www.risamgas.com

RISAM GAS

CALIBRATION GASES - EXPERTISE IN GREENHOUSE GASES

IRISAM GAS

Calibration GASES

Expertise in Greenhouse GASES

Special Calibration
Gas Mixtures

High Purity
Hydrocarbons,
LNG, CNG, Refrigerants
from cylinders to ISO tanks for
international shipping of bulk orders

Pressure
Regulators

Non-refillable
cylinders

Accessories
for oil & gas plants

World-wide export

Pure Gases & Specialty Gases

About us

RISAM GAS S.r.l.
is an ISO 9001 Certified manufacturing Company serving customers worldwide.
Situated in the heart of Europe, Milan-based RISAM GAS is your always-ready-for-the-challenge supplier.

Our clients can count on a heritage of decades of experience, accumulated primarily in Germany, and on a consolidated portfolio of chemical recipes that allow us to satisfy every technical request.

RISAM GAS is an established company at national and international level.

WHY TO CHOOSE RISAM GAS AS YOUR STRATEGIC SUPPLIER

- guaranteed rapid delivery
- quality and high accuracy
- production of special mixtures in Oil & Gas sector
- gas cylinders for the calibration of every GC-application
- technical study and development of special and custom-made recipes

OUR ADDED VALUE

- you will avoid penalties or malfunctions due to missing calibration bottles
- express production service (on request)
- dependable planning of calibration sessions
- large stock of raw materials, cylinders of every size and valves of the most common connection type
- calibration mixtures in liquid and gas phase
- export assistance
- support in the document management

ISO 9001
BUREAU VERITAS
Certification

Cylinders

RISAM GAS calibration blends are supplied in high pressure **seamless steel** or **light alloy cylinders**, from a minimum geometric volume of 1 litre up to a maximum of 40 / 50 litres.

3 different ways to supply gas mixtures:

RENTAL of cylinders

REFILL of **CUSTOMERS'** cylinders

SALE of NEW cylinders

Valves

The choice between a BRASS or a STAINLESS STEEL valve depends on the type of gas or gas mixture, taking into account the material compatibility.

VALVE CONNECTIONS

Risam Gas can supply a number of valve connections in compliance with a wide range of standards:

STANDARD **UNI**	STANDARD **BS**	STANDARD **DIN**	STANDARD **NEN**	STANDARD **CGA**	STANDARD **AFNOR**	**ETC.**
ITALY	UNITED KINGDOM	GERMANY	THE NETHERLANDS	THE UNITED STATES	FRANCE	

Calibration Gas Mixtures

MAIN FIELDS OF APPLICATION

- Calibration gas mixtures for explosimeters
- Detectors
- Sensors

GAS MIXTURES FOR LABORATORIES AND GAS CHROMATOGRAPHY GC

Complex multicomponent gas mixtures of extreme precision: Oil & Gas, process gas chromatography, natural gas control, IR analyser and spectrography.

	COMPONENT	NOMINAL VALUE	ANALYTICAL VALUE	ANALYTICAL ACCURACY
1	Hydrogen H_2	13,5 % mol.	13,6 % mol.	+/- 2%
2	Argon Ar	25,0 % mol.	25,05 % mol.	+/- 2%
3	Methane CH_4	6,0 % mol.	6,02 % mol.	+/- 2%
4	Ethane C_2H_6	6,0 % mol.	6,02 % mol.	+/- 2%
5	Ethylene C_2H_4	3,0 % mol.	2,99 % mol.	+/- 2%
6	Propane C_3H_8	1,0 % mol.	0,98 % mol.	+/- 2%
7	Propylene C_3H_6	3,0 % mol.	2,98 % mol.	+/- 2%
8	Propadiene C_3H_4	0,3 % mol.	0,3 % mol.	+/- 2%
9	n-Butane C_4H_{10}	4,3 % mol.	4,299 % mol.	+/- 2%
10	i-Butane C_4H_{10}	4,3 % mol.	4,3 % mol.	+/- 2%
11	i-Butene C_4H_8	2,6 % mol.	2,61 % mol.	+/- 2%
12	Trans-2-Butene C_4H_8	1,6 % mol.	1,599 % mol.	+/- 2%
13	Cis-2-Butene C_4H_8	0,6 % mol.	0,598 % mol.	+/- 2%
14	1,3-Butadiene C_4H_8	0,8 % mol.	0,79 % mol.	+/- 2%
15	n-Pentane c_5H_{12}	0,25 % mol.	0,255 % mol.	+/- 2%
16	iso-Pentane C_5H_{12}	0,25 % mol.	0,25 % mol.	+/- 2%
17	Carbon dioxide CO_2	2,8 % mol.	2,79 % mol.	+/- 2%
18	Carbon monoxide CO	3,3 % mol.	3,29 % mol.	+/- 2%
19	Helium He	4,7 % mol.	4,68 % mol.	+/- 2%
20	Sulphuric acid H_2S	0,05 % mol.	0,049 % mol.	+/- 2%
	Balance: Nitrogen N_2			

