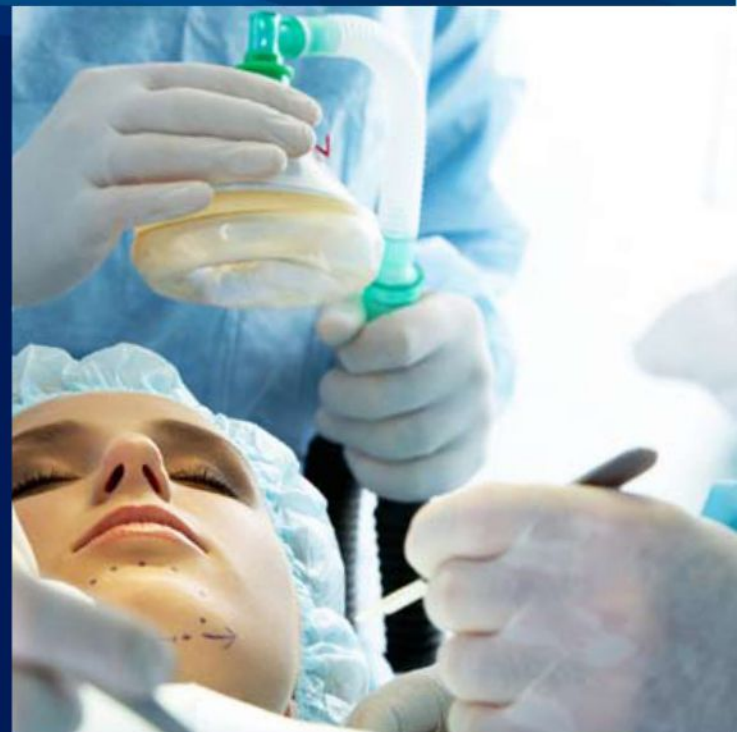
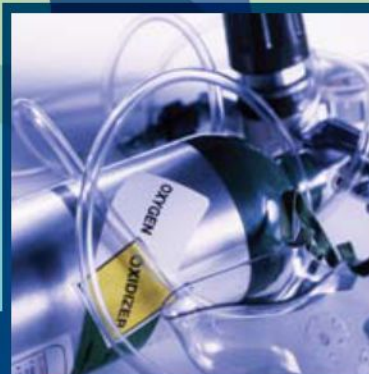


Healthcare Industry



For over half a century, Gulf Cryo has been supplying gases and developing new applications for the healthcare industry.

