



Gasbanor

SF₆ - Gas Equipment and Service

Switzerland



Equipment for Service and Maintenance of SF₆ - Switchgear and Circuit - Breaker

Certified acc. EC 305/2008

Your partner for SF₆ - solutions

www.gasbanor.com



SF₆ - gas

Heavy gas sulfur hexafluoride (SF₆) was originally discovered in the 1930s. Despite its outstanding qualities as an gaseous electrical insulator, it had initially no practical use in engineering.

It was only by the end of the 1950s, first in the USA and soon afterwards in Europe that this particular gas was more extensively explored, leading to its principle application as an extinguishing and electrical insulating medium.

Commonly used in power applications, SF₆ is used in high-voltage circuit breakers, metal-enclosed switchgear, linear accelerators, high-voltage transformers, capacitors and gas insulated lines world wide.

SF₆ - gas properties

SF₆ – gas is a non-toxic, non-flammable, stable compound. Its breakdown voltage is approximately 2.5 times higher than normal air, as the electro-negative SF₆ – molecule has a strong affinity to free electrons.

An increase in pressure allows the dielectric strength of SF₆ to be adjusted to individually designed requirements.

SF₆ - Gas Quality acc. IEC standard

Content	IEC 60376 New gas	IEC 60480 Used gas	IEC 62271 - 303 Used gas
SF ₆	99,55 vol. %	ca. 97,00 vol. %	
Air	1 vol %	< 3 vol %	< 30 vol %
CF ₄	2400 ppmw	< 3 vol %	< 5 vol %
Water	25 ppmw (dew point - 36°C)	25...95 ppmw dew point ca. - 36°C ... -23°C	< 1000 ppmw
Mineral oil	< 10 ppmw	< 10 ppmw	< 1000 ppmw
Acid HF	1 ppmw	Total decompositions products < 50 ppmv (12 ppmv for SO ₂ and SOF ₂ + 25 ppmw for HF)	< 1000 ppmw

The rapid arc extinction in the SF₆—gas is particularly encouraged by the favorable distribution of electrical conductivity and thermal conductivity in its critical temperature range. Electrical arcing fission products recombine almost completely. The remaining amount of gaseous sulfur fluorides and solid metal fluorides will be trapped in filters.



SF₆ - Gas Treatment and Recovery Units, Type GTRU

Making use of its longstanding expertise of 40 years in gas handling and 100 years in vacuum processing technology, **Gasbanor** offers compact units with all required features for a safe, dependable and environmentally friendly treatment of SF₆ - gas.

Gas treatment & recovery units of type **GTRU**, recover, purify and refill the SF₆ - gas with a high degree of safety and reliability during its process, offering versatility through an automated drive and control technology.

Through a high performance and efficient process our **GTRU** - type units dry, filter, liquefy SF₆-gas to refill the internal tanks and external SF₆ - cylinders. As an additional feature we offer the ability to recover and refill one gas compartment while evacuating another simultaneously.





SF₆ - gas accessories

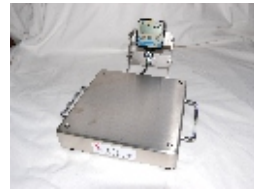
Gasbanor offers according to prevailing standards the range of required accessories which are used along with our GTRU - units.

- Gas transfer hoses
- Valves
- Filters
- Adapters
- Digital pressure gauges
- Digital Vacuum gauges
- Regulators for gas pressure reduction

Measurement and monitoring of SF₆ - gas quality is essential for longevity and continued optimal operation of gas insulated electrical components.

Gasbanor provides along with its GTRU - gas treating & recovery units the required equipment to qualify all physical aspects of SF₆ - gas in use.

- Leak Detectors
- Weighing scales
- SF₆—Gas Analyser



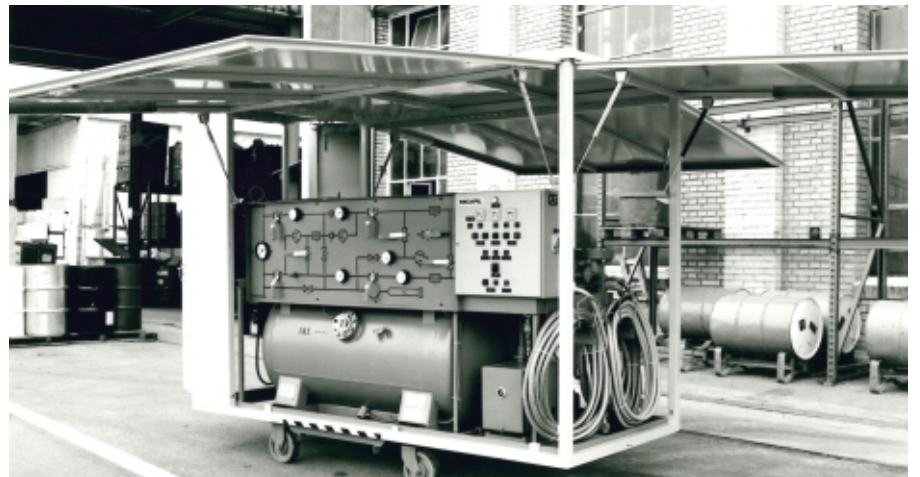
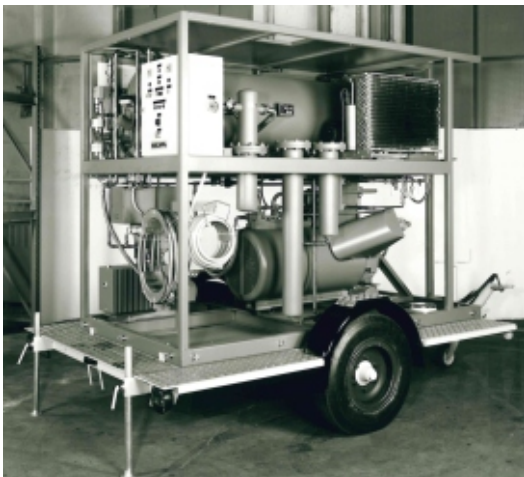


Gasbanor is proud to continue the long engineering tradition of MICAFLUID AG (Switzerland) for SF₆ - gas servicing machinery dating back to the 1970s.

Since the first SF₆—recovery system concepts developed by Micafil, considerable progress has been made in this field.

The SF₆ - recovery units and SF₆ - dryer are consistently evaluated and has been significantly optimized with relation to its price/performance ratio.

In the course of our development work, the new versatile, compact and robust machine design was implemented again under the umbrella of MICAFLUID AG in a new product range of mobile SF₆ - gas recovery & reclaim systems.





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