CEMS - ENVIRONMENTAL ANALYSIS AND EMISSION CONTROL

- Chimney emission analysis
- Environmental analysis of direct emissions
- Calibration gas mixtures for combustion analysers
- EMS

some examples

8 mg/Nm3 Ammonia NH_3 Balance: Nitrogen N_2	15 ppm Nitrogen Dioxide NO_2 Balance: Synthetic air
70 ppm Nitrogen monoxide NO Balance: Nitrogen N_2	70 ppm Sulphur Dioxide SO_2 35 ppm Nitrogen monoxide NO
1 %Vol. Oxygen O_2 Balance: Nitrogen N_2	50 ppm Carbon monoxide CO Balance: Nitrogen N_2
50 ppm Carbon monoxide CO Balance: Nitrogen N_2	13 mg/Nm_3 COT Balance: Nitrogen N_2

BIOGAS, BURNERS AND BOILERS

Sulphuric compounds, Wobbe index mixtures, calorific power control of burners.

some examples

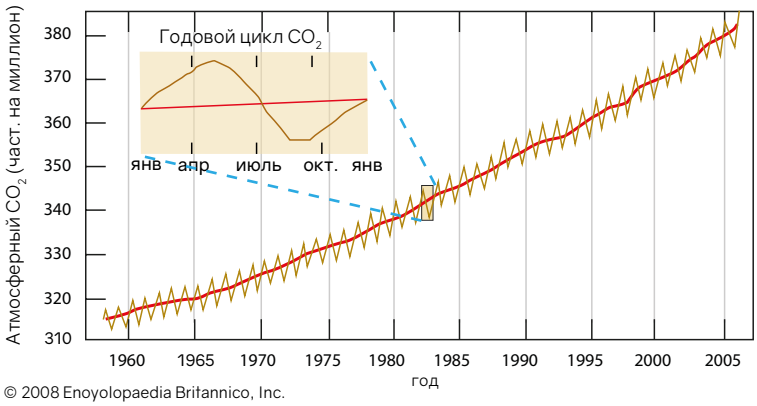
48 %Vol. Carbon monoxide CO 10 %Vol. Methane CH_4 5 %Vol. Carbon dioxide CO_2 Balance: Nitrogen N_2	150 ppm Hydrogen sulfide H_2S 885 ppm Hydrogen H_2 40 %Vol. Carbon dioxide CO_2 Balance: Nitrogen N_2
50 %Vol. Hydrogen H_2 26 %Vol. Methane CH_4 Balance: Nitrogen N_2	80 %Vol. Methane CH_4 7 %Vol. Propane C_3H_8 Balance: Nitrogen N_2

GREENHOUSE GASES

Calibration standards for compliance with international GHG monitoring requirements:
CO_2 + CH_4 + N_2O + SF_6 in Synthetic Air or in balance Natural Air (Ar + N2 + O2), calibrated against international standards.

Components	Range
Carbon dioxide (CO_2)	360-420 ppm
Methane (CH_4)	1700-2000 ppb
Nitrous nitrogen (N_2O)	320-335 ppb
Sulfur hexafluoride (SF_6)	5-9 ppt
Carbon monoxide (CO)	30-300 ppb
Argon (Ar)	
Oxygen (O_2)	
Nitrogen (N_2)	

THE KEELING CURVE



SOLVENT MIXTURES

Calibration mixtures of liquid compounds/solvents supplied in gas phase (in a specific range of temperatures). If high concentrations (vol.%) are requested it will be necessary to use 20 or 40 litre-cylinders and to reduce the charging pressure (approx. lower than 30/40 bar) to avoid condensation of the components with a lower vapour pressure.
The following are some examples of gas mixtures, including multi-component gas mixtures in one cylinder:

Composition	
45 mg/ Nm^3 *Balance:*	Acetone C_3H_3 *Carbone dioxide CO_2*
0,35 %vol. *Balance:*	MEK metil-etil-chetone C_4H_80 *Synthetic air*
600 ppm *Balance:*	Methanol CH_3OH *Argon Ar*
0,50 %vol. *Balance:*	n-Hexane C_8H1_4 *Synthetic air*

ODOURISERS

THT Tetrahydrothiophene / TBM Tert-Butyl Mercaptan in Methane CH_4 or in Nitrogen N_2

Some examples:
21 mg/Nm^3 THT in CH_4
15 mg/ Nm^3 TBM in N_2
10 mg/Smc TBM + 32 mg/Smc THT - balance: CH_4 high purity

PURE GASES

High-purity gases for laboratories in cylinders of different volumes with the right pressure regulator. Different EU valve connections on request.