جالف كرايو
**Gulf
Cryo**

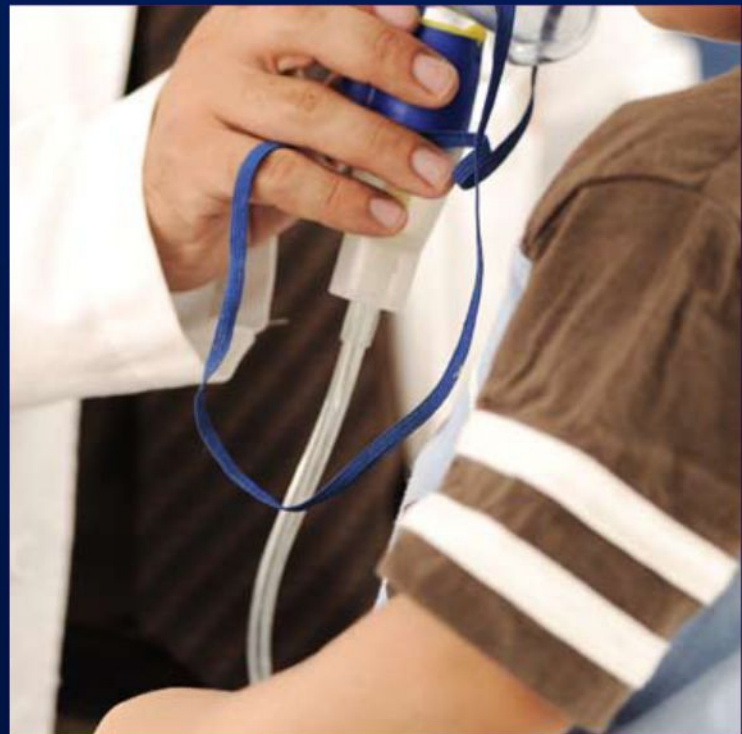
progressive by nature

BAHRAIN EGYPT IRAQ JORDAN KSA KUWAIT OMAN QATAR SYRIA TURKEY UAE

Helping you deliver critical medical care for patients

Our geographic reach

Gulf Cryo is a leading manufacturer of industrial, medical, food-grade, and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with healthcare professionals developing technology to advance processes and techniques through innovative gas applications.



The customer challenge

As the population gets older and more patients suffer from chronic diseases, there is a tremendous pressure on the healthcare industry to maintain and improve clinical and emergency care and home care for post-clinical patients. Hospitals, clinics and laboratories require a continuous supply of high-quality medical and speciality gases, as well as failsafe systems to store and route gases to many locations from operating rooms to the patient's home.

How we work with you

Gulf Cryo's dedicated team understands the challenges healthcare professionals face to find the right gas solution to help improve the quality of life for their patient. We supply a complete medical gas supply service, including storage, installation of equipment, accessories, warehouse management and dedicated delivery personnel for emergency situations. All Gulf Cryo medical gases are compliant with American, European and international medical engineering standards and pharmacopoeia standards, ensuring quality and safety for your patients.

Our gas solutions

Applications	Our products	Our services
<ul style="list-style-type: none"> Anaesthesia Resuscitation Preservation of human tissues and biological specimens Calibration and operation of analytical instruments Freezing Oxygen therapy – breathing Analgesia and sedation Sterilization MRI Magnet cooling 	<ul style="list-style-type: none"> Liquid and compressed pure gases Gas mixtures for blood gas analysers Gas mixtures for respiratory disorders Sterilization mixtures 	<ul style="list-style-type: none"> Production and supply of high quality medical and speciality gases Installation of equipment Maintenance of pipeline systems Maintenance of customer owned cylinders Engineered delivery system Traceable supply chain Secondary equipment and accessories supply Homecare services including home delivery

Our gases

Gulf Cryo gases and gas mixtures comply with strict international requirements and standards for the manufacture and quality control of medical gases stipulated by the industry's regulatory bodies.

Pure gases (Liquid and compressed)	Purity
Carbon Dioxide	99.9%
Helium	99.999%
Medical air	-
Nitrogen	99.999%
Nitrous Oxide	99.8%
Oxygen	99.5%
Sulphur Hexafluoride	-

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment.

Bulk gases	Capacity	Working pressure (barg)
Cryogenic storage tanks	2000 - 75,000 litres	3 - 30
Liquid gas cylinders (dewars)	180 - 1000 litres	2 - 37

Compressed gases	Capacity	Working pressure (barg)
Manifold racks	120 - 540 Nm ³	200 - 300
Gas cylinders	6 - 50 litres	150 - 200

Talk to our applications engineers to identify the right solution for you.



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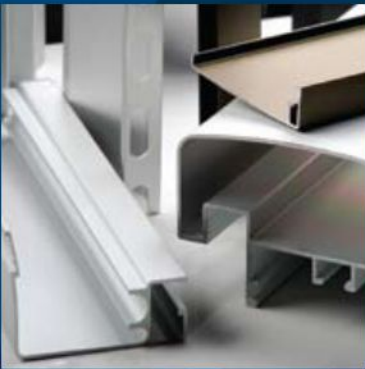


The International Oxygen Manufacturers Association



European Industrial Gases Association

Steel & Metals Industry



For over half a century, Gulf Cryo has been supplying gases and developing new gas mixtures for applications in the steel and metals industry.



progressive by nature

BAHRAIN EGYPT IRAQ JORDAN KSA KUWAIT OMAN QATAR SYRIA TURKEY UAE

Helping you boost productivity, reduce costs and decrease environmental impact

Our geographic reach

Gulf Cryo is a leading manufacturer of industrial, medical, food-grade, and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with the steel and metals industry developing technology to advance processes and techniques through innovative gas applications.



