

AGRIFARM

**Agricultural Lubricants
Expertise in All Fields**



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Protect your machinery, for long and reliable life.

A leading supplier to European OEM's.

Almost nobody understands engines, gearboxes and hydraulics better than FUCHS.

As the world's largest independent lubricant manufacturer, we concentrate exclusively on lubricants. This has made us the largest OEM in the European commercial vehicle industry and a leading partner in the agricultural sector. Because we know and understand the technical demands, we can always offer you the best possible solution.

For all of your lubricant demands. All the time.

All the lubricants for agricultural fleets.

Greases for vehicle and machinery bearings, hydraulic oils for a variety of applications or engine and gear oils for all the vehicles on your farm and on your fields – with FUCHS you get the perfect lubricant from just one source enabling a rationalisation of oil grades for your entire vehicle and machinery fleet. For example, the multi-functional UTTO and STOU oils. Read more about this in the technical section at the end of this brochure.

Regardless which FUCHS lubricant you choose: You will benefit from your decision every day.

Your advantages: Lower operating costs and greater reliability.

Lubricants are not just lubricants: Along with ultimate reliability at all temperatures, high-performance lubricants from FUCHS also offer lower oil consumption, a noticeable reduction in fuel consumption and specifically extended oil change intervals. The benefits are obvious: More efficient gearboxes and engines results in lower operating costs. Simply from the lower fuel consumption. Depending on usage, just 1% less fuel consumption can generate savings of many hundred Pounds per vehicle per year.

Moreover, the use of multi-functional oils (MFO/STOU) eliminates the risks of using the wrong lubricant because a machine may require just one lubricant. STOU or MFOs can be used in engines, gearboxes and hydraulic systems. For us, the operational reliability of your machinery and the protection of your investment is the highest priority.



The information contained in this product information is based on the experience and know-how of FUCHS EUROPE SCHMIERSTOFFE GMBH in the development and manufacturing of lubricants and represents the current state-of-the-art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pre-treatment, possible external contamination, etc. For this reason, universally-valid statements about the function of our products are not possible. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

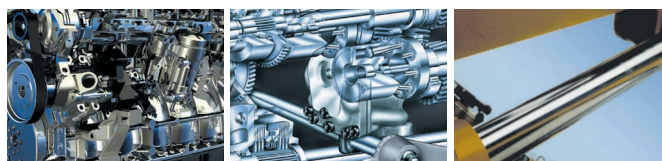
We therefore recommend that you consult a FUCHS EUROPE SCHMIERSTOFFE GMBH application engineer to discuss application conditions and the performance criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care.

Our products undergo continuous improvement. We therefore retain the right to change our product program, the products, and their manufacturing processes as well as all details of our product information sheets at any time and without warning. With the publication of this product information, all previous editions cease to be valid.

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Products for the most demanding applications:

Multifunctional Oils / STOU



High Quality		Specifications/ Approvals	FUCHS Recommendations
<p>AGRIFARM STOU MC PRO SAE 10W-40</p> <p>AGRIFARM STOU MC PRO 10W-40 is a high performance multifunctional agricultural oil (STOU/MFO) designed for use in the latest agricultural equipment. AGRIFARM STOU MC PRO 10W-40 is blended using the latest base oil and additive technology to give outstanding protection to the transmissions, brake systems, hydraulic systems and engines fitted to the latest agricultural equipment.</p>	<p>SAE J300: SAE 10W-40 DEUTZ DQC III - 10</p>	<p>ACEA E7(E5/E3),E4 API CI-4, API GL-3/GL-4/API GL-5 in tractors* MAN 3275 AFNOR NFE 48603 HV ALLISON C-4 CASE MS 1207, 1209, 1210, 1230</p>	<p>CNH MAT 3505, 3509, 3525, 3526 DIN 51524-3: HVLP (-D) FNHA 2C-200.00, 201.00 FORD M2C48-C3, M2C86-B, M2C134-D, M2C159-B/C JOHN DEERE JDM J20 C NEW HOLLAND 82009201/2/3</p> <p>NH 030C, NH 330G, NH 330H, NH 410B, NH 420A, NH 526C MASSEY FERGUSON CMS M 1145 (1135/1139/1143/1144) ZF TE-ML 06A, 06B, 06C, 06F, 06L, 07B * without HOLMER</p>
Medium Quality		Specifications/ Approvals	FUCHS Recommendations
<p>AGRIFARM STOU MC SAE 10W-40</p> <p>Super high-performance multifunctional low-friction oil (STOU / MFO) based on MC-base-oil technology for engines, manual gearboxes, wet brakes, hydraulics and turbo-drives in tractors and other agricultural and other commercial vehicles.</p>	<p>API GL-4 SAE J300: SAE 10W-40 DEUTZ DQC I-02 FENDT KDM 17/2012 ZF TE-ML 06B, 06F, 07B (ZF000729)</p>	<p>API GL-5 in tractors* ACEA E3 APIO CG-4 MAN 271 AFNOR NFE 48603 HV ALLISON C-4 CASE MS 1207, 1209, 1210, 1230 CNH MAT 3505, 3509,</p>	<p>3525, 3526 DIN 51524-3: HVLP (-D) FORD M2C134-D, M2C159-B/C, FNHA 2C-200.00, 201.00, FORD M2C48-C3, M2C-86 B JOHN DEERE JDM J20C NEW HOLLAND 82009201/2/3</p> <p>NH030C, NH330G, NH410B, NH420A, NH 526C MASSEY FERGUSON CMS M 1145, 1144, 1143, 1139, 1135 SAE J306: SAE 75W-90 ZF TE-ML 06A, 06C, 06L * without HOLMER</p>
<p>AGRIFARM STO PLUS 10W-30</p> <p>AGRIFARM STO PLUS 10W-30 is a universal tractor oil suitable for use in most tractor engines, transmissions, hydraulics and final drives. Also suitable for both turbo charged and naturally aspirated engines, and in machines fitted with oil immersed brakes.</p>	<p>API CG-4/SF API GL-4</p>	<p>ALLISON C-4 CASE NEW HOLLAND (CNH) MAT 3525, 3526 DIN 51524-3: HVLP (-D) FORD M2C 159B/C, 134D FORD NEW HOLLAND (FNH) 82009201/2/3 JOHN DEERE JDM J20C, J27 MASSEY FERGUSON CMS M 1135, M 1139, M 1143, M 1144, M 1145 MIL-L 2104D, 46152B NEW HOLLAND NH030C, NH024C, NH410B, NH420A, ZF TE-ML 06B, 06C, 06R, 07B</p>	
Standard Quality		Specifications/ Approvals	FUCHS Recommendations
<p>AGRIFARM STO 15W-30</p> <p>AGRIFARM STO 15W-30 combines modern additive technology in the approach to universal lubrication of diesel engines, transmissions and hydraulics, and meets most manufacturers wet brake requirements.</p> <p>AGRIFARM STO 15W-30 is multi-purpose SAE 15W-30 multigrade oil developed as a universal lubricant for industrial and agricultural wheeled tractors and is suitable for use in most agricultural tractors including many current models.</p>	<p>API CD/SF, GL4 MIL-L 2104C</p>	<p>ABEX DENISON HF-0 ALLISON C3 FORD M2C 159B JOHN DEERE J20A MASSEY FERGUSON M1135, M1139 VICKERS HYDRAULICS</p>	

