



# EcoPar Bio

**EcoPar Bio is 100% renewable/fossil-free.**

**Now guaranteed to be free from palm oil and PFAD.**

EcoPar Bio is 100% bio-based. The fuel functions excellently in all diesel vehicles from a practical and technical standpoint.

The raw materials used for EcoPar Bio are slaughterhouse waste and waste from oilseed crops. **EcoPar Bio is now guaranteed to be free from palm oil and PFAD, and therefore does not contribute to the destruction of the world's rainforests.**

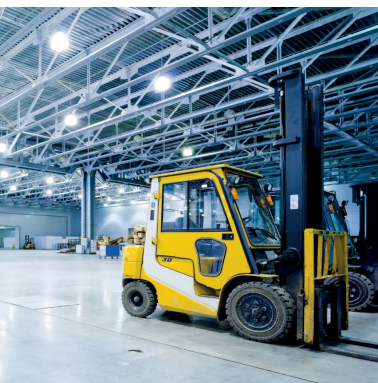
EcoPar Bio can withstand cold temperatures down to minus 35 degrees Celsius. EcoPar Bio is chemically stable, which gives it good storage and thermal stability. EcoPar Bio does not cause deposits on injectors or diesel pumps in the fuel system. It also does not cause deposits on gas-kets or fuel hoses, nor does it negatively affect them in any other way.

EcoPar Bio is one of the most environmentally friendly fuels on the market. CO<sub>2</sub> emissions are reduced by as much as 92% compared to crude oil-based diesel.

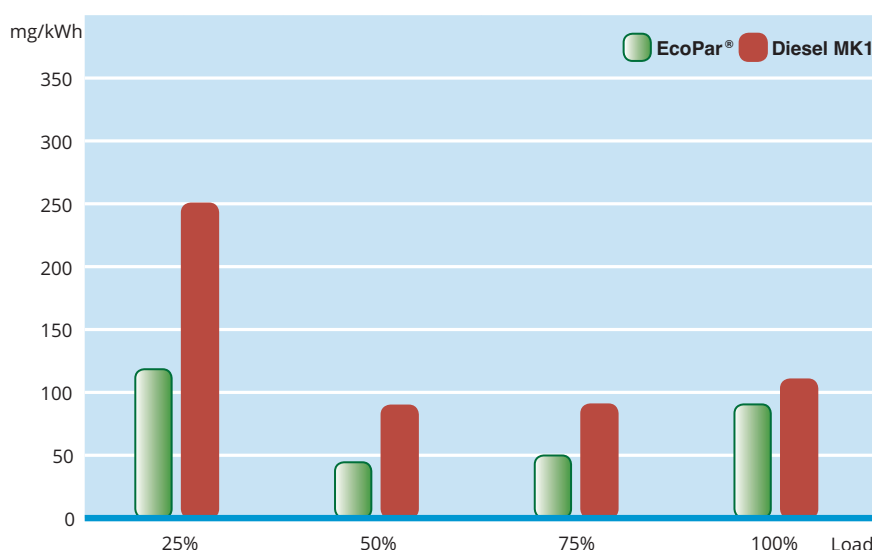
Since EcoPar Bio is a paraffinic oil, it significantly reduces emissions of soot and toxic hydrocarbons. The carcinogenic components in the exhaust gases are reduced by more than 90%.

Lubrication—or more precisely, wear— is measured in a test developed jointly by the automotive and oil industries (HFRR). The result is measured in micrometers (µm) of wear. EcoPar AB guarantees that the HFRR value is always below 450 µm, the level required by engine manufacturers.

EcoPar Bio complies with the European standard EN15940.



## Particle emissions at 1500 revolutions per minute



Soot emissions from a heavy-duty engine with after-treatment equipment ( $\text{DeNO}_x$ ). The greatest emission reductions were recorded at low engine loads, typical for urban traffic. In addition to a reduction in the amount of soot, the toxicity of the soot emissions also decreases. Measurements were conducted by STT Emtec, Sundsvall.

Users who have previously experienced health issues from diesel exhaust report that these problems are significantly reduced or completely disappear when using EcoPar Bio.

Common health issues related to diesel exhaust include headaches, nausea, and irritation of the eyes and nose.

EcoPar Bio is suitable for all applications where work or presence in exhaust environments is unavoidable – for example, in construction and

demolition work, park and street maintenance, road, bridge, and tunnel construction, warehouses, waste collection, and more.

EcoPar Bio is non-toxic to aquatic organisms. It is especially suitable for use near water protection areas, nature reserves, ecologically valuable habitats, and other sensitive natural environments.

The references below are exhaust emission measurements and toxicity tests conducted on synthetic paraffinic oil.

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### References:

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2. "A New Paraphinic Fuel Impact on Emissions and Combustion Characteristics of a Diesel Engine", Dr. S. Gjirja, Professor E. Olsson, A. Eklund, P. Hedemalm, SAE Paper 2002-01-2218.
3. "Emission measurements on a diesel car, UVMV Prague (owned by German TÜV), Sept 2001".
4. "Emission measurements on a Volvo bus engine, by STT Emtec, Sundsvall, Sweden, April 2001".
5. "Evaluating a Fischer-Tropsch Fuel, Eco-Par, in a Valmet diesel Engine", K. Nord and D. Haupt, Luleå University of Technology, SAE Paper 2002-01-2726.
6. "Influence of fuel on diesel-emissions engines", SMP Svensk Maskinprovning AB and SP Statens Provnings- och Forskningsinstitut, Report PU 45850/02 and PU 40318/01. (<http://www.smp.nu>)
7. "Evaluation of effects of three diesel fuels on embryonal development of Zebra fish, (Danio Rerio)", Tomas Viktor, IVL report U901, in Swedish.

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