

# FOX<sup>®</sup>

P E T R O C H E M S



PRODUCT CATALOGUE  
2016



**FOX**<sup>®</sup>  
PETROCHEMS



**FOX PETROCHEMS OFFERS A FULL RANGE FOR :**

- 🔥 Stationary and Mobile Propulsion Systems.
- 🔥 Large Bore Engines
- 🔥 Transmission Lubricants
- 🔥 Chassis Lubricants





[www.foxpetrochems.com](http://www.foxpetrochems.com)

## 1. ALL PURPOSE GREASE

**A general purpose lubricant.** Contains advanced EP additives. Prevents rust & corrosion for metal-to-metal contact areas, heavy loads & extreme pressure applications.

**Operating Temperatures :** - 10°C to + 130°C

## Main Applications

**Used in Chassis,** farm & Plant machinery, for plain & antifriction bearings. Automobiles with extended re-lubrication intervals & wear protection of electric motors & pumps.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth, Buttery & Light Yellowish	Lithium	Mineral ISO VG 100-220	3	220-250	>180°C	



## 2. LONG LIFE GREASE

**This** is a specially formulated grease with extra antioxidant properties. It has, excellent performance at extremely heavy shear.

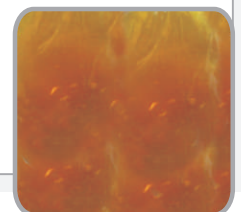
Structural stability is not affected even after a long period of service. Possesses appropriate pump ability for easy application.

**Operating Temperatures :** - 10°C to + 130°C

## Main Applications

**Recommended** for all types of anti-friction bearings used in automobiles including HCV's.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth, Buttery, Amber, Red, Fluorescent Green	Lithium	Mineral ISO VG 220	3	220-250	>180°C	>200



### 3. EXTREME PRESSURE GREASE

**Multipurpose Lithium grease** is formulated with oil soluble extreme pressure additives for heavy loads as well as oxidation & corrosion inhibitors.

**Operating Temperatures:** -10°C to +130°C

### Main Applications

**Preferred** choice for medium to High Ambient Temperatures, Sleeve Type Bushings, High Shock Loading Environments, Wet Environments. Highly Loaded Plain & Anti-friction Industrial Bearings. Also recommended for Gears, Electric Motors, Presses, Watches, Bushings, Wheel Bearings, Chassis Lubrication, Universal Joints, Ball Joints, Tie Rod Ends & Steering Knuckles.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth, buttery & brown	Lithium	Mineral ISO VG 100-220	2 Also available in NLGI 1,0,00,000,	265-295	>180°C	



### 4. CALCIUM GREASE

**This is Calcium based grease** contains highly refined mineral oils & suitable tackifier. Suitable for plain bearings operating under slow/medium speed. Has good water repellency, thus suitable for Water pumps. Also suitable for Agricultural equipments & Chassis lubrication of Automobiles.

**Operating Temperatures:** -10°C to +60°C

### Main Applications

**Recommended** for water pumps, agricultural equipments, gear couplings, electric motors exposed to high loads & high wear conditions.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Dark Yellow	Lithium	Mineral Oil ISO VG 100	2	265-295	>100°C	



## 5. WHEEL BEARING GREASE

This is a Premium Quality Lithium soap based grease made from heavy viscosity base oils containing anti-oxidants, anti rust & extreme pressure additives.

Operating Temperatures : -0°C to + 110°C

### Main Applications

Widely used in Automotive Wheel bearings, Industrial Plain & Rolling Bearings, Gears of Cotton, Ginning Mills & other Industrial Bearings where there is no water ingress.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Dark Brown / Black	Sodium / Soap	Mineral Oil ISO VG 220	2.5	250-280	>180°C	



## 6. CALCIUM COMPLEX GREASE

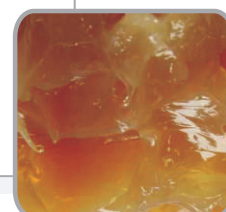
Calcium-Sulfonate Grease has superior mechanical & shear stability. This reduces leakage & run-out during operation. Due to better dropping point & high temperature life, this grease is used in application involving higher temperature. Our Calcium complex grease protects against rust & corrosion & has excellent water resistance properties.

Operating Temperatures : 0°C to 200°C

### Main Applications

Recommended for anti-friction & plain bearings in Industrial applications where water ingress is possible ie: steel , cement & power plant.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Yellow / Green	Calcium Complex	Mineral oil ISO VG 150 / 220	2	265-295	>280°C	





## 1. LITHIUM MOLY GREASE

**Moly Lithium grease** is smooth textured, has high melting point, water resistant lithium based fortified with molybdenum disulfide (moly) to reduce wear by increasing lubrication under condition of high friction & shock loads.

**Operating Temperatures** : - 20°C to + 120°C

## Main Applications

**Used as Chassis lubrication**, for wheel bearings, ball joints , control arms, Stg. Linkage, pedal shafts & spring shackles . Most suitable for heavy truck chassis lubrication , for heavily loaded Journal bearings in rock crushing plants & industrial units . Most popularly used as " fifth wheel " lubricant for trucks as moly keeps providing protection after the grease has been displaced.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Buttery, Dark Grey	LITHIUM	Mineral ISO-VG 100-220	2	265-295	>180°C	



## 2. COMPLEX MOLY GREASE

**This grease** is anti-friction bearing grease & has outstanding mechanical & thermal stability to withstand shock & heavy loading found in severe environments of mining construction & process industries.

This grease has exceptional water wash out resistance apart from rust & corrosion protection.

This grease has good cohesive & adhesive characteristics.

**Operating Temperatures** : - 30°C to + 200°C

## Main Applications

**Mining-General Machinery Bearings** on Drag Lines, Shovels & Drills, Rails & Rollers, Electric Wheel Motor Seals & General Chassis Lubrication, Ball & Roller Bearings, Bushings General plant lubrication, anti- friction.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Tacky, Grey Black	Lithium complex	Mineral ISO VG 220,320,460	2	265-295	>260°C	



## 1. COMPLEX GREASE MODERATE DUTY

This is a high performance, temperature resistance Grease. Excellent EP, anti-wear, anti-rust, oxidation stability, & water wash out. Protects against corrosion

Operating Temperatures: -10°C to +150°C

### Main Applications

**Recommended** For General Industrial Equipment, Textile Mills, Motor Pump, Conveyors, Construction & Off Highway Crane Stackers.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Tacky, Dark Yellow	LITHIUM COMPLEX	Mineral ISO VG 150	3 2	220-250 265-290	>260°C	>200



## 2. COMPLEX GREASE HEAVY DUTY

This is a High Performance Multi Purpose Grease: High load carrying capacity Excellent EP anti wear properties Excellent resistance to oxidation, water & shear stability Protects against corrosion & rust.

Operating Temperatures: -10°C to +160°C

### Main Applications

**Excellent Multi-Purpose** heavy duty grease for all Heavy Load , Wet, Hot Lubrication. Medium/slow speeds in Paper, Steel, Textile, Cement & Chemical Industries.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth, Tacky , Brown	Lithium Complex Brown	Mineral ISO VG 460	2	265-295	>260°C	





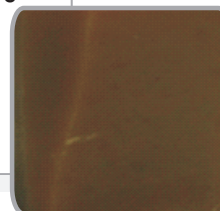
## 1. CLAY BASE GREASE

These are **Inorganic Non-soap Thickener**, smooth structured greases with specially selected base oil for high temperature operating conditions. This grease is water resistant & is not affected by mild acids / alkalis. This grease has high mechanical stability for long time protection against rust.

## Main Applications

This **grease** is highly recommended for Plain bearings, anti-friction bearings operating at high temperature (120° to 250°C) especially in textile, paper mills for their exhaust blowers, earth moving equipments and for heavily loaded machinery operating at elevated temperatures.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Yellow & Brown.	Organo Clay	Mineral ISO VG 150-220	2 3	265-295 220-250	0 -170	>200



### 1. PAO BASE SYNTHETIC GREASE

**Multiuse Synthetic Greases**, having very low starting torque, Excellent oxidation stability & anti-rust properties, it withstands high speed & high temperature. Reduces fatigue & wear under extreme dynamic loads.

**Operating Temperatures:** -40°C to + 130°C

### Main Applications

**Textile**, Printing, High Speed Machinery, Moving Parts & Tools etc.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
White / Beige	Lithium	PAO ISO VG	2 150-220	265-295	>180°C	



### 2. PAO BASE SYNTHETIC COMPLEX GREASE

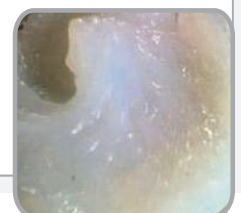
**Synthetic** high temperature long life grease having excellent EP antiwear & anti rust, Excellent water resistance & superior oxidation stability.  
High viscosity & high VI base oil.

**Operating Temperatures:** -40°C to + 170°C

### Main Applications

**Steel Mill** Concast Bearings, Dry End Paper Mill Bearings, Textile Industry.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Tacky White /brown	Lithium Complex	Synthetic PAO ISO VG	2 460	265-295	>260°C	250-400



## 1. SILICON GREASE

**Silicon grease** is a water proof grease made by combining a silicone oil with a thickener, having multiple uses. Ideally suited to high speed & extreme as well as low temperature uses. Outstanding water repellent, Excellent lubrication in wet & humid condition. Low torque leading to energy efficiency.

**Operating Temperatures:** -40°C to + 180°C

### Main Applications

This grease is commonly used for lubricating & preserving rubber parts. This grease does not swell or soften the rubber. It is used in Plumbing industries , for dental equipment, electrical utilities use this grease to lubricate separate elbows on lines which must endure high temperatures. Chemical laboratories & consumer appliances/applications also has wide usage of this grease.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Light Beige / White	Lithium	Silicone fluid ISO VG320	2	265-295	200°C	160



## 2. CONSTANT VELOCITY JOINT GREASE

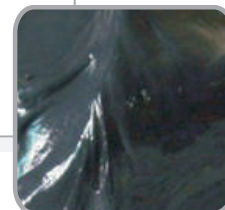
**A Special Lithium Base Grease** fortified with Molybdenum Disulfide & Polymers. It is used for the installation of C.V. Joints & the additives will sustain the shock loads encountered in the CV joints.

**Operating Temperatures:** -20°C to + 140°C

### Main Applications

**Lubrication** of constant velocity joints for front wheel / all wheel drive systems of passenger cars .

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black	Lithium Complex	Mineral Oil ISO VG 150	2	265-295	>250°C	315
Yellow	Lithium	Mineral Oil ISO VG 68	0	355-385	>200°C	315



### 3. PIN & BUSH GREASE

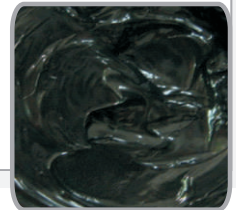
An adhesive, water resistant, high load grease

Operating Temperatures: -20°C to + 130°C

### Main Applications

For Mining, Quarry & heavy duty applications. Used also in Fifth wheel & Crane Boom slews.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black	Lithium	Mineral ISO VG 100	2	265-295	>180°C	



### 4. LONG LIFE TRANSPARENT GREASE

It is a premium quality Lithium complex grease formulated with highly refined petroleum oil & performance additives. With the result that this grease has Good high temperature properties. Excellent thermal & oxidation stability. Superior protection against rust & corrosion. Good resistance to water washout. Extended bearing life.

Operating Temperatures: -10°C to + 150°C

### Main Applications

Recommended for antifriction bearings in automotive & industrial applications. It has established re-lubrication frequency of 75000 kms in heavy duty trucks and buses. Also suitable for Cement plants & various other industrial applications.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Light Yellow	Lithium Complex	Mineral ISO VG 220	3	220-250	>230°C	





## 5. COPPER-ANTI SEIZE COMPOUND

Anti-seize compounds contain a high percentage of engineered solids. It is composed of pure copper, aluminium, nickel, molybdenum disulfide, zinc, graphite particles, dispersed into high melting point grease & advanced rust & corrosion inhibitors, extreme pressure additives & fillers.

**Operating Temperatures:** -30°C to + 980°C

### Main Applications

**Thread connections** exposed to high temperatures-Engines, super heated steam lines, combustion chamber connections, gas & oil burners.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Copper Brown Metallc Paste	Inorganic	Synthetic Base Oil	2	265-295	None	



## 6. HIGH TEMPERATURE SILICONE GREASE

**This is a waterproof grease** made by combining a silicon oil with a thickener. It is a translucent white viscous paste .

**Operating Temperatures:** -40°C TO + 260°C

### Main Applications

**Lubrication** & protection of stop-cocks, "O" rings, rubber seal & plastic components.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth water, white	Inorganic	Silicone fluid 1250 cst	2 1	265-2595 310-345	None	



## 7. ALUMINIUM COMPLEX GREASE

**These greases** are popular both in extreme pressure & non-extreme pressure versions. This grease also responds well to additive treatment for wear protection, against rust & oxidation.

