit of cooperation between the two companies in their speeches.

But young partnerships are enjoying success as well: in Germany, the new headquarters of Carl Lixfeld Schweißtechnik was officially opened in Kreuztal on 9 May. Lixfeld has been operating a Messer gases centre at its site in Kempen in the Lower Rhine region for a year now. Starting in August, the company will also run the sales operations in the Siegen region from its Kreuztal base. As a highly specialised welding company, Lixfeld helps Messer with customer acquisition and also provides specialist customer consulting.

Michael Holy, Messer Tatragas, and Dr. Dirk Kampffmeyer, Messer Group



Estonia: Gases for oil shale competence centre

Research on electricity from oil shale

Messer specialists have built a gas supply system for the Estonian oil shale competence centre of Virumaa College Tallinn University of Technology. The new building's laboratories are supplied with hydrogen, oxygen, nitrogen, argon, nitrous oxide, synthetic air and acetylene. Estonia currently meets most of its energy needs from the burning of oil shale, and worldwide

interest in the economic exploitation of oil shale has also increased in recent years. The competence centre in Kohtla-Järve has extensive expertise in oil shale extraction and processing as well as power engineering. It is one of the world's leading institutes in the area of oil shale research and cooperates with scientists all over the world.

Roman Uibukant, Elme Messer Gaas

Where is it, the world of gases?

Regular contact with customers, suppliers, employees, industrial firms or organisations, with the media, our neighbours, the general public as well as the Internet community – and not to forget our valued retirees – is important to us. The wide range of requirements is reflected in the diversity of communication channels. Information about the Messer brand, about product properties or special technologies has to be produced and made available in the appropriate format. And it should be easily accessible. Below is a brief overview of the channels.

Gases for Life,

our industrial gases magazine, was conceived for readers who are already acquainted with Messer and want to find out more about the diversity of our business: written in clear, comprehensible language and richly illustrated. But we consider it just as important to get different people interested in the world of gases – from technical experts to students with a thirst for knowledge. Because gases are as important as water and electricity in everyday life. And communication today is as multifarious as the numerous platforms that exist: but everything can also be found on the World Wide Web.

Our online presence at www.messergroup.com

With an average of 10,000 visitors a week accessing our European web pages, our online presence is an ideal platform for finding out more about the activities of Messer and about products and applications as well as the history and characteristics of a family company. The country selection featured on the home page provides access to the websites of our more than 30 national subsidiaries around the world.

The annual report

Annual reports, which are published once a year following conclusion of the financial year, are now no longer just a disclosure of key financial data and core projects. Together with the corporate responsibility report, they are an ideal compendium to facilitate assessment of the economic and technological development of a company.

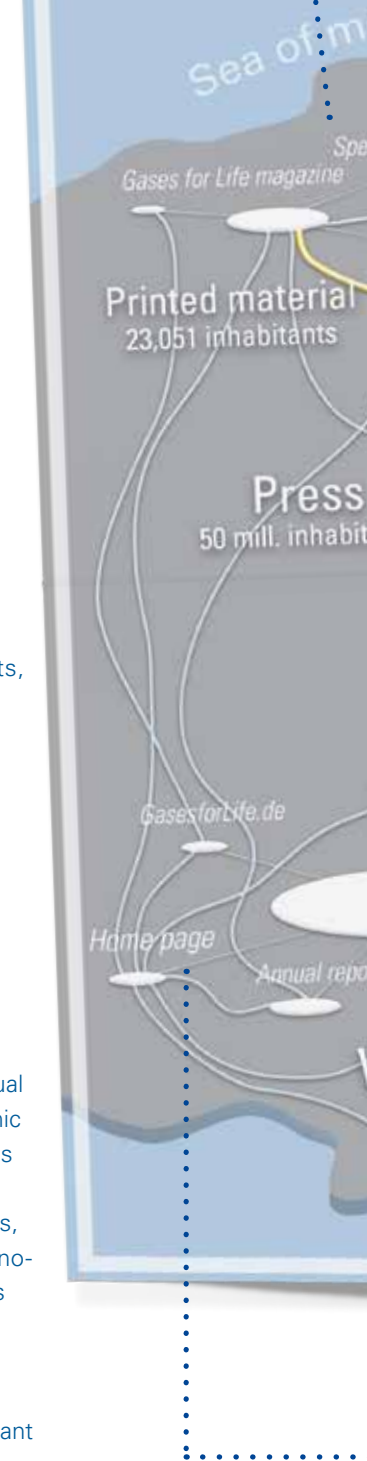
This is particularly important for transparency vis-à-vis

