



LUBRICANTS CATALOGUE

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Lucas Oil Products was born with the simple philosophy of producing only the best line of lubricants and additives available anywhere. Since its inception, Lucas has steadfastly adhered to this corporate objective. Through innovative product research and development, along with aggressive marketing programs, Lucas has established itself as a top selling additive line in the American truck stop industry.

The Lucas success story has been built upon hard work, an unparalleled line of premium products and an unwavering commitment to customer satisfaction. This single formula for success will continue to guide Lucas Oil Products as it grows in the years to come.





Products

Automotive Oil	Industrial Oil
Passenger & Light Vehicles	Industrial
Truck & Bus	Hydraulic
Motorbikes & ATVS	Compressor
Marine & Outboard	Gear

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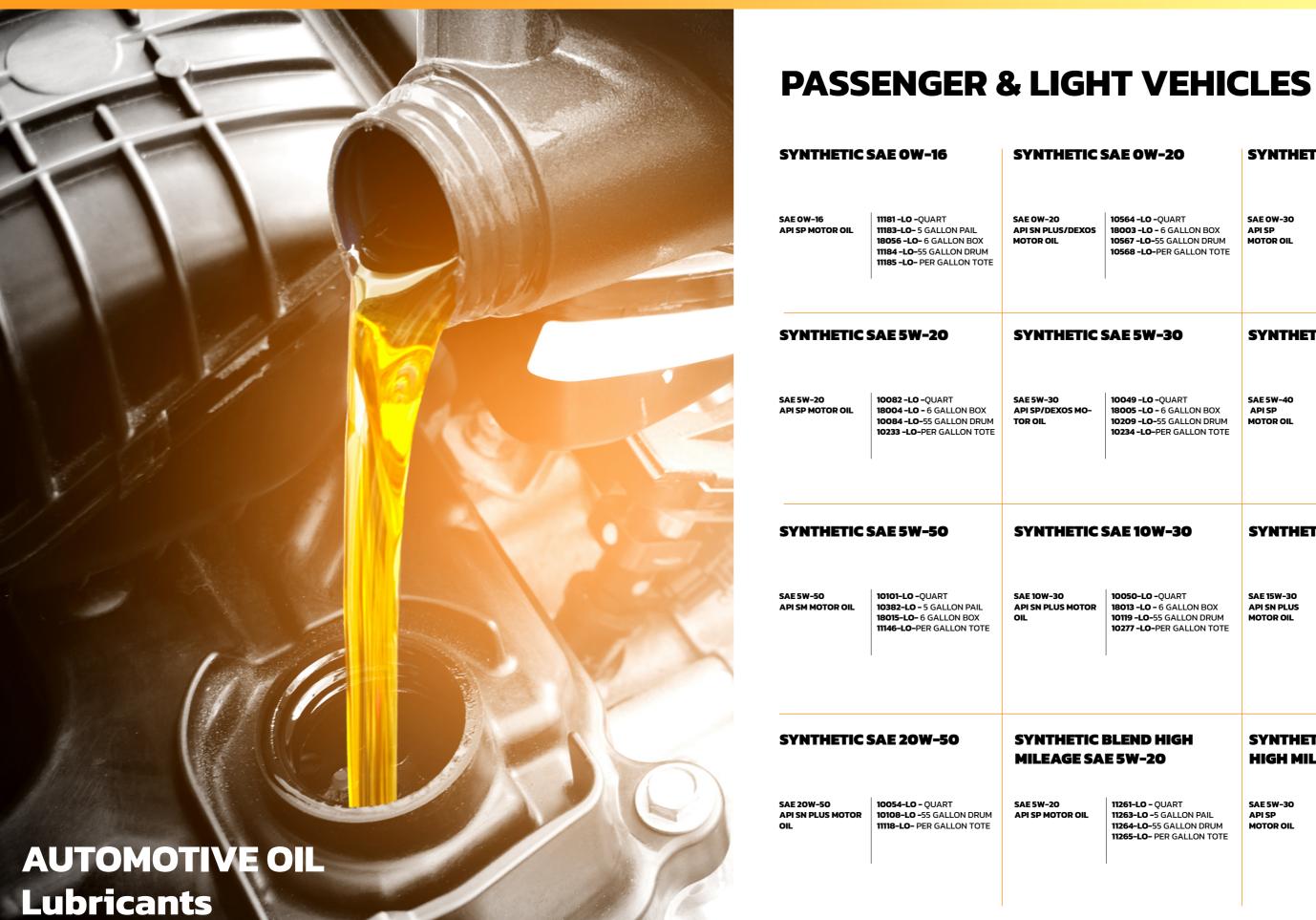




Additives & Fluids

ATF MTF & Gear Oil Brake Fluid Antifreeze & Coolants Additives & Service Fluids Greases





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AE OW-20	SYNTHET	IC SAE OW-30
0564 -LO -QUART 8003 -LO - 6 GALLON BOX 0567 -LO-55 GALLON DRUM 0568 -LO-PER GALLON TOTE	SAE OW-30 API SP MOTOR OIL	10179 -LO-QUART 10181 -LO - 5 GALLON PAIL 18008 -LO- 6 GALLON BOX
AE 5W-30	SYNTHET	IC SAE 5 W-40
0049 -LO -QUART 8005 -LO - 6 GALLON BOX 0209 -LO-55 GALLON DRUM 0234 -LO-PER GALLON TOTE	SAE 5W-40 API SP MOTOR OIL	10189 -LO - QUART 10191 -LO - 5 GALLON PAIL 18012 -LO- PER GALLON TOTE
AE 10W-30	SYNTHET	IC SAE 15W-30
10050-LO - QUART 18013 -LO - 6 GALLON BOX 0119 -LO- 55 GALLON DRUM 0277 -LO- PER GALLON TOTE	SAE 15W-30 API SN PLUS MOTOR OIL	11242 -LO - 5 GALLON PAIL 11243 -LO - 55 GALLON DRUM
LEND HIGH 5W-20	SYNTHET HIGH MIL	IC BLEND EAGE SAE 5W-30
11261-LO - QUART 11263-LO -5 GALLON PAIL 11264-LO-55 GALLON DRUM 11265-LO- PER GALLON TOTE	SAE 5W-30 API SP MOTOR OIL	11266-LO - QUART 11268-LO -5 GALLON PAIL 11269-LO-55 GALLON DRUM 11270-LO- PER GALLON TOTE