Some examples:

Nitrogen N_2	*grade: 5.0 (99.999) – 6.0 (99,9999%)*	Synthetic Air	*suitable for gaschromatography*
Helium H_e	*grade: 5.0 (99.999) – 6.0 (99,9999%)*	Carbon dioxide CO_2	*4.8 (99,998%)*
Hydrogen H_2	*grade: 5.0 (99.999*	Propane C_3H_8	*2.5 (99,5) – 4.0 (99,99%)*
Oxygen O_2	*grade: 3.5 (99.95) – 5.0 (99,9999%)*	Argon Ar	*5.0 (99,999)*
Methane CH_4	*grade: 2.5 (99.5) – 4.5 (99,995%)*	and so on...	

[for Bulk quantities see High purity hydrocarbons and specialty gases]

Pressure Reducers

Our cylinders are equipped with suitable pressure reducers (or controls) compatible with the chemical and physical properties of the mixture and capable of guaranteeing dependable, precise, constant working pressure.
Our reducers meet all the requirements on the market, guaranteeing a top-quality product suitable for calibrating testing instruments and for other laboratory applications.

It is essential to choose the right pressure control device:

- Guarantee of dependable analytic results and optimal performance;
- Protection of your instrumentation from sudden pressure changes passing through the reducer into expensive items of equipment!

CYLINDER PRESSURE REDUCERS

DMF LINE	PHL LINE	TC LINE	
MOD. 320 AND 322	MOD. 721, 722, 741 AND 742	MOD. 801	Mod. 409
SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230 bar P.Out: 0,2 – 3; 0,5 – 6; 1 – 10,5; 1 – 14 bar	SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 300 bar P.Out: 0 – 3,5; 0 – 8,5; 0 – 17; 0 – 35 bar	SINGLE STAGE with Flow-meter BRASS and plexiglass P.in: 220 bar P.Out: 1,5 bar (pre-set), Flow: 0÷3 Nl/min	SINGLE STAGE BRASS P.in: 300 bar P.Out: 0 – 1,5; 0 – 4; 0 – 10 bar
			

CYLINDER PRESSURE REDUCERS FOR HIGH PURITY GASES / MIXTURES

DMF LINE	VUETH LINE	RVA LINE	SCOTT LINE
MOD. 500 AND 502	MOD. 10114 - 10120	MOD. 10062	Mod. Q1-14B/14C/14D
SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230 bar P.Out: 0,2 – 3; 0,5 – 6; 1 – 10,5; 1 – 14 bar	SINGLE STAGE BRASS P.in: 300 bar P.Out: 0 – 3,5; 0 – 8,5; 0 – 17; 0 – 35 bar	SINGLE STAGE with Flow-meter BRASS and plexiglass P.in: 220 bar P.Out: 1,5 bar (pre-set), Flow: 0÷3 Nl/min	DOUBLE STAGE BRASS P.in: 300 bar P.Out: 0 – 1,5; 0 – 4; 0 – 10 bar
			

CS LINE	CD LINE	D LINE
MOD. 82 AND 83	MOD. 82 AND 83	MOD. 32-0.1
SINGLE STAGE BRASS or STAINLESS STEEL P.in: 200/300 bar P.Out: 0 – 1,5; 0 – 4; 0 – 10; 0 – 16; 0 – 35; 0 - 50 bar	DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 200/300 bar P.Out: 0 – 1,5; 0 – 4; 0 – 10; 0 – 16; 0 – 35 bar	DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 200 bar P.Out: 0,01 – 0,1 bar
		

GAS SUPPLY MANIFOLDS, CHANGEOVERS AND LINE REGULATORS

DMB LINE	DMS LINE	LINE REGULATORS
MOD. 320 AND 322	MOD. 320 AND 322	DML LINE
		Mod. DML 320
SEMI-AUTOMATIC SWITCH OVER SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230 bar P.Out: 14 bar (pre-set) *** on request, available model 500 and 502**	SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 300 bar P.Out: 1 – 14 bar *** on request, available model 500 and 502**	SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230 bar P.Out: 0,2 – 3; 0,5 – 6; 1 – 14 bar *** on request, available model 500 and 502**