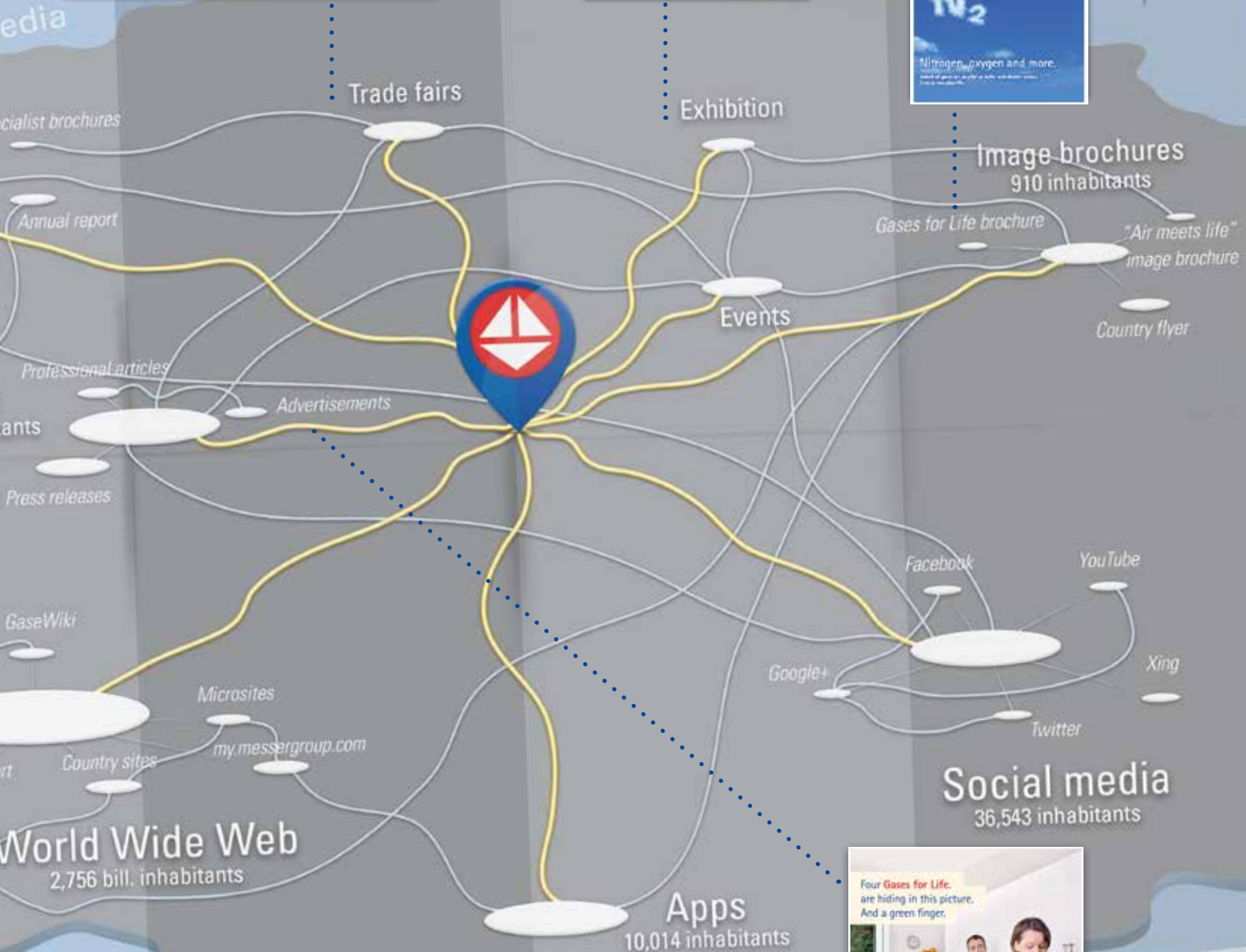
financial partners and key accounts, thus establishing trust. Since annual reports are very extensive documents, they are made available both on the Internet and in printed form.

