



Westfalen



Industrial Gases · Welding, Cutting and Laser Gases · Specialty Gases
Gases for Medical Use, Inhalation and Pharmaceutical Applications
Food Gases · Refrigerants · 300 bar Technology

A Whole World of Gases: Our Product Range.

Gases, service and know-how.

Gases fulfil key tasks in modern production and processing technology. These unseen helpers perform carrier, protective and control roles, supply power and act in ways that are reactive, reductive, oxidising, inert, cryogenic or thermic.

The targeted use of technical gases reduces costs, raises quality, saves time and is environmentally friendly – often achieving several or all of these things together.

Our comprehensive product range provides perfectly matched products for every application.

The following pages present the diversity of our range:

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Welding, cutting and laser gases	Pages	6 through 11
Specialty gases	Pages	12 through 21
Gases for medical use, inhalation and pharmaceutical applications	Pages	22 through 23
Food gases	Pages	24 through 25
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Extensive application and supply engineering services complete Westfalen's product range.

Efficient supply concepts.

The right supply concept for each application:

- Individual cylinders in nominal volumes of 1 to 127 litres and filling pressures up to 300 bar; other cylinder sizes are available on request
- Pallets of 12 or more individual cylinders, depending on cylinder size
- Bundles (permanently linked units) of 6, 12 or more cylinders
- Gas mixing plants
- High-vacuum insulated storage and transport containers for cryogenic, liquefied gases in volumes of 5 to 20,000 litres
- Mobile supply systems for construction site use and short-term high demand
- Stationary tanks for cryogenic, liquefied gases in volumes of 2,000 to 60,000 litres; for compressed gaseous hydrogen up to 115,000 litres; larger units also available as required
- Hydrogen trailer for higher volume users
- Helium trailer for higher volume users
- Heat exchanger for cryogenic media
- Evaporators
- Plants for the onsite production of nitrogen, oxygen, hydrogen and compressed air

Installation of an on-demand gas supply takes detailed planning, working closely with the customer. Here: installation of a 115,000 litre hydrogen container.



Added value from applications engineering.

Westfalen's innovative methods set new standards for economy and quality, with leading-edge technologies emerging from our applications engineers' expert cross-sector knowledge. Some examples of successful development work:

- For the metals industry: the Tempron® processes for generation of protective gas atmospheres during heat treatment of metals
- For the foundry industry: the Improx® process for the optimisation of oxygen transfer in cupola furnaces
- For the ready-mixed concrete industry: nitrogen cooling of concrete for quality assurance during construction

Our Technical Centre for welding, cutting and laser technology dedicates itself in particular to:

- Experimental research
- Development of new operating and process gases
- Training

That's service.

Our customer care representatives, technicians and engineers provide able support throughout every phase of your decision process.



Innovations create added value from applications engineering: for example the Tempron®H process for generation of protective gas atmospheres for hard brazing and annealing.

This includes product or application consultancy, together with the planning, development, construction and maintenance of supply plants and extends to every aspect that matters to you. Throughout, we take into account your individual requirements and operational needs.

We guarantee rapid availability and delivery according to your specific requirements.

If you don't see the products you require listed on the following pages, please ask!

The given data corresponds to the state of our current knowledge as at printing in September 2011. We regret we cannot be held responsible for any errors that may have escaped our notice despite careful proofreading. Subject to alteration.



All production activities are aligned to achieving flawless product of the highest quality.

Industrial gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Argon	Argon 4.6 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A005015 on request
	Argon 4.8 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A005115 on request
	Argon 5.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A005415 on request
Carbon dioxide	Carbon dioxide 3.0 (liquid)	by tank vehicle for stationary tanks in mobile tank	A071015 on request
	Carbon dioxide MR with odorant (liquefied under pressure)	8	on request
		13***	on request
		13***	on request
		33	on request
	40	on request	
	50	on request	
Compressed air	Compressed air (gaseous, compressed)	10	A00400110
		50	A00400150
Hydrogen	Hydrogen 3.0 (gaseous, compressed)	10	A09500110
		50	A09500150
	12 x 50 (bundle)	A09500312	
	Hydrogen 3.0 (gaseous, compressed)	by hydrogen trailer for stationary tanks	A095015
Nitrogen	Nitrogen (gaseous, compressed)	10	A00300110
		20	A00300120
		50	A00300150
		12 x 50 (bundle)	A00300312

Industrial gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Nitrogen	Nitrogen 4.0 (gaseous, compressed)	10	A00320110
		20	A00320120
		50	A00320150
		12 x 50 (bundle)	A00320312
	Nitrogen 4.8 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A003115 on request
	Nitrogen 5.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A003415 on request
Oxygen	Oxygen 2.5 (gaseous, compressed)	10	A00100110
		20	A00100120
		50	A00100150
		12 x 50 (bundle)	A00100312
	Oxygen 2.5 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001015 on request
Propane as domestic and industrial fuel	Propane to DIN 51622 (liquefied under pressure)	12 (5 kg)	A110005
		27 (11 kg)	A110041
		45 (19 kg)	A110049
		79 (33 kg)	A110042
		by tank vehicle for stationary tanks	on request
Propane as fuel for forklifts	Propane to DIN 51622 (liquefied under pressure)	27 (11 kg)	A120041
		by tank vehicle for filling stations	on request
Propane/Butane as autogas	Autogas to DIN EN 589 (liquefied under pressure)	by tank vehicle for filling stations	on request

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

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*** Different geometric types, detailed information on request.

