

# on air

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The magazine for customers and partners of Messer



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on oxygen in the  
iron foundry



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to meet exacting and  
specific requirements

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CO<sub>2</sub> makes travertine  
even more beautiful





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## Do you have high standards? So do we! Specialty gases from Messer

Specialty gases, with their wide range of applications, have to meet very exacting and specific requirements. Messer offers suitable solutions across the board, from planning through to complete installations.

*Annette Lippe, Team Assistant Engineering and Production, having fun with helium-filled balloons – just one of numerous applications for specialty gases from Messer.*

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### Oxygen makes iron melt

Martial Gobeaux, site manager at the Safem iron foundry, on the use of oxygen and working with Messer.



*The cupola at Safem*

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### The full range of technologies

Messer in Serbia serves almost every branch with its industrial gases.

### Precious stone made even more beautiful

Carbonic acid makes Italian travertine stone even more beautiful – with less water consumption.

### Carbonic acid neutralizes soils

In Hungary, Messer is supplying the carbon dioxide needed for the remediation of contaminated soils.

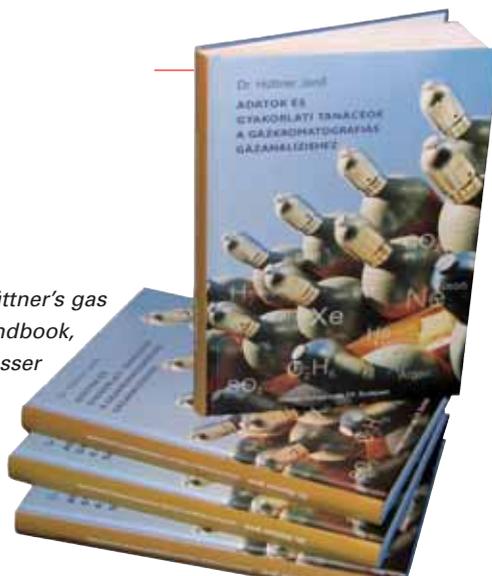


*Controlling the pH of water with CO<sub>2</sub>*

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### Tips, dates, things to know

*Jenő Hüttner's gas analysis handbook, published by Messer*



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## Dear Readers,

Is it possible to focus on diversity? Yes – for example in the area of high-purity gases or special gas mixtures. Messer produces a wide range of pure gases and different gas mixtures in our specialty gases plants, which are strategically located in a number of countries. They represent approximately ten percent of the industrial gases market. In this issue of on air you can read about the special properties of the noble gases helium, argon, krypton and xenon as well as the use of products that are manufactured to exacting requirements.

The real measure of success is how well you do when compared with others. In Serbia, Messer has been awarded the prize of best foreign brand for the second time, while in Poland an important customer has rated us as an excellent supplier. Also, in an interview with on air, the French steel manufacturer Safem confirms that it has a very good working relationship with Messer and is profiting from the technological edge provided by the use of oxygen with the Pulsox system.

In this edition, the focus of our reports on brand-new technologies and applications is carbonic acid: for example, did you know that carbonic acid makes the Italian stone travertine even more beautiful? It is also used in Hungary for the remediation of contaminated soils. Carbonic acid is a natural and gentle acid that has many different uses.

I hope you enjoy reading this issue of on air.

Best regards,

Stefan Messer



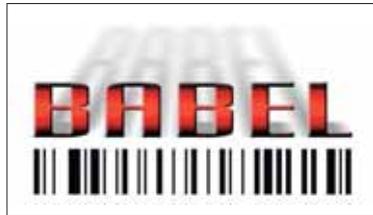


Every step of the supply chain can now be tracked thanks to the bar code labels on the gas cylinders.

## Complete tracking of gas cylinders

The Messer Babel system – Business Acceleration By European Labelling – facilitates complete monitoring of all gas cylinders from filling, transport and delivery through to their return. The system, which is standardized across Europe, is now being expanded: in future, customers will also be able to record internal movements of cylinders. Babel makes it possible to enter different departments as consignees, thus enabling customers to spread costs accordingly. The system provides round-the-clock access to a wide range of analyses and information via an Internet platform.

