

TITAN

High-tech safety for gearboxes



Gear oils for passenger cars and commercial vehicles 02/2014

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Gear oils for passenger cars.

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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.

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For problem-free operation over the entire life of the vehicle, passenger car gearboxes today need high-performance lubricants which protect against wear and significantly increase shifting comfort. In addition, extending oil change intervals up to the life of the vehicle make considerable demands on the quality of the oils.

As the long-term development partner of the world's leading gearbox manufacturers, we operate at the leading edge of technology.

***Go for quality and reliability.
Go for FUCHS.***



***TITAN SINTOFLUID –
for passenger car
manual gearboxes***

***TITAN SINTOPOID –
for passenger car
differentials***

TITAN **SINTOFLUID FE** **SAE 75W**

Premium Performance Manual Transmission Fluid offering increased gearbox efficiency in passenger cars due to low viscosity level. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill for life fluid according to manufacturer.

Specifications:

API GL-4

Approvals:

–

FUCHS Recommendations:

VW TL 521 71 (G 052 171 A1/A2)
VW TL 521 78 (G 052 178 A2)
VW TL 525 12 (G 052 512 A2)
VW TL 726 (G 052 726 A2/G 055
726 A2/ G 060 726 A2/G 070 726
A2)



TITAN **SINTOFLUID** **SAE 75W-80**

Premium Performance Manual Transmission Fluid for passenger cars. Offering good gearbox efficiency. Suitable as fill for life fluid according to manufacturer.

Specifications:

API GL-5

Approvals:

–

FUCHS Recommendations:

MIL-L-2105 D
ALFA ROMEO
BMW 83 22 0 309 031
BMW 83 22 0 403 247
BMW 83 22 7 533 818
BMW 2300 1434 404
BMW 2300 7533 513
BMW 2300 7533 818
CITROEN
FIAT
FORD M2C200-C/C2/C3
LANCIA
OPEL 19 40 182
OPEL 19 40 757
OPEL 19 40 768
OPEL 19 40 776
PEUGEOT
RENAULT
VOLVO 97308
VW 501 50 (G 005 000 05/G 005
000/G 005 000 20/G 052 911 A1/
A2)

TITAN **SINTOPOID FE** **SAE 75W-85**

Premium Performance Gear Oil offering increased gearbox efficiency in passenger cars due to low viscosity level, formulated with fully-synthetic base oils. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill for life fluid according to manufacturer.

Specifications:

API GL-5

Approvals:

MB-APPROVAL 235.7
ZF TE-ML 18

FUCHS Recommendations:

ALFA ROMEO
BMW
FIAT
LANCIA
VW TL 521 45-X (G 052 145 A1)
VW TL 521 90 (G 052 190 A2/
G 055 190 A2)



TITAN **SINTOPOID** **SAE 75W-90**

Premium Performance Axle Gear Oil for passenger cars, also for for high-offset hypoid drives offering good gearbox efficiency. Suitable as fill for life fluid according to manufacturer.

Specifications:

API GL-5

Approvals:

–

FUCHS Recommendations:

MIL-L-2105 D
BMW
VW TL 521 45-Y (G 052 145 A2)

TITAN **SINTOPOID LS** **SAE 75W-90/75W-140**

Premium gear oil for axle and transfer gearboxes, formulated with fully-synthetic base oils. Offers best cold start behaviour. Suitable for axle and transfer gearboxes with and without limited slip differential. SINTOPOID LS 75W-90 is suitable as trouble shooter for conventional manual transmissions.

Specifications:

SAE 75W-90 LS:
API GL-4/-5/-5 incl. LS
SAE 75W-140 LS:
API GL-5

Approvals:

–

FUCHS Recommendations:

SAE 75W-90 LS:
VW G50 / G51
SAE 75W-140 LS:
BMW 83 22 2 282 583
BMW 83 22 9 407 870
CHRYSLER MS-8985
FORD M2C192-A, GM 12346140
JOHN DEERE JDM J 11 G
SCANIA STO 1:0

***Gear oils
for mixed fleets.***

FUCHS has developed special gear oils for the wide variety of gearboxes in cars and trucks. To reduce the chances of incorrect filling. To reduce stock-keeping. And ultimately, to reduce operating costs. Choose FUCHS rationalisation products.



Reduce your operating costs: By using mixed fleet products in your vehicle park.

TITAN **SUPERGEAR MC** **SAE 80W-90**

Super High Performance Gear Oil based on MC-Synthesis for extended oil change intervals.