CMC LINE	CC LINE	
MOD. 82 AND 83	MOD. 482 AND 483	MOD. 582 AND 583
SINGLE or DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230/300 bar P.Out: 0 – 10; 0 – 16; 0 – 35; 0 – 50 bar	SEMI-AUTOMATIC SWITCH OVER SINGLE STAGE BRASS or STAINLESS STEEL P.in: 230/300 bar P.Out: 10; 16; 35 bar	SEMI-AUTOMATIC SWITCH OVER DOUBLE STAGE BRASS or STAINLESS STEEL P.in: 230/300 bar P.Out: 1,5; 5,5; 10 bar

Non-Refillable Cylinders

PRODUCT	GEOM. VOLUME	FILL PRESSURE	GAS CONTENT
12 L. TEST CAN:	*1.00 L.*	*12 bar*	*12 Ltr*
34 L. TEST CAN:	*0.95 L.*	*35 bar*	*34 Ltr*
58 L. TEST CAN:	*1.65 L.*	*35 bar*	*58 Ltr*
110 L. TEST CAN:	*1.65 L.*	*68 bar*	*110 Ltr*

Do not hesitate to request our complete e-catalogue.

AVAILABILTY OF TEST CAN GAS MIXTURES

NON reactive gases	Acetylene C2H2 Argon Ar Nitrogen N2 Benzene C6H6 Butane C4H10 i-Butane i-C4H10 i-Butylene C4H8 Carbon dioxide CO2 Helium He Heptane C7H16 Sulfur hexafluoride SF6 Hexane C6H14	Ethane C2H6 Ethylene C2H4 Hydrogen H2 Methane CH4 Carbon monoxide CO Oxygen O2 Pentane C5H12 Propane C3H8 Propylene C3H6 Nitrous oxide N2O Toluene C7H8
Reactive gases	Ammonia NH3 Sulphur dioxide SO2 Ethanol C2H6O	Hydrogen sulphide H2S Nitric oxide NO
Highly- reactive gases Category 1	Nitrogen dioxide NO2	Vinyl chloride (VCM) C2H3C1
Highly- reactive gases Category 2	Chlorine Cl2 Hydrogen chloride HCl Hydrogen cyanide HCN	Phosphine PH3 Ethylene oxide C2H4O Silane SiH4

GAS RELEASE EQUIPMENT AND FLOW REGULATORS FOR TEST CANS

- On/off valve in brass (not chrome plated), max pressure 20 bar.
- S-Flow valve with floating sphere and adjustable flow meter (ex. 0,5 – 1,5 l/min), without manometer– model Mini-Flo in BRASS STEEL (not chrome plated).
- Valve with floating sphere and adjustable flow meter (ex. 0,2 – 1,0 l/min), with manometer – model S-Flow in NICKEL PLATED BRASS.
- Single stage regulator with fixed set flow (ex. 0,5 l/min, 1,0 l/min or 2,5 l/min), with manometer, hose fitting – model HPC – available in chrome plated brass for non-reactive gases or in stainless steel for reactive/unstable gas mixtures.

High Purity And Specialty Gases

High Purity Hydrocarbons, LNG, CNG, Refrigerants from cylinders to ISO tanks for international shipping of bulk orders.

High Pressure
Packaging

Ethane	99.0% to 99.5%
Ethylene	99.0% to 99.95%
Methane	99.0% to 99.999%
Carbon Monoxide	99.0% to 99.99% +
CNG	94.0% +
LNG	94.0 % +
HCL Anhydrous	99.0% to 99.999%

Low Pressure
Packaging

Propane	99.0% to 99.999%
Propylene	99.0% to 99.99%
Pentene-1	99.0% to 99.999%
Iso-Pentane	99.0% to 99.5%
n-Pentane	94.0% to 99.5%
n-Butane	94.0% to 99.99%
Butene-1	99.0% to 99.99%
Isobutane	99.0% to 99.999%
Isobutylene	99.0% to 99.9%
R-290 (UL Classified)	99.5% +
R-600a (UL Classified)	99.5% +
R-600	99.5% +
Cis-2-Butene	99.0% to 99.5%
trans-2-Butene	99.0% to 99.5%
Mixed-2- Butenes	99.0% to 99.5%

Other Gases on Request

Cylinders | Packs | ISO Containers | Tube Trailers | Cylinders | Bulk Tanks | Tankers | 21 DS CGA 600 | #11 Threaded Valve | 221 ds CGA 165

World Wide References

Some foreign Countries to which our products have been shipped:

- > ALGERIA
- > AZERBAIJAN
- > CONGO
- > INDIA
- > IRAN
- > IRAQ
- > KAZAKHSTAN
- > KUWAIT
- > LIBYA
- > MALAYSIA
- > MALTA
- > MEXICO
- > OMAN
- > PAKISTAN
- > RUSSIA
- > SAUDI ARABIA
- > SINGAPORE
- > THAILAND
- > TUNISIA
- > U.A.E.

...and many European Countries.

