

Lubricants for Biogas Electricity Generation Facilities



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Gas engines used in biogas plants are characterised by continuous operation at full power. Biogas from anaerobic digestion raises particular challenges for the engine oil, as it consists of methane (CH_4), carbon dioxide (CO_2) and other trace compounds.

After combustion, the acid producing compounds can form acids (such as sulphuric acid (H_2SO_4) and hydrofluoric acid (HF)), which are extremely corrosive and can degrade piston rings, bearings and liners. To combat this problem, engine oils are formulated with alkaline additives to neutralise the acids - the alkalinity reserve is denoted by the Total Base Number (TBN). However, alkaline additives are ash producing when burnt, which results in the formation of ash deposits in the combustion chamber.

Zinc is typically used to minimise the corrosive effects of the acid producing compounds, however, zinc ash deposits can cause engine wear and premature engine failure. FUCHS uses specially adapted calcium compounds, which still provide excellent anti-wear, anti-corrosion, and anti-oxidant properties but without the engine damage.

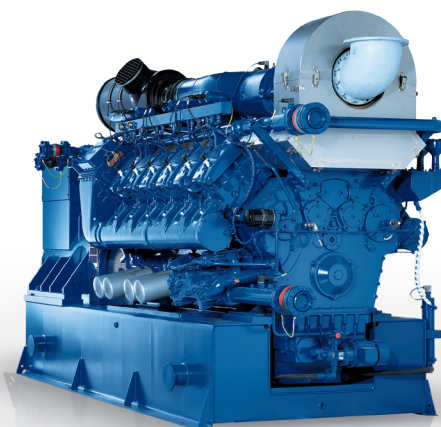
How FUCHS can help you

FUCHS is the world's largest independent lubricant manufacturer. Ongoing investments in our worldwide R&D centres, as well as close cooperation with OEMs, makes our product programme unique.

Our TITAN GANYMET engine oils have been specially developed for stationary Otto and pilot gas engines. Special high performance additives with a high resistance to oxidation and nitration, guarantees reliability even under extreme operating conditions. Our service and technical engineers can assist you with the right lubricant selection and deliver outstanding levels of service and support.

TITAN GANYMET:

- Zinc-free formulation
- High thermal stability
- Good acid neutralisation properties
- Extended oil drain intervals
- Reduces formation of sludge deposits
- Protects against corrosion



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Reducing your costs and improving efficiency

Our zinc-free engine oils have been specifically developed for use with aggressive biogases.

- Due to the high neutralisation capacity (approx. 30% higher TBN than zinc containing products), our products offer significantly **longer oil change intervals**.
- As the TBN remains constant for longer, the sulphated ash content reduces and **engine cleanliness** visibly improves.
- **Improved wear protection** and higher oxidation stability due to specialist additives.
- Innovative formulations means minimal phosphorous loss from the oil, ensuring the wear protection of the oil remains and the **longevity of catalytic convertors** is not affected.
- **Cost savings** through extended oil life and reduced engine wear

TITAN GANYMET ULTRA	
Premium performance	
Combines premium base oils with specially optimised zinc-free additives. Offers very high wear and corrosion protection with a reliable anti-ageing and acid neutralisation capacity when used with the most aggressive biogas.	
KEY PRODUCT INFORMATION	
Total Base Number (TBN)	8.5 mg KOH/g
Sulphated Ash (SA)	0.7% wt.
Flash Point	260°C
Zinc free	✓
APPROVALS FOR BIOGAS/ SEWAGE GAS	
GE Jenbacher	✓
MAN	✓
MWM/ Deutz Power Systems	0.5% < SA < 1%
MTU Onsite Energy/ MD	✓
ARGOGEN	✓
SPANNER RE	✓
SEVA	0.5% < SA < 1%

