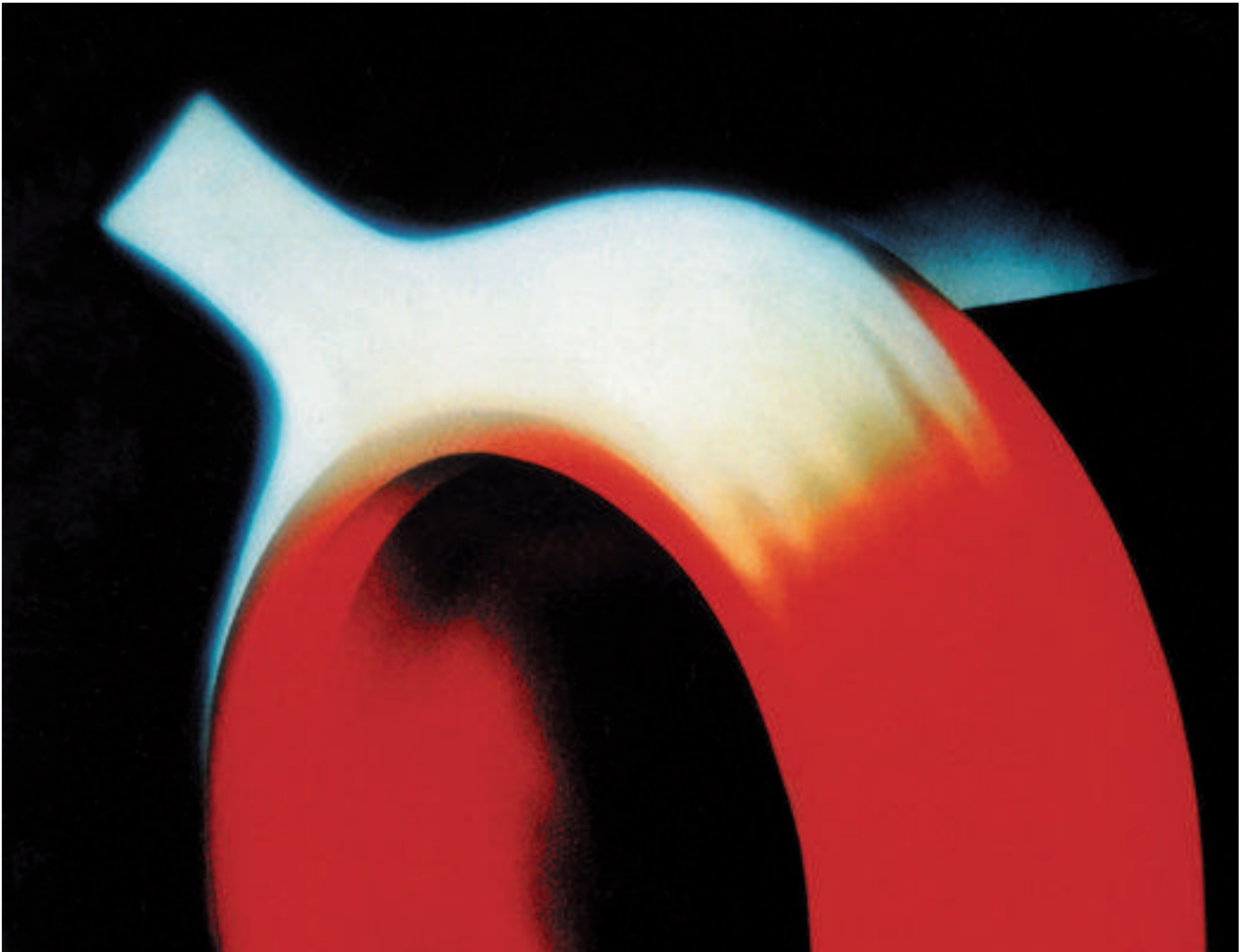




Acetylene

Gone all out for a classic



Acetylene – a constancy in oxyfuel technology

Multitalent

Acetylene has been regarded as "the" fuel gas for autogenous technology for more than 80 years now – really a constant flame.

Acetylene is the right fuel gas for

- flame cutting
- flame hardening
- flame heating
- flame spraying
- flame straightening
- flame blasting of steel and concrete
- manual and mechanical flaming in metallurgical processes
- joint gouging
- brazing and soldering
- oxyfuel welding
- thermal cutting of concrete

Autogenous flame cutting - a domain of Acetylene

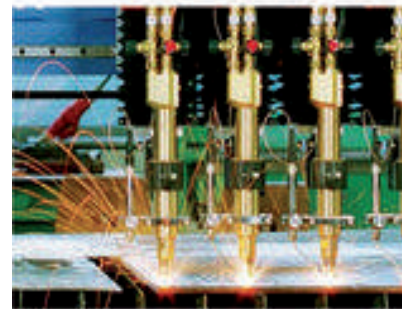
The high energy flame ensures short piercing times and high cutting speeds. Particularly valued in practice are the optimum results when cutting thin sheet steel.