TRUCK & BUS

SYNTHETIC BLEND HIGHSYNTHETIC BLEND HIGHMILEAGE SAE 10W-30MILEAGE SAE 10W-40		_	SYNTHETIC BLEND HIGH SAE 15W-40 CI-4 MAGNUM MILEAGE SAE 20W-50				SAE 5W-40 CK-4		SAE 10W-30 CK-4/ SM			
SAE 10W-30 API SP	11271 -LO - QUART 11273 -LO -5 GALLON PAIL 11274 -LO-55 GALLON DRUM 11275 -LO- PER GALLON TOTE	SAE 10W-40 API SP	11276 -LO - QUART 11278 -LO -5 GALLON PAIL 11279 -LO-55 GALLON DRUM 11280 -LO- PER GALLON TOTE	SAE 20W-50 API SP	11281 -LO - QUART 11283 -LO -5 GALLON PAIL 11284 -LO-55 GALLON DRUM 11285 -LO- PER GALLON TOTE		SAE 15W-40 CI-4 MAGNUM	10075 -LO - QUART 10076 -LO -GALLON 10077 -LO- 5 GALLON 10078 -LO- 55 GALLON DRUM 10175 -LO- PER GALLON TOTE	SAE 5W-40 CK-4	11178 -LO - GALLON 11165 -LO -5 GALLON PAIL 18011 -LO-6 GALLON BOX 11166 -LO- 55 GALLON DRUM 11167 -LO- PER GALLON TOTE	SAE 10W-30 CK-4/SM	10572 -LO - 55 GALLON DRUM 10573 -LO - PER GALLON TOTE
CONVENTIC SAE 5W-20	DNAL API SP	CONVENTIO SAE 5W-30	NAL API SP	CONVEN SAE 10W	TIONAL API SP -30		SAE 15W-40) CK-4	SYNTHETIC SAE 10W-30		SAE 15W	-40 CK-4
SAE 5W-20 API SP	10516-LO - QUART 10517 -LO -5 GALLON PAIL 18001 -LO- 6 GALLON BOX 10518 -LO-55 GALLON DRUM 10642 -LO- PER GALLON TOTE	SAE 5W-30 API SP	10474 -LO - QUART 18010 -LO - 6 GALLON BOX 10479 -LO-55 GALLON DRUM 10482 -LO- PER GALLON TOTE	SAE 10W-30 API SP	10276 -LO - QUART 18002 -LO - 6 GALLON BOX 10217 -LO-55 GALLON DRUM 10644 -LO- PER GALLON TOTE		SAE 15W-40 CK-4	11246 -LO - QUART 11247 -LO -GALLON 11248 -LO- 5 GALLON PAIL 18065 -LO- 6 GALLON BOX 11249 -LO- 55 GALLON DRUM 11250 -LO- PER GALLON TOTE	SAE 15W-40 CK-4	10282 -LO - GALLON 10283 -LO -5 GALLON PAIL 18017 -LO- 6 GALLON BOX 10284 -LO- 55 GALLON DRUM 10285 -LO- PER GALLON TOTE	SAE 15W-40 CK-4	10287 -LO - GALLON 10288 -LO -5 GALLON PAIL 18014 -LO- 6 GALLON BOX 10289 -LO- 55 GALLON DRUM 10292 -LO- PER GALLON TOTE
CONVENTIO SAE 10W-40	DNAL API SP	CONVENTIO SAE 20W-50		CONVEN SAE 30	TIONAL API SP		SYNTHETIC SAE 10W-30		SAE 40			
SAE 10W-40 API SP	10275 -LO - QUART	SAE 20W-50 API SP	10252 -LO - QUART 10257 -LO - 5 GALLON PAIL 18055 -LO-6 GALLON BOX 10259 -LO- 55 GALLON DRUM 10260 -LO-PER GALLON TOTE	SAE 30 API SM	10053 -LO - QUART 10280 -LO - 5 GALLON PAIL 18053 -LO-6 GALLON BOX 10556 -LO- PER GALLON TOTE		SAE 10W-30 FA-4	10759 -LO - GALLON 10761 -LO -5 GALLON PAIL 18009 -LO- 6 GALLON BOX 10762 -LO- 55 GALLON DRUM 10760 -LO- PER GALLON TOTE	SAE 40	10468 -LO - PER GALLON TOTE		
HOT ROD A SAE 10W-30	ND CLASSIC D	HOT ROD A SAE 10W-4	ND CLASSIC D	HOT ROD SAE 20W	AND CLASSIC -50							
SAE 10W-30	10687 -LO - QUART 10679 -LO -5 QUART 18025 -LO-6 GALLON BOX 10681 -LO- 55 GALLON DRUM	SAE 10W-40	10688 -LO - QUART 10683 -LO-5 QUART 18026 -LO-6 GALLON BOX 11027 -LO- 55 GALLON DRUM	SAE 20W-50	10689 -LO - QUART 10684 -LO -5 QUART 18027 -LO-6 GALLON BOX 11028 -LO- 55 GALLON DRUM							

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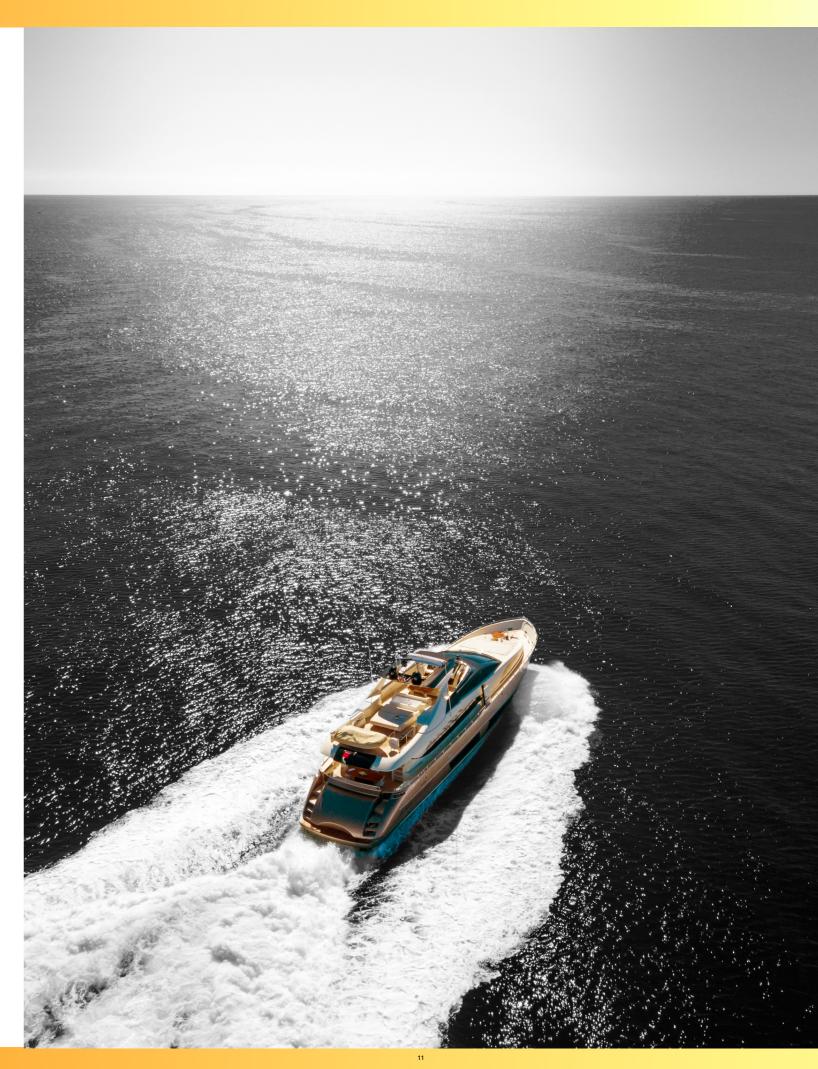
MOTORBIKES & ATVS

SAE 10W-40 SAE 20W-50		60	SYNTHETIC SAE 20W-50		SYNTHETIC	SAE OW-40	SYNTHET	C SAE 50 WT	SEMI-SYN SAE 10W-4		
SAE 10W-40	10767 -LO - QUART 10792 -LO - 5 GALLON PAIL 18031 -LO - 6 GALLON BOX 11145 -LO- PER GALLON TOTE	SAE 20W-50	10700 -LO - QUART 10729 -LO - 5 GALLON PAIL 18032 -LO- 6 GALLON BOX	SAE 20W-50	10702 -LO - QUART 10732 -LO -5 GALLON PAIL 18043 -LO- 6 GALLON BOX 10734 -LO- 55 GALLON DRUM	SAE OW-40	10718 -LO - QUART 18036 -LO-6 GALLON BOX	SAE 50 WT	10765 -LO - QUART 18035 -LO - 6 GALLON BOX	SAE 10W-40	10720 -LO - QUART
SYNTHETIC	SAE 5W-20	SYNTHETIC	SAE 5W-30	SYNTHET	'IC SAE 10W-30	SXS SYNTH	IETIC SAE OW-40	SXS SYNT	HETIC SAE 5W-50	SXS SYNT SAE 10W-	
SAE 5W-20	10704 -LO - QUART 10735 -LO - 5 GALLON PAIL 10737 -LO- 55 GALLON DRUM	SAE 5W-30	10706 -LO - QUART 10738 -LO -5 GALLON PAIL 18038 -LO- 6 GALLON BOX 10740 -LO- 55 GALLON DRUM	SAE 10W-30	10708 -LO - QUART 10741 -LO -5 GALLON PAIL 18039 -LO- 6 GALLON BOX 10743 -LO- 55 GALLON DRUM	SAE OW-40	11200 -LO - QUART 11201 -LO - GALLON 11202 -LO- 5 GALLON PAIL 18046 -LO- 6 GALLON BOX 11203 -LO- 55 GALLON DRUM	SAE 5W-50	11208 -LO - QUART 11209 -LO -GALLON 11210 -LO - 5 GALLON PAIL 18048 -LO - 6 GALLON BOX 11211 -LO - 55 GALLON DRUM	SAE 10W-30	11204 -LO - QUART 11205 -LO - GALLON 11206 -LO - 5 GALLON PAIL 18047 -LO - 6 GALLON BOX 11207 -LO - 55 GALLON DRUM
SYNTHETIC	SAE 10W-40	SEMI-SYNT	HETIC SAE 10W-40	SYNTHET MOLY	'IC SAE 10W-40	SXS SYNTH	IETIC SAE 10 W -50	SXS SYNT SAE 10W-	HETIC BLEND 40	SEMI-SYN 2-CYCLE O	
SAE 10W-40	10793 -LO - QUART 18040 -LO -6 GALLON BOX 10140 -LO- 55 GALLON DRUM	SAE 10W-40	10710-LO- QUART 10744 -LO-5 GALLON PAIL 18034 -LO- 6 GALLON BOX 10746 -LO- 55 GALLON DRUM	SAE 10W-40	10777 -LO - QUART	SAE 10W-50	11212 -LO - QUART 11213 -LO -GALLON 11214 -LO- 5 GALLON PAIL 18049 -LO- 6 GALLON BOX 11215 -LO- 55 GALLON DRUM	SAE 10W-40	11196 -LO - QUART 11197 -LO -GALLON 11198 -LO- 5 GALLON PAIL 18033 -LO- 6 GALLON BOX 11199 -LO- 55 GALLON DRUM	SEMI-SYNTHETIC	10058 -LO - 2.6 OUNCE 10059 -LO -6.4 OUNCE 10120 -LO- 16 OUNCE 10110 -LO- QUART 10115 -LO- GALLON 10125 -LO-55 GALLON DRUM
50WT		70WT		SYNTHE	TIC SAE 10 W-50	LAND & SEA 2-CYCLE OI		SYNTHET SNOWMO			
SAE 50W	10712 -LO - QUART 18029 -LO -6 GALLON BOX 10749 -LO- 55 GALLON DRUM	SAE 70W	10714 -LO - QUART 10750 -LO -5 GALLON PAIL 18030 -LO- 6 GALLON BOX 10752 -LO- 55 GALLON DRUM	SAE 10W-50	10716 -LO - QUART 10753 -LO -5 GALLON PAIL 18042 -LO- 6 GALLON BOX 10755 -LO- 55 GALLON DRUM		10467 -LO - QUART 10557 -LO -GALLON 10469 -LO - 5 GALLON PAIL 10470 -LO - 55 GALLON DRUM		10835 -LO - QUART 10847 -LO - GALLON 10904 -LO- 55 GALLON DRUM		