Specifications:
API GL-4/GL-5
SCANIA STO 1:0

Approvals:
MAN 341 TYPE E2
MAN 341 TYPE Z2
MAN 342 TYPE M2
MB-APPROVAL 235.0
ZF TE-ML 02B, 05A, 12L, 12M,
16B, 17B, 19B, 21A

FUCHS Recommendations:
CASE MS 1316
FORD M2C197-A
JOHN DEERE JDM J 11 E
MAN M 3343 TYPE M
NH 520 A
SDFG OP 1705
STEYR B-101
ZF TE-ML 07, 08

TITAN **SUPERGEAR MC** **SAE 80W-140**

Super High Performance Gear Oil based on MC-Synthesis for extended oil change intervals.

Specifications:
API GL-4/GL-5
SCANIA STO 1:0

Approvals:
–

FUCHS Recommendations:
JOHN DEERE JDM J 11 E
OPEL 19 42 386
RENAULT VI
ZF TE-ML 08

TITAN **SUPERGEAR** **SAE 80W-90**

High Performance Gear Oil for extended oil change intervals.

Specifications:
API GL-4/GL-5

Approvals:
MAN M 342 TYPE M2
ZF TE-ML 05A, 12E, 17B, 19B,
21A

FUCHS Recommendations:
MIL-L-2105 D

TITAN **SUPERGEAR** **SAE 85W-140**

High Performance Gear Oil for extended oil change intervals.

Specifications:
API GL-4/GL-5

Approvals:
ZF TE-ML 05A, 12E, 16D, 21A

FUCHS Recommendations:
MIL-L-2105 D

TITAN **GEAR LS** **SAE 90**

High Performance LS (Limited Slip) hypoid gear oil for axles with or without limited slip differentials.

Specifications:
API GL-5

Approvals:
ZF TE-ML 05C, 12C, 16E, 21C

FUCHS Recommendations:
MIL-L-2105 D
FORD M2C104-A
JOHN DEERE JDM J 11 F
LIEBHERR
NH 520 B

TITAN **GEAR MP** **SAE 80**

High Performance Gear Oil for synchronized and non-synchronized manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.

Specifications:
API GL-4

Approvals:
MAN 341 TYPE E1
MAN 341 TYPE Z2
MB-APPROVAL 235.1
ZF TE-ML 17A

FUCHS Recommendations:
BMW 81 22 9 407 052
BMW 81 22 9 407 053
EATON
FORD M2C9008-A
VW TL 726
ZF TE-ML 08

TITAN **GEAR MP** **SAE 90**

High Performance Gear Oil for synchronized and non-synchronized manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.

Specifications:
API GL-4

Approvals:
MAN 341 TYPE Z1

FUCHS Recommendations:
–

TITAN **GEAR HYP** **SAE 90**

High Performance Gear Oil for highly-stressed differentials in commercial vehicles and passenger cars.

Specifications:
API GL-5

Approvals:
MAN 342 TYPE M1
MB-APPROVAL 235.0
ZF TE-ML 16C, 17B, 19B, 21A

FUCHS Recommendations:
FORD M2C9102-A
JOHN DEERE JDM J 11 E
OPEL 19 42 387
VW TL 727
ZF TE-ML 07, 08

Gear oils for trucks.

Commercial vehicle gearboxes are subject to all sorts of loads. Urban driving puts different demands on the gearbox and its oil than long-distance haulage. As perfect and reliable function is a must – down-time can be ruinously expensive – the gear oil used must be perfectly matched to the gearbox and all of its application parameters. Make no compromises. Rely on the leading OEM supplier.

Heavy-duty gear oils for heavy-duty applications. Never make compromises in the commercial sector.



TTIAN

CYTRAC RR – SAE 75W-90

Fully synthetic Premium Performance Hypoid Gear Oil for axle drives in railcars and heavy duty vehicles.

Specifications:

API GL-5
API MT-1
SCANIA STO 1:0

VOITH TURBO 132.00374401
(3.325-340)
VOITH TURBO 132.00374402
(3.325-342)
ZF TE-ML 05B, 12L, 12N, 16F,
17B, 19C, 21B

Approvals:

SAE J2360
SIEMENS FLENDER Gear Units
for Railway Vehicles

FUCHS Recommendations:
Gmeinder Getriebebau railway
applications

TTIAN

CYTRAC ULTRA SYNTH – SAE 75W-80

Premium Performance Gear Oil for extended drain intervals in commercial vehicles, especially developed for ZF heavy duty transmissions with and without Intarder. Reduces fuel consumption by improving gearbox efficiency. Suitable for longest oil change intervals.

