

ADDINOL®

THE ART OF OIL • SINCE 1936

➤ **ADDINOL Classics**
Lubricants and specialties for antique cars



MORE THAN
75
YEARS

**GERMAN
QUALITY**



➤ **ADDINOL – German Quality since 1936** **Solutions for all lubrication-related challenges**

ADDINOL is one of the few companies in the German mineral oil industry acting independently of any large business group and has distributor partners on all continents in more than 90 countries. Our high-performance lubricants are design elements reflecting the most recent state-of-the-art. Their development and production are carried out according to latest standards at the chemical site in Leuna in the heart of Germany. Our lubricants reveal their full performance in symbiosis with engines, drives, chains, bearings and hydraulic systems. We possess decades of experience in the development and application of lubricants and the applications advice service makes up a vital part of our core competence since our foundation.

The automotive product range of ADDINOL includes engine and transmission oils of the highest international specifications. More than 150 approvals of leading OEM (Original Equipment Manufacturer), such as BMW, Mercedes-Benz, Porsche, Ford and the Volkswagen group, argue for the outstanding quality of ADDINOL lubricants for all motor and commercial vehicles.

ADDINOL – Improve the Performance!



Now and then – Research & development make up a vital part of our company's core competence.



➤ ADDINOL True love just keeps going

It is much more than a fascinating hobby to drive an antique car – it is a philosophy. The owner of such a vehicle appreciates the exceptional, even if a lot of effort sometimes is required for the cars' or motorbikes' maintenance and care. Important for care and maintenance are the right lubricants and function fluids.

Automotive engineering develops with tremendous speed which means increased and complex demands on lubricants as design elements. These demands are met by the help of innovative additive technologies. However, such additives make modern high-performance lubricants unsuitable for older vehicles in most cases. After all, antique cars place totally different demands on their lubrication than modern vehicles. Incompatibilities with sealing materials and metals can cause leakages and engine damages. Furthermore, the cleaning properties of modern, highly additivated engine oils can solve deposits inside the engine leading to obstructions in the oil passages and serious engine damages as a result.

For these reasons the ADDINOL range does not only offer engine and transmission oils possessing the latest specifications and approvals but includes the tried and tested lubricants for older vehicles all the same – starting with engine and transmission oils, over function fluids up to useful aids such as sprays and greases – they are all part of our range. With the ADDINOL products, which have stood the test since decades, antique cars hit the road until today.





➤ Antique vehicles are choosy, and classy!

Usually, older vehicles cannot cope with modern lubricants. That is why the ADDINOL range offers the fitting products for veteran, vintage and classic vehicles until today. Even if there is an operating manual at hand still, some information

needs to be translated and adjusted to today's specifications. The following explanations and information help in choosing the suited engine and transmission oils.

The viscosity according to Engler degrees and SAE

The viscosity is decisive for choosing the lubricant since it describes its flowability and depends on temperature. In modern lubricants it is controlled by special additives.

Prior to 1950 lubricants were classified according to Engler degrees depending on their flowability. This specification is given in many operating manuals until about 1950, but also later. Nowadays, viscosity is commonly distinguished according to SAE grades.

Depending on the season mono-grade engine oils used to be applied: in winter low viscosity engine oils with SAE grade 10W or 20W and in summer oils of a higher viscosity meeting SAE grade 30, 40 or 50. Mono-grade oils were also used for the lubrication of gears, such as SAE 80W for winter operations and SAE 140 at higher temperatures. Depending on their design, multi-grade oils might be applied in classic vehicles as well; such oils can be used throughout the year irrespective of the season.

Table comparing SAE grade of engine and transmission oils with Engler degrees

SAE grade at 40 °C		Engler degrees at 50 °C	
Engine	Transmission	from	up to
10W	75W	2.20	3.25
15W, 20W, 25W, 20	80W	3.00	6.20
30	85W	5.20	8.20
40	90	8.80	12.80
50	90	10.50	26.00

Please note: Today's SAE grades describe the viscosity at 40 °C. The values given in the table are approximate values.

API, CCMC and ACEA – these specifications characterise the quality

While SAE and Engler degrees describe the flowability of a lubricant only, the specifications of API, CCMC and ACEA also give information on lubricant features such as lubricity, ageing resistance or shear stability.

Engine oils according to API

At first, the following classification of engine oils according to API (American Petroleum Institute) was common:

- › **1. Type "Regular":** no additives – normal operation without special loads
- › **2. Type "Premium":** mild additivation – protection against corrosion and ageing for medium and higher loads
- › **3. Type "Heavy Duty":** lubricants with additives against corrosion, ageing, wear, often also detergents/dispersants – for high loads and difficult conditions

Soon this rough classification was replaced by API classifications valid until today:

- › **API S** – for four-stroke gasoline engines
- › **API C** – for diesel engines
- › **API T** – for two-stroke gasoline engines

The higher the letter added to the classes S, C and T the higher are the requirements on the engine oil. Older vehicles (models before 1970) mainly require oil specifications API SA, SB, SC and SD for gasoline and API CA, CB, CC and CD for diesel engines. Two-stroke engine oils for older vehicles are classified according to API TA.