Wolfgang Schuster, Messer Austria



## Ice-cold recycling of refrigerators

The first recycling plant for refrigerators and electronic waste in the Baltic states went into operation in January 2007. The plant uses liquid nitrogen to dispose of the ozone layer-damaging chlorofluorocarbons (CFCs) contained in the refrigerators in an environmentally friendly way. Messer will have responsibility for all nitrogen supplies for at least five years. The contract guarantees annual supplies of over 150,000 cubic meters of the minus 196-degree gas. Messer is thereby consolidating its 90-percent market share in the Lithuanian nitrogen sector.

Audrius Varnas, UAB Elme Messer Lithuania

A pile of refrigerators awaits disposal: Messer supplies nitrogen for environmentally friendly disposal in Lithuania.

## Prize for best foreign brand

Messer has been named as one of the best brands in Serbia for the second time. The prize is awarded annually by the Serbian Ministry for Trade, Tourism and Services in conjunction with the daily newspaper "Pregled" and the Serbian Chamber of Commerce. The jury, chaired by Secretary of Commerce Prof. Bojan Dimitrijević, assessed quality, standards, corporate image and customer relationships. The prizes were presented by Bojan Dimitrijević and Minister of Trade Predrag Bubalo.

Marija Vuković, Messer Tehnogas

Ernst Bode, Managing Director of Messer in Serbia, proudly accepts the award.



## Oxygen at home and on the move

As a partner of the Belgian University Hospital Antwerp, Messer supplies oxygen to the homes of around 200 patients with lung diseases such as chronic obstructive bronchitis and low oxygen levels in the blood. The patient is able to move freely with "Mobilox". The oxygen is supplied in an easy-to-use two-liter oxygen cylinder with economy valve. Messer first put Mobilox on the market in 2003, and has since been developing it further together with professors and medical experts from the University Hospital Antwerp.

Frank Liwerski, Messer Belgium

In addition to a concentrator for oxygen, the chronically ill patients receive an easy-to-use two-liter oxygen cylinder.





An image from the past: dust and toxic fumes, a hazard that is no longer present in today's cleaning cycles.

## Nitrogen against fire and explosions

Environmental protection and safety are of paramount importance in industry and manufacturing. For the copper smelting plant Huta Legnica, this means ensuring the optimum operation of its equipment and cleaning the blast furnace dust chamber twice a month. Dust and gases make this job much more difficult. Successful tests, in which nitrogen was used to inert the plant while cleaning work was being carried out, proved convincing. As a result, Messer is now going to install a fixed on-site nitrogen dosing system for its customer. This will provide protection against fire and explosions while at the same time preventing the escape of toxic gases.

Monika Lammertz, Messer Group

## Glowing sheet metal thanks to hydrogen

In Slovakia, Messer is supplying 460,000 cubic meters of hydrogen a year to U.S. Steel through to 2009. The steel manufacturer requires the hydrogen in order to get sheet metal to glow prior to galvanizing. Messer is also installing the complete hydrogen pressure station. The station includes connections for two battery trucks with a capacity of 4,000 cubic meters each. This allows Messer to provide a continuous supply of 55 cubic meters of hydrogen per hour. The ideal atmosphere in the furnace consists

of 95 percent nitrogen and five percent hydrogen.

Michael Holy, Messer Tatragas



Hydrogen is supplied to U.S. Steel in battery trucks like this.

## "Very Good" mark from Philip Morris

Messer in Poland has received an above-average supplier rating from Philip Morris. The cigarette manufacturer gave Messer an excellent rating in areas such as delivery times, price, contract compliance, quality, environmental awareness and consultation. Philip Morris uses liquid carbon dioxide to expand tobacco. This involves the tobacco being mixed with carbon dioxide that is under high pressure. The CO<sub>2</sub> is suddenly expanded, thereby increasing the volume of the tobacco, which is then made into cigarettes.