**Operating Temperatures:** 0°C to + 230°C

### Main Applications

**This grease** has excellent water resistance. It also excels in resistance to both washing out of a bearing & being washed off a flat surface. This feature is especially where it is necessary to prevent lubricating grease from entering plant discharge water.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Brown	Aluminium complex	Mineral ISO VG 100-220	2	265-295	>250°C	



## 8. LITHIUM CALCIUM MIX BASE

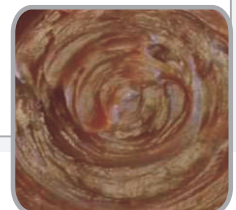
**This** is an excellent high performance grease, with appreciable load carrying capacity. Extended lubrication intervals. Reduces wear & fatigue.

**Operating Temperatures:** -20°C to + 140°C

### Main Applications

**All types** of plain & anti-friction ball & roller bearings, pumps, EOT cranes & forklifts.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth, Dark Brown	Lithium Calcium, Mix Base.	Mineral ISO VG 100-220	3 2	220-250 265-295	>180°C	200-315

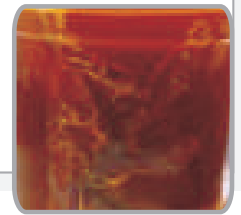


## 10. SUPER TECH GREASE

This grease is designed & formulated for operations under conditions of extreme pressure & high temperature. It provides good pump ability in both cold & hot operating temperatures. Has high dropping point. Excellent EP & anti wear properties for withstanding higher loads & improved wear protection. Excellent resistance to water & water washout.

**Operating Temperatures:** -10°C to + 180°C

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Dark brown	Lithium Complex	Mineral ISO VG 220	1	310-340	>300°C	>400



### Main Applications

**Lubrication** of bearings operating under high temperature and heavy shock/loads. Suitable for lubrication in steel, mining and other engineering industries. Also suitable for dispensing through centralized lubrication system.

## 11. SLIP SEAL GREASE

**Heavy Duty** extreme pressure water & dust resistance grease. Excellent EP antiwear, anti rust & shock load resistance. High load carrying capacity to resist extreme pressure, minimise friction & maximises wear. Good film forming capacity to provide sealing effect in the seal segments.

**Operating Temperatures:** -20°C to + 160°C

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Tacky & Black	Lithium Complex	Mineral Oil ISO VG 460	1.5	290-320	>200°C	400-550



### Main Applications

**Recommended** for sponge iron plants slip seal application.

## 16. ROLL PRESS 1000 GREASE

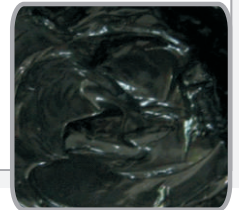
**Most** suitable for applications at extremes of temperature. PAO base oil being wax-free in nature & of low coefficient of traction provides low temperature pump ability low starting & running torque.

**Operating Temperatures:** -20°C to + 130°C

### Main Applications

**Popular** in Cement mills, roller press bearings, heavy self-alignment bearings, slow moving industrial & rolling element bearings, pin and bushes of heavy earth moving equipment.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Tacky & Black	Lithium Complex	Mineral ISO VG 1000	200	265-295 400-430	>250°C >200°C	650-700



## 17. GIRTH GEAR GREASE

**This grease** is fortified with solid lubricants, antiwear & high load bearing additives, friction modifiers & high viscosity base oil.

**Operating Temperatures:** -20°C to + 150°C

### Main Applications

**Large** open gears & tyres on ball mills, rotary kilns, driers & swing gears on large excavators & shovels require regular lubrication with this grease.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black Tacky	Aluminium Complex	Mineral / Synthetic Oil ISO Vg1000/2000/3000	2	265-295		





## 18. GLANDEX (XP) GREASE

**Solid lubricant** fortified extreme pressure gland sealant is applied on all types of packing to provide a superior, more, effective & long lasting seal thus extending the working life span.

**Operating Temperatures:** -30°C to + 300°C

### Main Applications

**Popular** in Cement mills, roller press bearings, heavy self-alignment bearings, slow moving industrial & rolling element bearings, pin and bushes of heavy earth moving equipment.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black Tacky	Synthetic	Synthetic Oil	200	265-295 400-430	>250°C >200°C  None	650-700



## 19. GIRTH GEAR GREASE

**This grease** is fortified with solid lubricants, antiwear & high load bearing additives, friction modifiers & high viscosity base oil.

**Operating Temperatures:** -20°C to + 150°C

### Main Applications

**Highly** recommended for packing in pumps & valves, handling aromatic hydrocarbon, natural gas, aquas solutions acids & caustics.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black Tacky	Aluminium Complex	Mineral / Synthetic Oil ISO Vg1000/ 2000/3000	2	265-295		



## 20. MINING GREASE LMEP 680

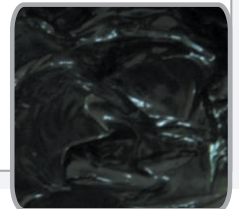
This is an extreme pressure lithium grease formulated with specially selected additives providing superior protection under arduous operating conditions.

**Operating Temperatures:** 0°C to + 150°C

### Main Applications

**Suitable** for Low speed, heavy duty bearing application in mining industry

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Black	Lithium Hydroxy stearate	Mineral oil 12 ISO VG 680	1.5	230-310	>175°C min	400



## 24. GENERAL PURPOSE GREASE (H1)

**General Purpose** water resistance grease developed for lubrication of machinery parts, bearings where ingress of water cannot be avoided. Has excellent oxidation stability & protection against rust & corrosion.

**Operating Temperatures :** ambient to 110°C

**An NSF Regd. Product, Reg no. 143349**

### Main Applications

**Plain & Antifriction** bearings in wet condition possibility of ingress of water.

NSF Registration No : 143349

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Off White	Calcium 12 hydroxy stearate	Mineral white oil ISO VG 68 / 100	2	265-295	140°C	



## 25. HIGH TEMPERATURE GREASE (H1)

**Non-melting** high temperature grease, excellent for high temperature application. Has very good water resistance & excellent oxidation.

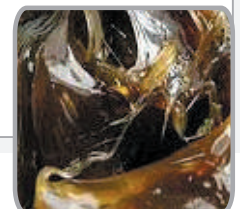
**Operating Temperatures :** -20°C to + 150°C

**An NSF Regd. Product, Reg no. 143350**

### Main Applications

**Suitable** for lubrication of bearings in high temperature areas such as ovens in food processing industries & bakeries.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Brown	Non Soap	Mineral white oil ISO Vg68/ 100/220	2	265-295	>280°C	



## 26. SYNTHETIC HIGH TEMPERATURE GREASE (H1) Main Applications

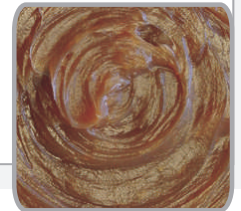
**Based** on non-soap thickener made from specially selected base oil & additives. Has high dropping point making it suitable for wide temperature application. Due to good oxidation stability this grease has longer life during storage & applications.

**Recommended** for plain and anti friction bearing in food processing, beverage and packing industries for wide temperature range.

**Operating Temperatures :** -20°C to + 180°C

**An NSF Regd. Product, Reg no. 143351**

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth / Brown	Non soap	Synthetic hydrocarbon ISO VG100/150/320	2	265-295	>280°C	



inhibitors, anti oxidant, anti foam

## 27. Low Temperature Grease (H1) Main Applications

**Food grade** low temperature lubricant is highly recommended for extended service under extremely low temperature conditions. It is developed from Calcium hydroxy stearate soap dispersed in selected white mineral oils. It is treated with the most effective extreme-pressure corrosion inhibitors, anti oxidant, anti foam & antiwear additives. This combination provides maximum equipment protection in extremely low temperature

**Recommended** for plain & anti friction bearings in food processing beverage industries specially in low temperature application like cold storage & chillers.

**Operating Temperatures :** -20°C to + 900°C

**An NSF Regd. Product, Reg no. 143353**

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Creamish Yellow	Calcium hydroxy stearate 12	Mineral white oil ISO VG68/100	2	265-295	>140°C	280-400





## 28. EXTREME PRESSURE GREASE (H1)

This is high performance industrial grease being technologically advanced. It is highly versatile, general purpose, heavy duty multifunctional extreme pressure grease. It is specially developed from Aluminium complex soap thickener dispersed in food grade white mineral oil & specially selected additives. Has high dropping point making it suitable for high operating temperature. Has excellent protection against rust & corrosion. Good oxidation stability leading to longer life. Has high load carrying capability.

**Operating Temperatures** : -10°C to + 150°C

**An NSF Regd. Product, Reg no. 143354**

### Main Applications

**Recommended** for plain & anti friction bearings in food processing industries for high load & temperature applications. Suitable for pumping through centralised lubrication systems.

Appearance	Thickener	Base Oil Type	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Buttery & Light Brown	Aluminium Complex	Mineral White Oil ISO VG68/100/150	2	265-295	250°C	315



## 29. CALCIUM SULPHONATE COMPLEX GREASE (H1)

**Extreme** pressure water resistant high temperature calcium sulphonate complex grease. Initially designed for lubrication of industrial bearings working under high temperatures & high loads in steel industry. It is a multi purpose grease usable in various other industrial application where water is in frequent contact with grease.

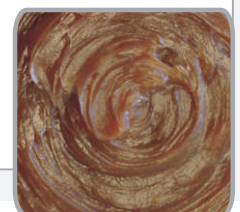
**Operating Temperatures** : -10°C to + 400°C

**An NSF Regd. Product, Reg no. 143353**

### Main Applications

**Recommended** for plain & antifriction bearings in food processing industries operating at higher temperature & wet conditions.

Appearance	Thickener	Base Oil Type & ISO Viscosity	NLGI Grade	Work Penetration	Drop Point	Weld Load(Kg) Timken ok load (Lb's)
Smooth Brown	Calcium Sulphonate Complex	Mineral white oil ISO VG 150 / 220	2	265-295	> 300°C	400



## 1. Universal Antifreeze & Coolant

**TUFF AC1** is an antifreeze coolant concentrate based on **mono ethylene glycol**. It is free of nitrite, amine and phosphate. Due to its additive composition **TUFF AC1** belongs to the hybrid type coolants.

### APPROVALS:

ASTM D 3306, ASTM D 4985, AFNOR NF R 15-601, BS 6580:1992, BUNDESWEHR TL 6805-0038/1, SAE J1034, DEUTZ TR-0199-99-1115, JENBACHER TA 1000-0201, MAN 324 NF, MAN 324 NF PRITARDER, MB-APPROVAL 325.0, MTU MTL 5048, MWM TR 0199-99-2091, PN-C 40007:2000  
VOITH TURBO 172.00225010, BMW N 600 69.0

### RECOMMENDATIONS:

BOMAG, LIEBHERR TLV 035; TLV 23009 A,  
OPEL/GM B 040 0240, VW TL 774-C(G 11)

## Main Applications

**Provides outstanding protection against deposits, cavitation and corrosion.**

Universal use in both passenger car and heavy duty engines, where a silicate containing coolant is recommended. Excellent for use in engines, cylinder heads and radiators made of various alloys.

**TUFF AC1** must be diluted with water. **TUFF AC1** can be mixed with distilled, fully demineralised, or tap water to a concentration range of 35% to 50% by volume.

Always follow manufacturers' recommendations for drain intervals. This product is recommended for use in combustion engines only. Contains bittering agent.

## 2. Antifreeze & Coolant 50:50 prediluted

**TUFF AC2** is formulated specifically for heavy duty applications. Based on ethanediol with the addition of organic and inorganic inhibitors. **TUFF AC2** inhibits corrosion.

### RECOMMENDATIONS:

Defence Standard 68-127/2 AL-39

## Main Applications

**Antifreeze for use in the cooling systems of marine and land service internal combustion engines containing both ferrous and non-ferrous components.** Particularly effective in cooling circuits which contain aluminium components in high temperature situations.

Pre-diluted with 50% demineralised water for ease of use.

Always follow manufacturer's recommendations for drain intervals.

Contains bittering agent.

### 3. Antifreeze & Coolant - MEG base

**TUFF AC3** is an antifreeze coolant concentrate based on **mono ethylene glycol**. It is free of nitrite, amine and phosphate. **TUFF AC3** fulfils the requirements of the latest VW coolant additive specification VW TL 774-G (G12 Plus Plus).

#### **APPROVALS :**

ASTM D 3306, ASTM D 4985, BS 6580, AFNOR NF R 15-601, MAN 324 Type Si-OAT, MB-Approval 325.5

#### **Recommendations:**

SCANIA TB 1451, VW TL 774 G

### Main Applications

**TUFF AC3 must be diluted with water.** TUFF AC3 can be mixed with distilled, fully demineralised, or suitable tap water to a concentration range of 35% to 50% by volume.

