

ULTIMATE GREASE GUIDE

**GET THE
RIGHT
GREASE
FOR ANY
GIG**



How to use this guide

Get an introduction to our portfolio and access to quick references that will help you find the right grease for the right gig. Learn more about what we do at Chevron and the ingredients we use for optimum performance.

This guide includes everything you need to get the job done for your industry, parts applications, and operational efficiency. If you're new to purchasing grease, in these pages you'll also find overviews that will help to familiarize you with grease and how it works.



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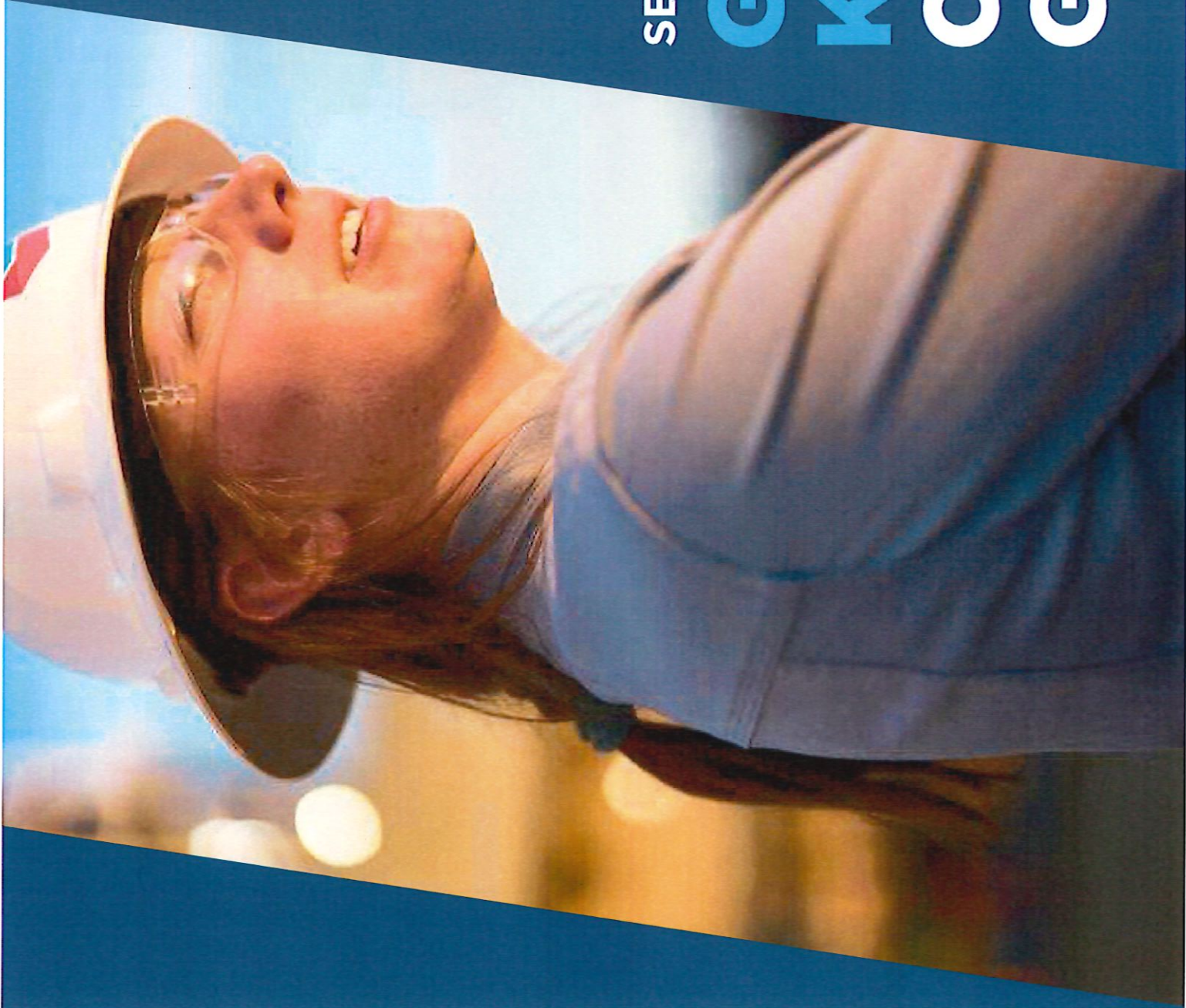
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SECTION 1

**GET TO
KNOW**

**CHEVRON
GREASES**

Get to know Chevron greases

We deliver industry leading durability, reliability and efficiency.