Engine Oils

High Quality		Specifications/ Approvals	FUCHS Recommendations
AGRIFARM MOT X-LA SAE 10W-40	Premium Performance engine oil for agricultural vehicles. Universal engine oil for application in modern vehicles with exhaust after treatment as well as in older vehicles. Best engine cleanliness and outstanding wear protection.	ACEA E9/E7/E6/E4 API CJ-4/CI-4 PLUS/CI-4/ CH-4 CAT ECF-3 DEUTZ DQC III-10 LA (inc. TTCD)	MB-APPROVAL 228.51 CNH MAT 3521 CUMMINS CES 20081
AGRIFARM MOT SAE 10W-40	Ultra high performance engine oil of the latest conception of the SAE grade 10W-40. Developed for advanced diesel engines which made high demands on service intervals and engine cleanliness. Specially recommended for normally aspirated and turbocharged engines.	ACEA E7, API CI-4, GLOBAL DHD-1, JASO DH-1 (10W-40),	ALLISON C-4 CUMMINS CES 20071/2/6/7/8 DAF DEUTZ DQC III MACK EO-M PLUS MAN M 3275 MTU DDC TYPE-2 RENAULT RLD / RLD-2 VOLVO VDS-3
AGRIFARM MOT SAE 15W-40	Super high-performance motor oil for normally aspirated and turbocharged diesel engines in tractors and other machinery with high demands on service intervals and engine cleanliness.	ACEA E7 API CI-4/SL GLOBAL DHD-1 CAT ECF-1a/ECF-2 DEUTZ DQC III-10 MB-APPROVAL 228.3	ALLISON C-4 CAT TO-2 CASE MS 1121 CUMMINS CES 20071/2/6/7/8 DETROIT DIESEL 93K215 IVECO 18-1804 CLASSE T2 E7 MACK EO-N MAN M 3275-1 MTU DDC TYPE-2 NH 330 H RENAULT RLD / RLD-2 STEYR A-201 VOLVO VDS-3
AGRIFARM 4 STROKE 30	AGRIFARM 4 STROKE 30 engine oil is a high quality SAE 30 monograde engine oil for use in petrol and diesel engines fitted to a variety of agricultural and horticultural equipment.	API - CD/CF/SG,	MAN 270 MERCEDES 227.0 / 228.0
TITAN CARGO SAE 10W-30	Ultra High Performance, extreme fuel-economy oil. Specially developed for Volvo with extended service intervals, exhaust after treatment and turbocharger.	ACEA E9/E7 API CJ-4/SL CAT ECF1-a/ECF-2/ECF-3 DEUTZ DQC III-10 LA MACK EO-O PREMIUM PLUS MAN M 3575	MB-APPROVAL 228.31 RENAULT RLD-3 VOLVO VDS-4 CUMMINS 20081 MTU DDC TYPE 2.1
TITAN CARGO SAE 15W-40	Ultra High Performance, fuel-economy oil, specially developed for commercial vehicle diesel engines with extended service intervals, exhaust after treatment and turbocharger.	ACEA E9/E7 API CJ-4/CI-4 PLUS/CI-4 CAT ECF-2/ECF-3 CUMMINS CES 20081 DETROIT DIESEL DDC 93K218 DEUTZ DQC III-10 LA FAWDE Q/XC 3135-2007	MACK EO-O PREMIUM PLUS MAN M 3575 MAN M 3275-1 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 VOLVO VDS-4 RENAULT RLD-3 ALLISON C4

2-STROKE

**AGRIFARM
UNIVERSAL
2-STROKE OIL**

AGRIFARM UNIVERSAL 2-STROKE OIL is a clean burning low smoke 2-stroke oil which may be used either as a tank mix or in oil injection systems, and is ideal for agricultural and horticultural machinery, chain saws, hedge cutters, strimmers, portable generators etc. AGRIFARM UNIVERSAL 2-STROKE OIL is fortified with a synthetic inclusion to give improved thermal stability, lubricity and anti-wear capability and is dyed red for ease of identification.