This product is recommended for use in combustion engines only.

Always follow manufacturers' recommendations for drain intervals. Contains bittering agent.

### 4. Antifreeze & Coolant - MEG base Anti Frost

**TUFF AC4** is a versatile, concentrated engine coolant, suitable for all year round use in the cooling systems of internal combustion engines. **TUFF AC4** is an MEG antifreeze, which is free from nitrite, amine and phosphate.

It protects engine cooling systems from corrosion all the year round and can provide frost protection down to minus 33°C.

Also available as a 50:50 mix.

#### **Approvals:**

ASTM D4985, BS6580:2010

### Main Applications

**Used in liquid coolant systems in petrol and diesel engines and in certain industrial applications.**

Always follow manufacturers' recommendations for drain intervals. Contains bittering agent.

## 5. Universal Longlife Antifreeze & Coolant

**TUFF AC5 is a long term antifreeze coolant concentrate based on mono ethylene glycol for heavy duty application as well as passenger cars and stationary combustion engines. TUFF AC5** reliably prevents highly loaded engines in passenger cars and commercial vehicles from frost, overheating, corrosion and cavitation. This high efficiency protection extends to all metals in the cooling system, especially aluminium.

### APPROVALS :

ASTM D 3306, BS 6580:2010, KSM 2142  
FORD WSS-M97-B44-D, DAF 74002, DEUTZ TC 0199-99-1115, MAN 324 SNF, MB-APPROVAL 325.3,  
MWM TC 0199-99-2091

### Recommendations:

AFNOR NFR 15-601, ASTM D 4985  
NATO S-759, CUMMINS (ISBe engines at DAF and Leyland), KOBELCO, KOMATSU (different colour and ready to use), LIEBHERR MD 1-36-130, PSA B 71 5110, RENAULT Type D, VW TL 774 D/F (different colour), VOLVO 128 6083/002 (=VOLVO TRUCKS, VOLVO CE, from MY 2005), WAUKESHA, YANMAR, VW TL 774 G

## Main Applications

**TUFF AC5 is a coolant concentrate and must be diluted with water before use.** Best concentration for application is 35% vol minimum and 50% vol maximum. Demineralised water is preferred.

This product is recommended for use in combustion engines only.

Always follow manufacturers' recommendations for drain intervals. Contains bittering agent.

Also available as a 50:50 mix.

## 6. High Performance Antifreeze & Coolant

**TUFF AC6 is a ultra high performance coolant additive concentrate based on monoethyl eneglycol and glycerol.** It is free of nitrites, amines, and phosphates and protects modern passenger cars, commercial vehicle engines and high loaded aluminum engines from freezing and overheating. **TUFF AC6** contains renewable raw materials.

It protects engine cooling systems from corrosion all the year round and can provide frost protection down to minus 33°C.

Also available as a 50:50 mix.

### Approvals:

ASTM D 3306, VW TL 774 J (G13)

## Main Applications

**TUFF AC6 must be diluted with water. TUFF Ac6** can be mixed with distilled, fully demineralised, or suitable tap water to a concentration range of 35% to 60% by volume.

This product is recommended for use in combustion engines only.

Always follow manufacturers' recommendations for drain intervals. Contains bittering agent.



## 1. Type A

**TUFF AT1 is a formulation developed especially for applications which have to be filled with an ATF meeting the old GM specification Type A Suffix A.**

**TUFF At1** offers very good viscosity temperature behaviour and protects against wear.

### **APPROVALS :**

MB-APPROVAL 236.2

### **Recommendations:**

TASA

MAN 339 Type A

## Main Applications

**TUFF AT1 can be used according to the unit manufacturer's operating instructions in automatic transmissions, turbo couplings, servo couplings as well as other hydrostatic and hydrodynamic systems.**

**TUFF AT1** must not be used if DEXRON B or higher nor Ford M2C-33 E/F/G ATF are specified explicitly.

## 2. Dex II

**TUFF AT2 is a super high performance DEXRON II (D) automatic transmission fluid suitable for a large variety of applications.**

**TUFF AT2** is formulated on selected mineral base oils and offers safe operation even under high stress in automatic transmissions, power steering systems and other hydraulic systems.

Protects against wear, sludge, deposits and corrosion and offers outstanding, shear-stable viscosity-temperature properties.

Also available as a 50:50 mix.

### **Approvals:**

MAN 339 TYPE V1, MAN 339 TYPE Z1, MB-APPROVAL 236.1, VOITH 55.6335.XX, ZF TE-ML 02F, 03D, 04D, 14A, 17C

### **Recommendations:**

DEXRON II (D), ALLISON C-4, BMW 81 22 9 400 272 / 81 22 9 400 275 / 81 22 9 407 738, CAT TO-2, FORD MERCON, FORD M2C185-A / M2C138-CJ / M2C166-H / M2C9010-A, OPEL 19 40 700 / 19 40 707, RENK-DOROMAT, VOLVO, VW, ZF TE-ML 09, 11A

## Main Applications

**Suitable for use in commercial vehicles, machinery and passenger cars according to manufacturer's documentation.**

**TUFF AT2** is miscible and compatible with conventional branded gear oils.

### 3. DEX III

**TUFF AT3 is an ultra-high-performance DEXRON III-generation-ATF for automatic transmissions. TUFF AT3 has been developed to satisfy highest demands to shifting comfort in modern automatic transmissions by Mercedes-Benz.**

**TUFF AT3** provides the required anti-wear and friction modifier additive systems to ensure proper function during the lifetime of the gearbox

#### **APPROVALS :**

MB-APPROVAL 236.12  
VW TL 52533 (G 052 533)

#### **Recommendations:**

DEXRON III, BMW 83 22 9 407 765, BMW 83 22 9 407 807, FORD M2C195-A, FORD M2C202-B, FORD M2C922-A1, SSANG YONG

### Main Applications

**TUFF AT3 is specially recommended for 4Matic transfer cases in Mercedes M- and R-Class Models (Type W164 and W251) where the use of a fluid in accordance to MB-Approval 236.12 is mandatory.**

**TUFF AT3** can be used in 5-speed transmissions with regulated torque converter lockup clutch (KÜB) as well as in the former 5-speed transmissions without regulated torque converter lockup clutch (KÜB).

**TUFF AT3** can also be used in many applications where DEXRON III-type fluids are recommended.

### 4. Dex III - High Load

**TUFF AT4 is suitable for multi-purpose applications, reliable at high loads and is recommended when DEXRON III automatic transmission fluids are specified.**

#### **Approvals:**

ALLISON C-4, ALLISON TES 389, DEXRON III (H), MAN 339 Type V1, MAN 339 Type Z1, MB-APPROVAL 236.1, VOITH 55.6335.XX, VOLVO 97341, ZF TE-ML 04D, 14A, 17C

#### **Recommendations:**

BMW 81 22 9 400 272/275, BMW 81 22 9 407 738, BMW 83 22 0 403 248, BMW 83 22 9 407, 765/807/858/859, CAT TO-2, FORD MERCON, OPEL 19 40 707 / 19 40 767, VW TL 521 62 (G 052 162), ZF TE-ML 09, 11B

### Main Applications

**TUFF AT4 for use in automatic transmissions as well as other ATF applications.** Licensed according to DEXRON III (H). Improved low-temperature shifting compared to DEXRON II.

In GM-Applications it is backward compatible to previous DEXRON specifications.

## 5. DSIH 6 speed Automatic Transmissions

**TUFF AT5 is specially designed for use in fully-automatic 6-speed passenger car and SUV gearboxes (6p805) manufactured by DSIH.** Due to the balanced ratio of viscosity and additive system developed by FUCHS, **TUFF AT5** distinguishes itself from conventional ATFs.

The formulation also represents the latest technology in friction control leading to high friction durability and shudder protection.

### APPROVALS :

DSIH 5M-66 Material Specification Rev 3  
SSANG YONG equipped with DSIH Transmissions

## Main Applications

**TUFF AT5 is the only approved aftermarket transmission fluid for DSIH 6P805 transmissions.** It has been specially developed to fulfil the challenging friction requirements of the DSIH 6-Speed automatic transmission to ensure smooth and proper shifting behaviour during the full lifetime of the gearbox.

## 6. Aisin Warner New Gen Transmissions

**TUFF AT6 has been developed especially to suit the special demands of modern Japanese step type automatic transmissions with hydraulic converters used in many passenger cars and light duty vehicles.**

### Approvals:

JASO M315 TYPE 1A

### Recommendations:

DEXRON III, AISIN WARNER / AW-1, BMW MINI 83 22 0 402 413 / 83 22 7 542 290, CHRYSLER ATF +3 / +4, DAEWOO, DAIHATSU ALUMIX ATF MULTI, FIAT TYPO T-IV FORD MERCON / FORD M2C924-A / M2C922-A1, GM 9986195, HONDA ATF Z-I, HYUNDAI SP III, SP IV, ISUZU BESCO ATF-II/ATF-III, JATCO 3100 PL085 / FWD (N402) / JF506E (K17), JWS 3309/TYP T-IV, KIA SP-IV, MAZDA ATF D-III/ATF M-3, MITSUBISHI SP-II/-III, NISSAN MATIC C/D/J, SAAB 3309, SUBARU ATF OIL/ATF OIL SPECIAL/ATF HP, SUZUKI ATF 3309/3317, TOYOTA TYPE T/T-II/T-III/T-IV, TOYOTA TYPE D-2/WS, VW G 052 990/055 025

## Main Applications

**TUFF AT6 is mainly designated for use in the latest generation of AISIN-WARNER-automatic transmissions.** These transmissions are being used in a large number of Japanese passenger cars and light duty vehicles, but also being used in a significant number of American and European models. Due to its outstanding properties **TUFF AT6** can also be used in many units of Asian origin or where DEXRON III-type fluids are demanded.

## 7. Mercedes (NAG2)

**TUFF AT7** has been specially developed to improve shifting comfort for the new generation of Mercedes-Benz NAG2 automatic transmissions.

**TUFF AT7** provides the required anti-wear and friction modifier additive systems to ensure proper function during the full lifetime of the gearbox.

### APPROVALS :

MB-APPROVAL 236.14

SSANG YONG (MB-Automatic transmissions)

## Main Applications

**TUFF AT7** is factory filled in the latest generation of Mercedes Benz (NAG 2) 7-speed automatic gearboxes (Model designation 722.9).

**TUFF AT7** is backward compatible to products fulfilling the requirements of MB-Approval 236.12 and substitutes them in almost every application (refer to manufacturer filling instruction).

**TUFF AT7** is specially recommended for 5-speed transmissions with regulated torque converter lockup clutch for vehicles with rear wheel drive (model designation 722.6) for remarkable improvement of shifting quality.

**TUFF AT7** is also suitable for Chrysler Crossfire and other vehicles requiring **TUFF AT7** or a product in compliance with MB-Approval 236.14.

**TUFF AT7** is also specified for the use in Ssang Yong vehicles equipped with MB Transmissions.

## 8. Dex II - High Thermal Load

**TUFF AT8** is a fully-synthetic, multifunctional ATF for passenger cars, power steering systems and torque converters which surpasses the low-temperature demands of DEXRON II (E). It provides optimum and smooth shifting characteristics at all temperatures

**TUFF AT8** has a higher thermal load capacity than conventional ATFs and ensures a smooth operation of transmissions and other units even at very low temperatures. **TUFF AT8** can be used as a multi-purpose ATF.

### Approvals:

MAN 339 Type V2, MAN 339 Type Z2, MB-APPROVAL 236.8, VOITH 55.6336.XX, ZF TE-ML 04D, 09X, 14B, 16L

### Recommendations:

DEXRON II (E), ALLISON C-4, FORD MERCON, RENK-DOROMAT

## Main Applications

**TUFF AT8** is recommended for use in automatic transmissions, converters, retarders, turbo couplings, power-shift transmissions, hydraulic systems, power-steering systems, and other units with ATF filling instructions.

## 9. Dex III - High Thermal Load

TUFF AT9 is a premium ATF for automatic transmission in motor vehicles. It has high thermal durability, offers extreme oxidation stability and also offers reliable performance at very low temperatures.

### APPROVALS:

MAN 339 TYPE V2/Z2, MB-APPROVAL 236.6, VOITH 55.6336.XX, ZF TE-ML 04D, 14B, 16L, 17C

### RECOMMENDATIONS:

DEXRON III (H), ALLISON TES 295, ALLISON TES 389, BMW 81 22 9 400 272 / 275, BMW 83 22 0 403 248, BMW 83 22 9 407 738 / 807 / 858 / 859, FORD MERCON V, MAN 339 TYPE Z3, OPEL 19 40 707, VOLVO 97341, VW TL 521 62 (G 052 162), ZF TE-ML 02F, 11B, 14C

## Main Applications

TUFF AT9 is recommended for use in automatic transmissions, hydraulic converters, retarders, turbo-couplings, power shift transmissions, hydraulic and power steering systems as well as many other components demanding the specifications listed in this document.