MARINE & OUTBOARD

	OUTY DIESEL -40 CK-4		Y SYNTHETIC 15W-40 CK-4	MARINE SAE 20W-50			
SAE 15W-40 CK-4	10991 -LO - QUART 10807 -LO - 55 GALLON DRUM	SAE 15W-40 CK-4	10992 -LO- GALLON	SAE 20W-50	10653 -LO- QUART 10810 -LO -5 QUART 10665 -LO- 5 GALLON PAIL 10666 -LO- 55 GALLON DRUM		
MARINE	SEMI-SYNTHETIC	OUTBOARD	SYNTHETIC	OUTBOAR	D SYNTHETIC		
SAE 20W	-50	SAE 10W-30		SAE 10W-4	40		
SAE 20W-50	10654 -LO- QUART 10811 -LO - 5 QUART 10667 -LO- 5 GALLON PAIL 10668 -LO- 55 GALLON DRUM	SAE 10W-30	10661 -LO- QUART 10812 -LO- 5 QUART 10817 -LO- 55 GALLON DRUM	SAE 10W-40	10662 -LO- QUART 10813 -LO-5 QUART 10526 -LO- 55 GALLON DRUM		
INBOARI DRIVE	D SAE 25W-40 STERN	SYNTHETIC API TC-JASC		SYNTHETIC BLEND 2-CYCLE			
SAE 25W-40	10677 -LO- QUART 10814 -LO- 5 QUART		11149 -LO- GALLON		10860 -LO- QUART 10861 -LO- GALLON		









INDUSTRIAL

NIL DRUM I TOTE		

SAE 30

HYDRAULIC

UNIVERSAL HYDRAULIC

SYNTHETIC UNIVERSAL **HYDRAULIC FLUID**

10017 -LO- GALLON 10037 -LO-5 GALLON PAIL 10038 -LO- 55 GALLON DRUM 10304 -LO-PER GALLON TOTE

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HEAVY DUTY TRANS/
DRIVE TRAIN SAE 30

10443 -LO- 5 GALLON PAIL

10445 -LO- 55 GALLON PAIL 10445 -LO- 55 GALLON DRUM 10446 -LO- PER GALLON TOTE

HEAVY DUTY TRANS/ DRIVE TRAIN SAE 40

SAE 40

11161 -LO- 5 GALLON PAIL 10588 -LO-55 GALLON DRUM 10586 -LO- PER GALLON TOTE



10100 -LO- 5 GALLON PAIL 10589 -LO- 55 GALLON DRUM 10851 -LO- PER GALLON TOTE

NON-CONDUCTIVE AW ISO 22

ISO 22

10691 -LO- 5 GALLON PAIL 10692 -LO- 55 GALLON DRUM 11127 -LO- PER GALLON TOTE



NON-CON AW ISO 32	NDUCTIVE 2	NON-COND AW ISO 46	UCTIVE	NAUTIC/	\L ISO 15	R&O ISO	46	R&O ISO (58
ISO 32	11107 -LO- 5 GALLON PAIL 11108 -LO- 55 GALLON DRUM 11109 -LO- PER GALLON TOTE	ISO 46	10917 -LO- 5 GALLON PAIL 11128 -LO- PER GALLON TOTE	ISO 15	10136 -LO- 5 GALLON PAIL 10057 -LO- 55 GALLON DRUM 10241 -LO- PER GALLON TOTE	ISO 46	10450 -LO- 5 GALLON PAIL 10452 -LO- 55 GALLON DRUM 11131 -LO- PER GALLON TOTE	ISO 68	10453 -LO- 18062 -LO- 10455 -LO- 11132 -LO- F
AW ISO 22	2	AW ISO 32		AW ISO 4	6				
ISO 22	11169 -LO- 5 GALLON PAIL 11171 -LO- 55 GALLON DRUM 11172 -LO- PER GALLON TOTE	ISO 32	10401 -LO- 5 GALLON PAIL 18057 -LO- 6 GALLON BOX 10403 -LO- 55 GALLON DRUM 10414 -LO- PER GALLON TOTE	ISO 46	10404 -LO- 5 GALLON PAIL 18058 -LO- 6 GALLON BOX 10406 -LO- 55 GALLON DRUM 10415 -LO- PER GALLON TOTE	COM	IPRESSO	R	
AW ISO 6	8	AW ISO 100		AW ISO 1	50	SYNTHET	IC ISO 32	SYNTHET	IC ISO 4
ISO 68	10407 -LO- 5 GALLON PAIL 18059 -LO- 6 GALLON BOX 10409 -LO- 55 GALLON DRUM 10416 -LO- PER GALLON TOTE	ISO 100	10503 -LO- 5 GALLON PAIL 11188 -LO- 55 GALLON DRUM 11189 -LO- PER GALLON TOTE	ISO 150	11106 -LO- 5 GALLON PAIL 10672 -LO- 55 GALLON DRUM 11126 -LO- PER GALLON TOTE	ISO 32	10836 -LO- 5 GALLON PAIL 10505 -LO- 55 GALLON DRUM 11124 -LO- PER GALLON TOTE	ISO 46	10497 10498 10499
AW ISO 22	20	ZINC FREE	AW ISO 46	R&O ISO	32	SYNTHET	IC ISO 100	SYNTHET	IC ISO 2
ISO 220	10961 -LO- 5 GALLON PAIL 10962 -LO- 55 GALLON DRUM 10963 -LO- PER GALLON TOTE	112	286 -LO- 5 GALLON PAIL 2 87 -LO- 55 GALLON DRUM 2 88 -LO- PER GALLON TOTE	150 32	10447 -LO- 5 GALLON PAIL 10449 -LO- 55 GALLON DRUM 11130 -LO- PER GALLON TOTE	ISO 100	11041 -LO- 5 GALLON PAIL 11044 -LO- 55 GALLON DRUM 10485 -LO- PER GALLON TOTE	ISO 220	11162 - 10486 10487