API - TC, JASO - FB

Gearbox-Hydraulic Oils

Medium Quality		Specifications/ Approvals	FUCHS Recommendations
AGRIFARM UTTO MP	Super high-performance oil (UTTO/MFO) for use in transmission and hydraulic systems with integrated wet brakes, clutches and differentials for agricultural and construction machinery.	API GL-4 SAE J300: 10W-30 ZF TE-ML 03E, 05F, 17E, 21F (ZF001623)	AGCO Powerfluid 821 XL 3509, 3525, 3526, 3540 AGCO Q-186 (Whitefarm) FNHA-2-C-200.00 / ALLISON C-4 -201.00 CASE MS 1230, 1210, FORD M2C48-C3 1209, 1207, 1206 ESN M2C86-B/C CLAAS/ LANDINI/ SAME- FORD M2C134-D Transmission JOHN DEERE JDM J20C CNH MAT 3505, 3506, KUBOTA UDT FLUID
AGRIFARM WET BRAKE OIL	A tractor transmission oil suitable for use in most agricultural tractors & associated equipment. Inhibitors are incorporated to ensure excellent corrosion protection, reduced gear wear and freedom from foaming. Friction modifiers are used to eliminate brake squawk on machines fitted with oil immersed brakes.	SAE 15W-30	FORD M2C-86B, M2C-86C JOHN DEERE J20A MASSEY FERGUSON M1135

Gear Oils

Medium Quality		Specifications/ approvals	FUCHS recommendations	
TITAN GEAR HYP 85W-140	TITAN GEAR HYP 85W-140 is a heavy duty, extreme pressure gear oil suitable for use in final drives, hub reductions and PTOs fitted to agricultural and construction equipment.	API - GL5	ZF - TE-ML 07, 08	
TITAN GEAR LS 90	TITAN GEAR LS 90 is a high performance Limited Slip (LS) hypoid gear oil for use in final drives fitted to agricultural and construction equipment. TITAN GEAR LS 90 ensures the safe and correct operation of limited slip differentials.	API GL-5 ZF TE-ML 05C, 12C, 16E, 21C (ZF000651)	FORD M2C104-A, JOHN DEERE JDM J11F, LIEBHERR, NH 520B,	MIL-L-2105D VOLVO 97310
TITAN GEAR HYP 90 SAE 80W-90	TITAN GEAR HYP 90 is a heavy duty, extreme pressure gear oil suitable for use in final drives, hub reductions and PTOs and some manual gearboxes fitted to agricultural and construction equipment.	API - GL5 MAN 342 Type M1, MB 235.0, ZF TE-ML 16C, 17B, 19B, 21A (ZF000656)	Ford M2C9102-A, JOHN DEERE JDM J11E OPEL 19 42 387 VOLVO 97310 VW TL 727	ZF TE-ML 07, 08

Hydraulic Oil

High Quality		Specifications/ Approvals	FUCHS Recommendations	
AGRIFARM UNIVERSAL HV46	Premium quality multipurpose hydraulic oil incorporating anti-wear, anti-foam, anti-rust, anti-oxidant agents to give long life under all operating conditions. AGRIFARM UNIVERSAL HU 46 is dyed blue for identification purposes.	DIN 51 524-3 HVLP ISO 6743-4: HV	DENISON HF-0	

Milking Machine Oil

High Quality		FUCHS recommendations
AGRIFARM MILKING MACHINE OIL	AGRIFARM MILKING MACHINE OIL is a universal milking machine oil specially developed for use in the vacuum pumps of milking machines. It contains additives which protect against wear and corrosion and combat foaming. These features increase the functional reliability of such systems.	ALFA LAVAL WESTFALIA

Chain Saw Oil

AGRIFARM CHAIN SAW OIL MEDIUM	AGRIFARM CHAIN SAW OIL MEDIUM is a high-viscosity, extremely tacky lubricant specially developed for all types of pressure fed chain saws. The product may be used in the heaviest duty applications and is particularly effective on the larger machines. Effective corrosion inhibitors, load carrying agents and anti-wear aids are incorporated to ensure maximum equipment life under all operating conditions.
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Greases		FUCHS recommendations
RENOLIT LX EP 2 GREASE	RENOLIT LX EP 2 is a non-leaded, lithium complex, extreme pressure grease, capable of operating at higher temperatures than normal lithium greases. It provides good rust protection, efficient water resistance, excellent stability against oxidation and good resistance to mechanical breakdown. RENOLIT LX EP 2 can also be used as a general purpose grease in order to aid product rationalisation.	
RENOLIT MO 2	RENOLIT MO 2 is designed as a multipurpose lubricating grease for high load applications. It is a high quality lithium based grease fortified by molybdenum disulphide and other additives which is suitable for the lubrication of suspension joints, steering joints, fifth wheel applications and general chassis use on automotive vehicles.	Formulated to Ford Specification ESA M1C 47A.
RENOLIT CXI 2	RENOLIT CXI 2 is an optimised calcium sulphonate complex thickened grease giving very good characteristics concerning water resistance, even concerning acids and alkaline solutions, working stability, corrosion protection and oil separation.	FORD ESA-M1C 172-A

This guide explains the different lubricants available for agricultural machinery and what the specifications mean.