## 10. DEX VI

TUFF AT10 is a premium ATF offering maximum performance in passenger car applications such as automatic transmissions with torque converters or wet clutches as well as powersteering systems. Formulation is licensed according to DEXRON VI which is backwards compatible in GM applications, offering the possibility of product rationalisation.

### APPROVALS:

DEXRON VI, VOITH H55.6335.3XX

### RECOMMENDATIONS:

BMW 81 22 9 400 272, BMW 81 22 9 400 275, BMW 81 22 9 407 738, BMW 83 22 0 397 114, BMW 83 22 0 403 248, BMW 83 22 0 403 249, BMW 83 22 0 432 807, BMW 83 22 9 407 858, BMW 83 22 9 407 859

## Main Applications

TUFF AT10 is recommended for step-type automatic transmissions and also components such as power steering in passenger cars, vans and light trucks. The switch to TUFF AT10 is possible even with older equipment, depending upon manufacturer's advice.



## 11. DEX VI

**TUFF AT10 is a premium ATF offering maximum performance in passenger car applications such as automatic transmissions with torque converters or wet clutches as well as powersteering systems.** Formulation is licensed according to DEXRON VI which is backwards compatible in GM applications, offering the possibility of product rationalisation.

### APPROVALS :

DEXRON VI, VOITH H55.6335.3XX

### RECOMMENDATIONS:

BMW 81 22 9 400 272, BMW 81 22 9 400 275, BMW 81 22 9 407 738, BMW 83 22 0 397 114, BMW 83 22 0 403 248, BMW 83 22 0 403 249, BMW 83 22 0 432 807, BMW 83 22 9 407 858, BMW 83 22 9 407 859

## Main Applications

**TUFF AT10 is recommended for step-type automatic transmissions and also components such as power steering in passenger cars, vans and light trucks.** The switch to **TITANTUFF AT10** is possible even with older equipment, depending upon manufacturer's advice.

## 12. Mercedes (NAG II+)

**TUFF AT11 is a premium performance fuel economy ATF with reduced viscosity.** Especially developed to further optimise gearbox efficiency of latest generation Mercedes-Benz 7-G Tronic Plus (NAG II +) automatic transmissions. .

### Approvals:

MB-APPROVAL 236.15990/055 025

## Main Applications

**Designed for Daimler AT type 7-G Tronic Plus (NAG II +)**

**TUFF AT11 is only miscible with other officially approved MB 236.15 ATFs and not backwards compatible with previous MB-ATF specifications.**

### 13. Continuously Variable Automatic Transmissions (CVT)

TUFF AT12 is a high performance transmission oil specially recommended for use in latest generations of Continuously Variable Automatic Transmissions (CVT) which transfer traction via steel-made traction chains or belts.

#### APPROVALS:

MB-APPROVAL 236.20  
FORD WSS-M2C928-A

#### RECOMMENDATIONS:

BMW 83 22 0 136 376, BMW 83 22 0 429 154, NISSAN NS-2, TOYOTA TC, VW TL 521 80 (G 052 180)

### Main Applications

Suitable for many CV-Transmissions of various brands (e.g. Audi Multitronic) and the latest generation of Mercedes Benz CVT transmissions called Autotronic.

## 1. DOT3

**TUFF BF1 is a high quality product for use in many cars, commercial vehicles and motorcycles for which a nonpetroleum based fluid is specified.**

Mixes safely with all fluids meeting the current standards FMVSS116 DOT 5.1, DOT 4 and DOT 3, ISO 4925 and SAE J 1703

This fluid has a minimum wet boiling point (expected boiling point after two years in service) of 155°C.

### **APPROVALS :**

FMVSS 116 DOT 3 AND DOT 4, ISO 4925, SAE J 1703

### **RECOMMENDATIONS :**

JIS K 2233 Types 3 & 4

## Main Applications

Suitable for use in many motor vehicles for which nonpetroleum based fluid is specified. **Note: Some vehicles (e.g. some Citroens and Rolls Royces) require a petroleum based fluid (LHM). Refer to vehicle manufacturer's handbook before selection.**

## 2. DOT4

**TUFF BF2 is a high quality product for use in many cars, commercial vehicles and motorcycles for which a nonpetroleum based fluid is specified.**

Mixes safely with all fluids meeting the current standards FMVSS116 DOT 5.1, DOT 4 and DOT 3, ISO 4925 and SAE J 1703

This fluid has a minimum wet boiling point (expected boiling point after two years in service) of 155°C.

### **APPROVALS :**

FMVSS 116 DOT 3 AND DOT 4, ISO 4925, SAE J 1703

### **RECOMMENDATIONS :**

JIS K 2233 Types 3 & 4

## Main Applications

Suitable for use in many motor vehicles for which nonpetroleum based fluid is specified. **Note: Some vehicles (e.g. some Citroens and Rolls Royces) require a petroleum based fluid (LHM). Refer to vehicle manufacturer's handbook before selection.**

### 3. DOT 5.1

**TUFF BF3** is a synthetic high performance brake fluid for hydraulic brake systems and clutch actuation in passenger cars, trucks and motorcycles.

**TUFF BF3** offers excellent protection against vaporization even under severe conditions.

**APPROVALS :**

FMVSS NR. 116 DOT 5.1

ISO 4925 CLASS 3/4/5.1

SAE J 1703/J 1704

### Main Applications

Universal use in both passenger care and heavy duty applications if a **TUFF BF3** brake fluid is specified.

Do not use **TUFF BF3** in any kind of hydraulic brake or clutch actuation systems if a silicon or mineral oil based fluid (e.g. LHM or DOT 5) is specified. Always follow manufacturers recommendations.

## 1. SAE 30

**TUFF E03 ENGINE OIL** is a high quality SAE 30 monograde engine oil for use in both petrol and diesel engines.

**APPROVALS :**  
API CD/CF/SG

**RECOMMENDATIONS :**  
CCMC D4, MIL-L 2104D/46152B

## Main Applications

The product is ideally suited for use in petrol engines fitted to agricultural and horticultural machines and may also be used in many diesel engines fitted to stationary equipment and generators.

## 2. SAE 10W40

**TUFF E04** is a high performance engine oil which has been specially developed for modern diesel engines. The product offers very good piston cleanliness and can be used for extended engine oil change intervals. Offers a reduction in fuel consumption.

**TUFF E04** satisfies the requirements of American and European engine manufacturers in one engine oil.

**APPROVALS :**  
ACEA E7, API CI-4, GLOBAL DHD-1, JASO DH-1

**RECOMMENDATIONS :**  
ALLISON C-4, CUMMINS CES 20071/2/6/7/8, DAF, MACK EO-M PLUS, MAN M 3275, MTU DDC TYPE-2, RENAULT RLD / RLD-2, VOLVO VDS-3, DEUTZ DQC III

## Main Applications

**TUFF E04** is particularly recommended for engines with and without turbo charging.

### 3. SAE 15W40

A super high performance SHPD category engine oil for normally aspirated and turbocharged diesel engines in tractors and other machinery which make high demands on service intervals and engine cleanliness.

Reduces wear, even at low temperature start-up and provides excellent protection against sludge and deposits.

#### APPROVALS :

ACEA E7, API CI-4, GLOBAL DHD-1, CAT ECF-1a/ECF-2  
DEUTZ DQC III

#### RECOMMENDATIONS :

ALLISON C-4, CAT TO-2, CASE Ms1121, CUMMINS CES 20071/2/6/7/8, DAF, IVECO 18-1804 CLASSE T2 E7, MACK EO-M PLUS, MAN M 3275, MTU DDC TYPE 2, NH 330 H, RENAULT RLD/RLD-2, STEYR A-201, VOLVO VDS-3

### Main Applications

TUFF E05 has a significantly more modern additive technology than usual HD engine oils of the same SAE class.

TUFF E05 can be used even with higher sulphur content diesel fuel.

Best suited to use in EURO 3 engines. All appropriate commercial vehicle diesel engines can be changed over to TUFF E05 without flushing, regardless of vehicle mileage.

### 4. SAE 15W30

TUFF E06 is a high performance multifunctional oil. The product has been developed using modern additive technology providing universal lubrication of diesel engines, transmissions and hydraulics.

TUFF E06 meets the five main areas of performance requirement: wet brakes, independent power takeoff, tractor transmission, diesel engine operability and hydraulic pump test.

#### APPROVALS :

API CD/SF, API GL-4, MIL-L 2104C

#### RECOMMENDATIONS :

ABEX DENISON HF-0, ALLISON C3, FORD M2C 159B, JOHN DEERE J20A, MASSEY FERGUSON M1135/M1139  
VICKERS HYDRAULIC

### Main Applications

TUFF E06 is multi-purpose SAE 15W-30 multigrade oil developed as a universal lubricant for industrial and agricultural wheeled tractors.

TUFF E06 is suitable for use in most agricultural tractors.



## 5. SAE 10W30

**TUFF E07 is a universal tractor oil suitable for use in most modern tractor engines, transmissions, hydraulics and final drives.** TUFF E07 meets the latest industry standards and provides advantage over earlier types of STOU products by ensuring higher protection levels and faster lubrication during the initial cold start period when the greatest wear occurs.

**TUFF E07 provides** off-highway plant and equipment operators with a high specification multi-functional fluid suitable for the majority of applications.

### APPROVALS :

API CG-4/SF & GL4

### RECOMMENDATIONS :

ALLISON C4, CASE NEW HOLLAND MAT 3525 / MAT 3526, CCMC D4, FORD M2C159B/C, M2C134D, FORD NEW HOLLAND 82009201/2/3, JOHN DEERE J20C, J27  
MAN 271, MASSEY FERGUSON CMS M1135, M1139, M1143, M1144, M1145, MIL-L 2104D, 46152B, NEW HOLLAND NH 030 C, NH 024 C, MH 410 B, NH 420 A  
ZF TE ML 06B, 06C, 06R, 07B

## Main Applications

**TUFF E07 is suitable for use in both turbo charged and naturally aspirated engines, and in machines fitted with oil immersed brakes.**

**TUFF E07** is suitable for use in four-stroke diesel and petrol engines fitted to mobile and static items of plant, together with gearboxes, final drives, rear axles, oil immersed clutches, wet brakes, mobile air compressors and hydraulic equipment.

## 6. SAE 10W40 - New Gen

**TUFF E08 is an ultra-high performance multifunctional oil (STOU/MFO) for the latest generation of agricultural vehicles.** Based on the modern MC-Base-Oil technology and latest generation additives.

### APPROVALS :

SAE J300 :SAE 10W-40, DEUTZ DQC III

### RECOMMENDATIONS :

ACEA E7(E5/E3),E4, API CI-4, API GL-3/GL-4/API GL5 in tractors\*, MAN 3275, AFNOR NFE 48603 HV, ALLISON C-4 CASE MS 1207, 1209, 1210, 1230, 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 J 20 C, New Holland 82009201/2/3, NH030C, NH330G, NH330H, NH410B, NH420A, NH 526C, Massey Ferguson CMS M 1145 (1135/1139/1143/1144), ZF TE-ML 06A, 06B, 06C, 06F, 06L, 07B, \* without HOLMER

## Main Applications

**TUFF E08 is recommended for use in commercial engines, manual transmissions, hydraulic aggregates and final drives, with or without wet brakes, and multi plate differentials.** Its special base oil and additive technology provide excellent deceleration values without any noise over the whole service period.

## 7. SAE 10W40 - Low Friction

**TUFF E09** is a super high performance, multifunctional, low-friction oil (STOU / MFO) based on MC-base-oil technology for engines in tractors and other agricultural and other commercial vehicles.

### APPROVALS :

SAE J300: SAE 10W-40, SAE J306: SAE 75W-90, API CG-4, API GL-4, DEUTZ DQC I, FENDT KDM 41.2011, ZF TE-ML 06B, 06F, 07B

### RECOMMENDATIONS :

API GL5 in Tractors\*, MAN 271, ACEA E3, AFNOR NFE 48603 HV, ALLISON C-4, CASE MS 1207, 1209, 1210, 1230, CNH MAT 3505, 3509, 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 J 20 C, New Holland 82009201/2/3, NH030C, NH330G, NH410B, NH420A, NH 526C, Massey Ferguson CMS M 1145 (1135/1139/1143/1144), ZF TE-ML 06A, 06C, 06L, \* except HOLMER

## Main Applications

**TUFF E09** is recommended for use in engines, manual transmissions, hydraulic aggregates and final drives, with or without wet brakes, and multi plate differentials.