Messer's latest annual and corporate responsibility report is always available for download at

annualreport.messergroup.com.

By the way, all the annual reports from 1964 to the present are available for download on the company website messergroup.com. The archived annual reports and the outlines of the economic environment in which the company was operating (written by historian Dr. Jörg Lesczenski) reflect the economic cycles, the growing integration of national economies and the rise of new boom regions which presented Messer Griesheim GmbH, set up in 1965, with increasing challenges in the last third of the 20th century, and which now have a significant bearing on the development of the Messer Group.





Specialist brochures and Know-how Navigator

Our specialist brochures contain know-how on our products as well as the specific applications and processes in which our gases are used: our website messergroup.com provides access to round 70 specialist brochures. Our "Know-how Navigator" provides customers with a means to carry out targeted searches for industry-specific information on our range of gases and applications.

Gases for Life brochure "Nitrogen, oxygen and more."

This eight-page brochure explains what air is, what industrial gases are, where they come from and how gases are obtained from air – all in a way that is easy for the reader to understand. A full page is dedicated to each of our most important Gases for Life – the air gases oxygen and nitrogen as well as the noble gas argon and carbon dioxide. The brochure can be used extensively, including in chemistry lessons.

Messer uses topic-based websites to provide specialised information on gas ranges and application technologies.

Gases in everyday life at www.gasesforlife.de

www.gasesforlife.de describes applications and processes where gases are used in all spheres of life such as nutrition, leisure, healthcare, communication, mobility, environmental protection, science or living. Our texts are aimed at a general readership rather than technical experts or those whose work involves the use of gases. The target groups for this website include journalists, teachers, students, school children and consumers. All images and texts can be downloaded for free.

Specialised information on specialty gases at www.specialtygases.de

This website details our product range in specialty gases such as high purity gases, gas mixtures, liquid helium, gases in pressure cans or balloon gas, as well as our range of fittings and gas supply systems. It also provides brief and easy-to-understand explanations of the applications of specialty gases in analytical processes, ambient air monitoring, environmental analysis, leak detection or magnetic resonance imaging.

New cylinder bundle at www.megapack.com

MegaPack is the name of the new product line based on the gas cylinder bundle developed by Messer. Its unique selling points, such as its form, improved safety and optimised handling, set MegaPack apart from the bundles that are normally used today.

Technologies at my.messergroup.com

The customer portal features services for customers, such as registration for electronic invoicing or online ordering, alongside information on application technologies. Under E-Technologies, topic-based pages link to descriptions of technologies such as freezing with nitrogen in cold chambers, solvent recovery with nitrogen, cryogenic grinding, mixer cooling in meat processing and wastewater neutralisation.

Free infographics

Under the heading "Info & downloads" on our homepage, we provide free access to easy-to-understand graphics relating to processes and gas technologies such as the production of gases through air separation, shrink fitting of metal components or soil freezing with nitrogen. This material is primarily used by students.

GaseWiki at www.gase.de

GaseWiki is a free encyclopaedia about the world of gases which is written by voluntary contributors rather than a permanent editorial team. This initiative by Messer is intended to provide a structured, comprehensive presentation of knowledge concerning specific topics as well as about every aspect of the world of gases. Knowledge is central to GaseWiki: in no way is it attempting to compete with the much bigger Wikipedia, upon which it is modelled. GaseWiki is a collection of pages, the vitality of which is based on the principle of transmitting knowledge about gas-related topics. As well as reading the pages, every visitor can also alter them and add new ones.