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Acetylene	Acetylene 2.0 (gaseous, dissolved in acetone)	10	A00200110
		20	A00200120
		40	A00200140
		50	A00200150
		6 x 60 (bundle)	A00200306
		16 x 54 (bundle)	A00200316
Argon to DIN EN ISO 14175	Argon 4.6 Group to DIN EN ISO 14175: I1 (gaseous, compressed)	10	A00500110
		20	A00500120
		50	A00500150
		12 x 50 (bundle)	A00500312
Argon He 11[®], 31 & 51 to DIN EN ISO 14175	Argon He 11 [®] Group to DIN EN ISO 14175: Z (gaseous, compressed)	10	A02720110
		20	A02720120
		50	A02720150
		12 x 50 (bundle)	A02720312
	Argon He 31 Group to DIN EN ISO 14175: Z (gaseous, compressed)	50	A02770150
	Argon He 51 Group to DIN EN ISO 14175: Z (gaseous, compressed)	20 50 12 x 50 (bundle)	A02730120 A02730150 A02730312
Argon/Helium mixtures to DIN EN ISO 14175	Argon/Helium 70/30 Group to DIN EN ISO 14175: I3 (gaseous, compressed)	50	A02700150
	Argon/Helium 50/50 Group to DIN EN ISO 14175: I3 (gaseous, compressed)	20 50 12 x 50 (bundle)	A02500120 A02500150 A02500312
	Argon/Helium 30/70 Group to DIN EN ISO 14175: I3 (gaseous, compressed)	50	A02300150
Argon S to DIN EN ISO 14175	Argon S 1 Group to DIN EN ISO 14175: M13 (gaseous, compressed)	10	A01010110
		50	A01010150
	Argon S 2 Group to DIN EN ISO 14175: M13 (gaseous, compressed)	10	A01020110
		50	A01020150
	Argon S 3 Group to DIN EN ISO 14175: M13 (gaseous, compressed)	10	A01030110
		50 12 x 50 (bundle)	A01030150 A01030312
	Argon S 4 Group to DIN EN ISO 14175: M22 (gaseous, compressed)	10	A01040110
		20	A01040120
50 12 x 50 (bundle)		A01040150 A01040312	

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Argon W to DIN EN ISO 14175	Argon W 2 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	10 50 12 x 50 (bundle)	A01420110 A01420150 A01420312
	Argon W 3 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	50	A01430150
	Argon W 5 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	10 50 12 x 50 (bundle)	A01450110 A01450150 A01450312
	Argon W 6 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	50	A01460150
	Argon W 7 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	10 50 12 x 50 (bundle)	A01470110 A01470150 A01470312
	Argon W 10 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	50 12 x 50 (bundle)	A01500150 A01500312
	Argon W 20 Group to DIN EN ISO 14175: R2 (gaseous, compressed)	50 12 x 50 (bundle)	A01600150 A01600312
	Argon W 35 Group to DIN EN ISO 14175: R2 (gaseous, compressed)	50 12 x 50 (bundle)	A01620150 A01620312
Carbon dioxide to DIN EN ISO 14175	Carbon dioxide Group to DIN EN ISO 14175: C1 (liquefied under pressure) Dip tube and other sizes/ geometric types on request	8 13*** 13*** 33 40 50	A071001084 A071001134 A071001136 A071001336 A07100140 A07100150
	Carbon dioxide 3.0 (liquid)	by tank vehicle for stationary tanks in mobile tank	A071015 on request

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Deltatig to DIN EN ISO 14175	Deltatig 2 Group to DIN EN ISO 14175: N2 (gaseous, compressed)	50	A01690150
	Deltatig 3 Group to DIN EN ISO 14175: N2 (gaseous, compressed)	50	A01670150
	Deltatig H2 Group to DIN EN ISO 14175: N4 (gaseous, compressed)	50	A01680150
Forming gas to DIN EN ISO 14175	Forming gas 97/03 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	10 50	A01970110 A01970150
	Forming gas 95/05 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	10 50 12 x 50 (bundle)	A01950110 A01950150 A01950312
	Forming gas 92/08 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	50 12 x 50 (bundle)	A01920150 A01920312
	Forming gas 90/10 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	10 50 12 x 50 (bundle)	A01900110 A01900150 A01900312
	Forming gas 85/15 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	50 12 x 50 (bundle)	A01850150 A01850312
	Forming gas 80/20 Group to DIN EN ISO 14175: N5 (gaseous, compressed)	50	A01800150

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Laser gases	Laser gas I (gaseous, compressed)	50	A03800150
	Laser gas II (gaseous, compressed)	50	A03810150
	Laser gas III (gaseous, compressed)	50	A03820150
	Laser gas IV (gaseous, compressed)	50	A03830150
	Laser gas V (gaseous, compressed)	50	A03840150
	Laser gas VI (gaseous, compressed)	10	A03850110
Oxygen to DIN EN ISO 14175	Oxygen 3.5 Group to DIN EN ISO 14175: 01 (gaseous, compressed)	10 50 12 x 50 (bundle)	A00150110 A00150150 A00150312
	Oxygen 3.5 Group to DIN EN ISO 14175: 01 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001515 on request

