

Product	<b>Sinopec L-CKD Heavy Duty Industrial Gear Oil</b>
Summary	<b>Product description</b> Sinopec L-CKD Heavy Duty Industrial Gear Oil is a range of high-performance gear oils formulated with high-quality mineral oils and an advanced multifunctional additive. These oils are designed for use in enclosed industrial gear drives where they offer excellent extreme pressure and load carrying properties.

## Applications

Sinopec L-CKD Heavy Duty Industrial Gear Oil is suitable for use in:

- Enclosed industrial gear drives equipped with circulation or splash-lubrication systems, operating under normal, heavy or shock-loaded conditions.
- Plain or antifriction bearings running under heavy or shock-loaded conditions.
- Heavy-duty gearboxes in a wide range of applications and industries, for example, in conveyers, presses, extruders and crushers in the construction, mining, steel and chemical sectors.

## Features and benefits

- Excellent extreme pressure(EP) and antiwear performance protect gear teeth and bearing surfaces against seizure, scuffing, spalling and wear, even in severe high-load and shock-loading conditions, extending component life and lowering operating noise.
- Excellent thermal and oxidation stability minimise the build up of sludge and varnish deposits that can reduce component life; and ensure lubricant stability and longer life even with high bulk oil temperatures, reducing the maintenance costs associated with oil changes.
- Protection against copper corrosion and rusting extends the life of copper alloys and steel components.
- Good antifoaming properties ensure optimum oil film thickness, protecting against wear, and minimising leakage and overflow from gear boxes and oil reservoirs.
- Excellent water separation properties prevent the formation of emulsions and allow excess water to be easily drained from the system, ensuring effective corrosion prevention, optimum lubrication and protecting components against surface fatigue and wear.
- Available in a wide range of viscosity grades to meet the specific needs of the application.
- Fully compatible with common seal materials, to extend seal life and prevent fluid leakage.

# Product Data Sheet

## Typical data

<b>Sinopec L-CKD Heavy Duty Industrial Gear Oil</b>							
ISO viscosity grade	100	150	220	320	460	680	1000
Kinematic viscosity, ASTM D 445							
cSt @ 40°C	99.16	149.9	217.0	313.0	432.0	688.7	1002.0
cSt @ 100°C	11.08	14.5	18.3	23.1	29.6	42.0	57.0
Viscosity index, ASTM D 2270	96	95	93	92	97	102	110
FZG scuffing test, fail load stage, A/8.3/90, DIN 51354	12+	12+	12+	12+	12+	12+	12+
Timken OK load, lb, ASTM D 2782	60	60	60	60	60	60	60
Four ball EP, ASTM D 2783							
weld load, kg	250	250	315	315	315	315	315
load wear index	465	465	549	565	588	587	605
Rust prevention, synthetic sea water, ASTM D 665B	pass	pass	pass	pass	pass	pass	pass
Copper corrosion, 3 hours @ 100°C, ASTM D 130	1b	1b	1b	1b	1b	1b	1b
Foaming characteristics, ASTM D 892							
sequence I	0/0	0/0	0/0	0/0	0/0	0/0	0/0
sequence II	10/0	10/0	10/0	10/0	10/0	20/0	20/0
sequence III	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Demulsibility @ 82°C, ASTM D 2711							
water in oil, %	1.0	0.8	0.5	0.5	0.9	0.8	1.0
emulsion, ml	0.5	0.3	0.2	0.5	0.2	0.60	0.8
separated water, ml	84.0	83.0	86.3	84.6	83.2	81.9	81.5
Water separability, time to 40/37/3, @ 82°C, mins, ASTM D 1401	10	15	15	20	25	30	35
Pour point, °C, ASTM D 97	-17	-14	-12	-9	-9	-9	-9
Flash point (COC), °C, ASTM D 92	246	249	242	250	238	270	246
Density @ 20°C, kg/cm <sup>3</sup> , ASTM D 4052	878.8	888.7	886.3	896.6	898.7	899.5	898.5

These data are given as an indication of typical values and not as exact specifications.

# Product Data Sheet

## Industry and OEM specifications

<b>Sinopec L-CKD Heavy Duty Industrial Gear Oil meets the performance requirements of the following industry specifications:</b>	
AGMA	9005-E02 (EP)
DIN	51517 CLP (Part 3)
AIST (US Steel)	224
ISO	12925-1 CKD

<b>Sinopec L-CKD Heavy Duty Industrial Gear Oil meets the performance requirements of the following OEM specifications:</b>	
Cincinnati Lamb	P-77 (ISO VG 150), P-74 (ISO VG 220), P-59 (ISO VG 320), P-35 (ISO VG 460), P-34 (ISO VG 680)
David Brown	S1.53.101
Rossi Motoriduttori	Recommended lubricant
<b>Sinopec L-CKD Heavy Duty Industrial Gear Oil holds the following formal OEM approvals:</b>	
SEW-Eurodrive	Approved (ISO VG 220) by SEW China

## Accuracy of information

Data provided in this PDS is typical and subject to change as a result of continuing product research and development. The information given was correct at the time of printing. The typical values given are subject to variations in the testing procedures and the manufacturing process may also result in slight variations. Sinopec guarantees that its lubricants meet any industry and OEM specifications referred to on this data sheet.

Sinopec cannot be held responsible for any deterioration in the product due to incorrect storage or handling. Information on best practice is available from your local distributor.

## Product and environmental safety

This product should not cause any health problems when used in the applications suggested and when the guidance provided in the Material Safety Data Sheet (MSDS) is followed. Please consult the MSDS for more detailed advice on handling; MSDSs are available from your local distributor. Do not use the product in applications other than those suggested.

As with all products, please take care to avoid environmental contamination when disposing of this product. Used oil should be sent for reclamation/recycling or, if not possible, must be disposed of according to relevant government/authority regulations.

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