Chevron is an industry leader in heavy-duty lubricant products including Chevron grease. Our greases are technically advanced and formulated to provide high performance with long-life protection for on-highway, off-highway and in-plant applications.

It's vital to maintain your vehicles and equipment in the best possible condition and optimize efficiency. No matter what your vehicle or equipment encounters, Chevron greases are an excellent safeguard against potential parts failure.

Because at Chevron, we are determined to help you, your engines, your equipment, and your business, go further — through thick and thin.



CHEVRON GREASES

Chevron is an industry leader in heavy-duty lubricant products, including Chevron grease. Our greases are technologically advanced and formulated to provide high performance with long-life protection on and off road.



CALCIUM SULFONATE COMPLEX

Outstanding oxidation and thermal stability

- Rykon®



LITHIUM COMPLEX

Extra-duty, heavy-duty and extreme pressure applications

- Starplex®



POLYUREA

For filled-for-life and high-speed motor applications

- Black Pearl®



SPECIALTY

Extra-duty product for sprayable applications

- Texclad®



SIMPLE LITHIUM

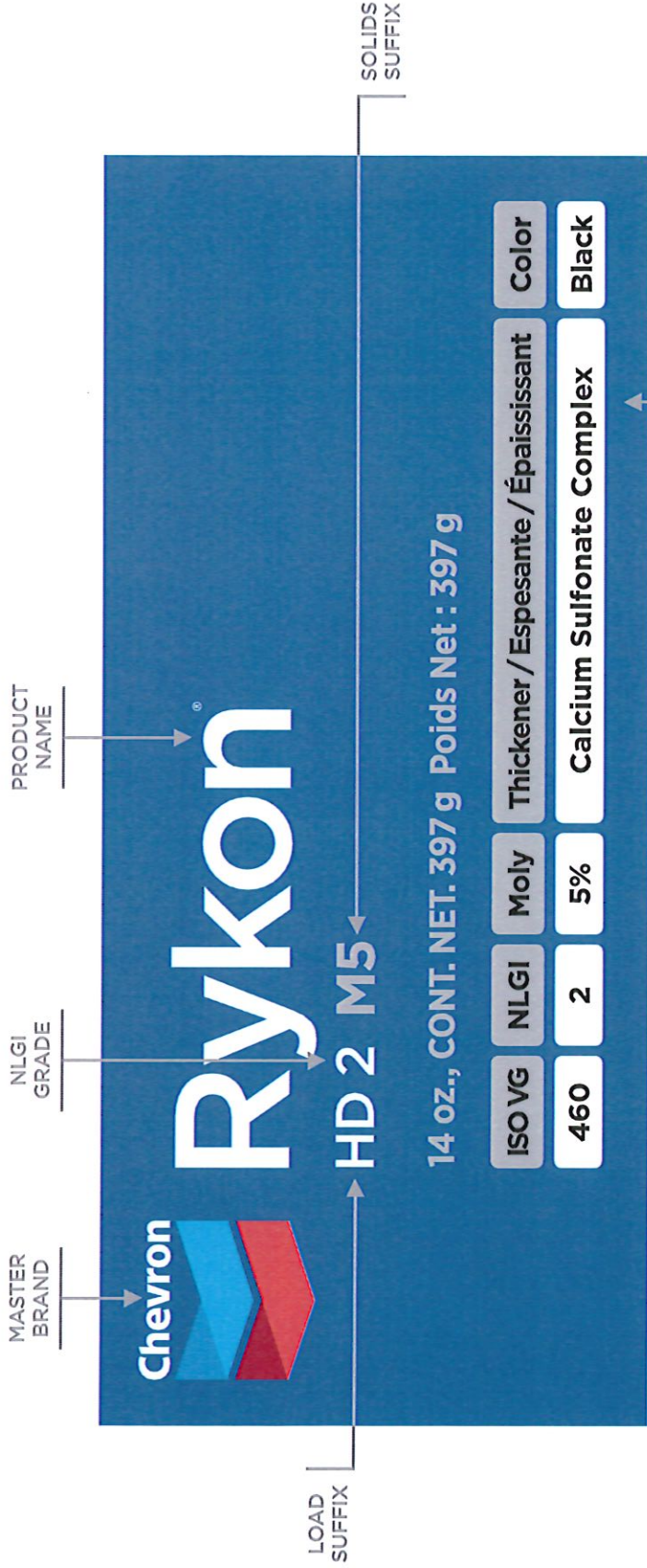
Heavy-duty multi-purpose greases for extreme-pressure applications