Suitable for manual transmissions and gear-hydraulic-systems in agricultural or construction machinery with HD engine oil of type SAE 15W-30, SAE 15W-40 or SAE 10W-30 or SAE 10W-40. Manual transmissions having SAE 75W-90 and API GL4 service recommendation are also serviceable with **TUFF E09**.

Tractors working with composite equipment should be completely switched to **TUFF E09** for safe working equipment.

## 8. 2 Stroke Engine Oil

A clean burning, low smoke 2-stroke oil, which reduces the incidence of carbon build up, plug fouling and ring sticking.

**TUFF E010** is fortified with a synthetic inclusion to give improved thermal stability, lubricity and anti-wear capability.

The product is dyed red for ease of identification.

### APPROVALS :

API TC  
JASO FB

## Main Applications

Recommended for all 2-stroke engines, particularly those used in agricultural and horticultural equipment.

**TUFF E010** 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.

## 1. SAE 10W40 - Low Ash

**TUFF E011 is a revolutionary diesel engine oil designed for commercial vehicles fitted with exhaust gas after treatment systems.**

The new additive technology of **TUFF E011** reduces the content of heavy metals to provide the highest levels of performance. The innovative additive technology combines the reduction of contaminant emissions with excellent anti-wear protection, low deposit formation, and high oxidation stability which leads to optimum engine cleanliness. This is particularly advantageous in vehicles fitted with exhaust gas treatment systems such as particle filters and catalytic converters.

### APPROVALS :

ACEA E7/E6/E4, API CI-4, JASO DH-2, SCANIA LOW ASH

## Main Applications

**TUFF E011 has been specially developed for Scania EURO V commercial vehicles fitted with DPF and fulfils the exclusive Scania Low Ash approval.**

**TUFF E011** can also be used in vehicles with gas engines.

## 2. SAE 5W30

**TUFF E012 is a premium engine oil with the innovative XTL®-Technology developed for commercial and construction vehicles.** The XTL®-Technology offers maximum fuel economy over the whole drain-interval due to outstanding oxidation and ageing stability.

**TUFF E012** guarantees optimum protection for modern diesel particulate filters and catalysts and provides improved durability. Due to minimum evaporation loss, the oil consumption and turbo charger deposits are significantly reduced. This new technology offers maximum performance over the entire temperature range and ensures best cold start properties even at very low temperatures.

**TUFF E012** exceeds conventional UHDP lubricants in versatility and performance due to its XTL®-Technology.

### APPROVALS :

ACEA E6, DEUTZ DQC IV-10 LA, MACK EO-N, MAN M 3477, MB-APPROVAL 228.51, MTU DDC TYP 3.1, RENAULT RXD/RLD2, VOLVO VDS-3

### RECOMMENDATIONS :

ACEA E7

## Main Applications

**TUFF E012 is specially developed for commercial and off highway vehicles with modern exhaust gas after treatment systems and fulfils the latest manufacturer specifications.** The product may only be used in diesel engines when low sulphur diesel fuel is being used.

### 3. SAE 5W30 - Euro 6

Ultra high performance, fuel economy engine oil for use in many Euro 6 engines fitted with modern exhaust after treatment systems. Excellent cold starting properties and low oil consumption.

#### APPROVALS :

ACEA E9/E7/E6, API CJ-4, CAT ECF-3, CUMMINS CES 20081, MDEUTZ DQC IV-10 LA, MACK EO-O PREMIUM PLUS, MAN M 3677, MB-APPROVAL 228.51, MTU TYPE 3.1, RENAULT RLD-3, VOLVO VDS-4

#### RECOMMENDATIONS :

GM-LL-B-025, DETROIT DIESEL DDC 93K218, MAN M 3271-1

### Main Applications

The ideal rationalisation product for the latest Euro 6 engines.

### 4. SAE 10W40

TUFF E014 is a revolutionary diesel engine oil designed for commercial and off highway vehicles. The new additive technology of TUFF E014 reduces the content of heavy metals to provide the highest levels of performance. This is particularly advantageous in vehicles fitted with exhaust gas treatment systems such as particle filters and catalytic converters.

#### APPROVALS :

ACEA E9/E7/E6, API CI-4, CATERPILLAR ECF-1-a, DEUTZ DQC IV-10 LA, MACK EO-M PLUS, MAN M 3477 / M 3271-1, MB-APPROVAL 228.51 / 235.28, MTU DDC TYPE 3.1, RENAULT RXD / RGD, VOITH-RETARDER "B", VOLVO VDS3/Cn6

#### RECOMMENDATIONS :

CUMMINS CES 20077, DAF, MAN M 3277 CRT

### Main Applications

The performance level of TUFF E014 is higher than that of conventional high performance engine oils. TUFF E014 is better than UHPD oils in its versatility and performance capacity.

Regardless of mileage, older diesel engines can also be changed over to TUFF E014 with no flushing required.

## 5. SAE 10W40 - Long Life

**TUFF E015 is a revolutionary diesel engine oil designed for commercial and off highway vehicles.** The new additive technology of **TUFF E015** reduces the content of heavy metals to provide the highest levels of performance. This is particularly advantageous in vehicles fitted with exhaust gas treatment systems such as particle filters and catalytic converters.

### APPROVALS :

ACEA E7/E4, API CI-4, CUMMINS CES 20077/8, DEUTZ DQC III-10, MACK EO-M PLUS / EO-N, MAN M 3277, MB-APPROVAL 228.5 / 235.27, MTU DDC TYPE-3, RENAULT RXD/ RLD-2, SCANIA LDF-2, VOITH-RETARDER "A", VOLVO VDS-3

### RECOMMENDATIONS :

DAF, IVECO 18-1804, SDFG OM-1901A

## Main Applications

**Designed for diesel engines with and without turbo charger in trucks, buses and industrial machinery.**

Regardless of the current service life, even older diesel engines can be changed over to **TUFF E015** without flushing.

## 6. SAE 5W30 - Gas Powered Engine

**TUFF E016, is a revolutionary synthetic engine oil designed for gas powered commercial vehicles and buses.** The new additive technology of **TUFF E016** requires absolutely no heavy metals to provide the highest levels of performance as well as the required high nitration and oxidation stability for gas powered applications.

**TUFF E016** is also suitable for vehicles driven by diesel engines. Thermal stability and low sulphate ash levels prevent carbon deposits and self-ignitions. This is particularly advantageous in vehicles fitted with exhaust gas treatment systems such as particle filters and catalytic converters.

### APPROVALS :

ACEA E6, MAN M 3477, MAN M 3271-1 / M 3271-3, MB-APPROVAL 226.9 / 235.28, VOITH-RETARDER "B"

## Main Applications

**TUFF E016 has been specially developed for gas powered engines with and without turbocharger.** It can also be used in older diesel engines.

## 7. SAE 15W40

**TUFF E01 is the ideal universal engine oil for older mixed fleets which could be operated on one type of engine oil.**

During the development of **TUFF E01**, a special emphasis was given to excellent performance in normally aspirated and turbocharged diesel engines.

In addition to the rationalisation which this product allows, **TUFF E01** also ensures that the optimum operating viscosity is maintained at all times, thus reducing power loss and fuel consumption and in turn increasing efficiency.

### APPROVALS :

ACEA A3/B3/B4, API CG-4/CF/SL, DEUTZ DQC I-02, MAN 271, MB-APPROVAL 228.1 / 229.1, MTU DDC TYPE-2

### RECOMMENDATIONS :

DACEA E2, MIL-L-2104 E, ALLISON C-4,, CASE MS 1120 DAF, MACK EO-L, SCANIA, STEYR A-202, VOLVO VDS, VW 501 01 / 505 00

## Main Applications

**TUFF E01 can be safely used in older engines. Prior flushing is not necessary.**

Transmissions with wet brakes are not to be filled with **TUFF E01**.

It is also suitable for some transmission and hydraulic systems requiring a SAE 15W-40 lubricant.

## 8. SAE 15W40 - New Gen

**TUFF E017 is an ultra high-performance, fuel-economy oil for a variety of commercial vehicle and off highway diesel engines.**

**TUFF E017** complies with the latest emission legislation ACEA E9.

**TUFF E017** is particularly advantageous in vehicles fitted with exhaust gas treatment systems such as Diesel Particulate Filters (DPF), Diesel Oxidation Catalyst (DOC), high rate of Exhaust Gas Recirculation (EGR), two-stage turbo charging and SCR-Catalyst (Selective Catalytic Reduction) or any combination of the given technologies.

### APPROVALS :

ACEA E9/E7, API CJ-4/CI-4 PLUS/CI-4, CAT ECF-2/ECF-3, CUMMINS CES 20081, DEUTZ DQC III-10 LA, DETROIT DIESEL DDC 93K218, MACK EO-O PREMIUM PLUS, MAN M 3575 / 3275-1, MB-APPROVAL 228.31, MTU DDC TYPE 2.1, RENAULT RLD-3, VOLVO VDS-4

### RECOMMENDATIONS :

ALLISON C-4

## Main Applications

**TUFF E017 has been specially developed for Volvo with extended service intervals, exhaust after treatment and turbocharger.**

Regardless of mileage, older diesel engines can also be changed over to **TUFF E017** with no flushing required.



## 9. SAE 15W40 - Euro 3

**TUFF E018** is a long term, all season engine oil for diesel and gasoline engines with and without turbo charging in passenger cars, trucks, buses and industrial equipment that have high requirements with respect to engine cleanliness and maintenance intervals.

Due to its advanced design, **TUFF E018** ensures operation without problems under all climatic conditions..

### APPROVALS :

ACEA E7, API CI-4/SL, GLOBAL DHD-1, CAT ECF-1-a/ECF-2, CUMMINS CES 20076/7/8, DEUTZ DQC III-10, MACK EO-N, MAN M 3275-1, MB-APPROVAL 228.3, MTU DDC TYPE-2, RENAULT RLD /RLD-2, VOLVO VDS-3

### RECOMMENDATIONS :

ACEA A3/B4, ALLISON C-4, CAT TO-2, CASE MS 1121, CUMMINS CES 20071/2, DAF, IVECO 18-1804 CLASSE T2 E7, NH 330 H, STEYR A-201

## Main Applications

**TUFF E018** has been developed specially for highly loaded commercial vehicle diesel engines and has a significantly more modern additive system than other HD engine oils of the same SAE class.

**TUFF E018** can be used even with higher sulphur content diesel fuel, which is important for shipping companies that operate internationally, bus operations, and construction companies. **TUFF E018** is most suitable for use in EURO 3 engines.

## 10. SAE 15W40 - Long Life

**TUFF E019** is a super long-life, all season oil for diesel engines with and without turbo charging in passenger cars, trucks, buses and industrial equipment.

### APPROVALS :

ACEA E7, API CH-4/SL, GLOBAL DHD-1, CUMMINS 20076/7, DEUTZ DQC II, MACK EO-N, MAN M 3275-1, MB-APPROVAL 228.3, MTU DDC TYPE-2, RENAULT RD/RD-2, VOLVO VDS-2

### RECOMMENDATIONS :

ACEA A3/B4, CAT ECF-1-a, DAF, SCANIA

## Main Applications

**TUFF E019** has been specially developed for highly loaded commercial vehicle diesel engines.

Regardless of the current service life, even older diesel engines can be changed over to **TUFF E019**.

**TUFF E019** can be used even with higher sulphur content diesel fuel, which is important for shipping companies that operate internationally, bus operations, and construction companies.

## 11. SAE 10W40 - High Performance

**TUFF E020 is an MC-synthesis, high-performance, fuel-economy oil for all commercial vehicles, off highway equipment and passenger cars.**

**TUFF E020** promotes very good piston cleanliness and can therefore be used for extended engine oil change intervals. **TUFF E020** offers a reduction in fuel consumption.

### APPROVALS :

ACEA E7/B4/B3/A3, API CI-4, GLOBAL DHD-1, JASO DH-1  
CUMMINS CES 20077/8, DETROIT DIESEL DDC 93K215,  
DEUTZ DQC III-10, MACK EO-M PLUS, MAN M 3275-1,  
MB-APPROVAL 228.3 / 229.1 / 235.27, MTU DDC TYPE-2  
RENAULT RLD / RLD-2, VOITH-RETARDER "A", VOLVO  
VDS-3

### RECOMMENDATIONS :

ALLISON C-4, CAT ECF-2, CUMMINS CES 20071/2/6,  
DAF, VW 500 00/501 01/505 00

## Main Applications

**TUFF E020 is suitable for use in diesel and gasoline engines with and without turbo charging.** The requirements of American and European engine manufacturers are combined in one engine oil. **TUFF E020** is specially recommended to supply mixed vehicle parcs.

## 12. SAE 10W40 - Mix Fleet

**TUFF E039 is an uncompromising engine oil for the mixed professional fleet. TUFF E039** surpasses the highest demands of current diesel engines and gasoline engine technology.