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Sagox® gas mixtures to DIN EN ISO 14175	Sagox® 1 Group to DIN EN ISO 14175: M23 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A00710110 A00710120 A00710150 A00710312
	Sagox® 2 Group to DIN EN ISO 14175: M24 (gaseous, compressed)	20 50 12 x 50 (bundle)	A00700120 A00700150 A00700312
	Sagox® 3 Group to DIN EN ISO 14175: M14 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A00690110 A00690120 A00690150 A00690312
	Sagox® 7S Group to DIN EN ISO 14175: M24 (gaseous, compressed)	50	A03310150
	Sagox® 8 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A00720110 A00720120 A00720150 A00720312
	Sagox® 10 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A00730110 A00730120 A00730150 A00730312
	Sagox® 15 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	20 50 12 x 50 (bundle)	A00750120 A00750150 A00750312
	Sagox® 18 Group to DIN EN ISO 14175: M21 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A00780110 A00780120 A00780150 A00780312
	Sagox® 20 Group to DIN EN ISO 14175: M21 (gaseous, compressed)	10 50	A00800110 A00800150
	Sagox® 25 Group to DIN EN ISO 14175: M21 (gaseous, compressed)	50	A00850150

Welding, cutting and laser gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Sagox® gas mixtures to DIN EN ISO 14175	Sagox® 2 K Group to DIN EN ISO 14175: M12 (gaseous, compressed)	10 20 50 12 x 50 (bundle)	A03230110 A03230120 A03230150 A03230312
	Sagox® 3 K Group to DIN EN ISO 14175: M12 (gaseous, compressed)	50	A03240150
	Sagox® He 10/2 Group to DIN EN ISO 14175: M12 (gaseous, compressed)	50	A03270150
	Sagox® He 30/2 Group to DIN EN ISO 14175: M12 (gaseous, compressed)	50	A03210150
	Sagox® He 30/8 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	50	A03250150
	Sagox® D Group to DIN EN ISO 14175: M22 (gaseous, compressed)	20 50 12 x 50 (bundle)	A01280120 A01280150 A01280312
	Sagox® S Group to DIN EN ISO 14175: M32 (gaseous, compressed)	50 12 x 50 (bundle)	A01320150 A01320312
	Sagox® HC Group to DIN EN ISO 14175: M11 (gaseous, compressed)	10 50	A03290110 A03290150
	Sagox® SC Group to DIN EN ISO 14175: Z (gaseous, compressed)	10 50	A03280110 A03280150
	Sagox® Ni Group to DIN EN ISO 14175: Z (gaseous, compressed)	50	A03300150
Wegaleen®	Wegaleen® (liquefied under pressure)	79	A00250179

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

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Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Acetylene	Acetylene 2.6 (gaseous, dissolved in acetone)	10	A00210110
		20	A00210120
		50	A00210150
Ammonia	Ammonia 3.8 W (liquefied under pressure)	12	A05210112
		51	A05210151
		79	A05210179
		127	A052101127
		950 (drum)	A05210590
	Ammonia 5.0 (liquefied under pressure)	10	A05220110
	50	A05220150	
Argon	Argon 4.8 ^{Spektro} (gaseous, compressed)	5	A00510105
		10	A00510110
		20	A00510120
		50	A00510150
		12 x 50 (bundle)	A00510312
	Argon 4.8 ^{Spektro} (cryogenic, liquefied)	in mobile tank	on request
	Argon 5.0 (gaseous, compressed)	10	A00540110
		50	A00540150
		12 x 50 (bundle)	A00540312
	Argon 5.0 (cryogenic, liquefied)	in mobile tank	on request
	Argon 5.5 ^{***} (gaseous, compressed)	10	A00550110
		50	A00550150
Argon 5.5 (cryogenic, liquefied)	in mobile tank	on request	

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Argon	Argon 6.0*** (gaseous, compressed)	10 50 12 x 50 (bundle)	A00560110 A00560150 A00560312
	Argon 6.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A005615 on request
Argon/Methane	Argon/Methane 95/05 (gaseous, compressed)	50	A03000150
	Argon/Methane 90/10 (gaseous, compressed)	50	A03010150
	Argon/Methane ECD 95/05*** (gaseous, compressed)	10 50	A03100110 A03100150
	Argon/Methane ECD 90/10*** (gaseous, compressed)	10 50 12 x 50 (bundle)	A03110110 A03110150 A03110312
Argon W Spektr	Argon W2 Spektr (gaseous, compressed)	50	A03520150
Balloon gas	Balloon gas (gaseous, compressed)	3	A0530010352
		10	A05300110
		20	A05300120
		50	A05300150
1,3-Butadiene	1,3-Butadiene 2.5 (liquefied under pressure)	12	A05450112
		27	A05450127