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MULTI VIS AW ISO 32

ISO 32

10569 -LO- 5 GALLON PAIL 10577 -LO- 55 GALLON DRUM 11129 -LO- PER GALLON TOTE

-LO- 5 GALLON PAIL **-LO-** 6 GALLON BOX **-LO-** 55 GALLON DRUM L**O-** PER GALLON TOTE

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SYNTHETIC ISO 68

 1497 -LO- 5 GALLON PAIL
 ISO 68
 10837 -LO- 5 GALLON PAIL

 1498 -LO- 55 GALLON DRUM
 10413 -LO- 55 GALLON DRUM
 10413 -LO- 55 GALLON DRUM

 1499 -LO- PER GALLON TOTE
 11125 -LO- PER GALLON TOTE
 11125 -LO- PER GALLON TOTE

220

162 -LO- 5 GALLON PAIL 1**486 -LO-** 55 GALLON DRUM 1**487 -LO-** PER GALLON TOTE



GEAR

ISO 150		ISO 220		ISO 320	
ISO 150	11164 -LO- 5 GALLON PAIL 10673 -LO- 55 GALLON DRUM 11119 -LO- PER GALLON TOTE	ISO 220	10960 -LO- GALLON 10589 -LO- 5 GALLON PAIL 18060 -LO- 6 GALLON BOX 10590 -LO- 55 GALLON DRUM 10508 -LO- PER GALLON TOTE	ISO 320	10591 -LO- 5 GALLON PAIL 18061 -LO- 6 GALLON BOX 10592 -LO- 55 GALLON DRUM 11120 -LO- PER GALLON TOTE
ISO 460		ISO 680			
ISO 460	10838 -LO- 5 GALLON PAIL	ISO 680	11158 -LO- 5 GALLON PAIL 18064 -LO- 6 GALLON BOX 10496 -LO- 55 GALLON DRUM 11122 -LO- PER GALLON TOT		









ATF

SURE-SI SYNTHE	HIFT SEMI- TIC ATF	MULTI-VEHICLE (
	10052 -LO- QUART 10166 -LO- 5 GALLON PAIL	10418 - 18007 - 10424 - 10464 -
SYNTHE ATF TES	TIC MULTI-VEHICLE -295	SYNTHETIC CVT
	10658 -LO- 5 GALLON PAIL	10111 -LO- QU

10659 -LO- 55 GALLON DRUM

10 10

MTF & GEAR OIL

SAE 80W	/-90	SAE 85W-	-140 PL
SAE 80W-90	10043 -LO- QUART 10046 -LO- GALLON 10066 -LO- 5 GALLON PAIL 10069 -LO- 55 GALLON DRUM 10511 -LO- PER GALLON TOTE	SAE 85W-140	10042 - 10045 - 10061 - 10064 - 10313 -L

ADDITIVES & FLUIDS Lubricants

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E (MV) ATF

18 -LO- QUART 07 -LO- 6 GALLON BOX 24 -LO- 55 GALLON DRUM 64 -LO- PER GALLON TOTE

SYNTHETIC LOW VISCOSITY MV ATF

11255 -LO- QUART 11256 -LO- GALLON 11257 -LO- 5 GALLON PAIL 18037 -LO- 6 GALLON POX 11258 -LO- 55 GALLON DRUM 11259 -LO- PER GALLON TOTE

SYNTHETIC ATF TYPE F

10111 -LO- QUART 10112 -LO- 6 GALLON BOX 10113 -LO- 55 GALLON DRUM 10079 -LO- PER GALLON TOTE

LUS H/D

2 -LO- QUART 5 -LO- GALLON 1 -LO- 5 GALLON PAIL 4 -LO- 55 GALLON DRUM -LO- PER GALLON TOTE

SYNTHETIC SAE 75W-90 TRANS & DIFF LUBE

SAE 75W-90

10047 -LO- QUART 10048 -LO- GALLON 10072 -LO- 5 GALLON PAIL 18006 -LO- 6 GALLON BOX 10074 -LO- 55 GALLON DRUM 10562 -LO- PER GALLON TOTE



	TIC SAE 75W-140 & DIFF LUBE	SYNTHETIC V-TWIN	C SAE 75 W-140	SYNTHE TRANS	FIC SAE 80W-85	SxS/UTV MULTI-PURPOSE GEARCASE FLUID	E ATF CONDITION
SAE 75W-140	10121 -LO- QUART 10122 -LO- GALLON 10123 -LO- 5 GALLON PAIL 18054 -LO- 6 GALLON BOX 10465 -LO- PER GALLON TOTE	SAE 75W-140	10791 -LO- QUART 18044 -LO- 6 GALLON BOX	SAE 80W-85	10778 -LO- QUART	11224 -LO - QUART 11225 -LO - GALLON 11226 -LO - 5 GALLON PA 18052 -LO - 6 GALLON PA 11227 -LO - 55 GALLON D	OX LUBRICANTS
SYNTHE	TIC 50 WT TRANS	SYNTHETIC 5 WT	C FORK OIL	SYNTHE 7.5 WT	FIC FORK OIL		I
50 WT	10146 -LO- QUART 10147 -LO- 5 GALLON PAIL 10149 -LO- 55 GALLON DRUM 10561 -LO- PER GALLON TOTE	5 WT	10771 -LO- 16 OUNCE 10780 -LO- 5 GALLON PAIL	7.5 WT	10789 -LO- 5 GALLON PAIL 10768 -LO- 55 GALLON DRUM	BRAKE FLU	JID
SYNTHE 10 WT	TIC FORK OIL	SYNTHETIC 15 WT	C FORK OIL	SYNTHE 20 WT	TIC FORK OIL	DOT 3 SYNTHETIC BRAKE FLUID	DOT 4 SYNTHETI BRAKE FLUID
10 WT	10772 -LO- 16 OUNCE 10781 -LO- 5 GALLON PAIL 10786 -LO- 55 GALLON DRUM	15 WT	10773 -LO- 16 OUNCE 10782 -LO- 5 GALLON PAIL	20 WT	10779 -LO- 16 OUNCE 10783 -LO- 5 GALLON PAIL	10825 -LO- 12 OUNCE 10826 -LO- 5 GALLON PAIL 11095 -LO- 55 GALLON DRU	10827 10788 M 10852
SYNTHE HYDRO:	TIC BLEND STATIC	SYNTHETIC TRANSMIS	C SXS SION FLUID	SYNTHE COMMA	TIC SXS ND DRIVE		
SAE 20W-50	11300 -LO- QUART		11216 -LO - QUART 11217 -LO -GALLON 11218 -LO- 5 GALLON PAIL 18050 -LO- 6 GALLON BOX 11219 -LO- 55 GALLON DRUM		11220 -LO - QUART 11221 -LO -GALLON 11222 -LO- 5 GALLON PAIL 18051 -LO- 6 GALLON BOX 11223 -LO- 55 GALLON DRUM		



NER

441 -LO- 20 OUNCE **389 -LO-** 55 GALLON DRUM

ETIC

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0827 -LO- 12 OUNCE **0788-6 -LO-** 5 GALLON PAIL **0852 -LO-** 55 GALLON DRUM



ANTIFREEZE & COOLANTS

SUPER COOLANT

10640 -LO- 16 OUNCE

MULTI SYSTEM ADDITIVE

COMPLETE ENGINE TREATMENT

10016 -LO- 16 OUNCE

ADDITIVES & SERVICE FLUIDS

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ENGINE OIL ADDITIVES

FUEL TREATMENTS

HEAVY DU STABILIZEI		PURE SYNT STABILIZER		ENGINE OII	L STOP LEAK	UPPER CYL LUBRICAN TREATMEN	T FUEL	DEEP CLEA CLEANER	N™ FUI
	10001 -LO- QUART 10002 -LO- GALLON 10015 -LO- 5 GALLON PAIL 10091 -LO- 55 GALLON DRUM 10398 -LO- PER GALLON TOTE		10130 -LO- QUART 10131 -LO- GALLON 10132 -LO- 5 GALLON PAIL 10134 -LO- 55 GALLON DRUM		10278 -LO- QUART 10279 -LO- GALLON 10281 -LO- 5 GALLON PAIL 11134 -LO- PER GALLON TOTE		10003 -LO- QUART 10013 -LO- GALLON 10020 -LO- 5.25 OUNCE 10674 -LO- 5.25 OUNCE 10080 -LO- 5 GALLON PAIL 10090 -LO- 55 GALLON DRUM 10023 -LO- PER GALLON TOTE		10512 -LO 10669 -LC
LOW VISCO	SITY STABILIZER	HIGH MILE STABILIZE		ENGINE OII TOP OFF A	L STOP LEAK DDITIVE	DIESEL DEE	P CLEAN	DEEP CLEA	N™
	11097 -LO- 12 OUNCE		10118 -LO- QUART		11100 -LO- QUART		10872 -LO- 16 OUNCE 10873 -LO- 64 OUNCE 10071 -LO- 55 GALLON DRUM		10669- 5.2 10512- 16 (11096- 11 (10575- 55