Engine oils

There are a wide range of specifications available. The table below shows some of the more widely used and important specifications:

ACEA

ACEA E categories are used to specify the correct engine oil in commercial diesel engines including those fitted to tractors, harvesters and other associated agricultural equipment.

E1	Older diesel engine specification now obsolete.
E2	Oil for older normally aspirated and turbocharged engines, medium to heavy duty and standard oil drain intervals.
E3	Heavy duty oil with improved piston cleanliness and bore polishing protection, better dispersancy and improved thermal stability. Recommended for diesel engines meeting Euro I and II emissions operating under harsh conditions and suitable for extended drain.
E4	Engine oil recommended for highly rated diesel engines meeting Euro I, II, III, IV and V emission requirements. Suitable for certain engines with EGR and SCR NOx reduction systems but not suitable for engines fitted with particulate filters. Capable of extended drain interval subject to manufacturer guidelines.
E5	Oil with improved properties compared to E3 with further improvements in piston cleanliness, bore polishing, soot handling and turbocharger deposit control.
E6	Ultra high performance diesel (UHPD), low SAPs engine oil recommended for engine oils up to and including those meeting Euro VI emission requirements operating under very severe conditions. Suitable for engines fitted with particulate filters, EGR and SCR NOx reduction systems. Significant extended drain interval capability subject to manufacturer guidelines.
E7	Ultra high performance diesel (UHPD) engine oil for engines meeting Euro I, II, III, IV and V emission requirements. Suitable for most engines fitted with EGR and SCR NOx reduction systems but not suitable for engines fitted with particulate filters.
E9	Ultra high performance diesel (UHPD), mid SAPs engine oil recommended for engine oils up to and including those meeting Euro VI emission requirements operating under very severe conditions including extended drain. Suitable for engines fitted with particulate filters, EGR and SCR NOx reduction systems.

Note. Current ACEA categories are E4, E6, E7 and E9

API

API commercial diesel specifications are classified by the letter C (Compression ignition) followed by a number, detailed and described below.

CE	Diesel engine oil for older high speed, four stroke, naturally aspirated and turbocharged diesel engines.
CF	Heavy duty diesel engine oil especially designed for indirect fuel injection but can also be used in other diesel engines. Suitable for fuel sulphur > 0.5%.
CF-4	Introduced in 1990 for high speed, four stroke diesel engines. Suitable for naturally aspirated and turbocharged engines.
CG-4	Engine oil for severe duty, high speed, four stroke diesel engines using fuel with sulphur < 0.5% by weight. Introduced for engines meeting 1994 emission standards.
CH-4	Engine oil introduced for engines meeting 1998 exhaust emission standards. Formulated for use with diesel engines using fuel with sulphur content up to 0.5%.
CI-4	Introduced in 2002 for engines designed to meet the 2004 EPA exhaust emission standards. Designed for engines fitted with and without EGR systems running on fuel with sulphur levels up to 0.5%.
CJ-4	Introduced in 2006 for diesel engines designed to meet the 2007 EPA on-highway emissions standards. CJ-4 oils are mid SAPs and designed to be used with fuel sulphur levels up to 500ppm. Oils of this specification can be used in engines fitted with particulate filters and other advanced exhaust treatment devices.

Gear oils

A variety of different gear oils which fulfil a range of specifications are available. The table here shows the lubricant types described by the API gear oil specifications:

API Classifications

The American Petroleum Institute (API) has a gear oil classification system which allows categorisation according to application conditions. API gear oil classifications are used internationally.