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**	
n-Butane	n-Butane 2.5 (liquefied under pressure)	27	A05510127	
		61	A05510161	
	n-Butane 3.5 (liquefied under pressure)	12	A05520112	
		27	A05520127	
Isobutane	Isobutane 2.5 (liquefied under pressure)	12	A05490112	
		27	A05490127	
		61	A05490161	
	Isobutane 3.5 (liquefied under pressure)	12	A05500112	
	27	A05500127		
1-Butene	1-Butene 2.0 (liquefied under pressure)	27	A05550127	
Isobutene	Isobutene 2.0 (liquefied under pressure)	12	A05530112	
		27	A05530127	
Carbon dioxide	Carbon dioxide 3.0 (liquefied under pressure)	50	A07130150	
		Carbon dioxide 4.5 (liquefied under pressure)	1	A0712010152
			13	A07120113
	50		A07120150	
	Carbon dioxide 5.0 (liquefied under pressure)	13	A07150113	
		50	A07150150	

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Carbon monoxide	Carbon monoxide 2.0 (gaseous, compressed)	10	A07200110
		50	A07200150
	Carbon monoxide 3.0 (gaseous, compressed)	10	A07240110
		50	A07240150
	Carbon monoxide 3.7 (gaseous, compressed)	10	A07210110
		50	A07210150
	Carbon monoxide 4.7 (gaseous, compressed)	10	A07220110
		50	A07220150
Chlorine	Chlorine 2.5 (liquefied under pressure)	2	A05670102
		10	A05670110
Ethane	Ethane 2.0 (liquefied under pressure)	10	A06000110
		50	A06000150
	Ethane 3.5 (liquefied under pressure)	10	A06010110
		50	A06010150
Ethene	Ethene 2.5 (liquefied under pressure)	10	A06040110
		50	A06040150
	Ethene 3.5 (liquefied under pressure)	10	A06050110
		50	A06050150
Ethylene oxide	Ethylene oxide 2.5 (liquefied under pressure)	12	A06100112
		27	A06100127

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Gas mixtures for laboratories and measuring technology	40 % H ₂ , balance He (gaseous, compressed)	50	A04930150
	10 % He, balance N ₂ (gaseous, compressed)	12 x 50 (bundle)	A04840312
	According to individual specifications	on request	on request
Helium	Helium 4.6 (gaseous, compressed)	2	A06730102
		10	A06730110
		20	A06730120
		50	A06730150
		12 x 50 (bundle)	A06730312
	Helium 5.0 (gaseous, compressed)	10	A06740110
		20	A06740120
		50	A06740150
		12 x 50 (bundle)	A06740312
	Helium ECD*** (gaseous, compressed)	50	A06720150
	Helium 5.5*** (gaseous, compressed)	10	A06750110
		50	A06750150
		12 x 50 (bundle)	A06750312
	Helium 6.0*** (gaseous, compressed)	10	A06760110
		50	A06760150
12 x 50 (bundle)		A06760312	
Helium 4.6 (gaseous, compressed)	by helium trailer for stationary tanks	A067315	
Helium liquid	in ISO tank container in mobile tank (dewar)	A067815 A067915	

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Hydrogen	Hydrogen 5.0 (gaseous, compressed)	10	A09540110
		50	A09540150
		12 x 50 (bundle)	A09540312
	Hydrogen 6.0*** (gaseous, compressed)	10	A09560110
		50	A09560150
	Hydrogen chloride	Hydrogen chloride 2.5 (liquefied under pressure)	10
50			A05730150
Hydrogen sulphide	Hydrogen sulphide 2.5 (liquefied under pressure)	10	A08680110
		40	A08680140
Krypton	Krypton 4.0 (gaseous, compressed)	2	A07260102
		10	A07260110
		50	A07260150
	Krypton 4.7 (gaseous, compressed)	2	A07270102
		10	A07270110
		50	A07270150
	Krypton 5.0 (gaseous, compressed)	10	A07290110
		50	A07290150
	Methane	Methane 2.5 (gaseous, compressed)	10
50			A07500150
12 x 50 (bundle)			A07500312
Methane 3.5 (gaseous, compressed)		10	A07510110
		50	A07510150
Methane 4.5 (gaseous, compressed)		10	A07520110
		50	A07520150
Methane 5.5 (gaseous, compressed)		10	A07530110
		50	A07530150

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Natural gas	Natural gas H (high) (gaseous, compressed)	50	A07600150
		12 x 50 (bundle)	A07600312
Neon	Neon 4.0 (gaseous, compressed)	2	A07900102
		10	A07900110
		50	A07900150
	Neon 4.5 (gaseous, compressed)	2	A07920102
		10	A07920110
		50	A07920150
	Neon 5.0 (gaseous, compressed)	2	A07910102
		10	A07910110
		50	A07910150
Nitrogen	Nitrogen 4.8 (gaseous, compressed)	10	A00310110
		20	A00310120
		50	A00310150
		12 x 50 (bundle)	A00310312
	Nitrogen 4.8 (cryogenic, liquefied)	in mobile tank	on request
	Nitrogen 5.0 (gaseous, compressed)	10	A00340110
		50	A00340150
		12 x 50 (bundle)	A00340312
	Nitrogen 5.0 (cryogenic, liquefied)	in mobile tank	on request
	Nitrogen ECD*** (gaseous, compressed)	50	A00290150
	Nitrogen 5.5*** (gaseous, compressed)	10	A00350110
		50	A00350150
		12 x 50 (bundle)	A00350312
Nitrogen 6.0*** (gaseous, compressed)	10	A00360110	
	50	A00360150	
	12 x 50 (bundle)	A00360312	
Nitrogen 6.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A003615 on request	