Witold Rammel, Messer Polska

Thumbs up for Messer in Poland: our customer Philip Morris rates Messer as an above-average supplier.



## Better quality of life for injured children

In most cases, craniofacial trauma results in permanent disfigurement and neurological damage. The Madarász Children's Clinic in Budapest has operated on 23,000 children with such injuries in the past ten years. The clinic originally did not have the necessary equipment to allow it to carry out microsurgery; however, the clinic was lacking the necessary equipment to

allow it to carry out microsurgery, but now thanks to a donation from Messer this situation has been rectified. The new equipment allows broken bones to be reconstructed. The procedure is carried out via the mouth, thus preventing scars and the need for subsequent plastic surgery.

Krisztina Lovas, Messer Hungarogáz

Dr. Tamás Sült (r.), head physician at the Children's Surgical Unit of the Madarász Children's Clinic in Budapest, explains the function of the microsurgical instrument to György Habsburg (m.), Chairman of the Hungarian Red Cross and of the Supervisory Board of Messer in Hungary, and Johann Ringhofer (l.), CEO of Messer Hungarogáz.



# Oxygen makes iron melt

The iron foundry Safem in Angoulême in the south-east of France uses Messer's Pulsox system to provide additional heat in its production process. Pulsox is a device that is used to introduce technical gases – especially oxygen – into solid media. on air spoke to the site manager Martial Gobeaux about the collaboration with Messer and the resulting advantages.

**on air:** What role does the Pulsox system from Messer play in your production process?

**Martial Gobeaux:** For the melting process, we use an induction furnace and a cupola with a diameter of one meter and a throughput of six tons of iron per hour. Through the introduction of Pulsox, we are now able to increase capacity to eight tons per hour.

**on air:** Could you explain that in a little more detail, please?

**Martial Gobeaux:** Gladly. Oxygen is injected into the cupola at certain points with special lances. By carefully metering the quantity of oxygen and injecting it in the right places at the right time, we can control the combustion of the coke perfectly. The resulting increase in combustion efficiency leads to higher melting temperatures, which in turn leads to reduced coke consumption and a higher furnace throughput. But Pulsox is more than that. Pulsox is a complete solution: the supply of oxygen, the development and installation of the required number of oxygen lances at the appropriate points on the furnace, the optimal setting of the pulsation frequency, based on the design of the furnace, as well as the training of personnel in the use of the technology.

**on air:** In what way has Pulsox fulfilled your expectations?

**Martial Gobeaux:** Our first objective was to increase the temperature of the iron. This makes it more fluid, which allows a more even casting process. We have achieved this. The result is a further improvement in product quality. Pulsox has certainly delivered on its promises and even given us some very welcome



*Perfect control: coke consumption can be reduced by injecting oxygen into the cupola.*

*Martial Gobeaux in conversation with on air: "Pulsox is a complete solution."*



and economically valuable side effects: on the one hand, the aforementioned increase in capacity and, at the same time, the reduced coke consumption.

**on air:** And how did you find working with Messer?

**Martial Gobeaux:** Our collaboration has been excellent. From the outset, Messer was mindful of the fact that Safem needed a tailor-made solution. First, the Messer team carried out a detailed analysis of our production process and adapted its technology accordingly. Next, it convinced our employees of the advantages of the new solution and gave them a step-by-step explanation of the changes in their day-to-day operational procedures. Only by virtue of the fact that our employees recognized the strengths of Pulsox did the use of the technology become a matter of course, and now we are benefiting from it daily.

**on air:** Given all these positive experiences, are there any other Messer applications that you would consider?

**Martial Gobeaux:** The introduction of Pulsox has shown how successfully the Messer team can integrate new technologies into our production process. I therefore believe that Pulsox was only the beginning of a series of new technologies. I am very impressed with the benefits of the gases applications for our area and am already in talks about a pilot batch for other areas of our production process. Our collaboration is based on trust, so I am confident that both parties will reap further benefits from our partnership.