The use of mobile devices such as tablets and smartphones is becoming more and more widespread. Messer has adapted and updated its range of communication media accordingly.

Messer in the social media

Our “Gases for Life” campaign is aimed at further raising awareness of the Messer brand. The use of gases in the production of everyday objects offers a wealth of stories which we can disseminate through social media in order to reach a large number of people.

Facebook is the largest and most active social network. The public and journalists are increasingly using it as a source of information, which is why Messer has also created an official Facebook page. We use it to feature content from articles in our magazine, share short stories about our day-to-day work and provide links to videos on our YouTube channel. Anyone can contact Messer via Facebook and get answers to their questions immediately after submitting them.

Google+ is a Facebook-like platform run by the search engine operator. We maintain similar content here to that on Facebook. As this network is going to be increasingly integrated into Google search in future, the content of company profiles will also be included in the search results.

Twitter is used by Messer primarily to disseminate press releases. Users can receive these messages by subscribing to them.



Xing is used for professional networking with customers, partners and colleagues. Messer has a company profile on Xing which conveys some information about the size of the company as well as the annual financial statement. Furthermore, every employee whose profile specifies Messer Group as their employer is linked to this page and can be easily contacted.



YouTube is a public video platform on which Messer also has its own channel. All the videos produced by Messer are released here, featuring such events as official openings and the laying of foundation stones. The video messages relating to our employer branding campaign are also published here, as are videos which draw attention to “Gases for Life”, that is, the use of our products in the manufacture of end products.

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Armchair comfort and city agility

Riding a trike is like sitting in a comfy armchair. It's just that the armchair is whizzing along the road at a considerable speed while the rider sits back and enjoys the changing scenery. When it comes to scooters in Southeast Asia, the picture is more likely to be one of a large, bustling city, with riders trying to find the quickest way through the labyrinth of streets and lanes on their agile two-wheelers. What both riding experiences have in common is the wind in one's hair and gases from Messer. The latter play a crucial role in the manufacture of the vehicles.

The picture of the armchair on wheels was supplied by Roland Lindenlaub, the Managing Director of Wolftrikes.



The company was founded in 1998 in Szajk, a small town in southern Hungary. Back then, three employees produced parts for the motorised three-wheelers; today, this number has grown to 43. Final assembly of the vehicles takes place at Boom Trikes, a partner company in the Swabian town of Sontheim. From there the vehicles are exported all over the world. Together, the two companies have conquered about half the EU trike market. Besides the electronics, the main components made in Szajk are the frame and bodywork, the forks, handlebars, luggage carriers and exhaust pipes. The Hungarian-German trikes are handmade works of art; special requests are the rule. "For a customer in Saudi Arabia, we even covered the bodywork with gold inlays. The

gold works alone cost 100,000 euros," recounts Roland Lindenlaub. All that glitters on a trike is not gold, but most trike owners want it to glitter a lot. That is why, increasingly, they order high-alloy stainless steel, especially for the exposed parts of the chassis. It does not rust, making it more durable, and any paint applied does not flake off. Unpainted, it can be polished until it gleams.

The high-grade material requires a welding process that meets very high standards. That is why only certified, skilled workers are employed at Wolftrikes. They weld with consumable electrodes and use Ferroline C18 (18 per cent CO₂, 82 per cent argon) as a shielding gas when working with plain steel.



Welding workshop at the Piaggio site near Hanoi

When working with high-alloy steel, pure argon is used. The latter is supplied by Messer in pallet tanks, while Ferroline C18 is supplied in cylinders. "We have worked closely with Messer from the beginning and benefited greatly from the know-how of their welding specialists," stresses the Managing Director. "The perfect look can only be achieved with the right gas."

Messer consulting for welding quality

Quality and efficiency are influential factors when it comes to promoting the sale of end products – including motorcycles and scooters. This is something that two-wheeler specialist Piaggio is also aware of. The company gave Messer in Vietnam the opportunity to analyse its production process and give practical tips on potential savings, for example in terms of rework and production time.

