

FUCHS Environmentally Friendly Lubricants

Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



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FUCHS Environmentally Friendly Lubricants

PLANTO
Enviro



**PLANTO and
PLANTO ENVIRO Lubricants**
Registered and awarded by the new European Eco-Label (EEL)



An ecological decision for today and tomorrow.



The European Eco-Label, the "Euro-Marguerite".

A global objective Environmental protection.

"Sustainability" has become a slogan frequently used during the last years. Nevertheless we are not yet totally aware of the shortage of many natural resources and of the consequences of lubricant consumption. Renewable raw materials offer a combination of environmental compatibility and sustainability. For example, lubricants made from vegetable oils, so-called biogenic lubricants, are more or less neutral regarding CO₂ emissions, they are rapidly biodegradable, and thus have a higher environmental compatibility than their fossil "competitors".

Due to an increasing awareness of the importance of environmental protection, more and more users realise that they can contribute actively to protecting our environment by using products which cause the least possible pollution and harm.

The meaning of the European Eco-Label (EEL).

The EEL is the official Eco-Label of the European Commission. The „Euro-Marguerite“ is a comfortable tool to help the user to identify products of good and environmentally friendly quality. All products labelled with the „flower“ have been tested by independent institutes to guarantee that they fulfil the strict criteria with regard to ecological aspects and fitness for practical use.

Eco-labelled products have a lower environmental impact on air, water, soil and human health than conventional products. Eco-labelled products are total-cost effective compared to similar conventional products. Often the use of Eco-labelled product offers added value.

The objectives of the European Eco-Label.

The European Eco-Label according to the EU Guideline 2005/360/EC was especially created to

- Reduce water and soil pollution
- Reduce CO₂ emissions

The new FUCHS PLANTO ENVIRO range of products helps you to select the right lubricant for your day-to-day applications.

- FUCHS PLANTO ENVIRO lubricants have all been awarded the European Eco-Label (according to EU Guideline 2005/360/EC) as shown by the EEL flower logo, the "Euro-Marguerite"
- Many FUCHS PLANTO lubricants have already been awarded the "Blue Angel" environmental seal
- Both logos, the „Euro-Marguerite“ and the „Blue Angel“ seal are proof of the high quality of the rapidly biodegradable lubricants manufactured by FUCHS

PLANTO and PLANTO ENVIRO – real biogenic lubricants.

The new products of the PLANTO ENVIRO range are biogenic lubricants. In general it was possible up to now to manufacture the so-called "bio-lubricants" from mineral oil products as raw materials (e.g. HEPR-lubricants according to ISO 15 380). **Biogenic lubricants, on the contrary, contain a high proportion of renewable raw materials.** Thus they represent a further improvement of the "bio-lubricants": not only the environmental compatibility in the application, but also the origin of the raw materials and thus sustainability are taken into consideration.

For example, the PLANTO ENVIRO hydraulic fluids and 2-stroke engine oils contain a proportion of carbon coming from renewable raw materials which is greater 50 %, for the PLANTO ENVIRO chain saw oils this proportion is greater 70 %.