UEL SYSTEM

COMPLETE FUEL SYSTEM RENEWAL KIT

2 -LO- 1 PINT 59 -LO- 5.25 OUNCE 10966- 4 PACK

HIGH MILEAGE FUEL TREATMENT

- 5.25 OUNCE - 16 OUNCE - 11 OUNCE - 55 GALLON DRUM 10977 -LO- 5.25 OUNCE



OCTANE BOOSTER	CETANE POWER BOOSTER	SAFEGUARD ETHANOL FUEL CONDITIONER	TRANSMISSION FIX	PENETRATING OIL	TOOL BOX BUDDY
10026 -LO- 15 OUNCE 10930 -LO- 5.25 OUNCE 10725 -LO- 2 OUNCE	10799 -LO- 16 OUNCE 11032 -LO- 64 OUNCE 10504 -LO- 55 GALLON DRUM	10576- 2 OUNCE 10670- 5.25 OUNCE 10929- 16 OUNCE	10009 -LO- 24 OUNCE 10087 -LO- 5 GALLON PAIL 10141 -LO- 55 GALLON DRUM 10154 -LO- PER GALLON TOTE	11043 -LO- 11 OUNCE	10070 -LO- 2 OUNCE
FUEL STABILIZER	ANTI GEL DIESEL TREATMENT		AIR TOOL LUBRICANT	CHAIN LUBRICANT	CHAIN LUBE AEROSOL
10314 -LO- 8 OUNCE 10302 -LO- 16 OUNCE 10314 -LO- 8 OUNCE 10302 -LO- 16 OUNCE 10303 -LO- QUART 10324 -LO- 5 GALLON PAIL 10326 -LO- 55 GALLON DRUM	10865 -LO- QUART 10866 -LO- HALF GALLON		10200 -LO- QUART 10216 -LO- PINT 10092 -LO- 55 GALLON DRUM	10014 -LO- QUART	10393 -LO- 11 OUNCE
			TB ZINC PLUS ENGINE BREAK-IN OIL ADDITIVE	MULTI PURPOSE PARTS CLEANER & DEGREASER AEROSOL	BRAKE PARTS CLEANER AEROSOL 50 STATE
PROBLEM SOLVERS &	UTILITY LUBRICANTS		10063 -LO- 16 OUNCE 10472 -LO- 55 GALLON DRUM	11115 -LO- 16 OUNCE 11115-6 -LO- 16 OUNCE	10906 -LO- 14 OUNCE 10157 -LO- 14 OUNCE 10158 -LO- 14 OUNCE
POWER STEERING STOP LEAK	POWER STEERING FLUID	POWER STEERING FLUID WITH CONDITIONERS	5TH WHEEL LUBE	HUB OIL	SURE START PREMIUM STARTING FLUID
10008 -LO- 12 OUNCE 10011 -LO- QUART 10143 -LO- 5 GALLON PAIL 10145 -LO- 55 GALLON DRUM	10823 -LO- 12 OUNCE 10824-LO- 12 OUNCE	10442 -LO- 12 OUNCE	10030 -LO- PINT 10031 -LO- 5 GALLON PAIL	10088 -LO- 32 OUNCE 10089 -LO- 5 GALLON PAIL	11238 -LO- 10.7 OUNCE



MARINE FLUIDS

NON-FLAMMABLE TIRE INFLATOR	ANTI-SQUAWK ANTI- SHUDDER ADDITIVE	MOTORCYCLE OIL STABILIZER	MARINE FUEL TREATMENT	SLICK MIST MARINE SPEED WAX	SYNTHETIC MARINE ATF TYPE F
11180 -LO- 16 OUNCE	10599 -LO- 16 OUNCE 11098 -LO- 5 GALLON PAIL	10727 -LO- 12 OUNCE	10150 -LO- 16 OUNCE 10981 -LO- QUART 10177 -LO- GALLON 11114 -LO- 5 GALLON PAIL	10980 -LO- 24 OUNCE 10980-6 -LO- 24 OUNCE	10651 -LO- QUART 11099 -LO- 5 GALLON PAIL 10887 -LO- 55 GALLON DRUM
ASSEMBLY LUBE	FOAM FILTER OIL	PRIMARY CHAINCASE OIL	SYNTHETIC SAE 75W-90 M8 MARINE GEAR OIL	SAE 80W-90 M8 MARINE GEAR OIL	SLICK MIST MARINE SPEED WAX
10152 -LO- 4 OUNCE 10153 -LO- 8 OUNCE 10390 -LO- 5 GALLON PAIL 10559 -LO- 55 GALLON DRUM	10798 -LO- QUART	10790 -LO- QUART 10795 -LO- 5 GALLON PAIL 18045 -LO- 6 GALLON BOX	SAE 75W-90 10652 -LO- QUART 10664 -LO- 5 GALLON PAIL 10818 -LO- 55 GALLON DRUM	SAE 80W-90 11153 -LO- QUART 11154 -LO- 5 GALLON PAIL	SAE 80W-90 10980 -LO- 24 OUNCE 10980-6 -LO- 24 OUNCE
HYDRAULIC OIL BOOSTER/ STOP LEAK			SYNTHETIC MARINE ATF TYPE F	SYNTHETIC SAE 75W-90 M8 MARINE GEAR OIL	SAE 80W-90 M8 MARINE GEAR OIL
10019 -LO- QUART 10018 -LO- GALLON 10039 -LO- 5 GALLON PAIL 10040 -LO- 55 GALLON DRUM 11123 -LO- PER GALLON TOTE			10651 -LO- QUART 11099 -LO- 5 GALLON PAIL 10887 -LO- 55 GALLON DRUM	SAE 75W-90 10652 -LO- QUART 10664 -LO- 5 GALLON PAIL 10818 -LO- 55 GALLON DRUM	SAE 80W-90 11153 -LO- QUART 11154 -LO- 5 GALLON PAIL

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GREASES

RED "N" TACKY GREASE			RED "N" TAG GREASE	RED "N" TACKY SPRAY GREASE		X-TRA HEAVY DUTY GREASE	
RED "N" TACKY GREASE AEROSOL	10574 -L 10005-3 10027 -L 10028 -L	0- 3X30Z 0- 1LB. TUB 0 -LO- 14.0 OZ CARTRIDGE 0- 35 LB. PAIL .0- 120 LB. PAIL .0- 120 LB. KEG .0- 400 LB. DRUM	RED "N" TACKY GREASE AEROSOL	11025 -LO- 11 OUNCE	X-TRA HEAVY DUTY GREASE	10330 -LO- 1 LB. TUB 10301-30 -LO- 4.5 OZ CARTRIDGE 10305 -LO- 35 LB. PAIL 10316 -LO- 120 LB. KEG 10335 -LO- 400 LB. DRUM	
MULTI- COMBC		POSE GREASE K	RED "N" TAC GREASE	CKY 5TH WHEEL	WHITE LI	THIUM GREASE	
3 OZ GREASE PACK/1 RED		10315 -LO- 2 X-TRA H/D 11048 -LO- 1 MARINE	RED "N" TACKY 5TH WHEEL GREASE	10676 -LO- 25 OUNCE	H/D MINING & CONSTRUCTION GREASE	10533 -LO- 8 OZ	
		Y MINING & ION GREASE	MARINE GR	EASE			
H/D MINING CONSTRUCT GREASE	ION 1059	1 1-30 -lo- 14.0 oz cartridge 7 -lo- 35 lb. Pail 2 -lo- 120 lb. keg	MARINE GREASE	11148 -LO- 1 LB. TUB 10682 -LO- 3X30Z 10320-30 -LO- 14 OUNCE 10321 -LO- 35 LB. PAIL 10322 -LO-120 LB. KEG 10660 -LO- 400 LB. DRUM			







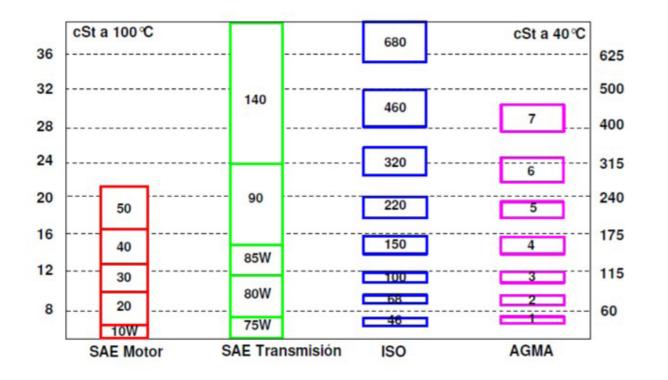
THE CONCISE GUIDE TO LUBRICANTS

There are several scales for measuring the viscosity of a fluid. The most commonly used are SAE and ISO. On the following pages we can see three types of scales.