- Multifak®
- Ultra-Duty

How we name our products

Our portfolio contains a wide variety of greases. To help you find the grease you need more easily, we use a specific formula for naming each product. Every part of the name represents information about that specific product that is essential to your grease selection.

FORMULA FOR PRODUCT NAMING



DESCRIPTOR
(INCLUDES MORE PRODUCT DETAILS)

EXAMPLES OF WRITTEN PRODUCT NAMES

Starplex® Syn HD 1.5
Black Pearl® HM 1
Multifak® EP 00

KEY

HD = Heavy Duty
M5 = 5% Moly
2 = NLGI Grade

Learn our viscosity ranges

GREASE ACRONYMS KEY

- CG:** COUPLING GREASE
- CH:** CHASSIS
- EM:** ELECTRIC MOTOR
- EP:** EXTREME PRESSURE
- EPS:** EXTREME PRESSURE SPRAYABLE
- HD:** HEAVY DUTY
- HDS:** HEAVY DUTY SPRAYABLE
- HM:** HIGH-SPEED BEARINGS/ELECTRIC MOTOR
- M3:** 3% MOLY
- M5:** 5% MOLY
- MP:** MULTI-PURPOSE
- SFE:** SEMI-FLUID EXTREME
- SRI:** SUPER RUST INHIBITOR
- SYN:** SYNTHETIC
- WR:** WIRE ROPE
- XD:** EXTRA DUTY
- XDS:** EXTRA DUTY SPRAYABLE

VISCOSITY GRADE



SECTION 2

LEARN ALL ABOUT GREASE



Grease 101

What does grease do?

Grease is a lubricant that coats moving surfaces and prevents potentially damaging metal-to-metal contact.

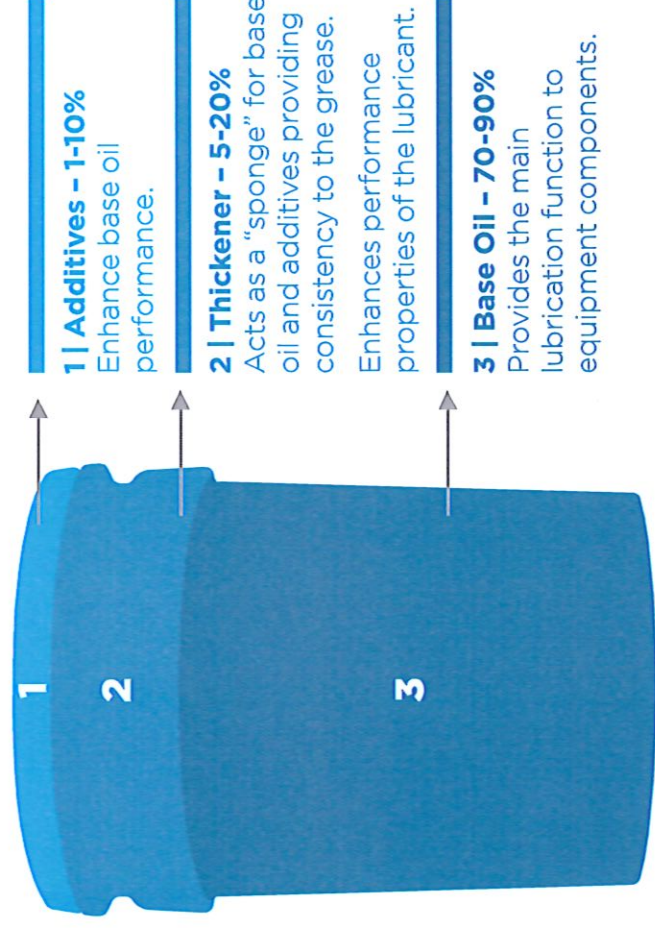
Other benefits of grease include:

- Reduce friction and wear
- Protect against rust and corrosion
- Act as a sealant to keep out contaminants
- Minimize re-lube intervals
- Minimize leaks
- Lubricate extreme applications where oil will not work

What is Grease?

