

Reducing the environmental impact

Greenway® Neo life cycle

Life Cycle Assessment (LCA) - (cradle to gate scope)

The LCA is a method (standards 14040 and 14044) used to assess a product's environmental impact over the course of its life. From the extraction of raw materials to delivery of the product after production.

Production of raw materials

- Extraction of raw materials and agriculture
- Transformation of the components of the heat transfer liquid

Production

- Transport of raw materials from the supplier to the Climalife production site
- Electricity usage at the production site (pump, blending, etc.)

Packaging

- Primary packaging (container) and tertiary packaging (recycled wood pallet)
- The full packaging cycle is included: Raw materials, production, transport, and end of life

Delivery

- To the Climalife logistics platform

Results of the comparative analysis of the life cycle of the Greenway® solutions -30°C / MPG -30°:

- Lower impact than MPG -30°C for 5 out of 7 indicators*
- Virtually no impact on deterioration of the ozone layer
- Bio PDO™ has less impact on climate change

*Depletion of abiotic resources / Acidification / Eutrophication / Climate change / Deterioration of the ozone layer / Creation of photochemical ozone / Cumulative demand for fossil and nuclear energy.

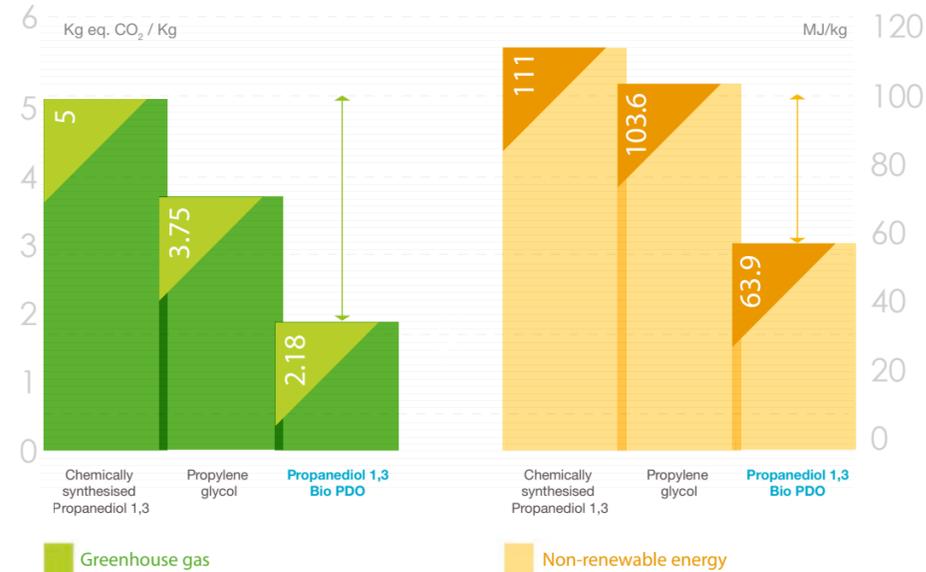
Managing the use of Greenway® Neo

To help you with this process, Climalife offers a set of products and services:

- Qualitative and quantitative analyses to control the concentration of the product in your facility.
- A concentrated Greenway® Neo product to dilute on site to save money on transport costs and reduce your environmental impact.
- Recovery containers provided to assist with waste management.
- Services available for recovering used heat transfer fluids, unloading under special conditions, or optimising your system.

Minimising the environmental footprint

Energy and environmental footprint comparison (Example of Greenway® Neo Solar)



Greenway® Neo Solar's environmental footprint is reduced by 40% in terms of CO₂ emissions and energy use compared with a traditional mono propylene glycol heat transfer fluid derived from oil production.

- Bio PDO™ greenhouse gas emissions**
 - 56% vs. Synthetic propanediol
 - 42% vs. Propylene glycol
- Bio PDO™ non-renewable energy**
 - 42% vs. Synthetic propanediol
 - 38% vs. Propylene glycol



Award Winning - Climalife takes the first prize for Environmental Quality

At the interclima + elec international trade fair for construction and energy efficiency in buildings, organised in conjunction with idéo bain and BATIMAT in November 2013, Climalife won the first prize for environmental quality with its new Greenway® Neo Solar -30°C heat transfer fluid in the innovation section for systems using renewable energy.