- · SAE grade scales for engine oils.
- · SAE grade scales for gear oils

• ISO grade scales for hydraulic or industrial oils The ISO and SAE classifications are based on the measurement of viscosities at different reference temperatures (40°C and 100°C respectively). In order to establish a correlation, it is necessary to assume a certain viscosity index. For example, the following comparison chart is based on IV= 95.

The AGMA classification corresponds to the classification developed by the American Gear Manufacturers Association.



SAE classification

Viscosity classification using the Centistoke (cSt) at 100°C as the unit of measurement. This system is used to classify:

· Lubricants used for the lubrication of internal combustion engines

The SAE index indicates how the oil flows at certain temperatures, i.e. its viscosity. This has nothing to do with oil quality, additive content, performance or application for specialised service conditions.

The SAE classification is based on the viscosity of the oil at two temperatures, in degrees Farenheit, 0°F and 210°F, equivalent to -18° C and 99° C, establishing eight SAE grades for monograde and six for multigrade.

SAE viscosity numbers are classifications of lubricating oils in terms of viscosity only. The official values of 0°F and 210°F are those specified in the classification. Centistokes grades represent kinematic viscosity and centispoises represent dynamic viscosity.

SAE Classification Engine Oils

Engine oils are classified by viscosity into "summer" and "winter" grades. Winter grades are identified by a number accompanied by the letter W. Summer grades are identified by a number. In both cases, the higher the number, the higher the viscosity of the oil.

SAE Grade	Dynamic viscosity (cP) at T (°C)	Limit Temperature Pumping (°C)	Viscosi	matic ity (cSt))0°C	Dynamic Viscosity (cP) at 150°C
0W 5W 10W 15W 20W 25W 20 30 40 50 60	Maximum 3250 a -30 3500 a -25 3500 a -20 3500 a -15 3500 a -10 6000 a -5	Maximum -35 -30 -25 -20 -15 -10	Minimum 3.8 3.8 4.1 5.6 95.6 9.3 5.6 9.3 12.5 16.3 21.9	Maximum <9.3 <12.5 <16.3 <21.9 <26.1	Minimum 2.6 2.9 3.7 3.7 3.7

SAE Classification Gear Oils

Transmission oils are classified by their viscosity into "summer" grades and "winter" grades. Winter grades are identified by a number accompanied by the letter W. Summer grades are identified by a number. In both cases, the higher the number, the higher the viscosity of the oil.

Grade	for viscosity 15000 cP		iscosity (cSt) 00°C
		Minimum	Maximum
70W	-40	4,1	<11,0
75W	-40	4,1	<13,5
80W	-26	7,0	<24,0
85W	-12	11,0	<41,0
80		7,0	
85		11,0	
90		13,5	
140		24,0	
250		41,0	

[·] Automotive gear lubrication oils.



According to the SAE viscosity grade, oils are classified as follows:

a. Monograde oils.

They are characterised by having only one degree of viscosity. When accompanied by the letter W (Winter) it indicates that the oil allows easy starting of the engine in cold weather (temperature below 0°C).

According to the ambient temperature below 0°C, the SAE grade is selected with the letter W, as each of these grades is a function of the ambient temperature.

The lower the winter viscosity grade (OW, 5W, 15W, 2OW, 25W, etc.) the more fluid the oil is at low temperatures, thus facilitating lubrication at start-up when the engine is cold or at low temperatures.

The other SAE grades without the letter W are used for operations in hot climates and under severe operating conditions.

b. Multigrade oils.

These oils have more than one SAE viscosity grade.

They have a high viscosity index which gives them a uniform behaviour at different temperatures, both in cold and warm climates.

For example, an SAE 10W 50 oil indicates the viscosity of the oil measured at -18 degrees and at 100 degrees, in that order. It tells us that the oil behaves like an SAE 10 when cold and like an SAE 50 when hot.

So, for greater cold protection, an oil with the lowest possible first number should be used, and for a higher degree of hot protection, an oil with a high second number should be used. The higher the summer viscosity (W2O, W3O, W4O, W5O, W6O, etc.) the higher the viscosity at high temperatures, which provides greater engine protection in hot temperatures.

One of the most important advantages of multigrade oils over monograde oils is the fuel saving due to the reduction of friction in the different parts of the engine, mainly in the upper part of the piston. In addition, a multigrade lubricant is also more stable in the face of the great changes in temperature to which an engine is subjected, avoiding its decomposition due to thermal shock and being more thermally stable. For this reason, multigrade oils last longer than monograde oils, as well as extending the life of the equipment.

· Winter Viscosity Grade Requirements:

- Low temperature start-up
- -Ease of pumping
- -Minimal viscosity at high temperatures

· Summer Viscosity Grade Requirements:

-Minimal viscosity at high temperatures

-High temperature/high shear stress viscosity The SAE viscosity grade is not a measure of the quality of the oil but gives an indication of the correct application of the lubricant.

If the expected outside temperature is lower than	Typical SAE viscosity grades for passenger cars
0°C	5W2O / 5W3O / 10W3O / 10W4O / 20W5O
-18°C	5w20 / 5w30 / 10w30 / 10w40
Below -18°C	5W20 / 5W3O

ISO classification

Viscosity classification of oils, using the Centistoke (cSt) at 40°C as the unit of measurement. This system classifies only industrial oils and makes it possible to quickly and accurately find the viscosity equivalent of an oil in another brand without fear of movement. Industrial lubricants are classified by viscosity into 18 grades according to a system specified by ISO (International Organisation for Standardisation). Each grade covers a range of kinematic viscosities measured in cSt at 40°C. The mid-point viscosity of each grade is approximately 50 % higher than that of the preceding grade.

ISO Grade	Kinematic viscosity mid-point (cSt) at 40°C	Viscosity Limits kinematic (cSt) at 40°C	
		Minimum	Maximum
2	2,2	1,98	2,42
3	3,2	2,88	3,52
5	4,6	4,14	5,06
7	6,8	6,12	7,48
10	10,0	9,00	11,O
15	15,0	13,5	16,5
22	22,0	19,8	24,2
32	32,0	28,8	35,2
46	46,0	41,4	50,6
68	68,0	61,2	74,8
100	100,0	90,0	110,0
150	150,0	135,0	165,0
220	220,0	198,0	242,0
320	320,0	288,0	352,0
460	460,0	414,0	506,0
680	680,0	612,0	748,0
1000	1000,0	900,0	1100,0
1500	1500,0	1350,0	1650,0

API Classification

Classification system based on the quality level of the product. The API (AMERICAN PETROLEUM INSTITUTE) is a technical and trade organisation representing petroleum product manufacturers in the USA. Through partnership with the SAE (SOCIETY OF AUTOMOTIVE ENGINEERS) and ASTM (AMERICAN SOCIETY FOR TESTING MATERIALS) they have developed various tests to correlate to everyday use.

Use: Automotive oils.