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Nitrogen dioxide	Nitrogen dioxide 1.8 (liquefied under pressure)	10	A09000110
Nitrogen monoxide	Nitrogen monoxide 2.0 (gaseous, compressed)	10	A08960110
		50	A08960150
Nitrous oxide	Nitrous oxide 1.8 (liquefied under pressure)	2	A0869010252
		3	A0869010352
		10	A08690110
		50	A08690150
	Nitrous oxide 2.5 (liquefied under pressure)	10	A08750110
		50	A08750150
Nitrous oxide 5.0 (liquefied under pressure)	10	A08730110	
Oxygen	Oxygen 4.5 (gaseous, compressed)	10	A00160110
		50	A00160150
		12 x 50 (bundle)	A00160312
	Oxygen 4.5 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001615 on request
	Oxygen 5.0 (gaseous, compressed)	10	A00180110
		50	A00180150
		12 x 50 (bundle)	A00180312
	Oxygen 5.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001815 on request
	Oxygen 5.5*** (gaseous, compressed)	10	A00190110
		50	A00190150
Oxygen 5.5 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001915 on request	
Oxygen 6.0*** (gaseous, compressed)	10	A00130110	
	50	A00130150	
	12 x 50 (bundle)	A00130312	
Oxygen 6.0 (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001315 on request	

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Propane	Propane 2.5 (liquefied under pressure)	12	A08270112
		27	A08270127
		61 in drum	A08270161 on request
	Propane 3.5 (liquefied under pressure)	12	A08280112
		27	A08280127
		61	A08280161
Propene	Propene 2.5 (liquefied under pressure)	12	A08320112
		27	A08320127
		61	A08320161
	Propene 3.5 (liquefied under pressure)	12	A08330112
Sulphur dioxide	Sulphur dioxide 3.0 (liquefied under pressure)	10	A08600110
		50	A08600150
Sulphur hexafluoride	Sulphur hexafluoride 3.0 (liquefied under pressure)	10	A08630110
		40	A08630140
Synthetic air	Synthetic air, hydrocarbon-free (gaseous, compressed)	10	A09110110
		50	A09110150
		12 x 50 (bundle)	A09110312
Tetrafluoromethane	Tetrafluoromethane 2.8	10	A07560110
		50	A07560150
	Tetrafluoromethane 4.5	10	A07570110
Xenon	Xenon 4.0	2	A09710102
		10	A09710110
	Xenon 4.7	2	A09720102
		10	A09720110
	Xenon 5.0	10	A09730110

Specialty gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Other high purity gases (provided in cylinders to be purchased by customer)	cis-2-Butene	on request	on request
	Cyclopropane	on request	on request
	Deuterium	on request	on request
	Dimethyl ether	on request	on request
	Ethylamine	on request	on request
	Hexafluoroethane (R-116)	on request	on request
	Isotopes:		
	- Ammonia deuterated	on request	on request
	- ³ He	on request	on request
	- ¹⁵ N ₂	on request	on request
	- ¹⁸ O ₂	on request	on request
	- ¹⁵ NO	on request	on request
	- ¹⁵ N ₂ O	on request	on request
	- ¹² CO ₂	on request	on request
	- ¹³ CO ₂	on request	on request
	- C ¹⁸ O	on request	on request
	- C ¹⁸ O ₂	on request	on request
- ³⁴ SO ₂	on request	on request	
- ³⁴ S ¹⁸ O ₂	on request	on request	
Methylamine	on request	on request	
Octafluorocyclobutane (R-318)	on request	on request	
Octafluoropropane (R-218)	on request	on request	
trans-2-Butene	on request	on request	
Vinyl chloride	on request	on request	

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

** Article numbers apply for supply in rental cylinders under the terms currently in force. Please request separately terms for filling of your own cylinders.

*** With test report

Gases for medical use, inhalation and pharmaceutical applications.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Carbogen (for generating a defined atmosphere)	5 % CO ₂ balance O ₂ (gaseous, compressed)	10	A03650110
		50	A03650150
Carbon dioxide	Carbon dioxide MP - basimed CO ₂ *** (liquefied under pressure)	1	A0701010152
		2	A0701010252
		3	A0701010352
		8	A070101086
		10	A070101106
		13****	A07010113
		13****	A070101136
		50	A07010150
	Carbon dioxide Pharma (liquefied under pressure)	2	A0719010252
		13	A071901130
		33	A07190133
		50 12 x 50 (bundle)	A07190150 A07190312
Compressed air to DIN EN 12021	Compressed air for breathing apparatus to DIN EN 12021 (gaseous, compressed)	2	A0042010252
		3	A0042010352
		10	A00420110
		50	A00420150
		12 x 50 (bundle)	A00420312
Divox®	Divox®-Mix Diving gases according to individual specifications (gaseous, compressed)	10	A04090110
		50	A04090150
		12 x 50 (bundle)	A04090312
Gases for blood gas analysis	According to individual specifications	on request	on request
Gases for pulmonary function testing (calibration gases, not for inhalation)	0.28 % CO 9.5 % He, balance synth. air with valve connection DIN 477 No. 14 (gaseous, compressed)	10	A04980110
	0.25 % CO 18 % He, balance synth. air with valve connection DIN 477 No. 14 (gaseous, compressed)	10	A04880110
	Other mixtures according to individual specifications	on request	on request