Please note: CCMC engine oil specifications meet API classifications to a large extent; API classifications however do not completely meet CCMC requirements. The requirements of the tests within ACEA cannot be compared to the requirements of CCMC and API specifications directly. Please follow instructions of engine and aggregate manufacturers.

Transmission oils according to API

Transmission oils (GL = gear lubricant) are distinguished as follows according to API:

- › **GL 1** – without additives, for manual transmissions exposed to minor loads
- › **GL 3** – mild additivation, EP-additives, can also be used in manual transmissions with non-ferrous metals, clutches running in oil bath
- › **GL 4** – strong additivation, for manual transmissions, hypoid gears (if permitted)
- › **GL 5** – strong additivation, for hypoid gears

In older antique cars (i.e. veteran and vintage cars) transmission oils according to API GL 1 and GL 3 are applied, in younger (i.e. classic) ones transmission oils of the classes GL 4 and GL 5 might be used as well. Please follow the respective manufacturer instructions.

Engine oils according to CCMC

In the 1970s the European vehicle manufacturers (Comité des Constructeurs d'Automobiles du Marché Commun/Committee of Common Market Automobile Constructors) introduced their own specification based on strict European test procedures: the CCMC classification. Gasoline engine oils were marked with the letter G, diesel engine oils with D and diesel engine oils for passenger cars with PD.

Engine oils according to ACEA

ACEA (Association des Constructeurs Européens de l'Automobile) replaced this classification in 1996. ACEA specifications are subject to ongoing development. Their currently valid versions sum up the requirements of European vehicle manufacturers and pour these into a common level shared by all of them.

Comparison CCMC – API – ACEA

CCMC	API	ACEA
Gasoline engines		
G 1	SE/CC	
G 2	SF/CC	
G 3	SF Low viscosity	
G 4	SG	A2-1996
G 5	SG Low viscosity	A3-1996
Diesel engines		
D 1	SE/CC	
D 2	CD	
D 3	SHPD	
D 4	heavy loads	E2-1996
D 5	heaviest loads, SHPD for extended service intervals	E3-1996
PD 2	diesel engines of passenger cars	B2-1996

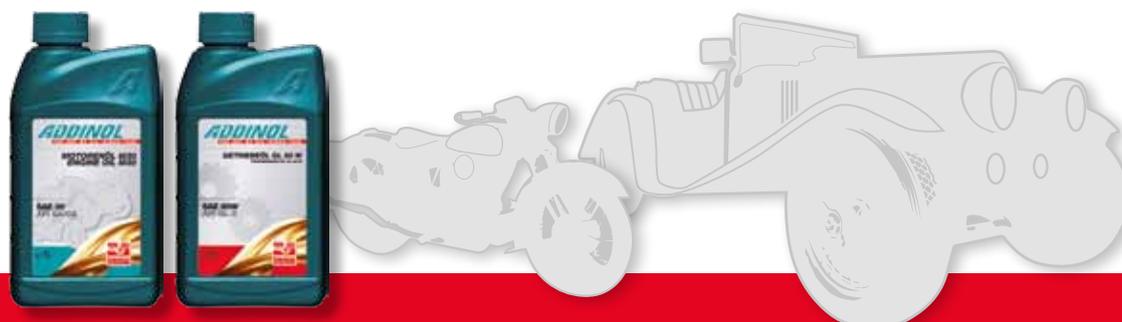
Source: compare Mineralölalphabet kompakt, S. 20-21, Hg.: Technischer Dienst UNITI, Hamburg 2007

Engine oils

	ADDINOL	SAE	API	Characteristics
Passenger cars 4-stroke bikes	M 30	30	SA/CA	Based on mineral oil, no additivation, mono-grade engine oils for gasoline and diesel engines, in particular four-stroke antique vehicles and vehicles with or without oil filter, for low requirements, ageing resistant M 30: preferred for winter usage M 50: preferred for summer operations
	M 50	50	SA/CA	
Commercial vehicles	MD 105	10	CG-4/CF-4/CF-2/CF/SF	Mono-grade engine oils based on mineral oil, mild additivation, for turbocharged diesel engines and engines without charging, best wear protection, keeps dirt and dust particles in suspension – for vehicles with oil filter, preferred for winter operations
	MD 205	20W-20	CG-4/CF-4/CF-2/CF/SF	
	MD 304	30	SF/CC	Mineral oil based, mild additivation, for low to medium requirements, reliable wear protection, high thermal-oxidative stability, minimum evaporation tendency, good cleaning properties – only suited for vehicles with oil filter MD 304: mono-grade oil, recommended for summer operations and transition periods MD 1034: multi-grade oil, all-season application
	MD 1034	10W-30	SF/CC	
2-stroke motorbikes	MZ 405		TC	Mineral oil based, mild additivation, suited for air- and water-cooled two-stroke engines with mixed lubrication and fresh oil automatics/separate lubrication, best protection against corrosion and wear, red colour, self-mixing – for mixing ratio please follow manufacturer instructions
Further	MT 16 P	40	CF	Mineral oil based, mild additivation, for large diesel engines with and without charging; also for locomotive, tank and ship engines, plunger and cross-head diesel engines, ensures engine cleanliness, achieves long operating lives based on best ageing stability