Petrol engine oils (S)

The API classifies them with 2 letters, the first letter indicates the type of engine, in this case a petrol engine, and the second, following the alphabetical order, is in accordance with the technological advance of the engines. The classification is as follows:



SA	Petrol engines manufactured before 1930. Automotive oils composed solely of the lubricant base. Contains no additives. DESIGNATION OUT OF SERVICE.
SB	Petrol engines manufactured before 1951 Automotive oils composed of the lubricant base and anti-rust and anti-corrosion additives. DESIGNATION OUT OF SERVICE.
sc	Petrol engines manufactured before 1967. Meets lubrication requirements for engines manufactured between 1964 and 1967. DESIGNATION OUT OF SERVICE.
SD	Petrol engines manufactured before 1971. Meets lubrication requirements for engines manufactured between 1968 and 1971 DESIGNATION OUT OF SERVICE.
SE	Petrol engines manufactured before 1979. Meets lubrication requirements for engines manufactured between 1972 and 1979 DESIGNATION OUT OF SERVICE.
SF	Petrol engines manufactured before 1988. Meets lubrication requirements for engines manufactured between 1980 and 1988 DESIGNATION OUT OF SERVICE.
SG	Petrol engines manufactured before 1993. Meets lubrication requirements for engines manufactured between 1989 and 1993 DESIGNATION OUT OF SERVICE.
SH	Petrol engines manufactured before 1996. Meets lubrication requirements for engines manufactured between 1994 and 1996 DESIGNATION OUT OF SERVICE.
LS	Petrol engines manufactured before 2001.
SL	Petrol engines manufactured before 2004.
SM	Petrol engines manufactured before 2010.
SN	Petrol engines manufactured from 2011 onwards. Designed to provide improved high temperature deposit protection for pistons, tighter sludge control and sealing compatibility. API SN with Resource Conserving matches ILSAC GF-5 by combining the performance of API SN with improved fuel economy, turbocharger protection, emission control system compatibility and protection of engines running on fuels containing ethanol up to E85.
SP	SP is the API's newest service category. And applies to those heavier viscosity grades like 10W40 and 20W50. API SP is fully backwardcompatible with previous API service categories, including API SN PLUS, SN, SM, SL or SJ.

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Diesel engine oils (C)

The API classifies them with two letters. The first (C) indicates the type of engine, in this case Diesel, and the second the conditions under which the engine operates.

СА	Naturally aspirated diesel engines. Minimal protection against corrosion, wear and deposits. DESIGNATION OUT OF SERVICE.
СВ	Naturally aspirated diesel engines For diesel engines which are subjected to moderate duty (trucks, buses, etc.) and use good quality fuel. DESIGNATION OUT OF SERVICE.
сс	Naturally aspirated, turbocharged or supercharged diesel engines. Moderate to severe engine conditions. Provides protection against corro deposit formation. DESIGNATION OUT OF SERVICE.
СD	Naturally aspirated, turbocharged or supercharged diesel engines, v increased and effective control of deposits and wear. DESIGNATION OUT OF SERVICE.
CD - II	Two-stroke diesel engines requiring effective wear and deposit control. DESIGNATION OUT OF SERVICE.
EC	Turbocharged or supercharged diesel engines for severe duty. Control of oil and thickening, deposit and wear. Aimed at multigrades. DESIGNATION OUT OF SERVICE.
CF	Naturally aspirated, turbocharged or supercharged diesel engines, which with different sulphur contents. Effective control of piston deposits, wear in bearings. Replaces CD level. DESIGNATION OUT OF SERVICE.
CF - 2	Two-stroke diesel engines requiring effective control of ring and cylin deposit formation. Replaces CD - II level. DESIGNATION OUT OF SERVICE.
CF - 4	Turbocharged or supercharged diesel engines for severe service, espec They replace the CE level with better control of oil consumption and p formation. DESIGNATION OUT OF SERVICE.
GC - 4	Diesel engines for extreme service, both on-road - low sulphur content: 0.05% p - and off-road - maximum sulphur content 0.5% - Effective co temperature deposits, wear, corrosion, foaming, oil oxidation and soot acc DESIGNATION OUT OF SERVICE.

or diesel engines which are subjected and use good quality fuel. supercharged diesel engines.

ns. Provides protection against corrosion, rust and

or supercharged diesel engines, which require posits and wear.

l engines for severe duty. Control of oil consumption med at multigrades.

supercharged diesel engines, which can use diesel ctive control of piston deposits, wear and corrosion

effective control of ring and cylinder wear and evel.

sel engines for severe service, especially on-road. er control of oil consumption and piston deposit

oth on-road - low sulphur content: sulphur content 0.5% - Effective control of high n, foaming, oil oxidation and soot accumulation.



CH - 4	High-speed, four-stroke cycle diesel engines designed to meet 1998 exhaust emission standards. They are specifically composed for use with diesel fuels ranging in sulphur content up to 0,5 % by weight. Can be used in place of CD, CE, CF-4 and CG-4 oils.
IQ - 4	High-speed, four-stroke cycle diesel engines designed to meet the 2004 exhaust emission standards implemented in 2002. They are formulated to maintain engine durability where exhaust gas recirculation (EGR) is used and are intended for use with diesel fuels ranging in sulphur content up to 0,5 % by weight. They may be used in place of CD, CE, CF-4, CG-4 and CH-4 oils. Some CI-4 oils may also qualify for CI-4 PLUS designation.
CJ - 4	High-speed, four-stroke cycle diesel engines designed to meet 2010 model year on- road and Tier 4 off-road exhaust emission standards, as well as for previous model year diesel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulphur content up to 500 ppm (0,05 % by weight). However, the use of these oils with more than 15 ppm (0.0015 % by weight) of sulphur fuel may affect the durability of the exhaust aftertreatment system or the oil drain interval. API CJ-4 oils exceed the performance criteria of API CI-4 oils with CI-4 PLUS, CI-4, CI-4, CH-4, CG-4 and CF-4, and can effectively lubricate engines requiring those API service categories.
СК – 4	High-speed, four-stroke cycle diesel engines designed to meet 2017 model year on-road and Tier 4 off-road exhaust emission standards, as well as for previous model year die- sel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulphur content up to 500 ppm (0,05 % by weight). However, the use of these oils with more than 15 ppm (0.0015 % by weight) of sulphur fuel may affect the durability of the exhaust aftertreatment system or the oil drain interval. These oils are especially effective in maintaining emission control system durability when particulate filters and other advanced after-treatment systems are used. They are designed to provide enhanced protection against oil oxidation, viscosity loss due to oil shear and aeration, as well as protection against catalyst poisoning, particulate filter blockage, engine wear, piston deposits, low or high temperature property degradation, and soot-related viscosity increase. API CK-4 oils exceed the performance criteria of API CJ-4, CI-4 with CI-4 PLUS, CI-4 and CH-4 oils, and can effectively lubricate engines requiring those API service categories.

Example: A lubricating oil is marked SAE 50 and API CF/SF. This means that it has a viscosity grade (Unigrade) SAE 40 and is suitable for lubricating supercharged and turbocharged Diesel (CD) engines as well as gasoline (SF) engines.

Gear Oils (GL)

The API established a set of specifications to determine the quality level of automotive gear oils. These specifications are based on the type of unit that makes up the gears and the degree of anti-wear protection required.

For identification purposes, these specifications consist of two letters (GL: Gear Lubrication) and a number. The two letters indicate that the oil is for mechanical transmissions and the number indicates the quality level, 1 being the lowest.

GL-1	Manual transmissions operating und Mineral oils are used where friction m additives are not permitted. DESIGNATION OUT OF SERVICE.
GL-2	Worm gears operating under load co GL-1 type lubricants do not perform s DESIGNATION OUT OF SERVICE.
GL-3	Manual transmissions and differentia and speed conditions, where a GL-2 of The level of service is lower than GL-4 DESIGNATION OUT OF SERVICE.
GL-4	Manual transmissions and differentia and speed conditions, where a GL-2 o The level of service is lower than GL- DESIGNATION OUT OF SERVICE.
GL-5	Manual transmissions and differentia similar equipment operating under h conditions. Lubricants for this service contain hig that protect against scuffing.
GL-6	Hypoid differentials with large crown DESIGNATION OUT OF SERVICE.
MT-1	Non-synchronised manual gearboxes (Buses and heavy-duty trucks). They provide protection against the wear and oil seal deterioration, which and API GL-5 requirements only. Less

der light conditions. modifiers or extreme pressure

onditions at temperature and sliding speeds, where satisfactorily.

als with bevel gears operating under moderate load oil will not perform satisfactorily. -4.

als with bevel gears operating under moderate load oil will not perform satisfactorily. -4.

als with hypoid gearing of passenger cars and other high-speed low-torque and low-speed high-torque

gh activity extreme pressure additives and additives

n and pinion gear wheelbases

es operating in very severe service

e combination of thermal degradation, component ch is not provided by lubricants that meet API GL-4 ss oxidation and longer life than a GL-4 or GL-5.