### APPROVALS :

ACEA E7/B3/A3, API CH-4, CUMMINS CES 20077, DEUTZ  
DQC II-10, MAN M 3275-1, MB-APPROVAL 228.3 / 229.1 /  
235.27, MTU DDC TYPE-2, RENAULT RD / RD-2, VOITH-  
RETARDER "A", VOLVO VDS-2

### RECOMMENDATIONS :

ALLISON C-4, CUMMINS CES 20071/2/6, DAF, MACK EO-  
M PLUS, SCANIA

## Main Applications

**TUFF E039 can be used without restrictions in diesel and gasoline engines.** It is suitable for commercial vehicles, off highway equipment and passenger cars.

### 13. SAE 5W30 - Long Life

**TUFF E040 is a top performance, extreme fuel economy oil for a variety of commercial vehicle and off highway diesel engines with optimum cold starting and lower oil consumption.**

**TUFF E040** was developed to optimise the reliability and cost effectiveness of vehicles. The fully-synthetic **TUFF E040** provides continuous reduction in fuel consumption. This is ensured by reduced friction, rapid oil circulation and extreme wear protection.

**TUFF E040** demonstrates special cost-effectiveness with extended engine oil change intervals of up to 160,000 km. The special aging stability and the excellent wear protection lead to optimum reliability.

#### **APPROVALS :**

ACEA E7/E4, CUMMINS CES 20077, DEUTZ DQC IV-10, MACK EO-N, MAN M 3277, MB-APPROVAL 228.5, MTU DDC Type-3, RENAULT RXD/RLD-2, VOLVO VDS-3

#### **RECOMMENDATIONS :**

IVECO 18-1804 TFE, SCANIA LDF-2

### Main Applications

**TUFF E040 has been specially developed for extended service intervals in a variety of commercial vehicle and off highway diesel engines.**

### 14. SAE 50

**TUFF E02 oils are heavy duty monograde medium ash Diesel Engine formulated from Solvent refined mineral base stocks.**

#### **APPROVALS :**

API Petrol rating SG, MIL-L-4615C, MIL-L-2104D, UK Def 2101D, Australian Standards DEF (Aust) 204, GM 6085M, Mercedes Benz 227.0, Ford M2C-153C, MACK EO-J, Allison C4

### Main Applications

**TUFF E02 oils contain advanced additives to ensure engine protection in a range of petrol and diesel engines operating under a wide range of climatic conditions**

**15. SAE 40**

**TUFF E036 oils are heavy duty monograde medium ash Diesel Engine formulated from Solvent refined mineral base stocks.**

**APPROVALS :**

API Petrol rating SG. MIL-L-4615C, MIL-L-2104D, UK Def 2101D, Australian Standards DEF (Aust) 204, GM 6085M, Mercedes Benz 227.0, Ford M2C-153C, MACK EO-J, Allison C4

**Main Applications**

**TUFF E036 oils contain advanced additives to ensure engine protection in a range of petrol and diesel engines operating under a wide range of climatic conditions**

**16. SAE 30**

**TUFF E037 oils are heavy duty monograde medium ash Diesel Engine formulated from Solvent refined mineral base stocks.**

**APPROVALS :**

API Petrol rating SG. MIL-L-4615C, MIL-L-2104D, UK Def 2101D, Australian Standards DEF (Aust) 204, GM 6085M, Mercedes Benz 227.0, Ford M2C-153C, MACK EO-J, Allison C4

**Main Applications**

**TUFF E037 oils contain advanced additives to ensure engine protection in a range of petrol and diesel engines operating under a wide range of climatic conditions**

**17. SAE 10**

**TUFF E038 oils are heavy duty monograde medium ash Diesel Engine formulated from Solvent refined mineral base stocks.**

**APPROVALS :**

API Petrol rating SG. MIL-L-4615C, MIL-L-2104D, UK Def 2101D, Australian Standards DEF (Aust) 204, GM 6085M, Mercedes Benz 227.0, Ford M2C-153C, MACK EO-J, Allison C4

**Main Applications**

**TUFF E038 oils contain advanced additives to ensure engine protection in a range of petrol and diesel engines operating under a wide range of climatic conditions**

## 1. SAE 5W30 - Long Life

**TUFF E021** is a premium motor oil for modern passenger cars and light commercial vehicles with or without extended service intervals. It offers optimum cold starting, lower oil consumption and minimised exhaust emissions.

**TUFF E021** was developed for VW engines and formulated for outstanding fuel economy characteristics. Many engines, irrespective of their make or design can be filled with this oil, particularly, diesel engines equipped with particulate filters, which last significantly longer with this engine oil.

### APPROVALS :

VW 504 00/507 00

### RECOMMENDATIONS :

ACEA C3, ACEA A3/B4, FORD M2C917-A

## Main Applications

**TUFF E021** is recommended for factory-filling of VW vehicles as well as all service oil changes as demanded in the manual.

It is used for extended drain intervals, as well as for standard drain intervals. Moreover **TUFF E021** can also be used for service of older VW vehicles.

## 2. SAE 5W30 - C1

**TUFF E022** is a premium motor oil for modern passenger cars and light commercial vehicles with or without extended service intervals.

This product is suitable for turbocharged or normally aspirated diesel and gasoline engines designed for use with special fuel economy engine oils.

This SAE 5W-30 high performance fuel economy oil is a true all season product. **TUFF Eo22** reduces fuel consumption, protects particulate filters and engine components, and reduces friction and wear.

### APPROVALS :

ACEA C1

### RECOMMENDATIONS:

ACEA A5/B5, JASO DL-1, FORD WSS-M2C934-B, MAZDA

## Main Applications

**TUFF E022** is suitable for all vehicles where ACEA C1 engine oils are specified.

**TUFF E022** may only be used in diesel engines when low sulphur diesel fuel is also being used.

The product can also be applied in many vehicles of Asian manufacturers if the use of a C1 engine oil is specified.

### 3. SAE 5W30 - C2

**TUFF E023 is an innovative engine oil for modern cars.** Provides benefits to all advanced, fuel efficient engines regardless of their emission category.

**TUFF E023** keeps turbochargers clean, for maintaining long-term optimum charging pressure, and provides perfect protection for exhaust gas after treatment devices such as particulate filters, CRT's or oxidation catalysts. Tests show that **TUFF E023** reduces fuel consumption significantly compared to conventional motor oils.

#### APPROVALS :

ACEA C2, API SN/SM/CF, PSA B 71 2290, RENAULT RN0700

#### RECOMMENDATIONS :

ACEA A5/B5, FIAT 9.55535-S1, HONDA, SUBARU, SUZUKI, TOYOTA

### Main Applications

**TUFF E023 fulfils all the requirements of engine oils for vehicles fitted with exhaust treatment systems.**

**TUFF E023** may only be used in diesel engines when in conjunction with low sulphur diesel fuel.

The product can be applied in many vehicles of Asian manufacturers if the use of a C2 engine oil is specified.

### 4. SAE 5W30 - C3

**TUFF E024 is a premium engine oil for passenger cars and vans, utilising the new XTL-Technology®.** The innovative XTL®-Technology offers high performance over a range of temperatures.

The unique lubrication properties of XTL-Technology® offer significant benefits in highly stressed engines, especially in latest downsized components or engines with Stop-Start systems. Engines with a high power density enjoy reliable lubrication and start more easily and more quickly.

The product is also advantageous for cars with exhaust gas after treatment systems such as catalysts or particulate filters. XTL-Technology® is proven to lower fuel consumption even compared to the same SAE-class.

#### APPROVALS :

BMW LONGLIFE-04, MB-APPROVAL 229.51, PORSCHE C30, VW 504 00/507 00

#### RECOMMENDATIONS:

ACEA C3, ACEA A3/B4, FORD M2C917-A

### Main Applications

**Designed for modern passenger cars and light commercial vehicles with or without extended service intervals.** Specially developed for BMW-, VW and Mercedes-Benz vehicles with exhaust after treatment and turbocharger.

**TUFF E024** fulfils all of the requirements of engine oils for vehicles fitted with exhaust gas after treatment devices.

**TUFF E024** may only be used in diesel engines when also low sulphur diesel fuel is being used.

The product can be applied in many vehicles of Asian manufacturers if the use of a C3 engine oil is specified.



## 5. SAE 5W30 - C4

**TUFF E025 is a premium engine oil for modern passenger cars with diesel engines equipped with particulate filters or CRT's.** Provides ultimate performance for use in diesel engines with and without turbo chargers.

Fuel consumption can be significantly reduced by using **TUFF E025**. This very high performing fuel efficient SAE 5W-30 motor oil is recommended for year round use, providing perfect pumpability at nearly all temperatures, which protects against wear and lowers friction.

### APPROVALS :

ACEA C4  
RENAULT RN0720

## Main Applications

**Suitable for all vehicles requiring ACEA C4 or Renault RN0720 engine oil.**

**TUFF E025** may only be used in diesel engines when low sulphur diesel fuel is also used.

The product can also be applied in many vehicles of Asian manufacturers if the use of a C4 engine oil is specified.

## 6. SAE 5W30 - Low Sulphur Diesel

**TUFF E026 is a premium engine oil for passenger cars and vans, utilising the new XTL-Technology®.** The innovative XTL-Technology® offers high performance over a range of temperatures.

The unique lubrication properties of XTL-Technology® offer significant benefits in highly stressed engines, especially in the latest downsized components or engines with Stop-Start systems. Engines with a high power density enjoy reliable lubrication and start easier and more quickly.

The product is advantageous for cars with exhaust gas after treatment systems such as catalysts or particulate filters, as it keeps their conversion rate high and provides a longer life time.

XTL-Technology® is proven to lower fuel consumption even compared to the same SAE-class.

### APPROVALS :

ACEA C3, API SN/SM, BMW LONGLIFE-04, dexos2™ (GB2C0209075), MB-APPROVAL 229.51, VW 502 00/505 00/505 01

### RECOMMENDATIONS:

ACEA A3/B4, FORD M2C917-A, supersedes GM-LL-A-025 supersedes GM-LL-B-025

## Main Applications

**TUFF E026 has been specially developed for BMW, Mercedes-Benz and GM / Vauxhall vehicles with exhaust after treatment and turbocharger.**

Older engine generations can be changed over to **TUFF E026**.

**TUFF E026** may only be used in diesel engines when also low sulphur diesel fuel is being used.

The product can be applied in many vehicles of Asian manufacturers if the use of a C3 engine oil is specified.

## 7. SAE 5W30 - Base VI

**TUFF E027 is a fuel conserving multigrade passenger car engine oil suitable for gasoline and diesel engines.**

**TUFF E027** is based on unconventional high VI base oils and advanced high performance additive components to provide excellent durability for long life performance, wear protection and low temperature performance.

### **APPROVALS :**

ACEA A5/B5, API SL/CF, FORD M2C913-C

### **RECOMMENDATIONS :**

ACEA A1/ B1, FORD M2C913-A, FORD M2C913-B, IVECO 18-1811, JAGUAR M2C913-B

## Main Applications

**TUFF E027 is developed for use in Ford vehicles and recommended for other cars which require the related ACEA and ILSAC specifications.**

## 8. SAE 5W30 - New Gen Additive

**TUFF E028 has been especially developed for GM / Vauxhall engines and set for specific fuel economy operating characteristics.** This innovative fuel economy SAE 5W-30 oil is based on state-of-the art additive technology.

### **APPROVALS :**

ACEA A3/B4, API SL/CF, GM-LL-A-025, GM-LL-B-025

## Main Applications

**TUFF E028 is suitable for all OPEL vehicles requiring GM-LL-A-025 or GM-LL-B-025. TUFF E028 can be used in other makes and models too.**

It is suitable for use in engines with and without turbo charging as well as with and without diesel particulate filters.

## 9. SAE 0W20

**TUFF E029 is a premium motor oil with new XTL-Technology® and zincfree additive technology, for high performance cars with gasoline and diesel engines.**

Specially designed for high speed driving and maximum power output.

It offers extreme fuel-economy characteristics, excellent cold starting behaviour and outstanding performance reserves.

The innovative XTL-Technology® offers highest performance over the full temperature range. The unique lubrication properties of XTL-Technology® offers significant benefits in highly stressed engines, especially also in latest downsized aggregates or engines with Stop-Start systems. Engines with a high power density enjoy reliable lubrication and start easier and quicker.

### APPROVALS:

ACEA C2, ACEA A5/B5, API SL, ILSAC GF-4

## 10. SAE 5W40

**TUFF E030 is a premium engine oil for passenger cars and vans utilising the new XTL-Technology®.** The innovative XTL-Technology® offers high performance over the full temperature range. The unique lubrication properties of XTL-Technology® offer significant benefits in highly stressed engines, especially in downsized components or engines with Stop-Start systems. Engines with a high power density enjoy reliable lubrication and start more easily and more quickly.

The product is also advantageous for cars with exhaust gas after treatment systems such as catalysts or particulate filters, as it keeps their conversion rate high and provides better life time.