The customer challenge

The steel and metals industry is one of the largest consumers of industrial gases worldwide for the manufacture and processing of metals such as high quality steel, copper and aluminium. Foundry operators and steel manufacturers are all looking to improve their competitiveness in the market place, with a focus on improving quality and yield, reducing costs and the environmental impact of their processes. A reliable supply of high quality industrial gases such as Oxygen, Nitrogen and Argon is crucial to operations. This is where Gulf Cryo can offer its vast expertise in on-site supply schemes, pipeline systems, and its unbeatable bulk distribution network covering ten countries across the Middle East.

How we work with you

Gulf Cryo's dedicated technical team understands the challenges you face and can help you find the right gas solution for your needs. We supply gaseous and liquid gases as well as a wide range of gas mixtures with varying compositions supporting you from project inception through to when you see the results. We have a diverse portfolio and serve the entire industry from melt-shops, slag and metal mixing through to smelting and refining processes in large scale industrial projects.

Our engineers can also design and implement a total gas management service handling the operation and maintenance of small or large on-site gas plants, assuring a 100% guaranteed source of high quality gases in the pipeline with an additional back-up bulk gas service.

Our gas solutions

Applications	Our products	Benefit to you	Our services
<ul style="list-style-type: none"> • Oxyfuel for furnaces • N₂ for blanketing • Oxygen for smelting operations • Oxygen in electric arc furnace • Argon/Oxygen Decarbonisation (AOD) • Extrusion Press; N₂ for cooling dies • Refining; H₂ is used to reduce oxides, • O₂ is used to reduce impurities • H₂ for steel heat treatment • Annealing; H₂ prevents oxidation and improves surface brightness and quality • Gas mixtures for post-treatment • Vacuum degassing 	<ul style="list-style-type: none"> • Oxygen • Nitrogen • Argon • Hydrogen • Gas mixtures 	<ul style="list-style-type: none"> • Increase production rates • Achieve faster melt rates • Increase heat transfer • Increase flame temperature • Increase reaction rate • Reduce volume of flue gases • Improve quality for finished products • Lower fuel costs 	<ul style="list-style-type: none"> • Supply of pure and mixed gases • Gas supply schemes on build own operate (BOO) basis • On-site equipment maintenance • Validation of customers plants • Cylinder maintenance and testing • Design, engineering, installation & commissioning of gas delivery systems • Logistic and technical support • Feasibility studies

Our gases

Gulf Cryo subsidiaries are ISO certified. Gases and gas mixtures are prepared under controlled conditions following strict international gas industry standards, ensuring tolerances are clearly defined.

Pure gases (Liquid and compressed)	Purity
Oxygen	Up to 99.5%
Hydrogen	99.999%
Argon	99.999%
Nitrogen	99.999%

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment. We will provide you with the best available supply package to suit your business requirements.

Supply scheme	Capacity	Working pressure (barg)
On-site plant installation (Cryogenic or non-cryogenic plants)	Customised based on customer requirement	Customised
Gas pipeline connection	Customised based on customer requirement	Customised

Bulk gases	Capacity	Working pressure (barg)
Cryogenic storage tanks	2000 - 75,000 litres	3 - 30
Liquid gas cylinders (Dewars)	180 - 1000 litres	2 - 37

Compressed gases	Capacity	Working pressure (barg)
Manifold racks	120 - 540 Nm ³	200 - 300
Tube trailers	3500 - 5400 Nm ³	200
Cylinders	6 - 50 liters	150 - 200

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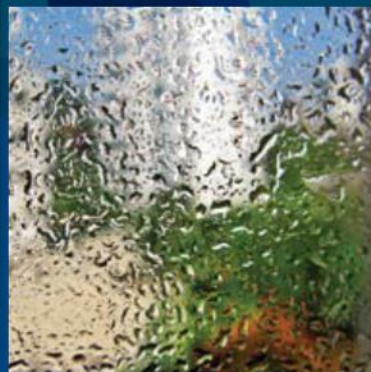