Gases for medical use, inhalation and pharmaceutical applications.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**	
Nitrogen	Nitrogen Pharma (gaseous, compressed)	10 50 12 x 50 (bundle)	A00390110 A00390150 A00390312	
	Nitrogen Pharma (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A003915 on request	
Nitrous oxide	Nitrous oxide for medical use*** (liquefied under pressure)	1	A0872010152	
		2	A0872010252	
		3	A0872010352	
		10	A08720110	
		50	A08720150	
		12 x 50 (bundle)	A08720312	
Oxygen	Oxygen for medical use*** (gaseous, compressed)	1	A0012010152	
		2	A0012010252	
		3	A0012010352	
		10	A00120110	
		50	A00120150	
		12 x 50 (bundle)	A00120312	
	Oxygen for medical use*** in special cylinders: (gaseous, compressed)	- Cylinders with integrated valve and adjustable flow (ViD)	2 (1-15 l/min) 2 (0.25-6 l/min) 5 (1-15 l/min)	A00120102549 A001201024958 A0012010249
		- Cylinders for MRT-application	2 (1-15 l/min) 2 (0.25-6 l/min)	A00120102495 A001201024958
		Oxygen for medical use*** (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A001215 on request
	Aviation oxygen (gaseous, compressed)	2	A00140102	
		10	A00140110	
		50	A00140150	

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

** Article numbers apply for supply in rental cylinders under the terms currently in force. Please request separately terms for filling of your own cylinders.

*** Trade name of the finished medicinal product.

**** Different geometric types, detailed information on request.

Food gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Protadur® E 290	Carbon dioxide (liquefied under pressure)	8 13*** 50 12 x 50 (bundle)	A020001084 A020001134 A02000150 A02000312
	Carbon dioxide (liquid)	by tank vehicle for stationary tanks	A020015
Protadur® E 938	Argon (gaseous, compressed)	50	A02050150
	Argon (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A020515 on request
Protadur® E 939	Helium (gaseous, compressed)	50	A02060150
	Helium (gaseous, compressed)	by helium trailer for stationary tanks	A020615
Protadur® E 941	Nitrogen (gaseous, compressed)	50 12 x 50 (bundle)	A02010150 A02010312
	Nitrogen (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A020115 on request
Protadur® E 942	Nitrous oxide (liquefied under pressure)	50	A02030150
	Nitrous oxide (liquid)	by tank vehicle for stationary tanks	A020315
Protadur® E 948	Oxygen (gaseous, compressed)	50 12 x 50 (bundle)	A02020150 A02020312
	Oxygen (cryogenic, liquefied)	by tank vehicle for stationary tanks in mobile tank	A020215 on request

Food gases.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Protadur® E 949	Hydrogen (gaseous, compressed)	50	A02040150
	Hydrogen (gaseous, compressed)	by hydrogen trailer for stationary tanks	A020415
Protadur® C 20	20 % Protadur® E 290 (CO ₂) 80 % Protadur® E 941 (N ₂) (gaseous, compressed)	10	A02080110
		20	A02080120
		50	A02080150
		12 x 50 (bundle)	A02080312
Protadur® C 30	30 % Protadur® E 290 (CO ₂) 70 % Protadur® E 941 (N ₂) (gaseous, compressed)	10	A02090110
		20	A02090120
		50	A02090150
		12 x 50 (bundle)	A02090312
Protadur® C 50	50 % Protadur® E 290 (CO ₂) 50 % Protadur® E 941 (N ₂) (gaseous, compressed)	20	A02100120
		12 x 50 (bundle)	A02100312
Protadur® 070 C30	70 % Protadur® E 948 (O ₂) 30 % Protadur® E 290 (CO ₂) (gaseous, compressed)	50	A02280150
		12 x 50 (bundle)	A02280312
Protadur® Ethen 4	4 % Ethene 96 % Protadur® E 941 (N ₂) (gaseous, compressed)	50	A02290150
		12 x 50 (bundle)	A02290312
Protadur® Mix	Mixtures according to individual specifications	on request	on request

Protadur® food gases comply in regard of their approval, specification and manufacture with all EU-wide mandatory ordinances for food and food additives, e.g. Regulation 178/2002/EC.

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

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*** Different geometric types, detailed information on request.