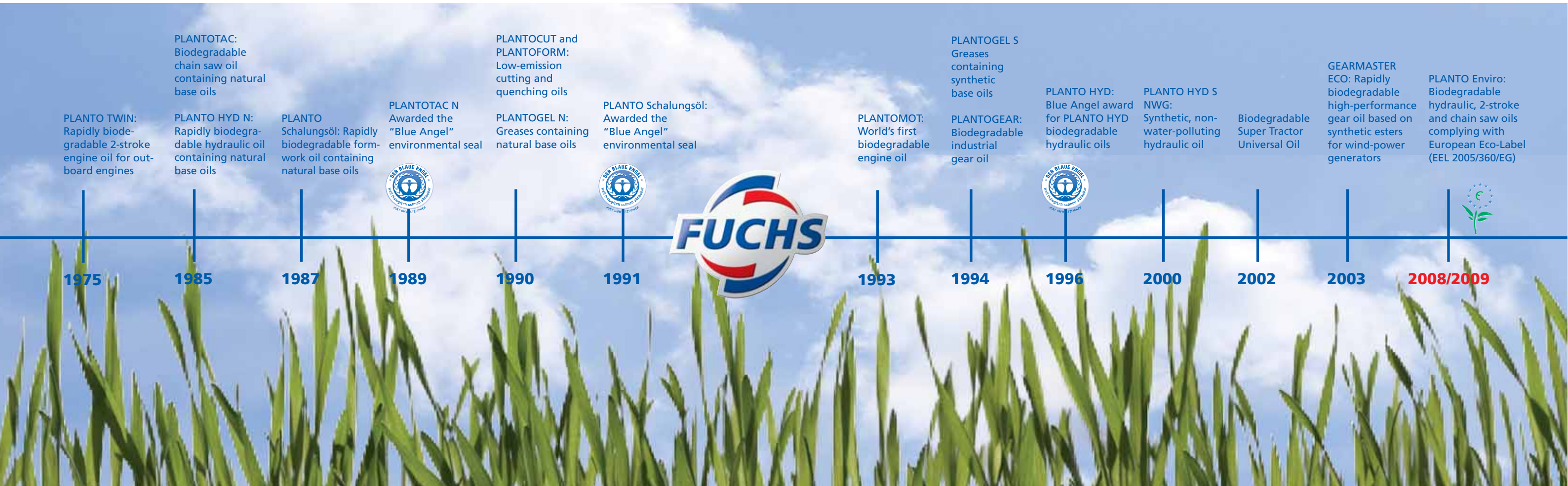
Our biogenic lubricants of the PLANTO ENVIRO range are based on synthetic ester oils. That means, the natural vegetable oils are stabilised by chemical modification to ensure that the finished products meet and surpass the technical performance requirements.

Furthermore special requirements for environmental compatibility and environmental protection have been considered when developing our biogenic lubricants: The products of the PLANTO ENVIRO range

- are free of substances which represent a danger for the environment and the human health (according to EU Guideline 1999/45/EC)
- do not contain organic halogen- or nitrite compounds
- have a very low aquatic toxicity (damaging of water organisms)
- are rapidly biodegradable (> 60 % according to OECD 301)
- are mostly CO₂-neutral when being manufactured
- reduce CO₂ emissions also in the application
- meet and surpass the requirements according to ISO 15380 and are „fit for use“
- are characterised by "reduced harm for water and soil during use "reduced CO₂ emissions"

Some products of the PLANTO ENVIRO range are classified as "non-water polluting" according to the German "Verwaltungsvorschrift wassergefährdende Stoffe" (VwVwS – German water protection legislation).

FUCHS history of ecological activities.



The dream of environmentally friendly lubricants has been dreamt by many. Nevertheless, FUCHS was one of the first companies to introduce rapidly biodegradable lubricants on the market in the early 70's. Since then, FUCHS has invested heavily in the research and further development of such environmentally friendly lubricants made from renewable raw materials.

The result: Unique global know-how and invaluable practical experience.

And one thing is for sure: The lubricant alone is not enough. The user needs professional advice to select the right products for his special needs when changing over to rapidly biodegradable lubricants. And such advice pays off. Every day.

Product overview.

PLANTO ENVIRO HYD 46 S

Description: PLANTO ENVIRO HYD 46 S is a rapidly biodegradable and environmentally friendly high-performance hydraulic fluid based on synthetic esters (type HEES acc. to ISO 15380). PLANTO ENVIRO HYD 46 S was specially developed for mobile agricultural, forestry and construction equipment for which ISO 15380 hydraulic fluids are specified. PLANTO ENVIRO HYD 46 S is the ideal product for machinery working in environmentally sensitive areas such as Protected Water Zones and for earthworks in general because it is classified as non-water-polluting according to German legislation.

Application: PLANTO ENVIRO HYD 46 S offers perfect performance between -35°C and +90°C

Specifications/Approvals: ISO 15380: Type HEES, DIN 51519: ISO VG 46, EEL 2005/360/EC

FUCHS Recommendations: –



PLANTO ENVIRO HYD 46 HVI

Description: PLANTO ENVIRO HYD 46 HVI is an environmentally friendly, rapidly biodegradable hydraulic fluid offering the highest performance. It can be used in all hydraulic systems, even the most highly stressed. PLANTO ENVIRO HYD 46 HVI exceeds the requirements of ISO 15380 and has been awarded the European Eco-Label EEL. PLANTO ENVIRO HYD 46 HVI is fully compatible with all materials commonly used in hydraulic machinery and is a perfect substitute for mineral oil-based and synthetic hydraulic fluids.