The International Oxygen Manufacturers Association



European Industrial Gases Association

Glass Industry



For over half a century, Gulf Cryo has been supplying gases and developing new applications for the glass industry.



progressive by nature

Helping you enhance quality, improve processes and reduce energy consumption

Our geographic reach

Gulf Cryo is a leading manufacturer of industrial, medical, food-grade, and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with glass manufacturers developing technology to advance processes and techniques through innovative gas applications.



The customer challenge

The complex production process of glass manufacturing makes it one of the most energy intensive industries in terms of the amount of energy used per unit of product. With rising energy costs and increasing environmental regulations, glass manufacturers are looking for innovative ways to drive cost down, improve productivity and ultimately enhance product quality. Industrial gases used in the glass making process have a significant impact on the strength, optical and thermal properties of the glass and hence it is important that glass manufacturers have a reliable supply of high quality gases.

How we work with you

Gulf Cryo's dedicated technical team understands the challenges glass manufacturers face in finding the right gas solution as a variety of gases can be used in different glass making processes. Gulf Cryo offer expertise in supplying gases for glass melting, polishing and surface treatment as well as a range of supply schemes from on-site installations of plants to truck delivery.

Our engineers can implement a total gas management service handling the operation and maintenance of the gas plants, assuring a 100% guaranteed source of high quality gases in the pipeline with an additional back-up bulk gas service.

Our gas solutions

Applications	Our products	Our services
• Glass melting • Glass polishing	• Oxygen	<ul style="list-style-type: none"> • Production and supply of high purity and mixed gases • Analysis of customer requirements • Operation and maintenance of gas plants • Bulk and gas cylinder delivery • Design, engineering and installation
• Lubrication for glass bottle and tableware manufacturing	• Acetylene	
• Creating an inert atmosphere • Maintaining positive pressure for float glass manufacturing	• Nitrogen	
• Glass coating on float glass to produce Reflectasol (solar control glass)	• Silane	
• Displacing oxidant in the float glass process	• Hydrogen/Nitrogen mix	
• Heat treatment of fibre optic pre-forms	• Hydrogen	
• Drawing of fibre optic pre-forms	• High purity speciality gases	
• Gas filling in bulbs and tube lights for imparting various colour and lighting characteristics	• Helium	
• Insulation gas	• Argon	
• Surface treatment/coating to increase glass durability	• Sulphur Dioxide	

Our gases

At Gulf Cryo, gases and gas mixtures are prepared under controlled conditions following strict international standards ensuring tolerances are clearly defined.

Pure gases (Liquid and compressed)	Purity
Liquid Nitrogen Liquid Oxygen	99.999% 99.5%
Compressed pure gases	Purity
Nitrogen Oxygen Hydrogen Acetylene Helium	99.999% 99.5% 99.999% 98.5% 99.999%

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment.

Bulk gases	Capacity	Working pressure (barg)
Cryogenic storage tanks Liquid gas cylinders (dewars)	2000 - 75,000 litres 180 - 1000 litres	3 - 30 2 - 37
Compressed gases	Capacity	Working pressure (barg)
Manifold racks Gas cylinders Tube trailers	120 - 540 Nm³ 6 - 50 litres 3500 - 5400 Nm³	200 - 300 150 - 200 200

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The Compressed Gas Association



The International Oxygen Manufacturers Association



European Industrial Gases Association

Metals Processing Industry



For over half a century, Gulf Cryo has been supplying gases and developing new gas mixtures for applications in the metals processing industry.



progressive by nature

BAHRAIN EGYPT IRAQ JORDAN KSA KUWAIT OMAN QATAR SYRIA TURKEY UAE

Helping you improve quality, increase productivity and reduce costs

Our geographic reach

Gulf Cryo is a leading manufacturer of industrial, medical, food-grade, and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with the metals processing industry developing technology to advance processes and techniques through innovative gas applications.