Refrigerants and heat transfer fluids.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
R-22 (reclaimed) to DIN 8960	R-22 (Chlorodifluoromethane) (liquefied under pressure)	12.3 61 900 (drum)	A06350112 A06350161 A06350590
R-23 to DIN 8960	R-23 (Trifluoromethane) (liquefied under pressure)	3 10 40	A06360103 A06360110 A06360140
R-134a to DIN 8960	R-134a (1,1,1,2- Tetrafluoroethane) (liquefied under pressure)	12.3 61.0 400 (drum) 900 (drum)	A06440112 A06440161 A06440540 A06440590
R-227 to DIN 8960	R-227 (1,1,1,2,3,3,3- Heptafluoropropane) (liquefied under pressure)	14.3 61.0	A06510114 A06510161
R-236fa to DIN 8960	R-236fa (liquefied under pressure)	12.3 61.0	A08450112 A08450161
R-245fa to DIN 8960	R-245fa (1,1,1,3,3- Pentafluoropropane) (liquefied under pressure)	12.3 61.0	A08460112 A08460161
R-290 to DIN 8960	R-290 (Propane) (liquefied under pressure)	12.3 27.2 79.0	A06600112 A06600127 A06600179
R-404A to DIN 8960	R-404A (liquefied under pressure)	12.3 61.0 400 (drum) 900 (drum)	A06320112 A06320161 A06320540 A06320590
R-407A to DIN 8960	R-407A (liquefied under pressure)	12.3 61.0	A06450112 A06450161
R-407C to DIN 8960	R-407C (liquefied under pressure)	12.3 61.0 400 (drum) 900 (drum)	A06470112 A06470161 A06470540 A06470590

Refrigerants and heat transfer fluids.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
R-410A to DIN 8960	R-410A (liquefied under pressure)	12.3 61.0 400 (drum) 900 (drum)	A06370112 A06370161 A06370540 A06370590
R-417A (ISCEON® M059) to DIN 8960	R-417A (liquefied under pressure)	12.3 61.0	A06590112 A06590161
R-422A (ISCEON® M079) to DIN 8960	R-422A (liquefied under pressure)	12.3 61.0	A06690112 A06690161
R-422D (ISCEON® M029) to DIN 8960	R-422D (liquefied under pressure)	12.3 61.0	A06680112 A06680161
R-427A to DIN 8960	R-427A (liquefied under pressure)	12.3 61.0	A06710112 A06710161
R-437A (ISCEON® M049 PLUS) to DIN 8960	R-437A (liquefied under pressure)	14.3 61.0	A06700114 A06700161
ISCEON® M089	ISCEON® M089 (liquefied under pressure)	12.3 61.0	A06670112 A06670161
R-507 to DIN 8960	R-507 (liquefied under pressure)	12.3 61.0 400 (drum) 900 (drum)	A06330112 A06330161 A06330540 A06330590
R-508A to DIN 8960	R-508A (liquefied under pressure)	3 10	A06490103 A064901128
R-508B to DIN 8960	R-508B (liquefied under pressure)	5 38	A06560105 A06560138

Refrigerants and heat transfer fluids.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
R-600a to DIN 8960	R-600a (Isobutane) (liquefied under pressure)	12.3 27.2 79	A06650112 A06650127 A06650179
R-717 to DIN 8960	R-717 (Ammonia K) (liquefied under pressure)	79 127 950 (drum)	A05200179 A052001127 A05200590
R-744	R-744 (Carbon dioxide) (liquefied under pressure)	13.4 33 50 50*** 12 x 50 (bundle)	A071801134 A0718013349 A07180150 A071801501 A071803121
R-1270 to DIN 8960	R-1270 (Propene) (liquefied under pressure)	12.3 27.2 79	A06640112 A06640127 A06640179
Solkane® 365/227	R-365 (1,1,1,3,3- Pentafluorobutane)/ R-227 (1,1,1,2,3,3,3- Heptafluoropropane)	on request	on request
Solkatherm® SES 36	Pentafluorobutane/ Pentafluoropolyether	on request	on request

Refrigerants and heat transfer fluids.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Antifrogen® heat transfer fluids	Antifrogen® N (liquid)	30	A0618070030
		60	A0618070060
		200	A0618070200
		1,000	A0618071000
	Antifrogen® N- water mixtures (liquid)	30	A0621070030
		60	A0621070060
		200	A0621070200
		1,000	A0621071000
	Antifrogen® L (liquid)	30	A0619070030
		60	A0619070060
		200	A0619070200
		1,000	A0619071000
	Antifrogen® L- water mixtures (liquid)	30	A0622070030
		60	A0622070060
		200	A0622070200
		1,000	A0622071000
	Antifrogen® SOL ^{HT} (liquid)	10	A0616070010
		30	A0616070030
		60	A0616070060
		200	A0616070200
		1,000	A0616071000
	Antifrogen® KF (liquid)	on request	on request

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

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*** Includes dip tube.

300 bar technology.