XTL-Technology® is proven to promote lower fuel consumption when compared to the same SAE-class.

### APPROVALS:

ACEA C3, API SN/SM/CF, FORD M2C917-A, BMW LONGLIFE-04, MB-APPROVAL 229.31, PORSCHE A40, RENAULT RN0700/RN0710, VW 502 00/ 505 01

### RECOMMENDATIONS:

ACEA A3/B4, FIAT 9.55535-S2, VW 505 00

## Main Applications

**TUFF E029 can be used for gasoline and diesel engines both with and without exhaust gas after treatment systems, such as catalysts or particulate traps.**

**TUFF E029** may only be used in diesel engines when also low sulphur diesel fuel is being used.

The product can be applied in many vehicles of Asian manufacturers if the use of a C2 engine oil is specified.

## Main Applications

**TUFF E030 was designed to meet the requirements of modern gasoline and diesel engines of many different car manufacturers, especially VW engines with pump unit injectors.**

**TUFF E030** can be used for vehicles both with and without exhaust gas after treatment.

**TUFF E030** may only be used in diesel engines when also low sulphur diesel fuel is being used.

The product can be applied in many vehicles of Asian manufacturers if the use of a C3 engine oil is specified.

## 11. SAE 5W40 - Cold Flow

**TUFF E031 is a multifunctional engine oil, with modern and reliable additive technology which ensures high performance at all running conditions.**

The good cold flow properties of **TUFF E031** ensures rapid lubrication to all parts of the engine. Friction and wear are substantially reduced leading to improved fuel efficiency.

**TUFF E031** guarantees engine durability and improved oil pressure under city cycle mode as well as under top speed highway running conditions.

### APPROVALS :

ACEA A3/B4, API SN/SM/CF, MB-APPROVAL 229.3, PORSCHE A40, PSA B 71 2296, RENAULT RN0700/RN0710, VW 502 00/505 00

### RECOMMENDATIONS :

BMW LONGLIFE-98, FIAT 9.55535-H2/M2/N2/Z2

## Main Applications

**TUFF E031 can be used for passenger cars and light duty vehicles with gasoline and diesel engines, whether naturally aspirated or turbocharged. TUFF E031 offers good cold start and fuel economy in the winter as well as high thermal stability in summer.**

## 12. SAE 0W30 - Long Life

**TUFF E032 provides the highest performance in diesel and gasoline engines.** With all-season capability it performs perfectly even under the most severe climatic conditions.

With optimised HTHS Viscosity **TUFF E032** ensures maximum fuel economy.

### APPROVALS :

VW 503 00/506 01

### RECOMMENDATIONS :

ACEA A5/B5, BMW LONGLIFE 01-FE, VW 506 00

## Main Applications

**TUFF E032 has been designed for VW and AUDI diesel and gasoline engines for extended oil drain intervals (WIV) including the diesel engines with pump unit injector technology which require motor oil according VW 506.01.**

### 13. SAE 0W30

**TUFF E033 is a multifunctional top tier engine oil, based on innovative synthetic engine oil technology.** The modern and reliable additive system ensures high performance under all running conditions.

This full synthetic ultra high performance engine oil is for year round use. The excellent cold flow properties of **TUFF E033** ensure rapid lubrication to all parts of the engine.

**TUFF E033** guarantees engine durability under city cycle mode as well as under top speed highway running conditions. Friction and wear are substantially reduced leading to a reduction in fuel consumption.

#### APPROVALS :

API SL/CF

#### RECOMMENDATIONS :

ACEA A3/B4, MB-APPROVAL 229.3, BMW LONGLIFE-98, VW 502 00 / 503 01 / 505 00

### Main Applications

**TUFF E033 can be used for passenger cars and light duty vehicles with gasoline and diesel engines, whether naturally aspirated or turbocharged.**

### 14. SAE 10W60

**TUFF E034 is the high-viscosity engine oil, based on innovative engine oil technology.** The modern and reliable additive technology ensures reliable performance at all operating conditions. This modern ultra high performance engine oil can be used all year round.

The good cold flow properties of **TUFF E034** provide rapid lubrication to all parts of the engine. Friction and wear will be effectively reduced due to a reliable oil film being generated.

**TUFF E034** guarantees engine durability and improved oil pressure under city cycle mode as well as under top speed racing conditions.

**TUFF E034** offers good cold start and fuel economy in the winter as well as high thermal stability in summer.

#### RECOMMENDATIONS :

ACEA A3/B3, API SL / CF, FIAT 9.55535-H3

### Main Applications

**TUFF E034 can be used for passenger cars and light duty vehicles with naturally aspirated or supercharged gasoline and diesel engines.**

## 15. **SAE 0W30**

**TUFF E035 is an advanced, SAE 10W-40 all-season, engine oil specially formulated for normally aspirated or turbocharged gasoline and diesel engines in passenger cars and vans.** Universal application was a high priority in the development of this oil.

The modern concept of **TUFF E035** offers high functionality. It offers good cold starting and lower oil consumption.

### **APPROVALS :**

ACEA A3/B4, API SL/CF, MB-APPROVAL 229.1

### **RECOMMENDATIONS :**

BMW SPECIAL, FIAT 9.55535-D2/G2, VW 500 00/505 00

## **Main Applications**

**TUFF E035 is suitable for use in vehicles without extended drain intervals.**

## 1. API GL4

**TUFF G03** is a high performance Universal Tractor Transmission Oil designed to meet the latest specifications introduced by original equipment manufacturers. **TUFF G03** provides improved wear control, excellent thermal stability, and the elimination of 'squawk' in machines fitted with oil immersed brakes.

Designed for use in modern tractor transmission, final drives and hydraulics systems.

**TUFF G03** meets the requirements of specification VME WB 101 for Volvo BM design wet brake axles.

### APPROVALS:

API GL-4, Ford M2C 86B/C, 134D, John Deere J20C, Volvo VME Wb101

### RECOMMENDATIONS:

Allison C-4, Komatsu, Kubota UDT, New Holland NH 410B, ZF TE ML 03E, 05F, 06K, 17E

## Main Applications

Transmission, hydraulic and final drive oil for use in agricultural tractors, off highway plant and associated machinery.

## 2. API GL4 - High Performance

**TUFF G04** is a 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.

### APPROVALS:

API GL-4, SAE J300: 15W-30, SAE J306: 75W-80, ZF TE-ML 03E, 05F, 17E, 21F

### RECOMMENDATIONS:

AGCO Powerfluid 821 XL, AGCO Q-186 (Whitefarm), ALLISON C-4, CASE MS 1230, 1210, 1209, 1207, 1206, CLAAS / LANDINI / SAME-Transmission, CNH MAT 3525, 3526, 3509, 3506, 3505, FNHA-2-C-200.00 / -201.00, FORD M2C48-C3, ESN M2C86-B/C, FORD M2C134-D, JOHN DEERE JDM J20C, Massey Ferguson CMS M 1145, (1135/1141/1143), NH 410 B, SDFG OT 1891 A, ZF TE-ML 06K

## Main Applications

Gearboxes or combined gearbox-hydraulic systems of agricultural and construction machinery with fill instruction HD-engine oil SAE 10W-30 or gear oils SAE 75W-80 acc. to API GL-4 can be filled using **TUFF G04**. All machines working with accessory equipment drives should be switched to **TUFF G04** consistently to utilise the maximum rationalisation effect.



### 3. SAE 80W90

**TUFF G05 is a modern mineral hypoid gear oil primarily developed for axle transmissions of Mercedes-Benz commercial vehicles.** The product was specifically developed for the new HL-6 axle and is backward compatible with previous axle models.

Also suitable for industrial and agricultural machinery

#### APPROVALS :

API GL-5, API MT-1, MAN 342 TYPE M3, MB-APPROVAL 235.20, ZF TE-ML 05A, 12E, 16B, 17B, 19B, 21A

#### 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

### Main Applications

The MB 235.20 specification allows the use in all DC hypoid axles (also covers MB 235.0) and requires oil changes only every 3 years or after 350,000 km.

The new DaimlerChrysler HL-6 axles may only be filled with oils compliant with 235.20, such as TITAN GEAR HYP LD SAE 80W-90.

### 4. SAE 85W140

**TUFF G06 is a heavy duty lubricant developed to meet or exceed internationally recognised specifications and classifications.**

#### RECOMMENDATIONS :

ZF TE-ML 07, 08

### Main Applications

Heavy duty automotive driveline oil suitable for use in final drive units fitted to cars and commercial vehicles. May also be used in certain gearboxes and industrial drives.

### 5. SAE 90

**TUFF G07 is a heavy duty lubricant developed to meet or exceed internationally recognised specifications and classifications.**

Contains the most effective EP additives, providing outstanding gear protection.

#### APPROVALS :

API 6L-5, MAN 342 Type M1, MB-APPROVAL 235.0, ZF TE-ML 05A, 16C, 17B, 19B

#### RECOMMENDATIONS :

FORD M2C9102-A, OPEL 1942387, VW TL 727, ZF TE-ML 07, 08

### Main Applications

Heavy duty automotive driveline oil suitable for use in final drive units fitted to cars and commercial vehicles. May also be used in certain gearboxes and industrial drives.

### 1. SAE 75W90 - High Load

**TUFF G08 is a fully synthetic multifunctional transmission and gear oil for use in both highly loaded manual transmissions and hypoid drives of heavy duty commercial vehicles.**

**APPROVALS :**

API GL-4/GL-5, ZF TE-ML 05B, 12B, 16F, 17B, 19C, 21B

**RECOMMENDATIONS :**

DAF, MAN M 3343 Type S, JOHN DEERE JDM J 11 E/G, SCANIA STO 1:0, ZF TE-ML 07

### Main Applications

**TUFF G08 is ideally suited for use in highly loaded axle gears.** Furthermore, it is also suitable for use in synchronised and nonsynchronised gear boxes, distribution gears and minor outputs for which an oil is prescribed that meets the requirements in accordance with API GL-5 or GL-4. Its formulation assures proper operation with synchromesh materials in manual transmissions.

### 2. SAE 75W90 - Special Actros Formulation

**TUFF G09 is a fully-synthetic, fuel-economy manual transmission oil for extended drain intervals in commercial vehicles, specially developed for Mercedes-Benz Actros vehicles.**

**APPROVALS :**

API GL-4, MAN 341 TYPE MB, MB-APPROVAL 235.11

**RECOMMENDATIONS :**

ZF TE-ML 08

### Main Applications

**TUFF G09 has been developed for use in large Mercedes-Benz manual transmissions in heavy duty vehicles.**

### 3. SAE 75W90 - Long Life

**TUFF G010 is a fully-synthetic, fuel-economy hypoid gear oil for highly-stressed axles in commercial vehicles.** Developed for the longest oil change intervals in commercial vehicle axle drives.

**TUFF G010** has proven its capabilities in field tests over more than 600,000 km.

**APPROVALS :**

API GL-5, SCANIA STO 1:0, MAN 342 TYPE S1, ZF TE-ML 05B, 12B, 16F, 17B,

**RECOMMENDATIONS :**

JOHN DEERE JDM J 11E/G, MB 235.8, VOLVO V 97312  
ZF TE-ML 07, 08

### Main Applications

**TUFF G010 is predominantly used in axle gearboxes with large axle offsets (hypoid gears), planetary axle hubs and transfer cases.**

#### 4. SAE 75W80

TUFF G011 is a fuel-economy manual transmission oil based on highly advanced synthetic technology offering very good shiftability and is compatible with modern synchromesh systems.

**APPROVALS :**

API GL-4, EATON, MAN 341 TYPE E3

**RECOMMENDATIONS :**

DAF, MAN 341 Type Z3, VOLVO 97305, ZF TE-ML 02D, 08

#### Main Applications

TUFF G011 is suitable for use in heavy duty manual transmissions with or without synchromesh systems as well as supplementary components such as transmission brakes.

#### 5. SAE 75W80 - Long Life

TUFF G012 is a manual transmission fluid developed for use in ZF manual transmissions. The product has been developed to meet long drain specifications of the automotive industry which have been successfully proven in a 600,000 km field test.

**APPROVALS :**

API GL-4, MAN 341 TYPE Z4, ZF TE-ML 01L, 02L, 16K

**RECOMMENDATIONS :**

DAF, EATON, IVECO, RENAULT, VOLVO 97307

#### Main Applications

TUFF G012 has been developed with ZF according to the specification ZF TE-ML 02L and can therefore be used in the specified components and operating conditions with extended drain intervals (refer to OEM manual).

For gearboxes applied to MAN trucks the product is approved according to MAN 341 Z-4 (formerly "SL").

Also recommended for use in applications where truck manufacturers use ZF-gearboxes. In these cases the ZF approval is applicable.