ILSAC classification

The INTERNATIONAL LUBRICANT STANDARDISATION AND APPROVAL COMMITTEE (ILSAC) is an organisation founded in 1992 that develops minimum performance standards for gasoline engine oils. ILSAC standards, denoted by the terminology ILSAC GF-x, are based on API service categories and bring additional performance requirements, e.g. fuel economy improvements and restrictions on viscosity grades that can claim to meet an ILSAC standard.

ILSAC uses the API Engine Oil Licensing and Certification System (EOLCS) which is a voluntary licensing and certification programme that authorises engine oil marketers who meet specified requirements to use the API Engine Oil Quality Marks.

GF-1	Corresponding to an API SH oil. In order to obtain the "Energy Conserving" designation and to be able to promote it together with the API symbol, an oil of a certain viscosity had to provide a fuel saving of 1.5% compared to another oil of the same viscosity but which did not achieve this Energy Conserving certification. Fuel economy improvements are always measured against a reference oil. DESIGNATION OUT OF SERVICE.
GF-2	Corresponding to an API SJ oil replacing GF-1. This licence required an additional fuel economy of 0.5% at viscosities of 0.5%. 10W30 and 1.1% in SAE 5W30. DESIGNATION OUT OF SERVICE.
GF-3	Corresponding to an API SL oil, This licence reduces the Phosphorus and other anti- wear content compared to its predecessor and improves the oil's share of emissions. It improves oil stability at high temperatures (higher Viscosity indexes) and carbon deposits. DESIGNATION OUT OF SERVICE.
GF-4	It corresponds to an API SM oil, although during the period of API SM's emergence, some API SJ lubricants were ILSAC GF-4 compliant. DESIGNATION OUT OF SERVICE.
GF-5	The ILSAC GF-5 standard is the most recent (2010). It corresponds to an API SN oil. Improved high-temperature deposit protection for pistons and turbochargers, tighter sludge control, improved fuel economy, improved emission control system compatibility, sealing compatibility and protection of engines running on fuels containing ethanol up to E85.
GF-6	GF-6 will replace GF-5 category and is divided into two sub-categories: - GF-6A: Fully backward-compatible for older vehicles that previously used GF-5 oils. - GF-6B: Covers the new, lower-viscosity oil grade OW-16 and will NOT be backward- compatible in most cases (unless specified by the OEM).

ACEA Classification

ACEA (ASSOCIATION OF EUROPEAN AUTOMOBILE BUILDERS) tests are based on laboratory and dynamometer tests. Some of these tests are the same as those used by the API, others are not.

- The parameters tested are:
- Wear protection
- Engine cleaning
- Oxidation resistance
- Resistance to increase in viscosity (due to thickening by soot)
- Shear stability (resistance of the oil to high stresses)
- Mechanics
- High temperature viscosity and high shear strength
- Elastomer compatibility
- Tendency to foam formation

Each product is designated by a code comprising:

- A letter to define the CLASS (e.g. C) and
- A number to define the CATEGORY (e.g. C1).

In addition, for industrial use, each sequence has a two-digit number to identify the YEAR of application of that severity level (e.g. A3/B4-16).

Class

Indicates oil intended for a general type of engine - currently available: - A/B: Petrol and light diesel engines

- C: Catalyst compatible oils for petrol and light diesel engines with aftertreatment devices.
- E: Heavy diesel engines

Additional classes may be added in the future if, for example, natural gas engines require oil characteristics that cannot be easily incorporated into existing classes.

Category

Indicates different purposes or applications within that general class, related to some aspect(s) of the performance level of the oil.

The specific applications of each sequence are the responsibility of each engine manufacturer for their own vehicles and engines. Oils of one category may also meet the requirements of another category, but some engines may only be suitable for oils of one category within a class.

Number

ACEA Sequence year numbers are intended for industrial use only and indicate the year of application of that severity level for the particular category. A new year number will indicate, for example, that a new test, parameter or limit has been incorporated into the category to satisfy new or updated performance requirements, while still being compatible with existing applications. An update must always satisfy the applications of the previous edition. Otherwise, a new category will need to be created.



Petrol (A)/ Light Diesel (B) Engine Oil

Heavy Diesel Engine Oils (E)

A1/B1	Standard quality. Fuel saver.	0/5W2O/30	Utility and small vehicles urban. They may not be suitable for some engines.
A3/B3	Standard quality. Without fuel economy requirements.	0/15/20W/ 30/40/50	Low-performance petrol engines performance and diesel with indirect injection.
A3/B4	High level of quality and performance. Synthetic and semi-synthetic oils.	0/5/10W/ 20/30/40	All high-performance engines with long oil change intervals, petrol and diesel with direct injection.
A5/B5	Highest level of quality and performance. Synthetic, fuel-saving oils fuel.	0/5W2O/3O	High performance vehicles with long oil change intervals, petrol and diesel with direct injection. These lubricants may not be suitable for some engines.

Light Diesel Engine Oils with particulate filters (C)

CI	Very high quality level. Low ash content and fuel saving.	0/5W2O/3O	Compatible with aftertreatment systems and particulate filters (DPF, FAP, CRT, CAT). May not be suitable for engines requiring high viscosity.
C2	Very high quality level. Low ash content and fuel saving.	5/10/15W/ 30/40	Compatible with aftertreatment systems and particulate filters (DPF, FAP, CRT, TWC, CAT). May not be suitable for some engines.
СЗ	Very high quality level. Low ash content and fuel saving.	0/10/15W/ 30/40	Compatible with aftertreatment systems and particulate filters (DPF, FAP, CRT, TWC, CAT). May not be suitable for some engines.
C4	Very high quality level. Low ash content and fuel saving	0/5W2O/3O	Compatible with aftertreatment systems and particulate filters (EGR, DPF, FAP, CRT, CAT). Suitable for all engine types.
C5	Stable, permanent quality engine oil with medium SAPS level to further improve fuel economy.	O/5W2O/3	Compatible with catalytic converters at extended change intervals in vehicles with all types of modern aftertreatment systems and high-performance DI petrol and diesel passenger car and light van engines designed to be suitable and approved by OEMs for the use of low viscosity oils with a minimum HTHS viscosity of 2.6 mPas.

E4	Performance LubricantUltra-high. Extremely high stable, maintaining its viscosity grade. They boost fuel economy, provide better piston cleanliness, better antiwear properties and better soot control than E3.	10W-40	Heavy-duty diesel engines with high power output under very severe operating conditions complying with Euro I, Euro II, Eu III and Euro IV standards. Suitable for engines without particulate filter, some engines equipped with EGR and some equipped with SCR for NOx reduction. They allow a considerable lengthening of the drain periods according to the manufacturer's recommendatio
E6	Highly stable lubricant for remain with the SAE grade. Provide excellent control of cleaning of the pistons, wear, soot management, and lubricant stability. Lubricant with levels of sulphate ash, phosphorus, and low sulphur (Low SAPS).	10W-40	Heavy-duty, high-performance diesel engines under extremely demanding operating condition which comply with Euro I, Euro Euro III and Euro IV standards. Suitable for engines with EGR w or without particulate filter (strongly recommended for eng with DPF particulate filter) and engines equipped with SCR. For in low sulphur diesel fuels (≤ 50 ppm). For significantly extended drain periods following manufacturer's recommendation
E7	Highly stable lubricant for remain with the SAE grade. Provide effective control of the cleaning of the pistons, the liner polishing and lubricant stability, excellent control of turbocharger wear and deposits, soot management. Contains many elements of API CI4 specification.	5/10/ 15W-40	High power diesel engines under very severe operating condition complying with Euro I, Euro II, Eu III and Euro IV standards. Suitable for engines without particulate filter and for most engines with EGR and SCR. For significantly extended drain periods following manufactures recommendations.
E9	Lubricants with low levels of sulphated ash, phosphorus and sulphur (Low SAPS). It contains many elements API CJ-4 specification.	5/10/15W/ 40/30	Engines with after-treatment system or DPF, EGR and/or SCR aftertreatment, in combination low sulphur fuel. Prolonged drainage periods.For Euro VI engines.



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