There are three components that form lubricating grease:

- 1 | ADDITIVES
- 2 | THICKENERS
- 3 | BASE OILS



1 | Additives - 1-10%
Enhance base oil performance.

2 | Thickener - 5-20%
Acts as a “sponge” for base oil and additives providing consistency to the grease. Enhances performance properties of the lubricant.

3 | Base Oil - 70-90%
Provides the main lubrication function to equipment components.

Why thickeners matter

Thickeners provide the main structure and consistency of the grease. Without a thickener, grease would not be able to create a barrier that stays in place and instead would leak out immediately. Centrifugal force, compression, and gravity also impact the efficiency of grease, so that is why finding the right thickener for the job is key.

At Chevron, we categorize our grease by different thickening agents, making it easier to find the right product for your needs.

Grease classifications and grades

Here we will take a closer look at the main measurements used across industries and applications for grease, what these ratings mean, and how they impact the function of the grease.



Grease has three main qualities that are measured and rated.

1 | Consistency

2 | Viscosity

3 | Heat Resistance

1 | Consistency

The measure of consistency is called penetration. This grease classification is assigned by the National Lubricating Grease Institute (NLGI) and measured with a tool called a penetrometer instrument.

NLGI Consistency Examples

- A lower NLGI Grade Number (000 through 1) = Softer/Fluid grease
- A middle NLGI Grade Number (2) = Common use grease
- A higher NLGI Grade Number (3 to 6) = Harder/Stiffer grease

NLGI GRADE NUMBERS

Fluid (000 through 1)	Number	Worked Penetration, P ₆₀
	000	445-475
	00	400-430
	0	355-385
	1	310-340
Common Use (2)	2	265-295
Solid (3-6)	3	220-250
	4	175-205
	5	130-160
	6	85-115

(Worked Penetration for a grease is achieved when a grease is churned 60 round-trip strokes in a standard worker [a standard piece of grease equipment to work grease to simulate real world grease activity] at 77°F [25°C]).

2 | Viscosity

Viscosity is the most important characteristic of grease. Like other lubricants, base oil primarily provides the lubricant film, but it's the thickener that holds it together. Film thickness is a result of viscosity. When increasing the speed of rotation, the viscosity will need to decrease to provide a more protective film thickness and create a greater resistance to flow.

The classification system for grease viscosity was established by the International Standards Organization (ISO) and is determined using a tool called a viscometer.

ISO Viscosity Examples

- ISO viscosity grade ≤ 100 = motors, high-speed
- ISO viscosity grade 220 = most applications
- ISO viscosity grade 460 = higher loads, medium speeds
- ISO viscosity grade 680+ = highest loads, slowest speeds

3 | Heat Resistance

Heat resistance identifies at what temperature the performance of grease is compromised. This measurement process and the quality control benchmarks are developed by the American Society for Testing Materials (ASTM) and is called the Dropping Point.

The Dropping Point identifies the maximum temperature when grease transforms from a semi solid to a liquid and loses its protective qualities. This measurement is determined using a thermometer and aluminum block oven.

The NLGI Service Categories will also help determine what greases are suitable for certain applications, ensuring the grease requirement exceeds the operating temperature of equipment to maintain its integrity.

How experts measure the Dropping Point

- Grease is applied to the wall of a test cup.
- Oven temperature is selected as defined by ASTM.
- The “dropping point” of the grease is when one (1) drop of oil falls from the test cup.

SECTION 3

FIND THE RIGHT GREASE



Chevron industrial grease for every segment, application and condition

We understand what drives your business and we have you covered when it comes to durability, reliability and efficiency. Selecting the right premium grease for the appropriate application, segment and condition is what will help drive total vehicle/equipment efficiency, ensuring your parts and equipment last longer, and your business goes further.

KEY SEGMENTS	APPLICATIONS	CONDITIONS
AUTOMOTIVE	ELECTRIC MOTORS	HIGH TEMPERATURE
FLEET/OWNER OPERATOR	CENTRALIZED SYSTEMS	LOW TEMPERATURE
SERVICE TRUCKS	GEARS	HIGH SPEED
BUSES	COUPLINGS	LOW SPEED
CONSTRUCTION	BEARINGS - HEAVY LOADED	SHOCK / EXTREME LOAD
AGRICULTURE	BEARINGS - LIGHT LOADED	HIGH MOISTURE
MINING	MULTI-PURPOSE	BOUNDARY FILM LUBRICATION
MANUFACTURING		
MARINE		
POWER GENERATION		
OIL AND GAS		

Choose the right grease by application

When considering which product is right for you, specific application requirements can help you narrow it down.