RISAM GAS, your reliable, dynamic and experienced partner

Some of the projects employing Risam Gas cylinders

YOUR RELIABLE PARTNER FOR BIG PROJECTS ALL OVER THE WORLD...

...for Oil & Gas

Rumalia Oilfield
IRAQ

Yamal Pipeline
RUSSIA

Turaif Refinery
SAUDI ARABIA

Sumgayit Refinery
AZERBAIJAN

Mellitah Oil & Gas
LIBYA

Gas and Power plants Refineries
ITALY

Temparossa Project
ITALY

Sarroch Refinery
ITALY

Val d'Agri Oil Center
ITALY

Priolo Gargallo & Augusta
MUSANDAM – OMAN

Gas storage plants
ITALY

Offshore
ITALY

Offshore platforms Mediterranean Sea
ITALY

...for Power Generation Plants

Pembroke Power Plant
UNITED KINGDOM

West Damietta Power Station
EGYPT

Thermal Power Plant
ALMEIRA – SPAIN

Thermoelectric Power Plant
VADO LIGURE
ITALY

Biomass Plant
SANT'AGATA DI PUGLIA
ITALY

...for Chemical Industries

Chemical &
Fertilizer Industry
EGYPT

LDPE Plant
BRATISLAVA
SLOVAK REPUBLIC

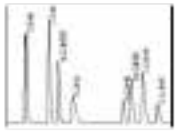
Sulphur-based
chemicals Production
Plant
ITALY

...and more!

Leading manufacturer
of Automation Solutions
ROMANIA

Steel Plants
POLAND

Major manufacturers
of safety products
GERMANY & ITALY



Major manufacturers
of gas analysers
GERMANY & ITALY

Leading Company in
Safety Technology
ITALY

TAP project

Examples of special productions

GERMAN VALVE DIN477 no. 14

Proj. 2016 _ Libya

COMPONENT	NOMINAL VALUE
Hydrogen H_2	24,3 % mol.
Argon Ar	3,3 % mol.
Methane CH_4	5,0 % mol.
Ethane C_2H_6	5,0 % mol.
Ethylene C_2H_4	1,7 % mol.
Propane C_3H_8	9,0 % mol.
Propylene C_3H_6	2,0 % mol.
Propadiene C_3H_4	0,3 % mol.
n-Butane C_4H_{10}	4,3 % mol.
i-Butane C_4H_{10}	4,3 % mol.
1-Butene C_4H_8	1,7 % mol.
iso-Butene C_4H_8	1,7 % mol.
trans 2-Butene C_4H_8	1,7 % mol.
cis 2-Butene C_4H_8	1,7 % mol.
1,3-Butadiene C_4H_8	0,3 % mol.
n-Pentane C_5H_{12}	0,3 % mol.
i-Pentane C_5H_{12}	0,3 % mol.
Carbon dioxide CO_2	1,7 % mol.
Carbon monoxide CO	4,3 % mol.
Helium He	3,3 % mol.
Hydrogen sulfide H_2S	1,7 % mol.
Balance: Nitrogen N_2	

BRITISH VALVE BS341 no. 4

Proj. 2017 _ Turkey

COMPONENTS	NOMINAL VALUE
t-Butyl Mercaptan TBM	0,2 ppm
Isopropyl mercaptan C_3H_8S	0,2 ppm
Dimethyl sulphide C_2H_6S	0,3 ppm
sec-Butyl mercaptan $C_4H_{10}S$	0,2 ppm
Ethyl mercaptan C_2H_6S	0,8 ppm
Carbonyl Sulphide COS	1,0 ppm
Methyl mercaptan CH_4S	3,0 ppm
Hydrogen sulphide H_2S	3,0 ppm
Propane C_3H_8	2,0 ppm
Ethane C_2H_6	5,0 %vol.
Balance: Methane CH_4	

ITALIAN VALVE UNI 11144-1H

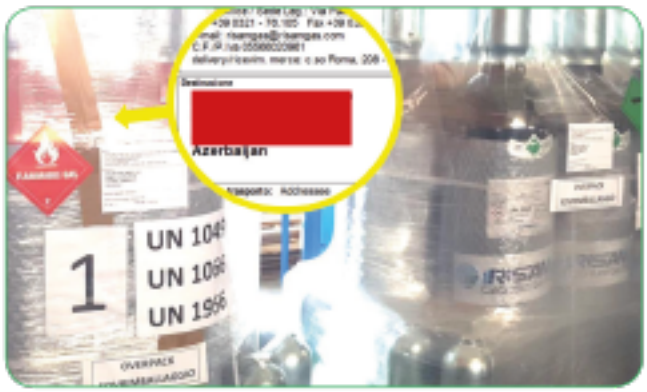
Proj. 2018 _ Priolo Gargallo (ITALY)