Flame straightening

Acetylene guarantees an optimum straightening effect, thanks to the concentrated and fast heat input. Typical areas of application are wagon construction and shipbuilding.

Individual flame adjustment

Acetylene allows you to set the flame easily and exactly according to the application. The clearly defined primary flame cone makes this possible. From a reducing flame with surplus fuel gas for flame brazing, to a neutral flame for fusion welding or an oxidizing flame with surplus oxygen, each flame setting has its own specific application.



Acetylene - bright supply ideas

Custom tailored to your needs

You have a choice of

- single cylinders
- single cylinder batteries
- cylinder bundles
- cylinder bundle batteries
- road semi-trailers

Single cylinder battery station



Switchable cylinder bundle station



Road semi-trailer



Single cylinder	
capacity (liter)	gas content (kg)
10	1,6
20	3,2
20	4,0
40	6,3
50	10,0

Cylinder bundle	
capacity (liter)	gas content ca. (kg)
6 x 50	52,5
8 x 50	70,0
12 x 50	105,0
18 x 50	157,5



road semi-trailer	
capacity (liter)	gas content (kg)
12 x 600	1260
22 x 600	2310

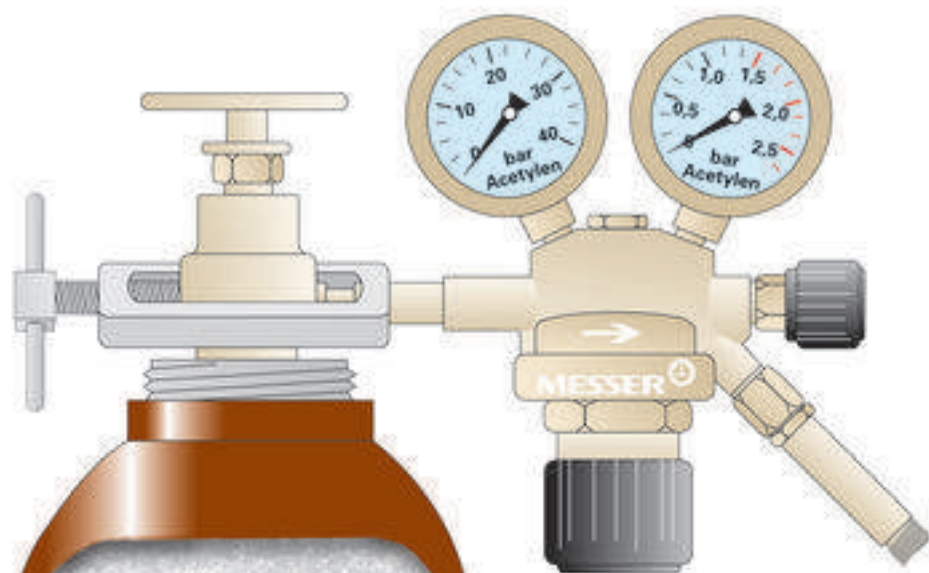
Recommended supply type according to consumption per month	
gas consumption kg/month	supply type
up to 100	single cylinder
100 up to 1000	single cylinder battery or cylinder bundle
over 1000	semi-trailer

Safety in storage

Unlike other fuel gases, Acetylene is stored in specially equipped steel cylinders. These cylinders contain a porous filler which reliably

prevents acetylene breakdown. The acetone or dimethyl formamide (DMF) introduced into the filler acts as a solvent, multiplying the storage capacity many times.

Gas delivery quantities: max. delivery in l/h bei 15								
Delivery	Single cylinder/gas content (kg)					Cylinder bundle/gas content (kg)		
	1,6	3,2	4,0	6,3	10	52,5	105,0	
 Short duration	400	600	1000	1000	1000	4500	9000	
 Continuous	200	300	500	500	500	2250	4500	



Identification marking of steel cylinders

Painted gray with maroon shoulder or painted completely maroon and embossed product designation Acetylene.

Valve connection

single cylinders:
clamp connection according to DIN 477 No. 3

Bundles/semi-trailer:
connection according to DIN 477 No. 3.1

Acetylene – points of anxious interest to users

Acetylene – the 3160 degree hot tip

Acetylene is the fuel gas with the highest flame temperature and the lowest oxygen requirement. It is also the fuel gas with the highest ignition speed. These are the criteria which make Acetylene a hot tip.

With greatest safety

The safety aspect is also crucial during delivery. Delivery points from supply pipelines and pressure regulators on single cylinders must be fitted with a back flow check valve.

Inspection for gas reentry and leakage at least once per year is specified for this unit.

It is important for continuous and safe working with Acetylene to take into account the exact delivery quantity for the supply concerned. If you have any questions, our experts will be glad to help you.