Application: PLANTO ENVIRO HYD 46 HVI is perfectly suitable for all applications in mobile and stationary hydraulic systems for which a rapidly biodegradable hydraulic oil according to ISO 15380: HEES is recommended and particularly when spillages can cause pollution to soil, groundwater or rivers (such as in construction, shipping, agriculture and forestry) and when a hydraulic oil is required with outstanding thermal and ageing stability as well as material compatibility. The change-over guidelines set out in ISO 15380 should be observed when changing over to PLANTO ENVIRO HYD 46 HVI.

Specifications/Approvals: ISO 15380 : Type HEES, EEL 2005/350/EG

FUCHS Recommendations: –



PLANTO ENVIRO 2T

Description: PLANTO ENVIRO 2T is a rapidly biodegradable, high-performance 2-stroke oil for use in the air-cooled engines 2-stroke engines normally used in forestry, silvicultural nursery, landscape gardening, etc. machinery.

Application: PLANTO ENVIRO 2T can be used as a pre-mix oil or in Autolube systems. Flushing prior to use is not necessary. PLANTO ENVIRO 2T mixes easily with gasoline.

Specifications/Approvals: EEL 2005/360/EC

FUCHS Recommendations: All air-cooled 2-stroke engines, JASO FC, ISO EGD



PLANTO ENVIRO TAC 150

Description: PLANTO ENVIRO TAC 150 is a rapidly biodegradable, high-viscosity and very tacky chain saw oil based on harvestable raw materials. PLANTO ENVIRO TAC 150 was developed for all pressure-lubricated, high-performance chain saws operated in environmentally sensitive areas such as Protected Water Zones, forests and silvicultural nurseries. PLANTO ENVIRO TAC 150 can, of course, also be used for other applications which require an outstanding chain lubricant.

Application: PLANTO ENVIRO TAC 150 can be used in all larger chain saws and tree-felling equipment.

PLANTO ENVIRO TAC 150 is fully miscible with all other brand-name chain oils.

However, PLANTO ENVIRO TAC 150 can only deliver its full benefits if it is used alone.

PLANTO ENVIRO TAC 150 is simple to use: flushing the oil tank before use is not necessary.

Specifications/Approvals: EEL 2005/360/EC

FUCHS Recommendations: –



Product overview.

PLANTOMOT 5W-40

Description: PLANTOMOT SAE 5W-40 is a highly innovative, rapidly biodegradable Super High Performance engine oil for normally aspirated and turbocharged diesel engines in cars, vans, buses and industrial machinery. PLANTOMOT SAE 5W-40 reduces fuel consumption, cuts oil consumption and protects the environment at the same time as guaranteeing excellent engine performance.

Application: All diesel or heating fuel-powered engines can be run on PLANTOMOT SAE 5W-40 without prior flushing regardless of their power. Engines fuelled with Bio-diesel/FAME (acc. to DIN EN 14214) or mixtures of this with regular diesel fuel can be changed over to PLANTOMOT SAE 5W-40 because this oil is fully compatibility with these fuels.

Specifications/Approvals: –

FUCHS Recommendations: ACEA E3/B3, API CG-4, DEUTZ DQC III 05, KUBOTA, SISU, ZETOR

PLANTO HYTRAC PLUS

Description: PLANTOMOT HYTRAC PLUS is the environmentally friendly alternative to mineral -based manual transmission and gearbox hydraulic oils of the UTTO type. PLANTOMOT HYTRAC PLUS is biodegradable and non-water soluble. This ensures that any spillages of PLANTOMOT HYTRAC PLUS remain in the upper reaches of the earth where they are degraded over time.