Transmission oils

	ADDINOL	SAE	Former denomination	API	Application
Mono-grade oils	M 30	30 (80W/85W)		GL 1	Mineral oil based, no additivation, mono-grade engine oils, which can be applied for power transmission and gear lubrication if demanded accordingly
	M 50	50 (90)			
	Transmission oil GL 80 W	80W	GL 60, GH 60, GL 100	GL 3	Mineral oil based, mild additivation, for the lubrication of common manual transmissions and minor loads, best wear and corrosion protection for transmission components, good anti-foam behaviour, ageing stability
	Transmission oil GL 90	90	G 15, G 20, GL 125, GL 220	GL 3	
	Transmission oil GL 140	140	GHD, GL 240, GL 265, GL 460	GL 3	
	Transmission oil GS 80 W	80W	GS 100 R	GL 4	Mineral oil based, with additives, for heavy loaded hypoid axle drives with minor offset and synchronised manual transmissions, also suited for steering gears and transfer cases, outstanding scuffing load capacity and shear stability for high loads, reliable corrosion protection, low foaming tendency, thermal-oxidative stability
Transmission oil GS 85W-140	85W-140	GS 200, GS 240, GS 460	GL 4		
Multi-grade oils	Transmission oil GH 85W-90	85W-90	GH 200	GL 5	Mineral oil based, with additives, for heavy loaded hypoid axle drives with large offset, suited for synchronised and non-synchronised manual, transfer and auxiliary transmissions, ageing resistant, highest scuffing load capacity and shear stability for high loads, ensures protection against corrosion and wear
	Transmission oil GH 85W-140	85W-140	GH 125, GS 125, GS 125 E, GH 200, GH 460		
ATF	Transmission oil ATF TASA				Mineral oil based, with additives, for semi- and fully automatic transmissions, long operating lives, reliable protection against corrosion and wear



Function fluids and special products

	ADDINOL	Specifica- tion	Application	Advantages
Shock absorber oils	Fork oil	SAE 5W ISO-VG 15	fork and shock absorber oil application at telescopic forks of motorcycles	excellent pressure absorption optimum damping also at extreme conditions reliable protection against corrosion
	Shock absorber oil B	SAE 5W ISO-VG 15	for heavy loaded shock absorbers, steering dampers and suspension struts	outstanding protection against corrosion and wear excellent low-temperature behaviour long operating lives
Corrosion protection	KO 220 C	ISO-VG 220	anti-corrosion agent based on mineral oil temporary protection of metallic surfaces ideal for underbody protection	free of solvents, displaces water good compatibility with paints, plastics, elastomers and further materials
	Lube Oil U 1500		special oil for the lubrication of mechanical timers with grease felt	precise application high viscosity ensures long lubrication time and stable lubricating film
Function fluids	Brake Fluid	DOT 3 DOT 4	fully-synthetic brake fluid for drum and disc brakes nearly universal application	protects against corrosion ageing resistant outstanding material compatibility no evaporation losses high wet boiling range
	Antifreeze		cooler-protecting agent based on ethylene glycol, blue-green	all-season use miscible with water at will – frost protection adjusted to respective conditions reliable protection against corrosion long lifetime neutral towards rubber and plastics

Lubricating greases and sprays

	ADDINOL	NLGI	Base oil	Thickener	Application	Advantages
Lubricating greases	Liquid grease SGA 600	0	mineral oil	sodium soap	low-viscosity grease for closed gears ("Ambroleum")	perfectly fit for gears of older models which are not suited for oil lubrication excellent material compatibility
	Multi-purpose grease L 2, L 2 G	2	mineral oil	lithium soap	universal grease for the lubrication of motor vehicles lubrication and sealing of roller and sliding bearings as well as sliding surfaces	long operating life reliable protection against corrosion L 2: useable as substitute for "Stauffer grease" L 2 G: with graphite for improved emergency lubricating properties
Sprays	Multi-function spray		mineral oil	fatty acid ester	universal application for all mechanical components	lubricates, protects, maintains economical consumption resistant against humidity contains graphite for improved emergency lubricating properties
	Anti-corrosion spray KO 6-F		mineral oil		suited for the temporary protection of metallic surfaces	low in aromatic hydrocarbons, contains solvents reliable protection against corrosion excellent penetrating properties, penetrates rust, displaces water
	Adhesive chain spray		semi-synthetic		for heavy loaded chains of motorbikes	outstanding adhesive and penetrating properties for optimum lubrication long-term protection against corrosion economical usage
	Silicone spray		silicone oil		highly fit for the protection and preservation of sealing components made of rubber	forms protective film which is odourless, water- and weatherproof and lightfast



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ADDINOL high-performance lubricants in more than 90 countries and on all continents.

handed over by:



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