In February, Piaggio Vietnam and Messer held a MIG/MAG welding workshop at the Piaggio site near Hanoi. Messer experts from Germany and Vietnam provided information on the latest technological developments and highlighted optimisation

possibilities. The workshop was attended by Piaggio employees as well as employees of Piaggio suppliers.

Andres Espuelas has gathered more than 25 years of experience in the motorcycle industry in Asia and Europe. He is in charge of quality management at Piaggio Asia Pacific. We asked him about two-wheelers, the influence of welding on quality and the workshop:

Gases for Life: What does Piaggio produce in Vietnam?

Andres Espuelas: We produce around 140,000 motorcycles and 150,000 engines a year in Vietnam. Our product range includes the Vespa, Beverly, Liberty, Fly and Zip brands.

Gases for Life: What did the workshop involve?

Andres Espuelas: After analysing the production processes of our suppliers, we identified possibilities for improvement and optimisation. We then discussed our findings with the Messer specialists and decided to hold this workshop. Our aim was to make use of

Messer's know-how in order to improve important welding parameters through optimised use of cylinder gases.

Gases for Life: Did it meet your expectations?

Andres Espuelas: Welding managers from all our suppliers had the different results with different gases demonstrated to them.

The training workshop was enormously helpful, and I look forward to a long-term cooperative partnership with Messer, which will also include joint visits to our suppliers.

Editorial Team



Andres Espuelas (left) was interviewed by Ivan Perez, an employee of Messer in Vietnam.

Interview [1]



Mariano Jiménez

Managing Director and owner
of Metalmecánicas Herjimar in Spain

In our new interview series, we talk to customers about their own experiences with Messer. They describe highlights in working with us, provide an insight into their gas applications and explain what they consider to be special about working with "Gases for Life".

What does your company do?

We have been manufacturing metal structures for railway construction and shipbuilding as well as port facilities and bridges for more than 40 years. We also make pipes for the petrochemical industry and carry out maintenance work for this sector.

What are your most important projects?

One example is our cooperation with the Navantia shipyard in Cartagena. Here we are supporting the construction of new submarines for the Spanish fleet as well as the construction of ships for the Chilean and Indonesian fleets. The environmentally friendly bulk hoppers built by Herjimar have already been installed in many Spanish ports and are also going to be exported to Peru soon.



What materials and gases do you use?

In our production lines, we work with stainless steel, carbon steel, duplex and aluminium. For welding we use argon, oxygen, carbon dioxide, Ferroline C18 and C8 as well as Inoxline C2 and the new gas mixture Ferroline C6X1 in cylinders.

What has your experience been with this new shielding gas mixture?

It has had a positive impact on product quality and improved productivity. The absence of spatter when welding means that there is no need to carry out subsequent cleaning. We also value the cost-effectiveness of the solution.

Why did you choose Messer as your supplier of welding gases?

We attach particular importance to good service, high product quality and a competitive price. Messer meets these requirements – and has done so for over eleven years now.

What are the most important requirements regarding your welded products?

We carry out quality checks using test methods such as ultrasound and X-ray. Our staff complete an extensive training programme, and we have also introduced management systems for quality assurance as well as environmental protection and work safety.

What do you expect from your gases supplier?

Primarily the best available product quality. A reliable delivery service is also indispensable in ensuring that there are no interruptions to our production. Extensive welding know-how and comprehensive consulting are also important. We want solution proposals for every area of our work, and we want to be informed quickly about new developments that would help improve our processes. I was introduced to the new MegaPack cylinder bundle at the Schweissen & Schneiden trade fair last year. This innovation really sets Messer apart from the competition. I didn't see anything similar at any of the competitors' stands.

Editorial Team

Without resistance

An electric current always encounters resistance. This means that some of the energy that is transmitted from power station to consumer is lost along the way. According to the laws of quantum physics, however, some materials lose this resistance at very low temperatures.