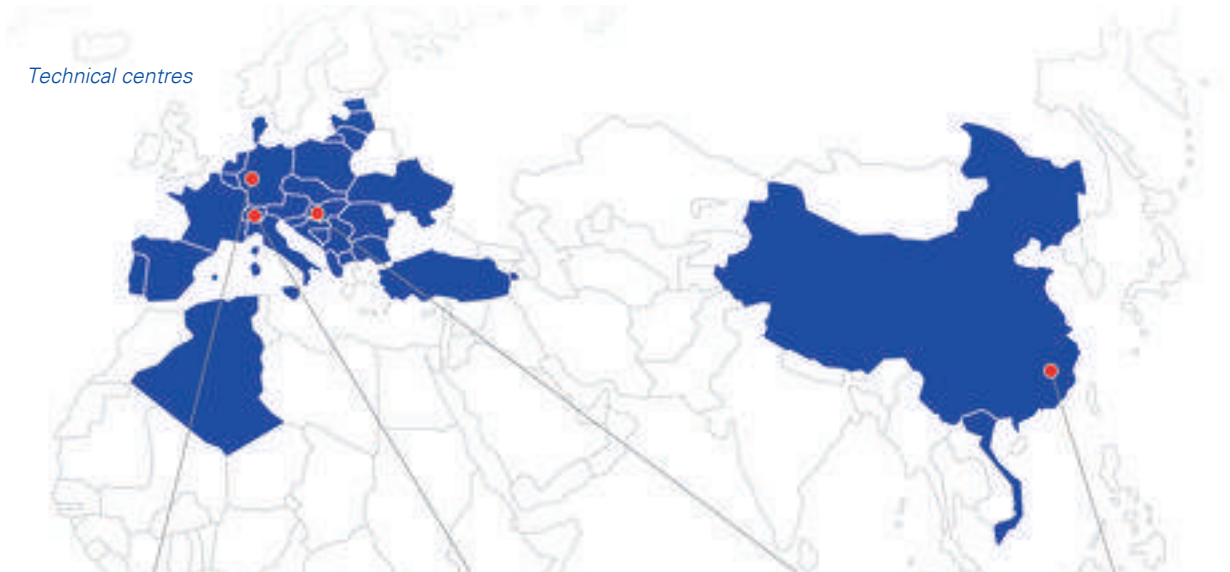
Properties:		
Chemical symbol:	C ₂ H ₂	
Molar mass:	26,04 g/mol	
Triple point:	-80,55 °C/1,28 bar	
Critical point:	35,18 °C/61,39 bar	
Density (at 15°C/1 bar):	1,1 kg/m ³	
Density (at 0 °C/1,013 bar):	1,1775 kg/m ³	
Comparative density:	10% lighter than air	
Ignition temperature:	in air 305 °C, in Oxygen 300 °C	
Explosion limits *:	in air	2,3 - 78 Vol. %
	in Oxygen	2,5 - 93 Vol. %
Mixture ratio:	maximum	1 : 1,5
Acetylene/oxygen for flames:	normal	1 : 1,1
Flame temperature:	maximum	3160 °C
	normal	3106 °C
Flame performance (in relation to flame cone surface):	maximum	17,4 kJ/cm ² . s
	normal	8,4 kJ/cm ² . s
Ignition speed:	maximum	1160 cm/s
	normal	710 cm/s
Lower calorific value:	48700 kJ/kg	

** Even in the absence of air or oxygen, Acetylene tends to explode as a result of spontaneous decomposition when heated above 300°C.*

m ³ gas in normal state (1,013 bar, 0 °C)	m ³ gas (1 bar, 15 °C)	kg
1	1,068	1,175
0,936	1	1,100
0,851	0,909	1

Advice, Delivery, Service

Technical centres



Krefeld



Dällikon



Budapest



Shanghai

Technical centres – sources for innovation

For the development of new technologies in the field of welding and cutting, Messer operates technical centres in Germany, Switzerland, Hungary and China. These facilities provide ideal conditions for innovative projects as well as customer presentations and training courses.

Portfolio of gases – comprehensive and clear

Messer offers a spectrum of gases that extends well beyond the standard fare: it ranges from just the right gas for each application, and clear, application-oriented product designations to the continuous introduction of new gas mixtures designed to address current trends.

Specialised on-site consulting – right where you need it

Specifically in the context of your particular application, we can show you how to optimise the efficiency and quality of your processes. Along with process development, we support you with troubleshooting and process development.

Cost analyses – fast and efficient

We will be glad to analyze your existing processes, develop optimisation proposals, support process modifications and compare the results with the original conditions – because your success is also our success.

Training courses – always up to date

For the optimal handling of our gases, we can train you on processes and how to use them. Our training courses illustrate the use of various shielding gases for welding and explain how to handle them safely. This also includes the storage of the gases and the safe transport of small quantities. Information and training materials for your plant are also part of the service, of course.

You can also download this brochure and many others from the Internet as a PDF file:
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