The customer challenge

With the on-going economic battle to reduce costs while maintaining higher quality product, customers are turning to the use of industrial gases in the production and fabrication process to open up new ways to increase productivity and quality in a cost effective way. The challenge the customer faces is to select the right type of gas to achieve the desired quality of the final product, such as required strength, bead appearance and shape, thickness of parental metal and fume emission. This is where Gulf Cryo can offer its vast expertise and experience to provide solutions and support.

How we work with you

Gulf Cryo's dedicated technical team understands the challenges production and process managers face to find the right gas solution for their needs. We supply pure gases such as Oxygen, Acetylene and Argon as well as a wide range of gas mixtures with varying compositions supporting you from application inception through to when you see the results. We have a diverse portfolio and serve the entire industry from small roadside weld shops to large fabrication yards, major ship repair companies to heavy steel industries.

Our engineers can also design and implement a total gas management service including the installation of a central gas pipeline network system, warehouse cylinder management, small or large on-site plants to supply product and provide on-site personnel.

Our gas solutions

Applications	Our products	Our services
<ul style="list-style-type: none"> • MIG/MAG welding • TIG welding • Plasma cutting and welding • Laser cutting and welding • Flame cutting • Oxy-fuel cutting • Powder coating • Plasma coating 	<ul style="list-style-type: none"> • Liquid and compressed pure gases • Gas mixtures for specific use • Shielding gases 	<ul style="list-style-type: none"> • Production and supply of pure and mixed gases • Analysis of customer requirements • Pipeline installation • Bulk installation • Technical support • Cylinder maintenance and testing • On-site equipment maintenance • Cryogenic storage tank system installation

Our gases

At Gulf Cryo, gases and gas mixtures are prepared under controlled conditions following strict international standards ensuring tolerances are clearly defined.

Pure gases (Liquid and compressed)	Purity
Acetylene	98.5%
Argon	99.999%
Carbon Dioxide	99.9%
Hydrogen	99.999%
Oxygen	99.5%
Argon/Carbon Dioxide mixture	-
Argon/Helium mixture	-
Argon/Hydrogen mixture	-

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment. We will provide you with the best available supply package to suit your business requirements.

Bulk gases	Capacity	Working pressure (barg)
Cryogenic storage tanks	2000 - 75,000 litres	3 - 30
Liquid gas cylinders (dewars)	180 - 1000 litres	2 - 37
Compressed gases	Capacity	Working pressure (barg)
Manifold racks	120 - 540 Nm ³	200 - 300
Gas cylinders	6 - 50 litres	150 - 200
MDS-5	Oxygen - 180 litres Acetylene - 40kg	16 - 22

Mobile Distribution Systems (MDS)

A unique system from Gulf Cryo, MDS includes one 180 litre Liquid Oxygen container, one eight cylinder Acetylene rack and two individual manifolds – one for Oxygen and one for Acetylene, with five outlets for each gas. Each manifold is provided with a master regulator and each outlet point is conveniently equipped with flash back arrestor. The MDS is safely mounted on a steel frame.

Benefits to the customer

- Better quality welding due to continuous supply
- Safer – cylinders are mounted and fitted in one entity
- Easier handling
- Cost effective compared to other options

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The International Oxygen Manufacturers Association



European Industrial Gases Association

Oil, Gas & Petrochemical Industries



For over half a century, Gulf Cryo has been supplying gases and developing new gas mixtures for applications in the oil, gas and petrochemical industries. Originally founded as Kuwait Oxygen and Acetylene co. in 1953, Gulf Cryo was the first gas manufacturer in the region to provide industrial gases such as Oxygen and Nitrogen to the booming local petroleum industry.



progressive by nature

Ensuring you have a guaranteed source of high quality gases

Our geographic reach

Gulf Cryo is a leading manufacturer of industrial, medical, food-grade, and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with the oil, gas and petrochemical industries developing technology to advance processes and techniques through innovative gas applications.



