

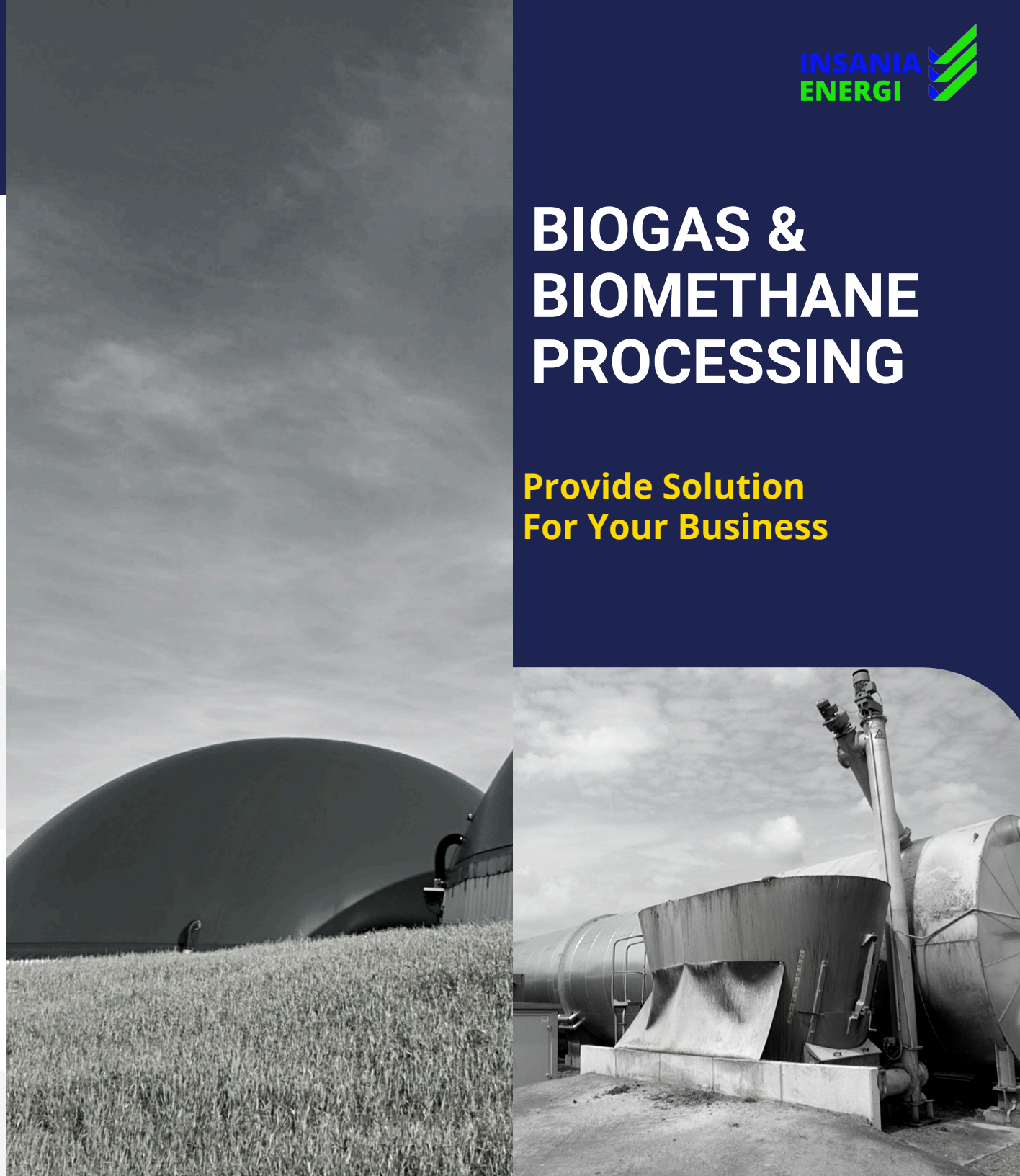
## About Us

**INSANIA ENERGI** serve you to increase your performance as well as to create a long term relationship with you to help you stay ahead at the competition. To do so, we provide a variety of structured consultancy programmers in combination with implementation skills in all relevant areas.

We see our key strengths not only in the development of innovative technologies, which help improve product quality and performance but also in provide service as supervision unloading, loading, start-up process, troubleshooting, evaluate performance and our commitment to close customer relationships. With sales offices two branch in java area, INSANIA ENERGI can meet market requirements for speciality chemical and equipment wherever that market may be. Therefore we are very appreciate your interest in our product and look forward to serving your needs.

# BIOGAS & BIOMETHANE PROCESSING

**Provide Solution  
For Your Business**



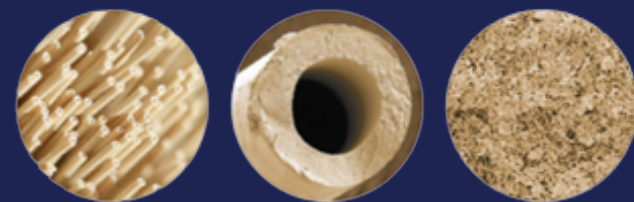
Evonik has developed a biogas upgrading process that makes best use of the membranes' separation properties:  
Through skillful connection of **SEPURAN® Green** membranes it is possible to obtain methane with a purity level of up to 99% from the crude gas. Just one compressor is needed.

**SEPURAN®** stands for customized hollow fiber membranes for efficient gas separation. The first product of the membrane family is **SEPURAN® Green** for biogas upgrading. Our aim is to support turning organic waste into green energy sources like biofuel simply and sustainably. Our membrane upgrading process with **SEPURAN® Green** delivers a constant high biomethane grade with more than 99% purity. In other words, almost all the methane is recovered in bio natural gas quality.