COMPONENTS	NOMINAL VALUE	ANALYTICAL VALUE	ACCURACY
n-Pentane C_5H_{12}	1.500 ppm Mol.	1490,8 ppm Mol.	2%
Hexane C_6H_{14}	1.000 ppm Mol.	984,8 ppm Mol.	2%
n-Butane C_4H_{10}	7.000 ppm Mol.	6850,1 ppm Mol.	2%
Propane C_3H_8	4 %-Mol.	3,95 %-Mol.	1%
Propylene C_3H_6	3 %-Mol.	2,98 %-Mol.	1%
Acetylene $C2H_2$	1.200 ppm Mol.	1184,7 ppm Mol.	2%
Carbon dioxide $C0_2$	500 ppm Mol.	499,8 ppm Mol.	2%
Propadiene C_3H_4	2.000 ppm Mol.	2015,5 ppm Mol.	2%
Propyne (methylacetylene) C_3H_4	1.000 ppm Mol.	981,0 ppm Mol.	2%
Carbon monoxide CO	100 ppm Mol.	99,8 ppm Mol.	2%
Ethane C_2H_6	10 %-Mol.	9,98 %-Mol.	1%
Ethylene C_2H_4	15 %-Mol.	15,40 %-Mol.	1%
Nitrogen N_2	10 %-Mol.	9,94 %-Mol.	1%
Methane CH_4	15 %-Mol.	14,86 %-Mol.	1%
Balance: Hydrogen H_2			

Packaging & Transport

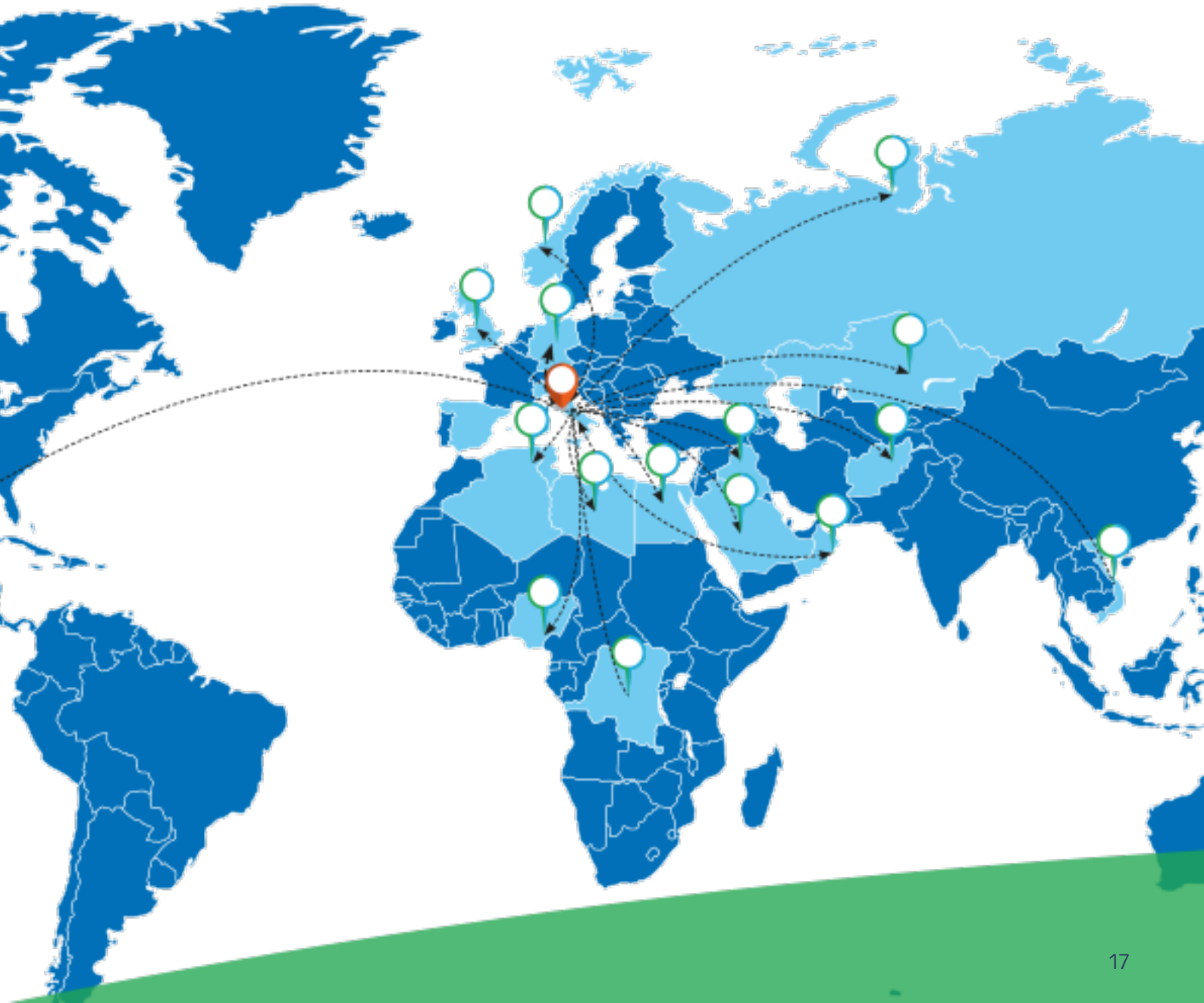
Risam Gas can support you with suitable packaging for dangerous goods and with our logistic partners.
We can provide solutions with all means of transport.