Application: PLANTOMOT HYTRAC PLUS is recommended for manual gearboxes and gearbox-hydraulic systems with or without integrated wet brakes. PLANTOMOT HYTRAC PLUS should not be used if ATF's are specified. Normally, no different sealing elements or filters are required when changing over from mineral oil-based products to PLANTOMOT HYTRAC PLUS. However, for absolute reliability, this should be checked on a case by case basis. Flushing prior to changing the oil is worthwhile but not absolutely necessary. PLANTOMOT HYTRAC PLUS can only offer its full benefits if it is used alone and not in mixtures with other oils. CAUTION: Due to the powerful detergent effect of the base oils, filters should be checked and, if necessary, replaced after about 50 operating hours. In some cases, a number of consecutive filter changes may be necessary. Moreover, one-part paint systems are not compatible with PLANTOMOT HYTRAC PLUS and contact should be avoided.

Specifications/Approvals: SAE J300: 10W-30, SAE J306: 80, API GL 4

FUCHS Recommendations: JOHN DEERE, MASSEY FERGUSON, SAME DEUTZ-FAHR, NEW HOLLAND (FIAT/FORD), CASE (CNH)

PLANTOGEL 2 N – Also available as NLGI 1

Description: PLANTOGEL 2 N is rapidly biodegradable lubricating grease based on rape seed oil and a calcium-12-hydroxy stearate soap. PLANTOGEL 2 N is water resistant, protects from corrosion, is strongly adhesive and shows good wear protection.

Application: Lubrication of lock gates, sewage treatment plants, garage doors, chains and agricultural vehicles (do not use for wheel hubs or hot water pumps)

Specifications/Approvals: KX 2 C-20, ISO-L-XBAEA 2

FUCHS Recommendations: –

PLANTOGEL 2 S – also available as Spray under the name PLANTO MULTISPRAY S and in NLGI 1

Description: PLANTOGEL 2 S is rapidly biodegradable lubricating grease based on synthetic ester and a lithium-calcium soap. PLANTOGEL 2 S is water resistant, protects from corrosion and wear, and is easily pumpable in central lubricating systems. Furthermore, PLANTOGEL 2 S contains EP-additives to improve the load carrying abilities of the lubricating film.

Application: Lubrication of roller and friction bearings, also in wheel hubs. Lubrication of friction bearings in water turbines.

Specifications/Approvals: KPE 2 K-40, ISO-L-XDCEB 2, MAN 283 Li-P 2-B, Bundeswehr-Code GY 3095

FUCHS Recommendations: For use in central lubricating systems of: WILLY VOGEL, LINCOLN

PLANTOGEL 2 FS

Description: PLANTOGEL 2 FS is rapidly biodegradable lubricating grease based on synthetic ester and a lithium-calcium soap. PLANTOGEL 2 FS is water resistant, adhesive, protects from corrosion and wear, and has good emergency running properties due to selected solid lubricants.

Application: Lubrication of high loaded roller and friction bearings of all kinds, e.g. for central lubricating systems in commercial vehicles as well as construction and agricultural machines. Also suitable for use in mixed friction areas and at low sliding speeds.

Specifications/Approvals: KPFE 2 K-30, ISO-L-XCCEB 2

FUCHS Recommendations: –

PLANTOGEL 000 S

Description: PLANTOGEL 000 S is rapidly biodegradable semi-fluid grease based on synthetic ester and a lithium-calcium soap. PLANTOGEL 000 S is water resistant, protects from corrosion and wear, is oxidation resistant and easily pumpable in central lubricating systems. Furthermore, PLANTOGEL 000 S contains EP additives to improve the load carrying abilities of the lubricating film.

Application: Lubrication of roller and friction bearings in machine tools, commercial vehicles and construction machines with central lubricating systems. Also suitable for use in gears and gear motors exposed to low and normal loads.

Specifications/Approvals: GPE 00/000 K-40, ISO-L-XDCEB 00/000, MAN TUC 533/92

FUCHS Recommendations: WILLY VOGEL central lubricating systems for commercial vehicles

Products for the transport, construction, municipal sectors and sewage-treatment plants.





Nearly all vehicles have some sort of impact on nature. All vehicles and machinery carry substances such as fuel, engine oil, gear oils, hydraulic oils, antifreeze, etc. which can pose significant dangers to our environment in the case of a spillage. This is particularly true of off-road vehicles (such as dozers, diggers, etc.) which operate directly on the earth and which carry larger volumes of fuel and lubricants. These pose a considerable potential hazard to the environment in case of an accident.