The customer challenge

The Middle East is abundantly endowed with oil and gas resources. However, as the world economy grows and the demand for energy increases the drive to improve efficiency, cost effectiveness and environmental stewardship has become a key driver in decision making.

How we work with you

Gulf Cryo's dedicated technical team understands that finding an industrial gas partner willing and able to invest in plant, equipment and human resources is a must for any oil and gas company. Gulf Cryo can provide a full portfolio of products and services including on-site supply of gases as process feedstock, bulk gases for safety and maintenance, EOR solutions for carbon capture and packaged gases for lab use and welding applications.

Our engineers can implement a total gas management service handling the operation and maintenance of gas plants, assuring a 100% guaranteed source of high quality gases in the pipeline with an additional back-up bulk gas service.

Our gas solutions

Applications	Our products	Our services
Upstream Oil well pressurisation Enhanced oil recovery (EOR) Oil well stimulation	<ul style="list-style-type: none"> • Nitrogen • Hydrogen 	<ul style="list-style-type: none"> • Production and supply of pure and mixed gases
Downstream Blanketing of tanks Preventing the release of hydrocarbon emissions Preventing Oxygen ingress into vacuum units Purging Supply of Oxygen, Nitrogen and Hydrogen as process feed stock Calm chemical reactions Safely shutdown or start up refinery units Lowering Sulphur content in hydrocrackers and hydro-treaters Sulphur recovery applications Pipeline pigging Combustion efficiency at the furnace Break down of heavy hydrocarbons during the catalytic cracking process Fire extinction Valve sealing Dry ice blasting Explosimetry Leak testing	<ul style="list-style-type: none"> • Oxygen • Carbon dioxide • Acetylene • Argon • Nitrous oxide • Mixed gases • Specialty gases • Dry ice • Helium 	<ul style="list-style-type: none"> • Analysis of customer requirements • Pipeline installation • Bulk installation • Technical support • Cylinder maintenance • On-site equipment maintenance • Air separation unit installation • Equipment supply • Design, engineering and installation • 'Over the fence' gas supply

Our gases

At Gulf Cryo, gases and gas mixtures are prepared under controlled conditions following strict international standards ensuring tolerances are clearly defined.

Pure gases (Liquid and compressed)	Purity
Acetylene	98.5%
Argon	99.999%
Carbon Dioxide	99.9%
Hydrogen	99.999%
Nitrogen	99.999%
Helium	99.999%
Oxygen	99.5%
Argon/Helium mixture	-
Argon/Hydrogen mixture	-
Argon/Carbon Dioxide mixture	-

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment. We will provide you with the best available supply package to suit your business requirements.

Options	
Air separation unit installation	Full gas supply distribution network
ISO tanks and road tankers	Spot requirements for bulk products
Tube trailers	High volumes
Cylinder racks	Medium volumes
Gas cylinders	Low volumes
SMR	For on-site Hydrogen supply
PSA and membranes	For on-site Nitrogen supply
VPSC	For on-site Oxygen supply

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For over half a century, Gulf Cryo has been supplying gases and developing new applications for the food and beverage industry.



progressive by nature

BAHRAIN EGYPT IRAQ JORDAN KSA KUWAIT OMAN QATAR SYRIA TURKEY UAE

Helping you meet demand for food quality and freshness

Our geographic reach

Gulf Cryo is a leading manufacturer of food-grade, industrial, medical and speciality gases in the Middle East. Covering all of the GCC, Jordan, Syria, Pakistan, Egypt and Iraq, our highly skilled engineers work with the food and beverage industry developing technology to advance manufacturing processes through innovative gas applications.



The customer challenge

Food manufacturers and distributors have a constant challenge to ensure their freshly preserved food and beverage product reaches their customers with the highest quality and freshness and with the lowest product loss. As more consumers become knowledgeable and concerned about nutrition, the demand for less additives and fresher products is increasing. Busy lifestyles are also driving the growth of convenience food and beverages, but consumers are not willing to sacrifice taste or nutrition so manufacturers are looking for new ways to safely introduce healthier, more convenient, and tastier foods to market.