Specifications:

API GL-4
VOLVO 97307

Approvals:

MAN 341 TYPE Z5
ZF TE-ML 01E, 02E, 16P

FUCHS Recommendations:

DAF
IVECO
MAN
Renault Trucks

TTIAN

CYTRAC MB SYNTH – SAE 75W-90

Premium Performance Gear Oil for extended drain intervals in commercial vehicles, specially developed for Mercedes-Benz Actros vehicles, formulated with fully-synthetic base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals.

Specifications:

API GL-4

Approvals:

MAN 341 TYPE MB
MB-APPROVAL 235.11

FUCHS Recommendations:

ZF TE-ML 08

TTIAN

CYTRAC MAN SYNTH – SAE 75W-80

Premium Performance Gear Oil for extended drain intervals in commercial vehicles manual gearboxes, specially developed for manual and automatic ZF-gearboxes, formulated with fully-synthetic base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals and compatible with Carbon-Synchronizers.

Specifications:

API GL-4

Approvals:

MAN 341 TYPE Z4
ZF TE-ML 01L, 02L, 16K

FUCHS Recommendations:

DAF
EATON
IVECO
RENAULT
VOLVO 97307

TITAN**CYTRAC SL – SAE 75W-90**

Premium Performance Gear Oil for highly-stressed hypoid axles in commercial vehicles formulated with fully-synthetic base oils. Developed for the longest oil change intervals in commercial vehicle axle drives.

Specifications:
API GL-5
SCANIA STO 1:0

Approvals:
MAN 342 TYPE S1

FUCHS Recommendations:
JOHN DEERE JDM J 11 E/G
MB 235.8
VOLVO 97312
ZF TE-ML 05B, 07, 08, 12B, 16F, 17B

TITAN**CYTRAC LD – SAE 75W-80**

Ultra High Performance Gear Oil for extended oil change intervals in commercial vehicles fitted with integral retarders or supplementary retarders.

Specifications:
API GL-4

Approvals:
EATON
MAN 341 TYPE E3

FUCHS Recommendations:
DAF
MAN 341 TYPE Z3
VOLVO 97305
ZF TE-ML 02D, 08

TITAN**CYTRAC HSY – SAE 75W-90**

Ultra High Performance Gear Oil for commercial vehicle manual transmissions and axle drives formulated with fully-synthetic base oils.

Specifications:
API GL-4/GL-5

Approvals*:
ZF TE-ML 05B, 12L, 12N, 16F, 17B, 19C, 21B

FUCHS Recommendations:
DAF
MAN 341 TYPE Z2/E3
MAN 342 TYPE M3
MAN M 3343 TYPE S
JOHN DEERE JDM J 11 E / G
SCANIA STO 1:0
ZF TE-ML 07

TITAN**GEAR HYP LD – SAE 80W-90**

Super High Performance Gear Oil specially developed for Mercedes-Benz commercial vehicles. Offering enhanced thermal stability and fuel-economy potential.

Specifications:
API GL-5
API MT-1

Approvals:
MAN 342 TYPE M3
MB-APPROVAL 235.20
ZF TE-ML 05A, 12L, 12M, 16B, 17B, 19B, 21A

FUCHS Recommendations:
MIL-PRF-2105 E
ARVIN MERITOR AXLES
MACK GO-J
JOHN DEERE JDM J 11 E
SCANIA STO 1:0
ZF TE-ML 07A

How to find the right gear oil.**API Classifications**

The American Petroleum Institute (API) created a classification system for gear oils based on application conditions and the type of gears most commonly used. The presence of frictional systems such as clutches or synchromesh rings in gearboxes as well as sealing material compatibility or component wear are not considered. API gear oil classifications are now internationally recognized and used.

API classification:

- GL – Gear Lubricant: For hypoid axle drives and differentials.
- MT – Manual Transmission: For Non-synchromesh manual gearboxes.