They become to superconductors, which let the electric current pass through virtually without loss. This opens up new possibilities for energy- and space-saving power transmission. In Essen, Germany, energy supply company RWE has installed what is currently the world's longest superconducting cable as part of the AmpaCity pilot project. Messer is in charge of cooling.



Cross section of the superconducting cable.
Source: Nexans

The cable is one kilometre long and runs through the centre of Essen between two transformer substations. It is only about 15 centimetres thick and is capable of transmitting 40 megawatts of power with a voltage of ten kilovolts (kV). In the long term, superconducting cables are supposed to help reduce energy loss in power lines. However, cooling to temperatures of around minus 200 degree Celsius also requires energy. For the time being, therefore, it is not possible to use superconducting cables for overhead power lines. Yet they transmit five times more electricity with the same cable diameter, and even manage this with a relatively low voltage. It is therefore no longer necessary to bring overhead power lines into city cen-

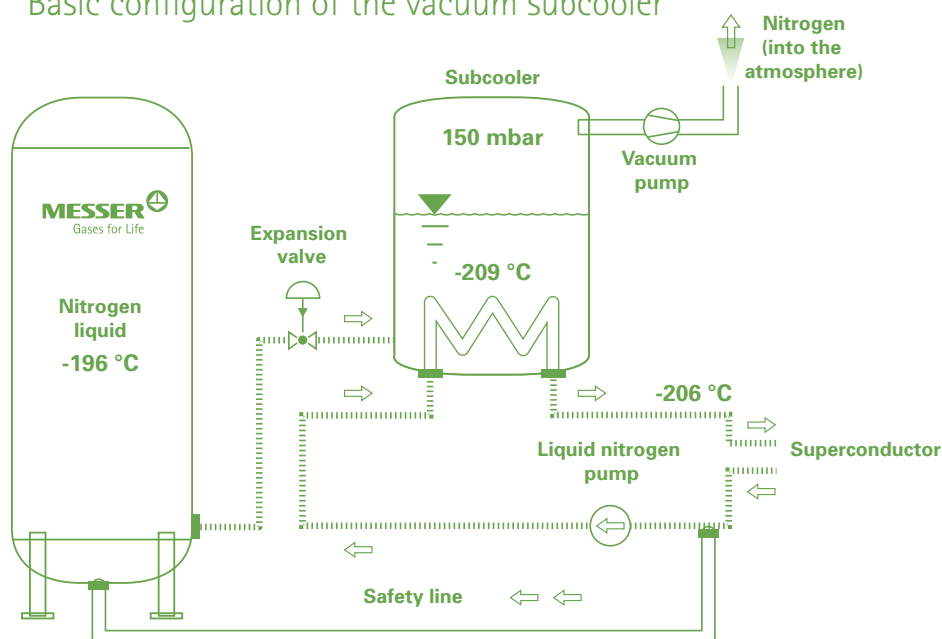
tres, and the space taken up by thick cable harnesses and transformer substations can be freed up.

The cooling system for the superconducting cable was developed by Messer in collaboration with plant engineering firm Krytem. The system uses liquid nitrogen as a coolant. The gas is vaporised in a vacuum and reaches a temperature of minus 209 degrees. It compensates for the ambient heat absorbed by the superconducting cable. A feedback system ensures an energy-efficient closed loop. There is a patent pending on the system's operating principle.

Thomas Kutz, Messer Industriegase, and Dr. Friedhelm Herzog, Messer Group



Basic configuration of the vacuum subcooler



Industry Spotlight

Chemical Industry

Food

► **Breweries**

Recycling

Research and Development



Switzerland: CO₂ equipment for brewery

Fresh Quöllfrisch beer

Hops, malt and fresh spring water from the legendary Alpstein massif are the most important ingredients for the beers of the Locher family brewery in the Swiss town of Appenzell. Carbon dioxide ensures that the Appenzell specialities, such as Quöllfrisch, are really fresh when they reach the consumer. For example, gaseous CO₂ is used to displace the air from bottles and beer tanks before filling them in order to prevent oxidation and aging of the beer. Messer in Switzerland supplies the gas to the brewery in liquid form. A CO₂ vaporiser from ASCO Carbon Dioxide is used to change it into its gaseous state.