API Gear Oil Classifications	Operating Conditions	Type of Gearbox
API GL-1	Low bearing loads and low sliding speeds. Non EP.	Manual transmissions and axles operating under mild conditions.
API GL-2	Higher loads and sliding speeds than API GL-1.	Worm drives, manual gearboxes and some axles operating under moderate loads.
API GL-3	Moderately high loads and sliding speeds.	Certain axle drives, bevel gears and manual gearboxes.
API GL-4	Higher loads and speeds. High speed/low torque or low speed/high torque.	Axles with spiral bevel gears and manual transmissions operating under moderate to severe conditions.
API GL-5	High speed and shock loads. High speed/low torque or low speed/high torque.	High off-set hypoid gears operating under severe operating conditions. Suitable for some manual gearboxes.

Special agricultural lubricants (STOU / UTTO)

These are oils specifically designed for the gearboxes and hydraulic systems of tractors and other agricultural equipment fitted with or without wet brake systems. Our STOUs and UTTOs were developed to offer the best performance in the widest variety of equipment with STOUs and MFOs also suitable for use in certain engines.

The table on the right offers an overview of their uses.

Limited Slip (LS)

Limited slip oils are required in certain agricultural equipment where they are fitted with limited slip differentials. The additional additives in LS gear oils ensure smooth and quiet operation under all loads.

Equipment	UTTO	STOU	MFO
Internal combustion engines (with or without turbocharging)		●	●
Manual gearboxes	●	●	●
Gearboxes and gearbox-hydraulic systems with or without integrated wet brakes	●	●	●
Hydraulic systems	●	●	●
Final drives	●	●	●
Final drives with high off-set gears			●

UTTO = Universal Tractor Transmission Oil

STOU = Special Tractor Oil Universal

MFO = Multifunctional Oil

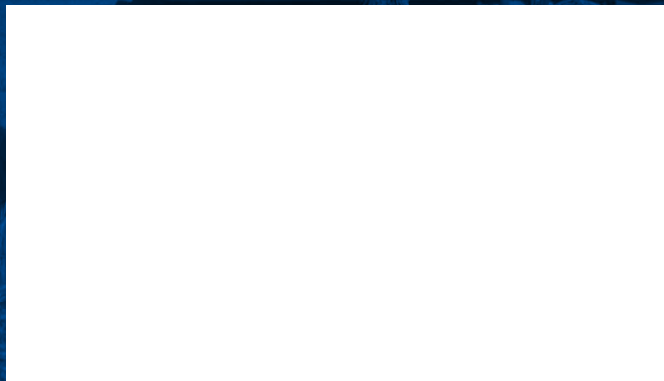
Important OEM Specifications in Agriculture

Manufacturer	Specification	Lubricant Type
CASE	MS 1207	UTTO SAE 10W-30
	MS 1209	UTTO SAE 10W-40
	MS 1316	Gear oil, SAE 80W-90, SAE 85W-140, API GL-5
	MS 1317	Gear oil, SAE 80W-140 with wet brakes
	MAT 3525	UTTO
FORD	M2C159-B	STOU, SAE 10W-30, 15W-30, 20W-40
	M2C86-C	UTTO (Europe)
	M2C134-D	UTTO (USA)
JOHN DEERE	JD J 20 C	UTTO, SAE 10W-30
	JD J 27	STOU, SAE 10W-30, SAE 15W-40
MASSEY FERGUSON	M 1139	STOU, SAE 15W-40
	M 1144	STOU, SAE 5W-30 to 20W-40, API CD
	M 1135	UTTO
	M 1143	UTTO
	M 1145	STOU / UTTO
ZF	ZF TE-ML 06 B/C/D/F	STOU
	ZF TE-ML 06 E/K	UTTO
NEW HOLLAND	NH 405	UTTO, SAE 5W-20
	NH 410 A	UTTO, SAE 20W-30, SAE 10W-30
	NH 410 B	UTTO, SAE 10W-30
	NH 410 C	UTTO optimized for wet brakes
	NH 420	UTTO as NH 410 B and NH 410 C
	NH 520 B	LS gear oil, SAE 85W-90
	NH 524 A	Gear oil, SAE 85W-140

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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