*Interview: Marc Dierckx*

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### Heavyweight delivery

Formed in 1840 as "Cordoba et Michault", the French iron foundry has been trading under the name of Safem since 1870. A few years ago, Safem was taken over by one of its largest customers, the French Allimand Group. Allimand is one of the leading groups for paper-making machines and the market leader in the manufacture of cigarette paper. Safem's core competence lies in the production of large, high-precision products from cast iron, as found, for example, in the rolling mills of the paper industry. Safem produces parts weighing from two to 50 tons.

*Increase in capacity: with Pulsox, the capacity of the furnace has been increased from six to eight tons of iron per hour*

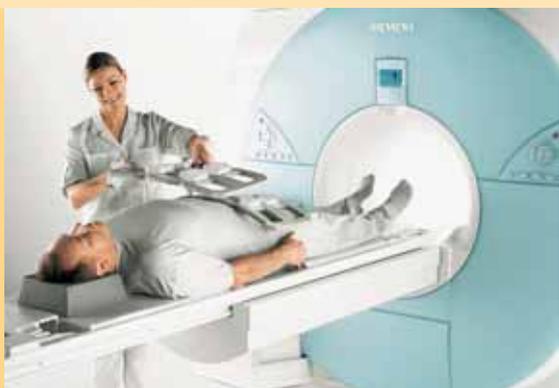


*Specialty gases have to meet very exacting requirements if they are being used in the operation of sensitive analytical equipment.*

## Do you have high standards? So do we! Specialty gases from Messer

Specialty gases cover a wide range of high-grade products – from liquid helium and an extensive range of pure gases and standard mixtures through to gas mixtures that are specially produced to individual customer specifications. The product requirements are just as specific and diverse as their applications.





*Magnetic resonance imaging is the most important application of liquid helium.*



*The liquid helium is transported from source to filling plant in special tank containers.*

■ □ Helium is a really special specialty gas: in addition to what is probably the best-known use of helium as a lifting gas for balloons and airships, this rare gas has a whole range of other uses thanks to its special properties. For example, it is used in many processes in welding and laser technology because of its high thermal conductivity. "However, its high diffusibility also makes it an ideal carrier gas in gas chromatography and the most widely used test gas for leak detection," explains Dr. Michael Hanisch, Technology Manager Specialty Gases, Messer Group.

### Extremely cold

In a liquid state, helium has the lowest boiling point of all gases at 4.2 Kelvin or minus 269 degrees Celsius. This makes liquid helium the coldest liquid on Earth. It is used as a refrigerant wherever extremely low temperatures (below minus 200 degrees Celsius) are required. An example of this would be applications connected with the generation of very strong magnetic fields using superconductive magnets. From a technical viewpoint, the most important applications are magnetic resonance imaging (MRI) in medicine and nuclear magnetic resonance spectroscopy (NMR) as well as several applications in pure research.

Helium is extracted from helium-rich natural gas wells, which are found in only a few places worldwide. For the European market, Messer draws on a very reliable Russian source. To import the gas, Messer operates a fleet of special super vacuum-insulated tank containers with a capacity of 40,000 liters each.

These are used to transport the helium to our European filling plants in Mity-Mory (France), Lenzburg (Switzerland) and Gumpoldskirchen (Austria). At these plants, Messer transfers the helium into smaller dewars, which are designed for supplying customers and are also super vacuum-insulated. Gaseous helium is also filled at these plants. Our Chinese plant in Wujiang is supplied from a source in the USA.

