



Medical gases and mixture.  
New horizons  
for human health



## Medical gases as drugs

Among the new frontiers of medicine, medical gases represent a resource of interest in the fight against human diseases. In addition to oxygen and nitrous oxide, used for many years, today medical gases and mixtures that provide new short and long term therapeutic solutions are available. Carbon dioxide, medical air, nitrogen monoxide and mixtures are the main examples.

Gases used for therapeutic purpose are actually drugs and they have to comply with specific purity and quality standards stated in European Pharmacopoeia.

According to European Directive 2001/83/CE on human drugs, industrially produced medical gases have been subjected like all other drugs to specific authorizations, released by national authorities; regarding product manufacturing, marketing and distribution.



SOL Group primary and secondary medical gases production sites, and the gases themselves, meet the requirements dictated by current legislation regarding purity, safety, traceability and product packaging.

In addition to liquefied, compressed and cryogenic medical gases supply, SOL Group also provides on-site air production systems, designed for the specific needs of the healthcare facility, allowing to get European Pharmacopoeia certified medical air. Continuous extensive tests and checks, ensure monograph correspondence and product quality.



SOL Group is present across the world with over 45 manufacturing sites for technical, medical and special gas production. Depending on the specific use, gas can be stored in fixed tanks, cylinder bundles and cylinders, or produced on-site.





SOL Group service:  
Medical gases  
everywhere,  
always in time

SOL Group designs and manufactures CE pipeline systems, marked as a Medical Device, for centralized distribution of medical gases and endocavitary aspiration, in compliance with UNI EN ISO 7396 technical standards and according to local

legislation, from supply (Solair, SolVacuum) to terminal units. SOL Group also provides medical devices for gases such as flowmeters, vacuum regulators and pressure regulators, which can also be integrated with cylinders (Oxalys) and emergency devices for gas delivery (EMU).



- SolAir® 
- SolVacuum 
- Oxalys 
- EMU 
- TGM 
- SolMaint 
- EPGA 
- WashWater 
- TDM 
- InfoHealthSolution 
- CryoManagement 
- CellManagement 



To ensure the safety of patients and hospital operators, SOL Group provides: general and technical systems maintenance with 24 hours on-call service (SOLMaint); handling and tracking of medical gas cylinders (TGM); monitoring of anaesthetic gases, air quality in operating rooms and quality analysis at medical gases supply and terminal units (EPGA).

Motivated by the deep knowledge of the hospital environment, SOL Group completed its range of services offering rooms or devices sanitation, prevention equipments to avoid bacterial water system contamination (WashWater), and drug supply management (TDM). To ensure high efficiency and safety levels, SOL Group manages its services through high-tech computer systems.



In operating room environment, equipment efficiency and quality should be absolute. SOL Group can deal with design, implementation and management of gas supply and pipeline systems. Emergency equipments are always available thanks to Sol Group services support.



An efficient medical device requires constant monitoring and control actions. Total Gas Management staff ensures on-time assistance and the required competence in health service management.





## Biological samples in Cryopreservation

New cells and tissues preservation technologies in liquid nitrogen or vapors, at temperatures ranging between  $-150^{\circ}\text{C}$  and  $-196^{\circ}\text{C}$ , ensure the vitality of the cryopreserved biological material, which is often very precious.

SOL Group commits the certified service CryoManagement to Biobanks design, building and management in compliance with international accreditation standards (JACIE, FACT, and AABB-NETCORD).

SOL Group has designed many biobanks in Italy and abroad, some of which accredited according to international reference standards.

The Medical Device certification in compliance with the European Directive 93/42/CEE and following amendments, covers all biobank elements, thus ensuring the preservation of biological samples and the safety of all the operators involved in cryopreservation process.

SOL Group offers a biologists, engineers and technicians team to manage sample banking and tracing, acting directly by the customer where required. Highly skilled staff is also involved in validation of every component of the structure, an added value that ensure to reach the highest quality level.





## SOL Group Training Service

### Quality, safety and professional training

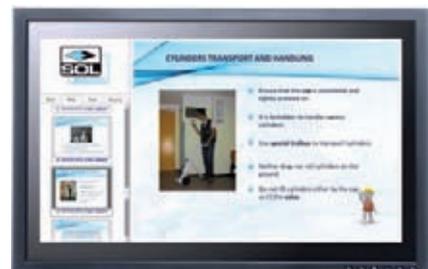
Quality and safety have always been core values for the SOL Group.

The ISO 9001:2008, ISO 14001:2004 and ISO 13485:2004 certification for medical gas pipeline, vacuum and anesthetic gas scavenging systems and for medical gas devices, are the result of work processes developed in over 80 years of SOL Group history.

The continuous request of refresher courses for hospital staff, led SOL Group to arrange trainings for users who deal with technical, medical and pure gases.

Training courses provided by SOL Group are safety oriented with the aim of minimizing risks related to gas use. For that reason SOL Group training courses can be included in national Continuing Medical Education program for healthcare professionals.

Countries with compulsory Continuing Medical Education: Austria, France, United Kingdom, Germany, Netherlands. Countries with strongly recommended Continuing Medical Education: Belgium, Cyprus, Greece, Luxembourg.



SOL Group branches and production facilities located in major European countries and India

- Italy
- France
- Belgium
- Netherland
- United Kingdom
- Germany
- Austria
- Spain
- Slovenia
- Croazia
- Bosnia-Erzegovina
- Serbia
- Kosovo
- Macedonia
- Albania
- Greece
- Bulgaria
- Romania
- Hungary
- India



SOL primary and secondary production sites distribution ensures an accurate and efficient delivery throughout Europe, thanks also to the strong logistics and the large supply of vehicles, equipped for the transport of compressed, liquefied and cryogenics medical gases. The widespread network of SOL sales and technical staff, allows the customer to have an accurate and continuous assistance.



Detailed information on SOL branches in Europe are available on the website [www.solworld.com](http://www.solworld.com)