How we work with you

Gulf Cryo's dedicated applications team understands the challenges the food and beverage industry faces and works with customers to find the right gas solution for their needs. We provide analysis, design and installation of equipment, supporting you from application inception through to when you see the results! Whatever food and beverage sector you are in, we have a gas application that can improve quality, rate of production, extend shelf life, and optimise distribution capabilities.

As well as traditional supply agreements, a total gas management service is offered where Gulf Cryo can install a full gas network and manage the gas supply chain.

Our gas solutions

Application	Our products	Our services
<ul style="list-style-type: none"> • Cryogenic food freezing and chilling • Liquid Nitrogen dosing • Modified Atmosphere Packaging (MAP) • Cold transportation with dry ice • Cleaning with dry ice blasting • Carbonation • Water oxygenation • Blanketing 	<ul style="list-style-type: none"> • Nitrogen • Oxygen • Carbon Dioxide • Liquid Nitrogen • Solid Carbon Dioxide (Dry ice) 	<ul style="list-style-type: none"> • Production and supply of high quality food-grade gases • Design, engineering and installation of the application • Vast range of sizes of dry ice pellets • Vast range of sizes and thicknesses of dry ice blocks • Cost/benefit analysis • Dedicated transportation fleet to ensure fast delivery • Equipment supply

Our gases

The food and beverage industry has specific gas purity requirements to comply with International food standards. At Gulf Cryo, gas mixtures are prepared under controlled conditions following strict international standards ensuring tolerances are clearly defined.

Cryogenic products	Purity
Liquid Nitrogen	99.999%
Liquid Carbon Dioxide	99.9%
Liquid Oxygen	99.5%

Compressed pure gases	Purity
Nitrogen	99.999%
Carbon Dioxide	99.9%
Oxygen	99.5%

Our supply and packaging options

With 13 subsidiaries covering ten countries in the Middle East, Gulf Cryo covers a vast territory offering the supply of gases and the installation of equipment.

Bulk gases	Capacity	Working pressure (barg)
Cryogenic storage tanks	2000 - 75,000 litres	3 - 30
Liquid gas cylinders (dewars)	180 - 1000 litres	2 - 37

Compressed gases	Capacity	Working pressure (barg)
Manifold racks	120 - 540 Nm ³	200 - 300
Gas cylinders	6 - 50 litres	150 - 200
Dry ice	Different sizes of pellets and blocks available	-



Talk to our applications engineers to identify the right solution for you.



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Gulf Cryo subsidiaries are members of:



The Compressed Gas Association



The International Oxygen Manufacturers Association



European Industrial Gases Association

For over 60 years, Gulf Cryo has been manufacturing and supplying industrial, medical and specialty gases to a wide range of industries across the Middle East. Established in 1953 as the Kuwait Oxygen and Acetylene Company, the Gulf Cryo group now comprises of over 30 production and distribution sites operating in 12 countries, including all of the GCC, Jordan, Syria, Egypt, Iraq, Turkey and Austria.

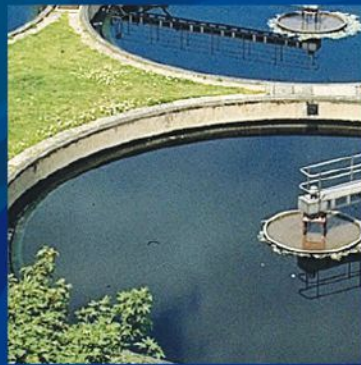
CO₂

O₃



Water Treatment Gas Applications

O₂



Our Services

Gulf Cryo offers several services to the wastewater industry in order to improve the overall performance of the treatment process and make it environmentally friendly. Our experts work closely together with customers in order to achieve tailor-made solutions that target their needs directly.