### High-purity gases and gas mixtures

Many technologies require pure gases or gas mixtures of defined composition and quality in order to operate safely and efficiently. The inert gas filling in incandescent lamps prevents the filament from burning up. Nowadays, krypton mixtures are also frequently used for this. The lower thermal conductivity allows higher filament temperatures and therefore greater light output. If a particularly high luminance is required, for example in car headlights, then xenon-filled gas discharge lamps are used. The rare gas filling in insulated glass units ensures improved thermal and acoustic insulation. Very high demands are also placed on gases that are used in the operation of sensitive analytical equipment in environmental analysis, safety engineering or quality assurance. In addition to the carrier and process gases for the instruments and detectors used in gas analysis, gas mixtures with a specific and precise composition are also used in order to calibrate the devices. "There are only a few standard products in this area, so Messer



Central supply unit for high-purity gases.

„We do not only produce specialty gases but also know the applications in which they are used by our customers. This allows us to bring our experience with products, technologies and the necessary installations to bear to optimum effect on site. Individual solutions are standard with us.“

**Gwendal Le Scouezec**, Sales Manager, Specialty Gases France, at Messer in France



□ □ □ produces calibration gases to individual customer specifications," says Jerry Girardi, Sales Manager Specialty Gases for Messer in Switzerland. In line with the many different applications, there are very different requirements in terms of the quality and form of delivery of the gases. Messer offers a comprehensive range of standard products. The purities range from "technical" through to "6.0 quality" with a purity level of 99.9999 percent. Messer supplies the gases as and when required. Our products range from

one-liter pressure cans to cylinders and bundles through to trailer and liquid supplies.

### Knowing how it's done...

The production of specialty gases consists of various stages, from the pretreatment of cylinders to filling technology through to quality assurance analysis. A sound understanding of each individual area as well as a firm grasp of the entire process chain are essential. "Through our many years of experience in the local

## Alstom

For Eric Joly at Alstom MSA, reliable helium supplies from Messer are particularly important. He relies on Messer to do everything to ensure that there are no supply interruptions, even in times of worldwide product shortages. Alstom MSA in Belfort, France, is one of the leading companies in the manufacture of superconducting wires, cables and large magnets. Alstom supplies superconducting wires to the largest manufacturers of medical and analytical equipment such as magnetic resonance imaging scanners and spectrometers. Alstom was the leading supplier of superconducting cables and magnets for the LHC project (LHC = Large Hadron Collider) of the European Organization for Nuclear Research (CERN) in Geneva and is also involved in the international ITER project (International Thermonuclear Experimental Reactor) for controlled nuclear fusion. In special liquid helium-cooled, super-insulated test facilities – so-called cryostats – the superconducting wires and cables are tested to measure the maximum currents up to which they retain their superconductivity before becoming resistive again. Gaseous helium was used to carry out leak tests on the magnets manufactured on site for the LHC.



Counting on reliable helium supplies from Messer: Alstom MSA in France.

Photo: pixello.de



*Precise calibration gases are used in low concentration ranges for air quality monitoring.*

specialty gas plants, Messer is able to supply almost any technically feasible gas mixture with the desired composition and the required degree of precision," says Dr. Bruno Reimann, Coordinator Specialty Gases Production/Analysis Europe.

We can also offer the option of supplying a wide range of calibration gases with a certificate of accreditation. However, specialty gases also require special know-how in terms of their application. In order to ensure that the desired quality is maintained from

the storage vessel to the application, special precautions are necessary at the installations. Not all technically approved fittings can also be used for specialty gases as well. Together with our sister company, Messer Cutting & Welding, a leading manufacturer of fittings and gas supply systems, Messer offers suitable solutions for every application – from planning through to complete installation.

*Dr. Hermann Grabhorn, Messer Group*

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## Liebherr

The Liebherr Group's best-known products include earthmoving equipment as well as a wide range of cranes for vehicles, building sites and maritime applications. The corporate head office in the Swiss town of Bulle is also home to Liebherr Machines Bulle SA, which specializes in the development and construction of the high-performance diesel engines that are used by Liebherr.