A renewed and complete range Follow the Greenway® Neo

Plant-based Secondary refrigerant/Heat transfer fluids

climalife®

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The new Greenway® Neo range: the technological and environmentally friendly alternative



Climalife, a leading specialist in the formulation of heat transfer fluids for more than 30 years, is strongly committed to solutions from plant resources.

A plant-based product
Climalife's objective is to offer a reliable and effective technical alternative to traditional mono propylene glycol (MPG)-based fluids developed from the petrochemical industry.

A new range
The Climalife R&D department has developed and patented a new formula to meet user expectations. Greenway® Neo was created for use across a range of applications, including **refrigeration, air conditioning, heat pumps, central heating, thermal solar energy and sprinklers.**

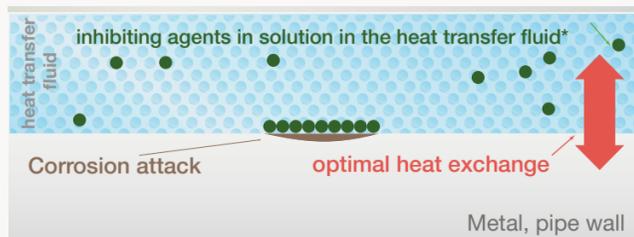


Long-lasting organic corrosion inhibitors

Traditional mineral-based inhibitors



Organically-based inhibitors



*Extremely thin molecular film that does not alter the heat exchange

The Greenway® Neo formula continues to be borax-free in compliance with European Directive 2005/58/EC dated 15/09/2008, and contains organic corrosion inhibitors developed by Climalife's R&D department.

These organic inhibitors are placed only on the areas subject to corrosion by creating a molecular film. This results in the optimisation of heat transfer, unlike traditionally used mineral inhibitors which form a film layer.

These inhibitors do not react chemically, do not degrade over time, and give long-lasting anti-corrosion protection.

Greenway® Neo
bacteriostatic

Anti-microbial protection that prevents bacteria proliferation

In compliance with the ISO 11930 international standard, Greenway® Neo is bacteriostatic, which means that it does not allow bacteria to form.

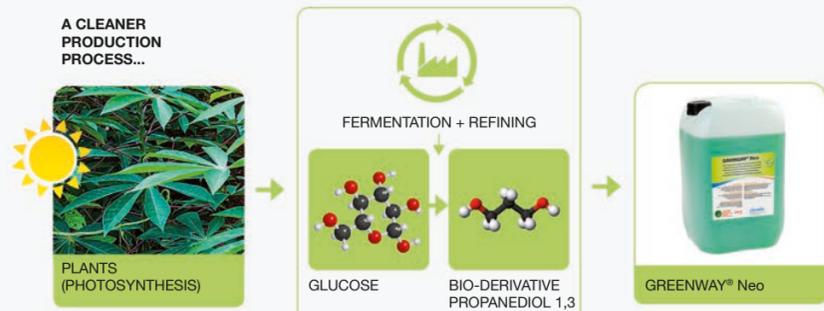
This anti-microbial protection prevents bacteria proliferation in thermal facilities. In particular, it prevents the development of mould, fungi, algae, etc., that can alter flow and heat exchange in systems.

Greenway® Neo, a range approved to meet user requirements

The Greenway® Neo secondary refrigerant / heat transfer fluid range is approved on the A list from the French General Health Department for heat treatment by simple water exchange intended for human consumption as defined by ANSES.

The Greenway® Neo range is also approved by Belgaqua, the Belgian Federation for the water sector, according to the standard NBN-EN 1717 as a fluid category 3.

► Production of Bio PDO™



The Greenway® Neo secondary refrigerants / heat transfer fluids are formulated based on **1,3-Propanediol (Bio-PDO™) and long-lasting organic corrosion inhibitors.**

The raw material used, 1,3-Propanediol (Bio-PDO™), is produced by fermentation of natural, 99.7% purified glucose syrup.



>> See our product sheets for further information on the certifications and thermodynamic properties of the Greenway® Neo fluids.