API	Application conditions	Gearbox type	Grade
GL-1	Low flank loading and sliding speeds.	Axle drives with bevel gears, worm drives, manual gearboxes.	Old!
GL-2	Higher loading than described under GL-1.	Worm drives which are not adequately lubricated by API GL-1 oils.	Old!
GL-3	Moderately difficult operating conditions regarding rotational speed and torque.	Axle drives with bevel gears, manual gearboxes.	Old!
GL-4	High rotational speed / low torque or low rotational speed / high torque.	Manual gearboxes, hypoid axle drives, moderate axle off-sets.	Old!
GL-5	High rotational speed and shock loading, high rotational speed / low torque or low rotational speed / high torque; sliding motion.	Hypoid axle drives, manual gearboxes, large axle off-sets.	GL-5
MT-1	Spur gear, dog-engaged gearboxes.	Non-synchromesh manual gearboxes.	MT-1

US Military Specifications

The US Military authorities have created their own gear oil specifications which are sometimes also used for civilian application.

MIL Specification	Status	API Performance	SAE Grades
MIL-L-2105	Introduced in 1950. Superseded by MIL-L-2105 B.	API GL-4	SAE 75 SAE 80 SAE 90
MIL-L-2105 B	Introduced in 1962. Superseded by MIL-L-2105 C.	API GL-5	SAE 80 SAE 90 SAE 140
MIL-L-2105 C	Introduced in 1976. Superseded by MIL-L-2105 D.	API GL-5	SAE 75W SAE 80W-90 SAE 85W-140
MIL-L-2105 D	Introduced in the 2nd half 1987.	API GL-5	SAE 75W SAE 80W-90 SAE 85W-140
MIL-PRF-2105 E	Introduced in 1997: As MIL-L-2105 D, with additional suitability for non-synchromesh, manual gearboxes.	API GL-5 API MT-1	SAE 75W SAE 80W-90 SAE 85W-140
SAE J2360	Civil version of MIL-L-2105 E.	see above	see above

Approvals by manufacturers

MACK Application area

GO-H	Axle oils, e.g. SAE 90, SAE 140, SAE 80W-90 and SAE 85W-140
GO-J	Gear oil, axle oil, normal drain interval (up to 250,000 miles/3 years on highway operation) Also fulfills SAE J2360 specification.
GO-J Plus	Gear oil, axle oil, extended drain interval (up to 500,000 miles/3 years on highway operation) e.g. SAE 40/ SAE 50.
TO-A Plus	Manual transmission fluid (MTF), e.g. SAE 50, extended drain interval (up to 500,000 miles/3 years on highway operation).

MAN Application area

M 3343 ...	Multifunctional oils for use in ZF manual gearboxes und axel gearboxes.
M	Multifunctional oil, mineral-based, extended change interval.
S	Multifunctional oil, synthetic, extended change interval.
MAN 339 ...	ATF
Type A	ATF Type A Suffix A, obsolete.
Type Z1-Z4	ATF for ZF automatic gearboxes.
Type V1-V2	ATF for Voith automatic gearboxes.
MAN 341 Z...	High pressure gear oil/ MTF for ZF transmissions.
Z1	MTF, mineral oil-based, normal change intervals.
Z2	MTF, mineral oil-based, extended change intervals.
Z3	MTF, semi-synthetic, extended change intervals.
Z4	MTF, semi-synthetic, extended change intervals.
Z5	MTF, synthetic, maximum change intervals.
MAN 341 E...	High pressure gear oil/ MTF for EATON transmissions.
E1	MTF, mineral oil-based, normal change intervals.
E2	MTF, mineral oil-based, extended change intervals.
E3	MTF, semi-synthetic, extended change intervals.
E4	MTF, synthetic, maximum change intervals.
MAN 341 ZE	MTF, ZF gearboxes without Astronic.
MAN 341 VR	MTF, VOITH Retarder.
MAN 341 MB	MTF, Mercedes-Benz manual gearboxes in buses.
MAN 342	Extreme pressure gear oils/ hypoid axle drives and differentials.
M1	Axle oil, mineral oil or semi-synthetic, normal change intervals.
M2	Axle oil, mineral oil or semi-synthetic, extended change intervals.
M3	Axle oil, mineral oil or semi-synthetic, extended change intervals.
S1	Axle oil, synthetic, maximum change intervals.