Just like in the automotive sector, the engine emissions must comply with strict European standards as well as those used in the US. On eight test-beds, the engines are tested under extreme conditions and have their emissions checked. Messer has been involved in the development of these test-beds for more than 18 years. As part of this, Messer supplied and installed all the

gas supply systems. Moreover, it is now supplying all the process and precision gas mixtures needed for exhaust gas analysis.

Michel Dupont, in charge of the test-beds at Liebherr, said: "With Messer Schweiz we value the quality of the products, the quick response times for inquiries and service calls, the quick delivery times and our good working relationship."



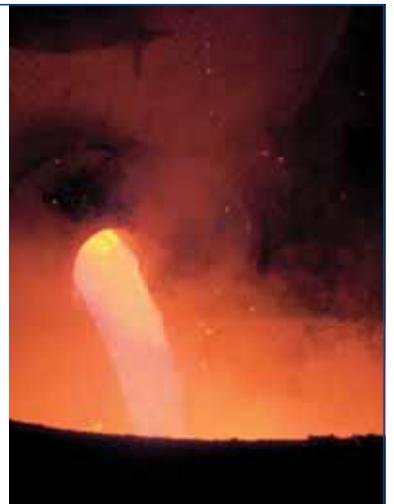
Photo: Liebherr

*Heavy equipment: Messer supplies Liebherr with precision gas mixtures for exhaust gas analysis.*



*Controlling  
the pH of water  
with CO<sub>2</sub>*

*Oxygen shortens  
the burning  
process in lead  
smelting.*



## The full range of technologies

**Serbia:** As an industrial gases specialist, Messer in Serbia offers the full range of application processes in almost every industrial sector. In particular, the company is promoting technologies that are helping to reduce the burden on the environment.

A new contract has been signed with the Belgrade Waterworks, which has been a partner of Messer in Serbia for years. In order to control the pH of untreated water, the waterworks is now using carbon dioxide instead of mineral acids. Previously, sulfuric acid was often added to the water. The Messer experts managed to convince the waterworks operators of the merits of the gentle and natural alternative: CO<sub>2</sub> is harmless and also saves costs.

### Improving the quality of aluminum

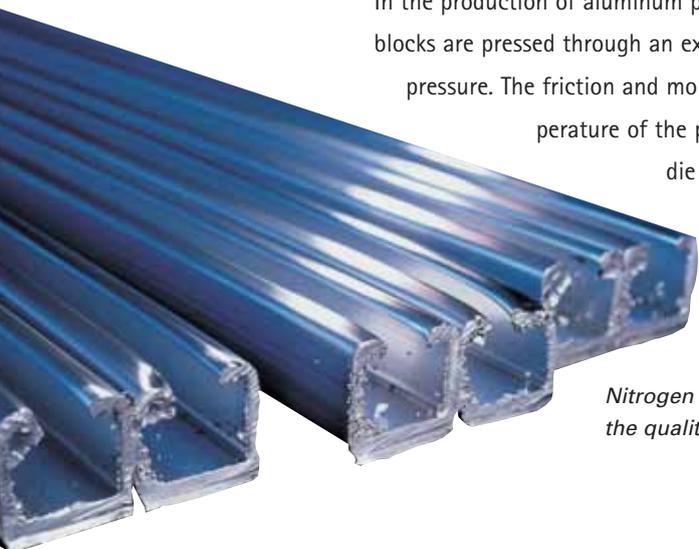
In the production of aluminum profiles, hot aluminum blocks are pressed through an extrusion die under high pressure. The friction and molding causes the temperature of the pre-heated extrusion die to rise still further. If the temperatures are too high, this can lead to faults in

the extruded profile. At Nissal in Serbia, Messer has installed the Incal system. This technology involves the mold being cooled with liquid nitrogen in order to control the temperature. At the same time, the inert gas reliably prevents surface faults which could be caused by oxidation through the ambient air.