The Industry Challenge

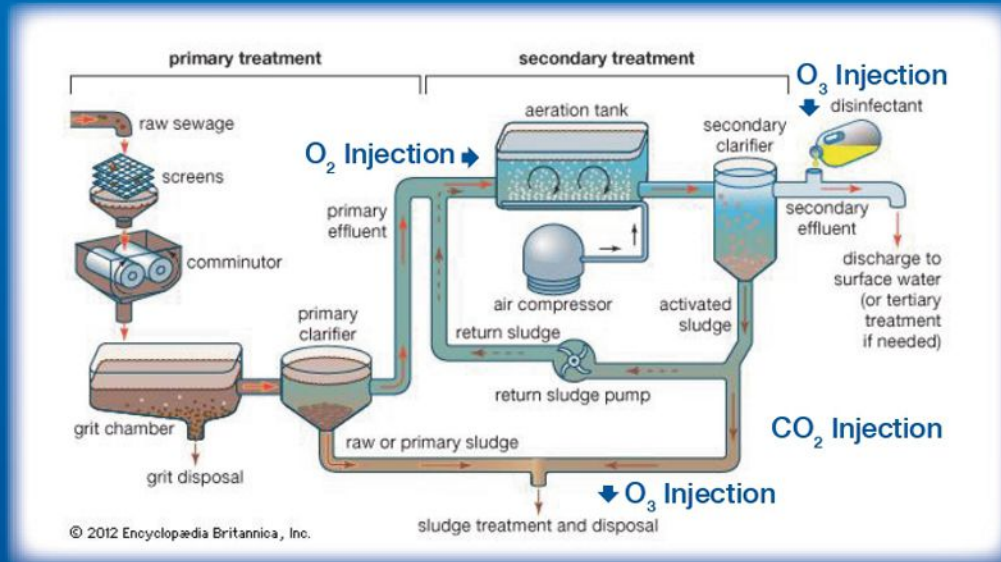
The wastewater industry strives to reach the highest possible yields while minimizing energy and material costs. Currently, the major challenge for the treatment plants is reaching a full capacity and not being able to accommodate for the increasing demands.

Due to the increasing environmental regulations, a new challenge has also emerged and it consists of minimizing the usage of chemicals, while retaining the efficiency of the process and the quality of the product.



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Our Technologies



Our Gases

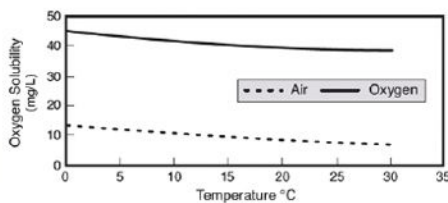
Pure Gases	Purity
Oxygen (O ₂)	99.5%
Carbon Dioxide (CO ₂)	99.9%

For Ozone requirements, on-site ozone generation is set up along with Oxygen supply.



Benefits of Oxygen Injection Compared to Standard Aeration

- Increases treatment capacity using the same facility, without the need for additional investment
- Reduces odors & volatile organic compounds emission
- Saves up to 40% in energy and operating expenses
- Reduces Hydrogen sulfide (H₂S) formation
- Reduces aerosol formation
- Improves sludge settling
- Complies with stricter water discharge standards
- Diminishes hydraulic breakdowns



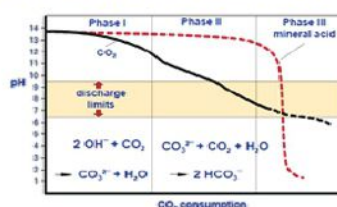
Benefits of Ozone Injection Compared to Standard Chlorination

- Enhanced disinfection as Ozone is the most effective disinfectant
- Removal of organic & inorganic matter, including micro-pollutants such as pesticides
- Reduction of sludge by up to 80%
- Odour and taste elimination

Benefits of Carbon Dioxide Injection Compared to Standard Acidification

- Eco-friendly, safe and simple pH control
- No possibility of overdosing
- No handling of hazardous acids
- Low investment & operating costs
- No corrosion problems

Neutralisation curves of mineral acid and CO₂



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