

Simply enhanced efficiency

The EcoVap vaporiser reduces the energy costs of refrigerating installations.



The cooling energy of liquefied gases from the EcoVap vaporiser supports environmentally friendly and efficient operation of cooling systems. Many production plants use industrial gases such as nitrogen, oxygen, carbon dioxide or argon, which are stored in cryogenic, liquefied form. Before using the gases, it is necessary to vaporise and heat them up – this more often than not involves their inherent coldness being needlessly wasted. The EcoVap vaporiser ensures that this energy is harnessed. Integrated into the return pipe of a refrigerating installation, it transfers cooling energy from the liquid gas directly into the circulating coolant. The result is efficient use of coldness and reduced energy costs.

Lower return temperature, greater energy efficiency

If the production process requires gas, it is transferred there via the EcoVap vaporiser rather than via a conventional air vaporiser, where the coldness is lost to the ambient air. The energy required to vaporise the liquefied gas is transferred from the coolant, which cools down in the process, thereby relieving the load on the cooling machine.

Formation of ice and mist around the air vaporisers is a thing of the past and the temperature of the gas that is needed always remains constant, irrespective of the ambient conditions.

Example calculation (figures rounded):

Annual gas requirement	800.000 m ³ /a
Average throughput ^{*1)}	100 m ³ /h
Average refrigeration output of liquid gas	10 kW
Power saving potential ^{*2)}	26.000 kWh/a
CO ₂ saving potential ^{*3)}	17.000 kg/a

Equates to CO₂ emissions ^{*4)} of four cars

^{*1)} At 8,000 hours of operation per year

^{*2)} Coefficient of performance for refrigerating machine: 3

^{*3)} Average CO₂ emissions for electrical energy generation:
500 – 700 g of CO₂/kWh (depending on energy mix)

^{*4)} 140 g of CO₂/km, 30,000 km per annum



Easily integrated anywhere

The EcoVap vaporiser can be used wherever industrial gases and low temperatures are both needed in production at the same time, for example:

- Refrigerating installations in the chemical industry
- Metallurgical plants
- Ozone generators with their own refrigerating machines
- Soldering machines in PCB manufacturing
- Heat presses in tyre production
- Carbonation facilities at bottling plants
- PCC facilities for calcium carbonate production

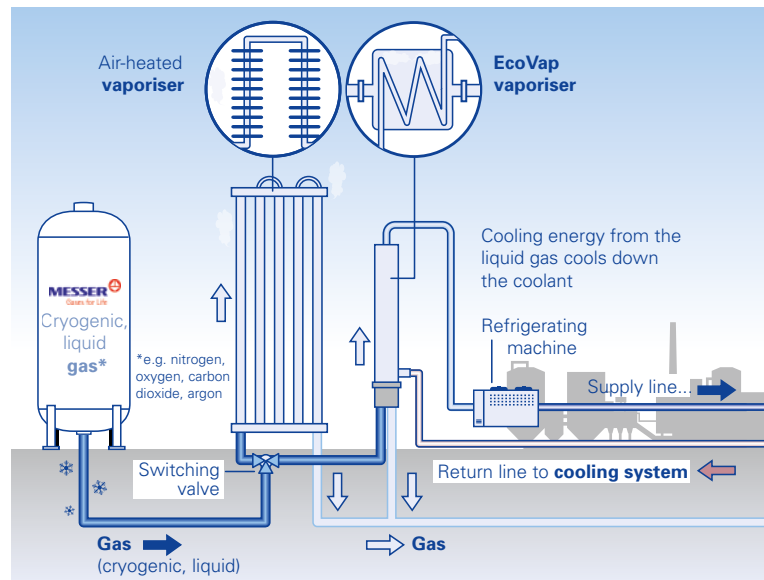
Individuality as standard

Each EcoVap vaporiser is individually designed in terms of gas throughput, refrigeration output, temperature profile, operating conditions and space requirement. In addition to energy savings, therefore, it is also possible to make optimum use of other advantages: the dimensions are small so less space is needed than for conventional air vaporisers. Formation of ice and mist is no longer an issue and formation of condensation on un-insulated gas pipes is effectively prevented.

Benefits to you at a glance

- Lower energy costs
- Reduced CO₂ emissions
- Simple integration into existing facilities
- Prevention of ice and mist
- No condensation on gas pipes
- Constant gas temperature

If you have any questions regarding the EcoVap vaporiser or would like an individual consultation with our application experts, please do not hesitate to contact us.



Principle of EcoVap vaporiser process



Messer SE & Co. KGaA

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