### Environmentally acceptable lead smelting

Messer in Serbia is also making an important contribution to environmental protection in collaboration with the company Farmakom Šabac. In Zajača, in the west of the Balkan state, Farmakom Šabac operates a smelting furnace for lead from used or defective batteries. The addition of oxygen shortens the burning process and reduces emissions of NO<sub>x</sub> and other waste gases substantially. The lead is recycled and used for the production of new batteries.

*Marija Vuković, Messer Tehnogas*



*Nitrogen improves  
the quality of aluminum.*

# Fine stone made even more beautiful



**Italy:** The ancient Romans used travertine in the construction of their magnificent buildings and monuments. Even today, it is found in many buildings. However, this building material has to be washed before it is used. Carbonic acid reduces the water consumption – and produces a nice side effect.

Travertine is one of the most commonly used stones in modern architecture, where it is used as a façade material, wall coating and floor covering. The largest building in the world constructed of travertine is the Colosseum in Rome because extensive travertine deposits are mainly found in central Italy, for example at Tivoli. In fact, the name travertine is derived from this town: Tivoli was known as Tibur in the ancient Roman Empire. The historical name for the stone is "lapis tiburtinus", the Tibur stone. Travertine deposits are also found near the Rapolano thermal spring, where Messer owns natural CO<sub>2</sub> sources.

Band-saw working, polishing and washing of travertine require large quantities of water due to the large amount of natural calcium carbonate that is washed out of the stone and the fact that hoses and nozzles easily become blocked. The injection of CO<sub>2</sub> into the water, however, affects the lime-carbonic acid balance in such a way that the water can absorb more calcium carbonate, thus preventing the build-up of residues. This not only reduces the consumption of fresh water, but also makes the travertine lighter in colour and even more beautiful.

*Leonardo Galli, Messer Italia*

*Working the travertine: less water consumption due to the addition of CO<sub>2</sub>.*

*The ancient Romans appreciated the beauty of travertine.*





# Carbonic acid neutralizes soils

**Hungary:** A technology developed and patented in Hungary makes it possible to clean up industrial waste-contaminated soil in an environmentally friendly way. Messer delivers the carbon dioxide necessary for this process.

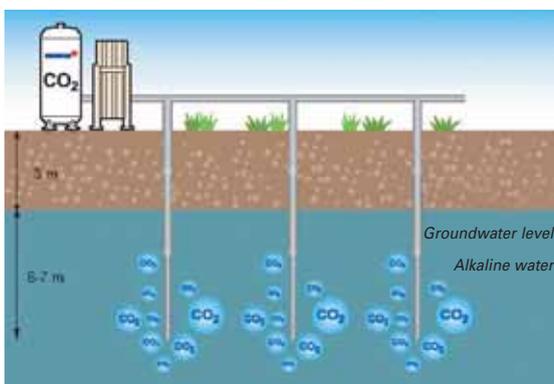
The green grass belies the poor state of the soil on the site of a former aluminum oxide plant in Hungary. The soil, contaminated over many years, and the alkaline groundwater were in desperate need of remediation. The removal of soil contamination caused by industrial activity is a major challenge for environmental protection. In many industrial areas, the soil is contaminated to a certain degree by liquid effluents, waste gas or chemical products. A high pH is indicative of alkaline groundwater, a basic solution in which no organisms can survive. A newly developed decontamination procedure offers an environmentally friendly and cost-saving solution to this problem. In order to achieve the neutral pH of a healthy soil, the ground on the site of the former Hungarian aluminum oxide plant is being treated with gaseous carbon dioxide. Decontamination is taking place "in situ", i.e. directly in the soil. The CO<sub>2</sub> supplied by Messer is injected below the groundwater table with the aid of lances. The number of

lances is determined by the degree of contamination. The carbon dioxide is dissolved in the groundwater and dissociates into carbonic acid, which neutralizes the pH of the previously alkaline water. The addition of gaseous CO<sub>2</sub> thus creates a healthy environment for organisms, allowing the soil to come back to life.