Nicole Urweider, ASCO Carbon Dioxide



Hungary: CO₂ for large brewery

Sparkling connection

Anyone who enjoys a cold lager will probably have had a Heineken, at least on holiday: few other beers are as well-known and sold virtually all over the world. The Heineken family deliberately created a global brand over a hundred years ago and was the first to sell its beer in green bottles. This colour and the classic logo now stand for premium quality and fun – with common sense. Under the motto “Dance more, drink slow”, the world’s third-largest brewery group has launched a responsible drinking campaign to encourage moderate beer consumption. Conscious and sensible use of this refreshingly bitter social drink is supposed to be associated with pleasure and strength rather than going without. Heineken has now also established a strong connection in Hungary, where the company has been getting carbon dioxide from Messer for brewing and bottling since October 2013. The Hungarian supply contract is part of an international collaboration between the two companies. The brewery group also gets liquid carbon dioxide from Messer in Croatia, Greece, Serbia, Bulgaria and Slovakia. HEINEKEN operates two breweries in Hungary. The most popular Hungarian beer, Soproni lager, is brewed in Sopron, in the west of the country. Like Amstel, Foster’s, Gösler, Calanda or Desperados, it is one of the numerous brands owned by the HEINEKEN Group. The breweries use the food gas to protect the beer against oxidation in the fermentation and storage tanks as well as during bottling. As a beer additive, it also increases the beer’s CO₂ content, thus enhancing its freshness and effervescence.



*Krisztina Lovas, Messer Hungarogáz,
and Witold Rammel, Messer Group*



Nguyen Danh Doan, Tran Minh Quan, Tran Thanh Tu and Nguyen Thanh Mai of Messer in Vietnam enjoying a refreshing beer after closing time.

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The "Gases for Life" editorial team

We are ...



From left to right: Angela Bockstegers, Dr. Bernd Hildebrandt, Dr. Dirk Kampffmeyer, Roberto Talluto, Diana Buss, Benjamin Auweiler, Marion Riedel, Katrin Hohneck, Krisztina Lovas, Michael Holy and Zolt Pekker
(Not pictured: Dr. Christoph Erdmann, Tim Evison, Reiner Knittel, Monika Lammertz, Dr. Joachim Münzel, Marlen Schäfer and Nicole Urweider)

Competition

Delicious!

The winner of this issue's prize draw will receive a gourmet hamper of products that are featured on

www.gasesforlife.de. For your chance to win, simply answer our questions about this issue of "Gases for Life". The letters in the numbered boxes will reveal the answer. Please send it by e-mail with the subject line "Gases for Life competition" to: diana.buss@messergroup.com
The deadline is 15 October 2014.

Please remember to include your name and address.

The competition is not open to employees of the companies of the Messer Group or their families. In the event of multiple correct answers, the draw determines the winner. The result of the draw is final and not subject to appeal.

What is the name of the pilot project for the world's longest ever superconducting cable?

9 1 5

Which manufacturer builds trikes with the aid of Ferroline welding gases?

3 4 8

Which web portal provides an overview of all the available Messer apps?

6 7 2

Congratulations!

The winner of the last competition is **Christian Kotz from Waidhoven, Austria**. The correct answer was "ENERGY".

ANSWER:
1 2 3 4 5 6 7 8 9
D

Have fun and good luck! Your "Gases for Life" team!

Design object



Is this meant to be a chair or a throne? Or perhaps as an object of visual interest? After all, its simple beauty is particularly eye-catching. It was designed by Philippe Hiquily, and the copper seat was made by the family-run TPU metal workshop, which is based in the French town of Chelles and specialises in art and design objects, among other things. Messer in France has been supplying gases in cylinders and bundles for welding and cutting the objects for over ten years.

For more on this and many other gas applications, go to:

www.GasesforLife.de

