



## SPARTAN™ EP-C

### Industrial Extreme Pressure Gear Oil

#### Product Description

SPARTAN™ EP-C is the brand name for a family of premium quality industrial extreme pressure gear lubricants. They are formulated with high quality mineral oils and carefully selected high performance additives that work synergistically to provide excellent gear protection and long lubricant life. SPARTAN EP-C oils contain a sulphur/phosphorus Extreme Pressure additive system that provides high load carrying capability and excellent protection from wear. The thermal stability of SPARTAN EP-C helps reduce sludge formation and keep internal surfaces clean. SPARTAN EP-C oils provide excellent protection against corrosion of steel and copper containing alloys. They also have excellent demulsibility, so that water separates rapidly from the oil, simplifying drain off from gear cases and system reservoirs.

SPARTAN EP-C oils can be used in either splash or circulating systems, wherever industrial gear oil is recommended. All SPARTAN EP-C grades are suitable for use in a variety of applications in industrial gear drives including; spur, helical, double helical (herringbone), spiral bevel and others. SPARTAN EP-C can be used for the lubrication of plain and anti-friction bearings and worm gears, where specified.

#### Features and Benefits

SPARTAN EP-C oils enjoy a reputation for quality and consistency, as well as the ability to handle a variety of tough gear applications.

Features	Advantages and Potential Benefits
Extreme Pressure wear protection	Reduced wear, extended gear service life
Resistance to sludge formation and staining	Gear box cleanliness, reduced maintenance and cleaning
Oxidation resistance and thermal stability	Long lubricant life, excellent protection for a variety metals and alloys, resulting in extended service life with reduced maintenance
Excellent demulsibility	Separates water rapidly, providing excellent protection against rust and corrosion
Excellent foam and air control	Reduced foam related heat and wear, leading to extended service life
Versatility	Fewer lubricants required, simplification of plant requirements

#### Applications

SPARTAN EP-C gear oils are used in a wide range of industrial spur, helical, bevel and steel-on-steel worm gearing.

- Drives for conveyers, agitators, dryers, fans, mixers, presses, pulpers, pumps, screens, extruders, oil well pumps
- Industrial bearings- journal and rolling contact, especially operating at low speeds and high loads

**Note:** Bulk oil temperatures should be kept below 90°C for optimum oil life. SPARTAN EP-C is not recommended for worm gears operating above 70°C. Above these temperatures limits Mobil SHC™ synthetic lubricants are strongly recommended.

## Specifications and Approvals

<b>SPARTAN EP-C grades meets or exceeds the requirements of:</b>	<b>Specification</b>
AGMA	9005-D94 3-EP
AGMA	9005-E02-EP
DIN	51517 CLP (Part 3)
ISO	ISO L-CKD (ISO 12925-1, 1996)
ISO	ISO L-CKC (ISO 12925-1, 1996)
TEXTRON POWER Transmission	Type E3
U.S. Steel	224
MAG LLS	P67, P76, P77, P74, P59, P35, P34

## Typical Properties

<b>Grade</b>	<b>68</b>	<b>100</b>	<b>All Season</b>	<b>150</b>	<b>220</b>	<b>320</b>	<b>460</b>	<b>680</b>	<b>1000</b>
Colour	2.0	1.0	4.5	2.5.0	<3.0	<3.0	<4.5	<4.5	7.0
AGMA Grade	2 EP	3 EP	4 EP	4 EP	5 EP	6 EP	7 EP	8 EP	--
Density @ 15°C, kg/m3	875	880	895	884	891	892	895	881	913
Viscosity, Kinematic, cSt									
@ 40°C	68	100	150	150	220	320	460	680	1000
@ 100°C	9.6	11.5	21.5	14.7	18.6	24.0	30.4	43.8	47.5
Viscosity, Brookfield, 16 hour soak, Poise									
@ -30°C	--	--	517	--	--	--	--	--	--
@ -32°C	385	--	--	--	--	--	--	--	--
@ -36°C	1400	--	--	--	--	--	--	--	--
@ -40°C	--	--	3714	--	--	--	--	--	--
Viscosity Index	120	99	170	96	93	95	100	112	90
Flash Point, COC, °C	205	230	192	240	240	240	240	240	246
Pour Point, °C	-36	-27	-36	-27	-15	-15	-15	-9	-9
Timken OK Load, kg (min)	27	27	27	27	27	27	27	27	27
Foam Test, Stability Sequence I, II, III	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Demulsibility, After 30 minutes, oil	40	40	40	40	40	40	40	40	40
Rust Test,	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Corrosion, Copper Strip, 3 hr @ 100°C	1b	1b	1b	1b	1b	1b	1b	1b	1b

Grade	68	100	All Season	150	220	320	460	680	1000
4 Ball Wear Test, 1800 rpm, 20 kg load for 1 hr @ 54°C, Scar Dia., mm	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
FZG Test, Fail Load Stage	>13	>13	>13	>13	>13	>13	>13	>13	>13
Total Acid Number, mg KOH/g	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75

*The values shown above are representative of current production. Some are controlled by manufacturing and performance specifications while others are not. All may vary within modest ranges.*

## Health and Safety

The products described on this data sheet are manufactured from high quality petroleum base stocks, carefully blended with selected additives. As with all petroleum products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact to skin, splashing into the eyes, ingestion or vapour inhalation. Please refer to the Material Safety Data Sheet for further information.

Note: The products described on this data sheet are NOT controlled under Canadian WHMIS legislation.

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Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit [www.exxonmobil.com](http://www.exxonmobil.com). ExxonMobil is comprised of numerous affiliates and subsidiaries, many with names that include Esso, Mobil, or ExxonMobil. Nothing in this document is intended to override or supersede the corporate separateness of local entities. Responsibility for local action and accountability remains with the local ExxonMobil-affiliate entities.

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