MB-sheet Application area

MB 235.0	Hypoid gear oils SAE 85W-90, SAE 90.
MB 235.1	Gear oils SAE 80, 80W / 85W.
MB 235.3	FE Gear oils.
MB 235.4	Synthetic gear oils SAE 75W / 85W.
MB 235.5	Gear oils SAE 80, 80W / 85W.
MB 235.6	Hypoid gear oils SAE 85W-90, SAE 90.
MB 235.7	Fuel Economy hypoid gear oils SAE 85W-90.
MB 235.8	Hypoid gear oils SAE 75W-90.
MB 235.10	Manual gearbox oils.
MB 235.11	Fuel Economy manual gearbox oils for extended change intervals.
MB 235.12	Manual gearbox oils SAE 30, 40.
MB 235.13	Fully-synthetic manual gearbox oils for NFZ.
MB 235.15	Hypoid gear oils SAE 75W-85.
MB 235.20	Mineral axle oils, LD, SAE 80W-90.
MB 235.27	Retarder oils for trucks, category Voith A.
MB 235.28	Retarder oils for trucks, category Voith B.
MB 235.29	Retarder oils for trucks, category Voith C.
MB 235.31	Commercial vehicle hypoid gear oil.
MB 235.41	Gear Oil for commercial vehicles.
MB 235.61	Hypoid gear oils, AMG.
MB 235.62	Differential gear oils.
MB 235.71	Smart automatic gearbox oils.
MB 235.72	Automatic gearbox oils, Type 451 for Smart Fortwo and Type 454 for Smart Roadster.
MB 235.74	Front axle gear oil.

SCANIA Application area

STO 1:0	GL-5 axle oil for use in SCANIA manual gearboxes, power distributors and rear axles.
STO 2:0A	SAE J 2360 axle oil for use in SCANIA manual gearboxes, power distributors and rear axles. Improved shearing and oxidation stability and fuel savings. Additionally, extended oil change intervals to 540,000 km (tested in field trials).
STO 2:0G	SAE J 2360 axle oil for use in Scania manual gearboxes, power distributors and rear axles. Improved shearing and oxidation stability and fuel savings. Additionally, extended oil change intervals to 540,000 km (tested in field trials).

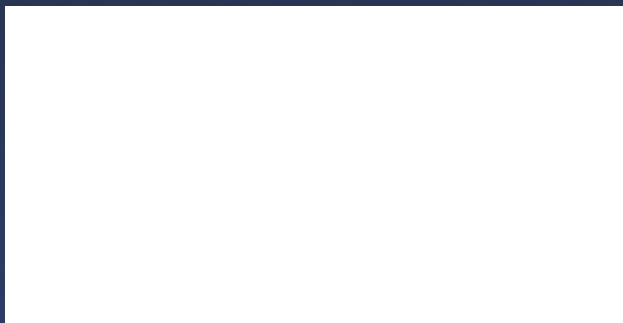
VOLVO Application area

97303	Multifunctional oil for wet brake systems	WB 101, UTTO
97305	Manual transmission oil, transfer case oil	API GL-4, SAE 80W-90
97307	Manual transmission oil, extended drain intervals	API GL-4
97308	Special synthetic manual transmission oil	API GL-4
97309	Gear oil for MMT6, MTX75and IB5 manual transmissions	API GL-4
97310	Gear oil for heavy rear axles	API GL-4
97312	Gear oil for heavy rear axles, extended drain intervals	API GL-5
97315	Fully-synthetic manual transmission oil, more extended drain intervals (400.000 km)	API GL-4
97331	Special synthetic ATF	-
97335	ATF	Dexron IID, IIE und III
97342	Volvo AT102	-

ZF Application area

TE-ML 01	Manual gearboxes in trucks and buses.
TE-ML 02	Manual and automatic transmissions for commercial vehicles.
TE-ML 03	Converter transmissions for off-road equipment.
TE-ML 04	Marine gearboxes.
TE-ML 05	Axles for off-road vehicles.
TE-ML 06	Tractor transmissions and hydraulic lifts.
TE-ML 07	Hydrostatic-mechanical and electric drive systems.
TE-ML 08	Mechanical steering systems in cars, commercial vehicles and machinery.
TE-ML 09	Steering systems and oil pumps in cars, commercial vehicles and machinery.
TE-ML 11	Manual and automatic transmissions for cars.
TE-ML 12	Axles for commercial vehicles and buses.
TE-ML 13	ZF assemblies in special purpose vehicles.
TE-ML 14	Powershift gearboxes in commercial vehicles and buses.
TE-ML 15	Braking systems in special vehicles.
TE-ML 16	Transmissions for rail vehicles.
TE-ML 17	Transmissions and axles for lift-trucks.
TE-ML 18	Axles for cars.
TE-ML 19	Transfer and offset transmissions for commercial vehicles.
TE-ML 20	Powershift gearboxes in buses.
TE-ML 21	Front axles in tractors, harvester gearboxes and power take-offs.

Contact:



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