

# Shell PANOLIN for agriculture

## Balancing performance and sustainability



Why



### Keeping the world moving

Lubricants play a vital role in keeping our equipment operating efficiently, today and tomorrow.



### Increased demand

As the world's needs for mobility, construction and industrial production increase, so too will the demand for lubricants



### Reduced environmental impact

There is a need to balance this increased demand with the environmental impact of lubricants



Key challenges

### Agriculture faces tough challenges



Stay compliant with evolving standards and regulations



Safeguard sensitive ecosystems, by preventing soil, water and air pollution



Maintain equipment availability during critical planting and harvesting seasons



Decrease carbon footprint and enhance resource efficiency



Optimise yields and reduce ownership costs while minimising environmental impact



Technology

### Shell PANOLIN biodegradable lubricants are designed to provide equipment protection and offer a choice for customers eager to take tangible steps towards sustainability.

The Shell PANOLIN range of high-performance lubricants helps to run equipment without compromise.



More performance, less resources



More regulations, less risk



More productivity, less impact

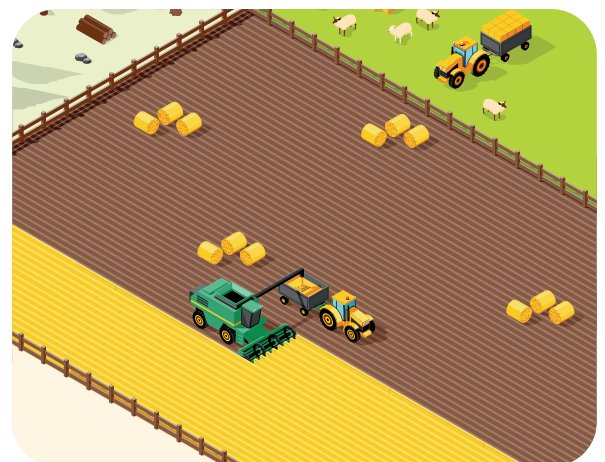
Shell has developed a wide range of high-performance biodegradable lubricants in collaboration with industry partners, OEMs and customers.



Performance and protection

### Shell PANOLIN, our range of biodegradable lubricants: trusted in agriculture for decades.

- Biodegradable:**  
 A broad choice of readily biodegradable, low-ecotoxicity lubricants and greases, including environmentally acceptable lubricants (EALs) certified by EU Ecolabel.<sup>1,2</sup>
- Outstanding equipment protection:**  
 Biodegradable technology designed to provide excellent equipment protection in harsh conditions.
- Extended oil life:**  
 Shell PANOLIN range helps to run equipment without compromise, especially our S4 and above.<sup>3,4,5</sup>



[1] Our finished lubricants biodegraded by over 60% after 28 days in the OECD 301 B carbon dioxide evolution test and are tested in accordance with OECD 202 to determine toxic potential. Biodegradability and ecotoxicity terminology is defined by ASTM D 6384-99, "Standard Terminology Relating to Biodegradability and Ecotoxicity of Lubricants". [2] Calculation based on volumes sold in 2023 of all 65 products including 25 which hold EU Ecolabel Certifications. [3] The product oil-drain interval and maintenance procedures are influenced by equipment type and operating conditions; results may vary. No guarantees are provided. Follow your equipment manufacturer's recommendations. [4] In comparison with unsaturated-ester-type HEES, Shell PANOLIN S4 HLP Synth fluids were developed to increase the oil life, with an outstanding dry TOST life of over 6,000 hours (modified ASTM D943 test). [5] Oxidation stability tested in accordance with ASTM D2070 and in comparison with unsaturated ester type HEES, particularly on our S4 products.

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## Application guide

Component	Shell recommendation
1 Hydraulic systems	Shell PANOLIN S4 HLP Synth (or EAL) 46, 68, 100 Shell PANOLIN S2 Hydraulic EAL 46, 68
2 Axles	Shell PANOLIN S4 Gear EAL 150* Shell PANOLIN S4 Gear 150*
3 Pins, bushings and truck pins	Shell PANOLIN S5 Grease EAL V120P 2 Shell PANOLIN S5 Grease EAL V320 2
4 Final drive	Shell PANOLIN S4 Gear RS 80W90
5 Transmission	Shell PANOLIN Biofluid SBH-N Shell PANOLIN Biofluid ZFH
6 Heavy duty diesel engine	Shell PANOLIN Biomot LX 10W-40