Proj. 2018 _ Azerbaijan



Proj. 2018 _ Malasya

Proj. 2016/2017/2018 _ Yamal



Accessories For Oil & Gas

ATEX

MADE IN GERMANY

GAS BOTTLE HEATERS

ATEX gas bottle heaters series WEXHB

Gas bottle heaters are used for protection against frost, temperature maintenance and process heating in the temperature range from -40 °C to +50/60 °C

Features

- Robust, flexible and dissipative construction for indoor and outdoor use
- Standard and customer-oriented solutions; the heating jacket is customised according to the required gas bottle dimensions
- System-approved with an EC-type examination certificate according to RL 2014/34/EU appendix III
- Documentation for the explosion protection document according to §6 para. 9 of the German Ordinance on Hazardous Materials (GefStoffV)

Note: Please consider the technical rules
TRG 310 / TRBS 3145 / TRGS 745 Maximum operating temperature 50 °C (cylinder temperature)

Explosion protection marking

Marking
Gas II 2G Ex e mb IIC T3 Gb
Dust II 2D Ex mb IIIC T120°C Db
-40°C ≤ Ta ≤ +60°C (ambient temperature)
EC-type examination certificate
TPS 11 ATEX 29587 011 X

EXCLUSIVE DISTRIBUTOR OF GERMAN MADE EXPANSION JOINTS AND HOSES

Certified quality Made in Germany

Among Europe's leading manufacturers, the product range covers a wide spectrum, from simple standard expansion joints through to individually realized special expansion joints.

Certificates of approval such as DVGW, Germanischer Lloyd, Lloyds Register, Bureau Veritas, RMRS and DNV confirm the high quality of our products, likewise the TÜV HP0 welding licence, the certification from DGRL Category III Module H and certifications for ISO 9001, ISO 3834-2 and ASME-U-Designator and EAC. Our expansion joints and hoses are used worldwide today in over 50 countries.

NON-SPARKLING TOOLS

Designed and manufactured according to the standard requirements indicated by the Certifying Authority. They are specifically for safe work in environments with a potential risk of explosion, where flammable liquids or gases are used, or for applications that require the use of perfectly non-magnetic tools, with high resistance against corrosion. These tools avoid the possibility of generating any sparks created while using the tool: their special composition in Copper-Beryllium (Cu-Be) or aluminium-copper (Al-Cu) guarantees the perfect combination between non-sparking characteristics and mechanical resistance.

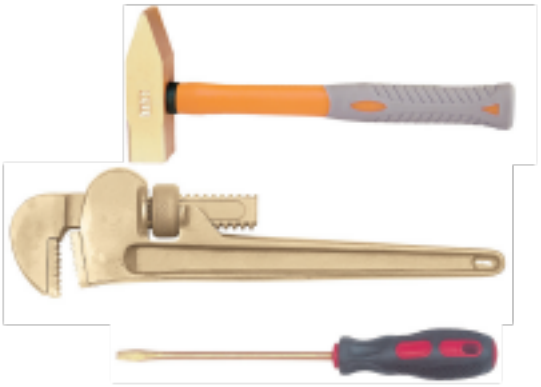
Applications:

petrochemical refineries, oil tankers, chemical industries, gas and fuel stations and depots, powder storage, mines, distilleries, flour and grain silos, aerospace industries, navy, pharmaceutical industries, and magnetic applications.
They are also particularly useful in work in contact with fresh or salt water, in alkaline solutions and some acid solutions, thanks to their particular resistance to oxidation and corrosion.