## No need for chemical substances

The new technology – a Hungarian patent – already has several successful reference projects to its name. It can be used on its own or in conjunction with a classical soil remediation method. The efficiency can be further increased if, in addition to the in-situ technology, the groundwater is pumped out of the ground and treated with carbon dioxide in neutralization equipment. The gas ensures a controlled pH without the need for large quantities of chemicals or aggressive mineral acids.

*Anita Kötél and András Paszera, Messer Hungarogáz*



*CO<sub>2</sub> is injected below the groundwater table. The carbon dioxide reduces the pH of the alkaline water in an environmentally friendly way.*

*Green grass belies the bad state of the soil. Now the contaminated soil is being cleaned up using carbon dioxide.*



## COMPETITION

### Win...

### ... a Messer USB stick with 256 MB of memory

Here's what to do. On which page of this issue of on air does this picture appear? Find the page and you could be the lucky winner! Simply e-mail your answer to:\*



Deadline:  
21 June 2007



\* The competition is not open to employees of Messer or their relatives.

 [diana.buss@messergroup.com](mailto:diana.buss@messergroup.com)

Congratulations to Erich Gill from St. Pölten, Austria, the winner of the Messer mug.

## WINE SYMPOSIUM

### Applications for wine-growers

The Hungarian Messer subsidiary organizes symposia for wine-growers from Hungary's leading wine regions. The program features information about the optimum use of gases in cellar technology as well as bespoke hardware solutions. The symposium will also convey specific know-how, both theoretical and practical!

Further information about the symposium and other events can be found at

 [www.messer.hu](http://www.messer.hu)



*Fine wines due to the use of gases in cellar technology.*



**Your opinion please!**

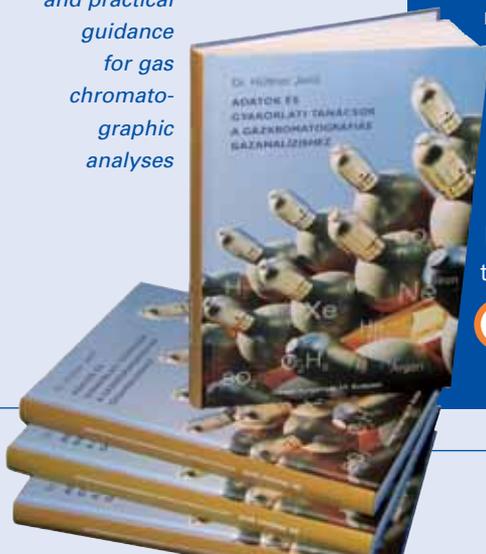
*What did you particularly like about on air? What did you not like? What would you like on air to cover in the near future? Please write to us at...*

 [info@messergroup.com](mailto:info@messergroup.com)

## TECHNICAL LITERATURE

### Gas analysis handbook from Messer

*Jenő Hüttner:  
information  
and practical  
guidance  
for gas  
chromato-  
graphic  
analyses*



There are numerous specialist books on the subject of gas chromatography. The newly published handbook by Jenő Hüttner is the first one in Hungary which also provides practical guidance in the area of gas analyses with gas chromatography for the application of specific gas analytical methods. The author, a retired Messer employee, draws on nearly 50 years of experience in this book, which is aimed at anyone working with gases or gas mixtures – whether as a user or as a producer. The publisher, Messer Hungarogáz, plans to publish a German version of the book in addition to the Hungarian version.

 [anita.kotel@messer.hu](mailto:anita.kotel@messer.hu)

## Coming up in the next issue:

- Improved yield: greenhouse vegetables, fruit and flowers grow more quickly with CO<sub>2</sub>. However, fertilizing with carbon dioxide has many other advantages.
- Safety in aircraft production: Messer has installed an on-site nitrogen system in the new factory of FACC, the largest Austrian supplier to the aerospace industry.