Product	Specification	Delivery mode (nominal volume in litre/cylinder)*	Art. No.**
Argon	Argon 4.6 (gaseous, compressed)	50 12 x 50 (bundle)	A005001503 A005003123
	Argon 4.8 ^{Spektro} (gaseous, compressed)	50 12 x 50 (bundle)	A005101503 A005103123
	Argon 5.0 (gaseous, compressed)	50 12 x 50 (bundle)	A005401503 A005403123
Argon W	Argon W 5 Group to DIN EN ISO 14175: R1 (gaseous, compressed)	12 x 50 (bundle)	A014503123
Compressed air	Compressed air, technical (gaseous, compressed)	50	A004001503
Divox®	Divox® O Diving Gas (gaseous, compressed) 100 % O ₂ according to European Pharmacopoeia- specification and NATO-standard	50	A004501503
	Divox® He Diving Gas (gaseous, compressed) 100 % He according to European Pharmacopoeia- specification and NATO-standard	50	A033501503
Helium	Helium 4.6 (gaseous, compressed)	50 12 x 50 (bundle)	A067301503 A067303123
	Helium 5.0 (gaseous, compressed)	50 12 x 50 (bundle)	A067401503 A067403123
	Helium 6.0 (gaseous, compressed)	50	A067601503
Nitrogen	Nitrogen Pharma (gaseous, compressed)	50	A003901503
	Nitrogen (gaseous, compressed)	50 12 x 50 (bundle)	A003001503 A003003123
	Nitrogen 4.8 (gaseous, compressed)	50 12 x 50 (bundle)	A003101503 A003103123
	Nitrogen 5.0 (gaseous, compressed)	50 12 x 50 (bundle)	A003401503 A003403123
Oxygen	Oxygen 2.5 (gaseous, compressed)	50 12 x 50 (bundle)	A001001503 A001003123
	Oxygen 3.5 (gaseous, compressed)	50 12 x 50 (bundle)	A001501503 A001503123
Protadur® E 941	Nitrogen (gaseous, compressed)	50 12 x 50 (bundle)	A020101503 A020103123
Protadur® E 948	Oxygen (gaseous, compressed)	50 12 x 50 (bundle)	A020201503 A020203123
Sagox® gas mixtures	Sagox® 8 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	50 12 x 50 (bundle)	A007201503 A007203123
	Sagox® 10 Group to DIN EN ISO 14175: M20 (gaseous, compressed)	12 x 50 (bundle)	A007303123
	Sagox® 18 Group to DIN EN ISO 14175: M21 (gaseous, compressed)	50 12 x 50 (bundle)	A007801503 A007803123
Synthetic air	Synthetic air, hydrocarbon-free (gaseous, compressed)	50 12 x 50 (bundle)	A091101503 A091103123

* Filling volume varies according to product; for more detailed information, please request the respective product data sheet.

** Article numbers apply for supply in rental cylinders under the terms currently in force. Please request separately terms for filling of your own cylinders.

Cylinder types and sizes.

Product	Type geometric volume (l) ^{1) 2)}	Length with cap/collar (cm) ³⁾	Diameter (cm) ³⁾	Empty weight (kg) ³⁾
Alumini® 12 pressure cans seamless drawn aluminium body (12 bar)	1.0	28.0	8.0	0.2
Alumini® 200 mini cylinders seamless drawn aluminium body (200 bar)	0.5	32.0	7.0	1.1
High-pressure cylinders seamless drawn steel cylinders (200 bar, optional 300 bar ⁴⁾)	1.0	44.0 (35.0) ⁵⁾	8.3	2.0
	2.0	51.0 (45.0) ⁵⁾	10.0	5.0
	3.0	66.0 (59.0) ⁵⁾	10.0	6.0
	5.0	61.0	14.0	8.0
	10.0	98.0	14.0	16.0
	13.4	124.0	14.0	19.0
	13.4	72.0	20.4	19.0
	20.0	96.0	20.4	29.0
	26.7	160.0	20.4	33.0
	30.0	110.0	22.9	40.0
50.0	170.0	22.9	74.0	
12 x 50 (bundle)	L x W x H 103 x 80 x 197			1,050
High-pressure cylinders seamless drawn aluminium cylinders (200 bar)	2.0	48.0	11.7	5.0
	10.0	112.0	14.0	14.0
	40.0	159.0	22.9	46.0
	50.0	166.0	25.0	58.0
Low-pressure cylinders welded for liquefied gases (filling pressure gas-dependent)	12.3	48.0	22.9	8.0
	14.3	51.0	24.5	10.0
	27.2	62.0	30.0	14.0
	52.0	126.0	26.7	28.0
	61.0	140.0	26.7	32.0
	79.0	130.0	31.8	44.0
127.0	150.0	37.2	50.0	
Steel cylinders for acetylene (pressure as stated on cylinders)	10.0	98.0	14.0	23.0
	20/22	96.0	20.4	20-35
	40.0	158.0	20.4	65-71
	40.0	132.0	22.9	74.0
	50.0	170.0	22.9	75.0
	6 x 60 (bundle)	L x W x H 91 x 64 x 174		675
	12 x 54 (bundle)	L x W x H 103 x 80 x 205		1,180
16 x 54 (bundle)	L x W x H 103 x 103 x 205		1,530	

¹⁾ the actual gas content varies depending on the type of gas and filling pressure

²⁾ other cylinder sizes on request

³⁾ all data are approximate values

⁴⁾ different weight data applies for 300 bar cylinders; information on request

⁵⁾ data in brackets: cylinder type with convex bottom and without cylinder cap



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