



## INDUSTRIAL SPECIAL GEAR OILS

# ADDINOL GEAR OIL 100 F, 150 F, 220 F, 320 F, 460 F, 680 F

### PRODUCT DESCRIPTION

ADDINOL GEAR OIL ... F are based on selected mineral oil raffinates and an ideally tuned zinc and ash-free additive combination.

Temperature range up to +100°C.

### APPLICATION

- Excellent suitability for all types of closed industrial gears with spur gearing and bevel gearing tooth systems
- Also applicable for immersion and circulation lubrication
- Preferable applicability in paper industry in industrial gears with high impact of foreign particle
- Also suitable for the lubrication of heavy-loaded sliding and roller bearings, joints and guide systems

### SPECIFICATIONS

Meets the requirements according to:

- DIN 51517-3 (2014)
- ISO 12925-1 (2002)
- AGMA 9005-E02 (2002)

Approved by:

- Siemens MD (Flender Rev. 15)  
(Gear Oil 150 F, 220 F, 320 F, 460 F, 680F)

Viscosity grade corresponds to:

- ISO classification 3448
- DIN 51519

### DELIVERY

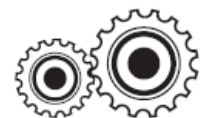
Delivery preferable in tanker and drums.

### CHARACTERISTICS

- Excellent scuffing load capacity and very good protection against wear
- Good micro-pitting resistance
- High ageing stability
- Protection against rust and nonferrous metal corrosion
- Low foaming tendency
- Very good compatibility with elastomers
- Free from zinc and ash

### ADVANTAGES AND BENEFITS

- Longer machine lifetime (reduced running costs)
- Lowest fatigue effects on machine elements
- Long lifetime of the oil
- Very good protection of the machine parts also in multi metal systems
- Lowering of the maintenance and repair costs
- High safety against formation of foam also under high impact of foreign particles
- Improved protection against leakages and long lifetime of the sealing material
- No formation of deposits





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## SPECIFICATIONS AND TYPICAL PARAMETERS

Feature	Test condition / unit		Gear Oil 100 F	Gear Oil 150 F	Gear Oil 220 F	Gear Oil 320 F	Gear Oil 460 F	Gear Oil 680 F	Method acc. to	
ISO-VG			100	150	220	320	460	680	DIN 51519	
Density	at 15°C	kg/m <sup>3</sup>	883	890	895	901	905	905	DIN 51757	
Viscosity	at 40°C	mm <sup>2</sup> /s	100	150	215	315	450	680	ASTM D 7042	
	at 100°C	mm <sup>2</sup> /s	11.5	15	19	24	31	41		
Viscosity index			101	98	98	97	96	102	DIN ISO 2909	
Flash point	COC	°C min.	245	250	250	255	264	265	DIN EN ISO 2592	
Pour point			°C max.	-26	-23	-21	-15	-14	-11	ASTM D 7346
Corrosion protection on steel	method A	corr.level	passed						DIN ISO 7120	
Corrosivity on copper	at 100°C, 3h	corr.level	1						DIN ISO 2160	
Micro-pitting test			high (> 10)						FVA Nr. 54	
Ageing behaviour, increase of viscosity	after 312 h at 121 °C	%	≤ 5			≤ 8			ASTM D2893	
FZG A/16.6/90			stage load	> 12						ISO 14635-1
Foaming characteristics	at 24°C	ml / ml	0 / 0						ASTM D 892	
	at 93.5°C	ml / ml	0 / 0							
	at 24°C after 93.5°C	ml / ml	0 / 0							
VKA welding load			N	2400 / 2200	2600 / 2400	2800 / 2600		DIN 51350-2		

### ADDINOL - The Experts for High-Performance Lubricants

We at ADDINOL develop and produce more than 600 high-performance lubricants of the new generation. Among these are automotive lubricants for highest demands and pioneering developments for industrial applications. Our customers all over the world benefit from the high and stable quality of our ADDINOL high-performance lubricants, our know-how and the individual customer advisory service of our competent experts. Our company has world wide activities. ADDINOL high-performance lubricants are distributed by more than 90 international partners.

The data given in this product sheet represent our current level of knowledge and experience. Due to the various specific application they do, however, not discharge the user from his own examination. The information provided herein may not be used to derive a legally binding warranty of specific properties or the suitability for a certain purpose of application. Detailed security-concerning and toxicological data as well as security instructions for each product can be taken from the corresponding Material Safety Data Sheets (MSDS). High-performance lubricants from ADDINOL are under continuous development. Therefore, ADDINOL Lube Oil GmbH keeps the right to change technical data in this product data sheet without notification. In case of doubt, please do not hesitate to contact our customers' advisory service.