#### 6. SAE 80W90

TUFF G013 is a modern mineral hypoid gear oil primarily developed for axle transmissions of Mercedes-Benz commercial vehicles. The product was specifically developed for the new HL-6 axle and is backward compatible with previous axle models.

Also suitable for industrial and agricultural machinery

**APPROVALS :**

API GL-5, API MT-1, MAN 342 TYPE M3, MB-APPROVAL 235.20, ZF TE-ML 05A, 12E, 16B, 17B, 19B, 21A

**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

#### Main Applications

The MB 235.20 specification allows the use in all DC hypoid axles (also covers MB 235.0) and requires oil changes only every 3 years or after 350,000 km.

The new DaimlerChrysler HL-6 axles may only be filled with oils compliant with 235.20, such as TITAN GEAR HYP LD SAE 80W-90.

## 7. SAE 80W90 - Long Life

**TUFF G014 is a super high-performance gear oil based on MC-synthesis for extended oil change intervals.**

True all-season suitability even under unfavourable climatic conditions.

**TUFF G014** provides a stable lubricating film even with very hot oil and./or high stresses. Use of **TUFF G014** also results in less transmission operation noise.

### APPROVALS :

API GL-4/GL-5, SCANIA STO 1:0, MAN M 3343 Type M, MAN M 341 Type E2, MAN M 341 Type Z2, MAN M 342 Type M2, MB-APPROVAL 235.0, ZF TE-ML 02B, 05A, 12E, 16B, 17B, 19B, 21A

### RECOMMENDATIONS :

CASE MS 1316, FORD M2C197-A, JOHN DEERE JDM J 11 E, NH 520 A, SDFG OP 1705, STEYR B-101, ZF TE-ML 07, 08

## Main Applications

Designed for multifunctional use in transmissions and hypoid drives.

## 8. SAE 80W90 - Long Life

**TUFF G015 is a modern mineral hypoid gear oil primarily developed for axle transmissions of Mercedes-Benz commercial vehicles.** The product was specifically developed for the new HL-6 axle and is backward compatible with previous axle models.

Also suitable for industrial and agricultural machinery

### APPROVALS :

API GL-5, API MT-1, MAN 342 TYPE M3, MB-APPROVAL 235.20, ZF TE-ML 05A, 12E, 16B, 17B, 19B, 21A

### 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

## Main Applications

The MB 235.20 specification allows the use in all DC hypoid axles (also covers MB 235.0) and requires oil changes only every 3 years or after 350,000 km.

The new DaimlerChrysler HL-6 axles may only be filled with oils compliant with 235.20, such as **TUFF G015**

## 9. SAE 85W140

TUFF G016 is a heavy duty lubricant developed to meet or exceed internationally recognised specifications and classifications.

**APPROVALS :**

API 6L-5

**RECOMMENDATIONS :**

ZF TE-ML 07, 08

## Main Applications

Heavy duty automotive driveline oil suitable for use in final drive units fitted to cars and commercial vehicles. May also be used in certain gearboxes and industrial drives.

## 10. SAE 85W140 - Long Life

TUFF G017 is a super high-performance gear oil for extended oil change intervals.

**APPROVALS :**

API GL-4 / GL-5, ZF TE-ML 05A / 12E / 16D

**RECOMMENDATIONS :**

MIL-L-2105 D

## Main Applications

TUFF G017 is a mineral universal gear oil suitable for use in manual transmissions and axle gearboxes in both passenger cars and commercial vehicles.

## 11. SAE 90

TUFF G02 is a heavy duty lubricant developed to meet or exceed internationally recognised specifications and classifications.

Contains the most effective EP additives, providing outstanding gear protection.

**APPROVALS :**

API 6L-5, MAN 342 Type M1, MB-APPROVAL 235.0,  
ZF TE-ML 05A, 16C, 17B, 19B

**RECOMMENDATIONS :**

FORD M2C9102-A, OPEL 1942387, VW TL 727, ZF TE-ML  
07, 08

## Main Applications

Heavy duty automotive driveline oil suitable for use in final drive units fitted to cars and commercial vehicles. May also be used in certain gearboxes and industrial drives.

### 13. SAE 90 - Limited Slip

TUFF G018 is a high-performance LS (Limited Slip) hypoid gear oil for axles in commercial vehicles and passenger cars with or without limited slip differentials. TUFF G018 ensures safe operation of limited-slip differentials and maximum lifetime of components.

**APPROVALS:**

API GL-5, ZF TE-ML 05C, 12C, 16E, 21C

**RECOMMENDATIONS:**

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

### Main Applications

Axles in commercial vehicles and passenger cars with or without limited slip differentials

### 14. SAE 85W140 - Long Life

TUFF G019 is a multipurpose gear oil for synchronised and non-synchronised manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars which demand a GL-4-performance level.

**APPROVALS:**

API GL-4, MAN 341 TYPE E1, MAN 341 TYPE Z2, MB-APPROVAL 235.1, ZF TE-ML 02B, 17A

**RECOMMENDATIONS:**

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

### Main Applications

TUFF G019 can be used as a rationalisation product whenever a SAE 80 API GL 3 or GL 4 oil is specified.

## 15. SAE 80W140

**TUFF G020 is a super high-performance gear oil based on MC-synthesis for extended oil change intervals.**

True all-season suitability even under unfavourable climatic conditions. **TUFF G020** provides a stable lubricating film even with very hot oil and./ or high stresses. Use of **TUFF G020** also results in less transmission operation noise.

### APPROVALS :

API GL-4/GL-5, SCANIA STO 1:0, MAN M 3343 Type M,, MAN M 341 Type E2, MAN M 341 Type Z2, MAN M 342 Type M2, MB-APPROVAL 235.0,ZF TE-ML 02B, 05A, 12E, 16B, 17B, 19B, 21A

### RECOMMENDATIONS :

CASE MS 1316, FORD M2C197-A, JOHN DEERE JDM J 11 E, NH 520 A, SDFG OP 1705, STEYR B-101, ZF TE-ML 07, 08

## Main Applications

Designed for multifunctional use in transmissions and hypoid drives.

## 16. SAE 140

**TUFF G01 Gear Oil is a lubricating oil for mechanical transmissions based on high quality base oils and additives that are a balanced combination of active ingredients.** Special high-pressure (EP) agents and other additives offer excellent wear protection even under severe operating conditions.

## Main Applications

**G01 Gear Oil is designed for use in highly loaded, hypoid gears (final drives, transmissions, etc.), and for use as an extreme pressure gear oil where this grade of lubricant is specified by the manufacturer.**



### 1. SAE 90 GL-4

TUFF G021 is a mineral Monograde TUFF G021 transmission fluid for use in transmissions which demand a GL-4-performance level.

**APPROVALS :**

API GL-4, MAN 341 TYPE Z1

### Main Applications

Multipurpose gear oil for synchronized and non-synchronized manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.

### 2. SAE 75W

TUFF G022 is a synthetic, fuel-economy 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.

**APPROVALS :**

API GL-4

**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)

### Main Applications

Passenger car gearboxes. Suitable as fill for life fluid according to manufacturer.

### 3. SAE 75W80

TUFF G023 is a synthetic manual transmission fluid for passenger cars. Offering good gearbox efficiency and good cold start behaviour.

**APPROVALS :**

API GL-5

**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 513/818, CITROEN, FIAT, FORD M2C200-C/C2/C3, LANCIA, OPEL 19 40 182, 19 40 757, 19 40 768, 19 40 776, PEUGEOT, RENAULT, VOLVO 97308 VW 501 50 (G 005 000 05/G 005 000/G 005 000 20/ G052 911 A1-A2)

### Main Applications

Passenger car gearboxes. Suitable as fill for life fluid according to manufacturer.

#### 4. SAE 75W85

**TUFF G024 is a fully-synthetic, fuel-economy passenger car fluid offering increased gearbox efficiency in passenger cars due to low viscosity level.**

Special Friction Modifiers reduce power losses in gears and bearings due to friction, and hence increase the gearbox efficiency as well as ensuring the performance of limited slip differentials. Oil sump temperature is reduced significantly during constant operation.

**APPROVALS :**

API GL-5, MB-APPROVAL 235.7, ZF TE-ML 18

**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)

#### Main Applications

Passenger car gearboxes. Suitable as fill for life fluid according to manufacturer.

#### 5. SAE 75W90

**TUFF G025 is a premium fully-synthetic multifunctional gear oil.** Its wear protection has been adapted to high contact pressure in tooth systems with very high sliding rates.

**APPROVALS :**

API GL-4/-5/-5 incl. LS

**RECOMMENDATIONS :**

VW G50 / G51

#### Main Applications

**TUFF G025 has been developed as gear oil with multifunctional application profile.**

Due to its unique additive technology and the high viscosity level **TUFF G025** can be used in highly loaded axles equipped with either conventional or limited slip differentials also as in most highly stressed manual transmissions in passenger car applications.

Suitable for axles and transfer gearboxes with or without self locking differentials and also as trouble shooter for conventional manual transmissions.

## 6. SAE 75W90 - High Load

**TUFF G08 is a fully synthetic multifunctional transmission and gear oil for use in both highly loaded manual transmissions and hypoid drives of heavy duty commercial vehicles.**

### APPROVALS :

API GL-4/GL-5, ZF TE-ML 05B, 12B, 16F, 17B, 19C, 21B

### RECOMMENDATIONS :

DAF, MAN M 3343 Type S, JOHN DEERE JDM J 11 E/G, SCANIA STO 1:0, ZF TE-ML 07

## Main Applications

**TUFF G08 is ideally suited for use in highly loaded axle gears.** Furthermore, it is also suitable for use in synchronised and nonsynchronised gear boxes, distribution gears and minor outputs for which an oil is prescribed that meets the requirements in accordance with API GL-5 or GL-4. Its formulation assures proper operation with synchromesh materials in manual transmissions.

## 7. SAE 75W140

**TUFF G027 is a fully synthetic, high-performance gear oil for the use in highly loaded passenger car axle and transfer gearboxes equipped with either conventional or limited slip differentials.**

Provides excellent resistance against shear and ageing and allows increased drain intervals.

### APPROVALS :

AAPI GL-5

### RECOMMENDATIONS :

BMW 83 22 2 282 583, BMW 83 22 9 407 870, CHRYSLER MS-8985, FORD M2C192-A, JOHN DEERE JDM J 11 G, GM 12346140, SCANIA STO 1:0

## Main Applications

**Suitable for axle and transfer gearbox with and without limited slip differential.**

**TUFF G027** complies with the wear protection requirements of API GL-5 and is suitable for the use in hypoid drives even under high stress.

Due to the additive chemistry the product can be used in both conventional and limited slip differentials. **TUFF G027** can be used in passenger cars where a lubricant of this quality is specified.

## 1. TUFF HO

**TUFF HO products are special HLPD lubricating and hydraulic fluids according to DIN 51 502 with outstanding corrosion protection, powerful cleaning and sludge transportation properties.** Contain zinc as well as being detergent and dispersant. The **TUFF HO** series allows oil changes to be extended.

**TUFF HO** oils are used in a number of hydraulic systems as problem solvers, especially when standard oils cannot fulfil all the requirements. **TUFF HO** products fulfil and surpass the minimum demands on HLPD hydraulic oils according to DIN 51 524-2. ISO 6743/4-HM with high DD-performance.

### APPROVALS :

API GL-4, EATON, MAN 341 TYPE E3

### RECOMMENDATIONS :

DAF, MAN 341 Type Z3, VOLVO 97305, ZF TE-ML 02D, 08

## Main Applications

**TUFF HO 3:** For machine tool spindles and bobbin bearings in the textile industry.

**TUFF HO 5, 10 and 20:** Heavy-duty hydraulic oils with good corrosion protection up to continuous temperatures of 100 °C. Also suitable for smaller gearboxes, especially when fitted with electromagnetic clutches.

**TUFF HO 30:** For larger gearboxes. Running-in and corrosion protection oil.

Product Name	TUFF H04	TUFF H05	TUFF H06	TUFF H07
Density at 15°C (kg/m <sup>3</sup> )	807	837	852	868
Flash Point (°C)	75	85	166	165
Kinematic Viscosity at 40°C (mm <sup>2</sup> /s)	2.2	5	10	22
Pour Point (°C)	-42	-36	-30	

Product Name	TUFF H08	TUFF H01	TUFF H02	TUFF H09
Density at 15°C (kg/m <sup>3</sup> )	875	877	881	883
Flash Point (°C)	210	220	225	248
Kinematic Viscosity at 40°C (mm <sup>2</sup> /s)	32	46	68	100
Pour Point (°C)	-30	-27	-24	-18

Product Name	TUFF H010	TUFF H011	TUFF H012
Density at 15°C (kg/m <sup>3</sup> )	889	903	907
Flash Point (°C)	250	265	297
Kinematic Viscosity at 40°C (mm <sup>2</sup> /s)	150	320	460
Pour Point (°C)	-18	-12	-9

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