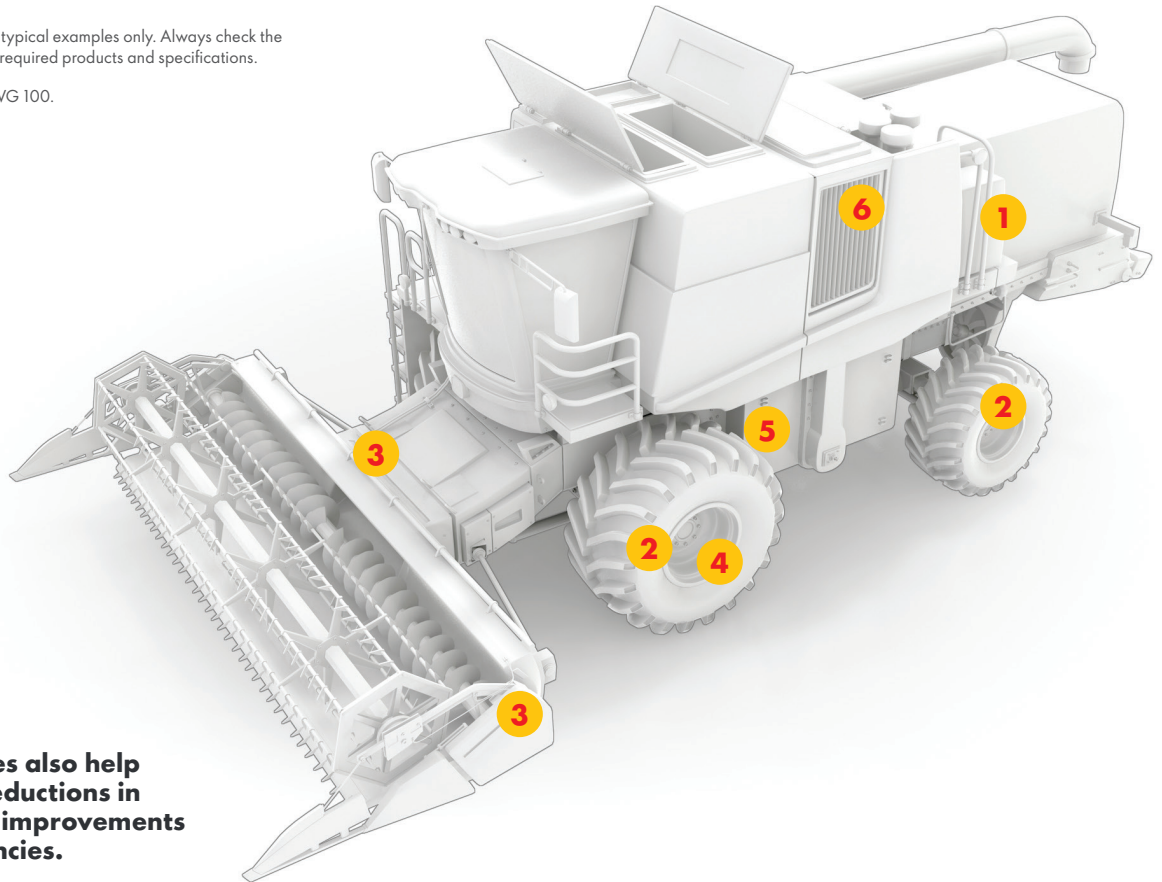
### Which products should I use?

Reducing the environmental impact of critical operations does not mean that you need to compromise on productivity or protection.

Shell has a broad portfolio of products designed for a wide range of operating conditions and applications; these include lubricants especially suited for environmentally sensitive areas and operations in or near water.

Product recommendations are typical examples only. Always check the manufacturer's manual for the required products and specifications.

\*For arctic environments ISO VG 100.



Shell lubricant services also help to unlock potential reductions in carbon footprint and improvements in operational efficiencies.

### Services

#### Shell LubeAnalyst

Oil and equipment monitoring service

#### Shell LubeCoach

Lubrication training

#### Shell LubeAdvisor

Expert advice from the Shell technical team

#### Shell LubeMatch

Find the right oil for your vehicle or equipment



Find out more by visiting

[www.shell.com/business-customers/shell-agriculture-and-forestry.html](http://www.shell.com/business-customers/shell-agriculture-and-forestry.html)