## SEPURAN® GREEN MEMBRANES FOR EFFICIENT UPGRADING OF BIOGAS TO BIOMETHANE

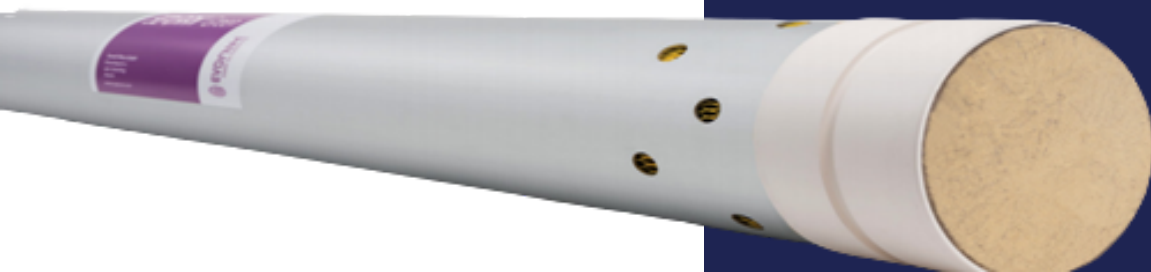
SEPURAN® Green membranes have the highest CO<sub>2</sub>/CH<sub>4</sub> selectivity and are therefore a superior technology for upgrading biogas. This selectivity of the membranes enables the production of high purity biomethane with superior methane recovery. This distinguishes the Evonik membranes from other membranes that are available.

Biogas comes from the biogas plant as a mixture of CO<sub>2</sub>, methane and the typical secondary components, and is first desulfurized, filtered and pre-dried with activated carbon. The pre-treated gas is then compressed to 10 - 20 bar, and upgraded to biomethane and a CO<sub>2</sub>-rich waste gas flow using several membrane stages.



### BENEFITS OF SEPURAN® GREEN MEMBRANE TECHNOLOGY

- Reduced operating costs
- Low Investment
- Easy to operate
- Low space requirement and short installation times
- Flexible and modular Installation
- No chemicals required
- No additional drying stage





## H<sub>2</sub>S BIO-SCRUBBER PACKAGE

The anaerobic digestion of organic matter produces methane and carbon dioxide. It can also lead to the production of other trace gases, such as hydrogen sulphide. As well as being a health and safety hazard, hydrogen sulphide can cause serious corrosion-damage to metal components in engines, burners and boilers. Therefore, it must be reduced to safe levels prior to the use of such gas in any commercial or long-term application.



## ACTIVATED CARBON

Treating the effluent air stream with activated carbon has been found to be one of the best ways to remove hydrogen sulfide. Most standard activated carbons have little capacity for H<sub>2</sub>S. However, General Carbon carries both impregnated and non-impregnated high H<sub>2</sub>S capacity carbons.



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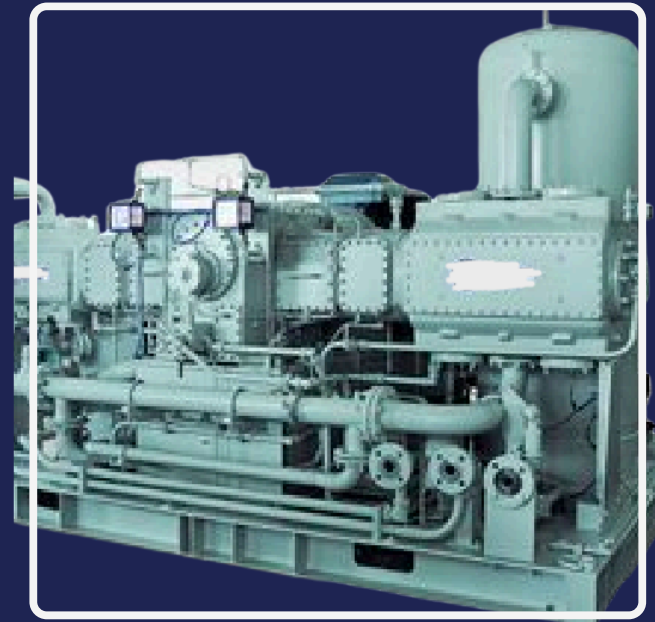
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## BIOGAS COMPRESSOR PACKAGE

Adicomp is at the forefront of this revolution with its packages: as a matter of fact it has been among the first players in the sector to believe in this application, developing a range of designated compressors for upgrading and is now one of the main partners of the largest biomethane plant suppliers. The systems produced by Adicomp are able to remove hydrocarbons and other contaminants in the gases through coalescing filtration systems or activated carbon columns at controlled temperature



## CNG/CBG COMPRESSOR PACKAGE

Gas compression is the most common way to facilitate gas transportation. Biomethane or natural gas can be compressed i.e. pressurized to high pressures up to 300 bar (typically to 250 bar) for its transportation. When compressing the gas, its volume decreases and thus its transportability improves. Gas compressors for mother stations. These compressors pressurize the gas taken directly from a natural gas grid or a biogas upgrading plant for further supply to a gas filling station. The inlet pressure is often 3-16 bar and the outlet pressure is 250-275 bar.





# INSANIA GROUP



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**INSANIA**  
**AIR SOLUTION**



**PETROSORB**  
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In Collaboration with

 **EVONIK**  
Leading Beyond Chemistry

**CECO**  
ENVIRONMENTAL

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