Technical specifications of the construction material for non-sparking tools:

Copper-Beryllium (Cu-Be)

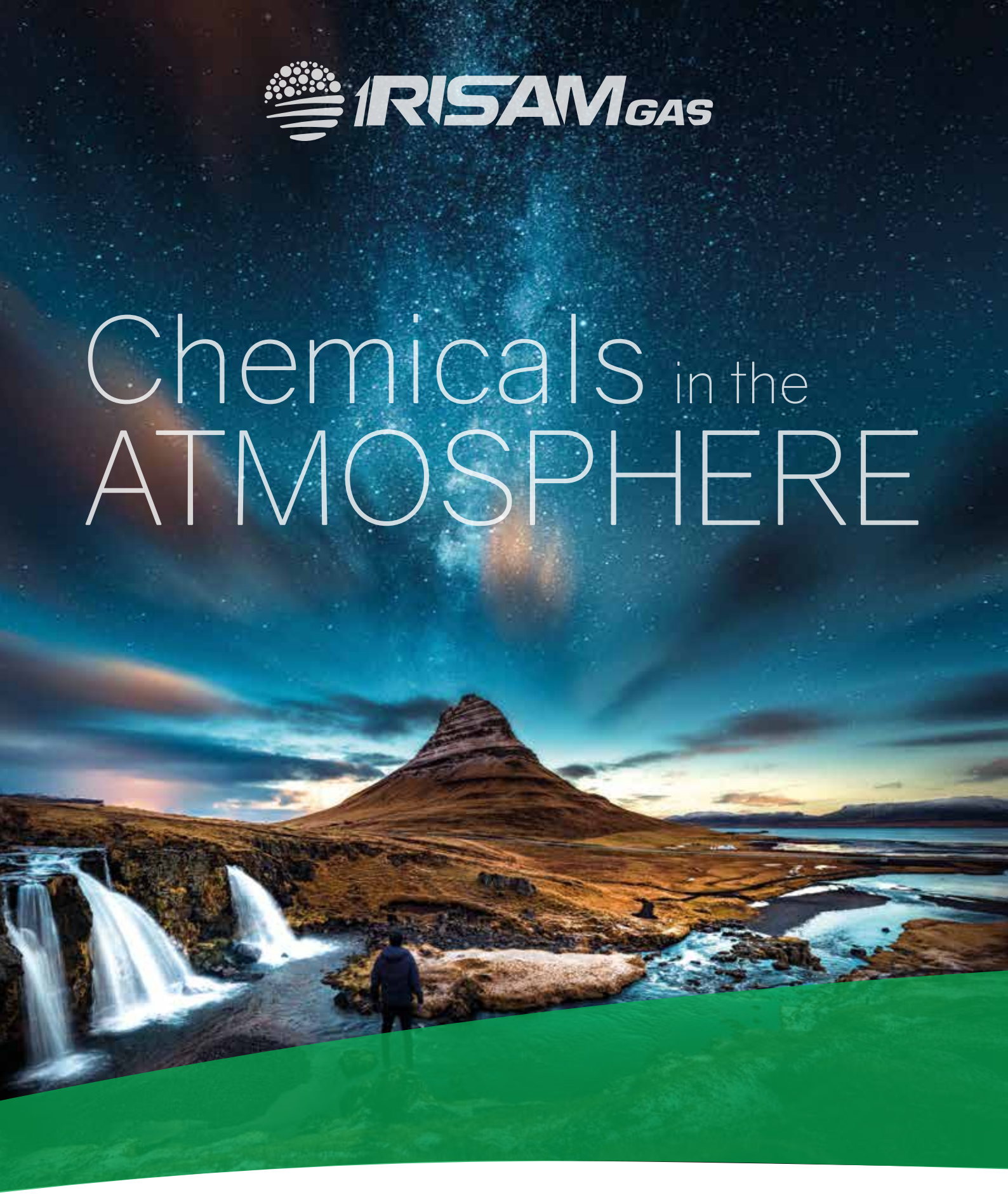
Composition: Be 1,5 - 2,3% - Co+Ni min. 0,2% - Co+Ni+Fe max. 1,2% - Cu to compensation
Hardness: 283 - 365 Brinell
Resistance to traction: 1117 ~ 1326 N/mm2
Yield point: 840 - 880 N/mm2
Magnetism: 0
Expansion coefficient: 0,000012%
Specific weight: 8,60
Extensibility: 1,0%
Resistivity: 8 ~ 6



Aluminium-Copper (Al-Cu)

Composition: Al 10% - 12% - Ni 4,6% - Fe+Mn < 5,8% - Cu to compensation
Hardness: 229 ÷ 291 Brinell
Resistance to traction: 782 ~ 989 N/mm2
Yield point: 450 ÷ 550 N/mm2
Magnetism: 1,2
Expansion coefficient: 0,000015%
Specific weight: 8,10
Extensibility: 5,0%
Resistivity: 8 ~ 12

Chemicals in the ATMOSPHERE



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