Applications

- Harvesters
- Construction machinery
- Transport and municipal vehicles
- Drainage cleaning machinery
- Sewage-treatment plants

Products

 Hydraulic oil	PLANTO ENVIRO HYD 46 S
 Hydraulic oil	PLANTO ENVIRO HYD 46 HVI
Engine oil	PLANTOMOT 5W-40
Gear oil	PLANTO HYTRAC PLUS (mobile)
Gear oil	PLANTO GEAR S (stationary)
Grease	PLANTOGEL 2 N
Grease	PLANTOGEL 2 S
Grease	PLANTOGEL 2 FS
Grease	PLANTOGEL 000 S





Lubricants are used for work in forests, alpine meadows, ski slopes or farming because the modern utilization of these highly sensitive eco-systems is treated as a commercial enterprise. Chain saw oils are total-loss lubricants which end up in the environment after use. Assuming 30 million m³ of wood is felled every year and a chain saw oil consumption of 0.18 kg/m³, more than 5000 tonnes of chain saw oil is deposited in European forests every year! The same applies to 2-stroke oils which are used for chain saws as well as for snowmobiles etc. These lubricants also end up in the environment after use. Both examples account for many million kg of lubricants which end up in our sensitive eco-systems. FUCHS supports sustainability and economy and has therefore developed a biodegradable chain saw oil and a biodegradable 2-stroke oil which fulfil the requirements of the EEL.

Applications

- Forestry
- Earthworks
- Agriculture
- Chain saws, landscape gardening

Products

Hydraulic oil	PLANTO ENVIRO HYD 46 S
Hydraulic oil	PLANTO ENVIRO HYD 46 HVI
2-stroke oil	PLANTO ENVIRO 2T
Chain saw oil	PLANTO ENVIRO TAC 150
Engine oil	PLANTOMOT 5W-40
Gear oil	PLANTO HYTRAC PLUS (mobile)
Gear oil	PLANTO GEAR S (stationary)
Tacky oil	PLANTOTAC HV
Grease	PLANTOGEL 2 N
Grease	PLANTOGEL 2 S
Grease	PLANTOGEL 2 FS
Grease	PLANTOGEL 000 S








A major aspect of commercial applications in the mountains is the long-term preservation of an unharmed and clean environment. FUCHS offers a specific range of biodegradable lubricants which satisfy both environmental protection and the need to offer the best possible lubrication of all equipment operated in mountainous regions such as snow crawlers, snow cannons, ski lifts, snowmobiles and snow dozers. This range of products includes environmentally friendly engine, transmission and hydraulic oils.

Applications

- Ski slope and piste preparation
- Ski lifts
- Snowmobiles
- Snow cannons

Products

 Hydraulic oil	PLANTO ENVIRO HYD 46 S
 Hydraulic oil	PLANTO ENVIRO HYD 46 HVI
 2-stroke oil	PLANTO ENVIRO 2T
Engine oil	PLANTOMOT 5W-40
Grease	PLANTOGEL 2 S
Grease	PLANTOGEL 000 S








Drinking water is the most important staple which usually comes from groundwater or rivers. Almost all pollution to these important reservoirs is caused by water craft, particularly from propeller greases, chain or rope lubricants, 2-stroke oils and other products. FUCHS offers a range of biodegradable lubricants which are specifically formulated to meet the needs of such applications.

Renewable energy sources like wind power and rapidly biodegradable lubricants have the same background: protection of the environment and of the natural resources. In windmills with the highest demands made on the lubricant, the FUCHS rapidly biodegradable lubricants demonstrate their excellent suitability.

Applications

- River and coastal fishing
- River and coastal navigation
- Sailing and motor boats
- Locks, hydroelectric plants
- Drilling rigs
- Dry docks
- Wind energy

Products

 Hydraulic oil	PLANTO ENVIRO HYD 46 S
 Hydraulic oil	PLANTO ENVIRO HYD 46 HVI
 2-stroke oil	PLANTO ENVIRO 2T
 Chainsaw oil	PLANTO ENVIRO TAC 150
Engine oil	PLANTOMOT 5W-40
Gear oil	PLANTO HYTRAC PLUS (mobile)
Gear oil	PLANTO GEAR S (stationary)
Gear oil	GEARMASTER ECO (stationary)
Grease	PLANTOGEL 2 S
Grease	PLANTOGEL 2 FS