BEST

Goes beyond requirements. The most technically advanced formulation providing extended service protection under the most adverse climates and tough operating conditions.

BETTER

Exceeds minimum requirements. Providing exceptional protection for more targeted applications and conditions.

GOOD

Meets requirements fully. Premium grease for wide range of applications.

SATISFACTORY

Satisfactory for use where OEMs require a specific attribute in the grease, such as moly.

CALCIUM SULFONATE
COMPLEX



LITHIUM COMPLEX



POLYUREA



SIMPLE LITHIUM



SPECIALTY



Choose the grease for the right conditions

Chevron greases excel when protecting key components in adverse climates and tough operating conditions.

BEST

Goes beyond requirements. The most technically advanced formulation providing extended service protection under the most adverse climates and tough operating conditions.

BETTER

Exceeds minimum requirements. Providing exceptional protection for more targeted applications and conditions.

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Meets requirements fully. Premium grease for wide range of applications.

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CALCIUM SULFONATE
COMPLEX



LITHIUM COMPLEX



POLYUREA



SIMPLE LITHIUM



SPECIALTY





	High Temp.	Low Temp.	High Speed	Low Speed	Shock, Extreme Load	High Moisture
CALCIUM SULFONATE COMPLEX						
Rykon HD 2	█	█		█	█	█
Rykon HD 2 M5	█			█	█	
Rykon EP 2	█	█	█	█	█	█
LITHIUM COMPLEX						
Starplex [®] Syn XD 1.5	█			█	█	█
Starplex Syn HD 1.5	█		█			
Starplex Syn EP 1 M5	█	█		█	█	█
Starplex HD 1 M3		█		█	█	█
Starplex HD 1 M5		█		█	█	█
Starplex HD 2 M3		█		█	█	█
Starplex HD 2 M5		█		█	█	█
Starplex EP 00		█				
Starplex EP 0		█				
Starplex EP 1 M3	█	█	█	█	█	█
Starplex EP 2 M3	█	█	█	█	█	█
Starplex EP 2 M3	█	█	█	█	█	█
Delo [®] ESI EP 2	█	█	█	█	█	█
POLYUREA						
Black Pearl [®] HM 1		█				
Black Pearl EP 1			█			
Black Pearl EP 2			█			
Black Pearl SRI 2			█			
Delo Syn-Grease [™] SFE EP 0			█			
SIMPLE LITHIUM						
Ultra-Duty XD 00		█				
Ultra-Duty HD 0		█				
Ultra-Duty HD 1		█		█	█	█
Ultra-Duty HD 2		█		█	█	█
Multifak [®] CG			█			
Multifak EP 000		█				
Multifak EP 00		█				
Multifak EP 0		█				
Multifak EP 1		█		█	█	█
Multifak EP 2		█		█	█	█
SPECIALTY						
Texclad [®] 2					█	

Other grease selection factors

The DN Value

One of the most common grease applications is for lubricating bearings. The NLGI and ASTM has developed a system called the DN Value which looks at the grease viscosity requirements for the two main types of bearings: journal and rolling element.

The DN Value is determined by the outer diameter of the bearing and the operating speed.

BEARING DN VALUES AND RECOMMENDED VISCOSITY

BEARING TYPE	DN VALUE	RECOMMENDED NLGI CONSISTENCY GRADE NUMBER	RECOMMENDED BASE OIL VISCOSITY
Journal	<200,000 (low speed)	NLGI 2 or higher	High viscosity base oil with >500 SUS*
Journal	>200,000 (high speed)	NLGI 1 or 2	Low viscosity base oil 100-500 SUS
Rolling Element	<200,000 (low speed)	NLGI 2 or higher	High viscosity base oil with >500 SUS
Rolling Element	>200,000 (high speed)	NLGI 1 or 2	Low viscosity base oil 100-500 SUS

*Saybolt Universal Seconds (SUS) is a measurement used to rate oil viscosity.

Bearing examples

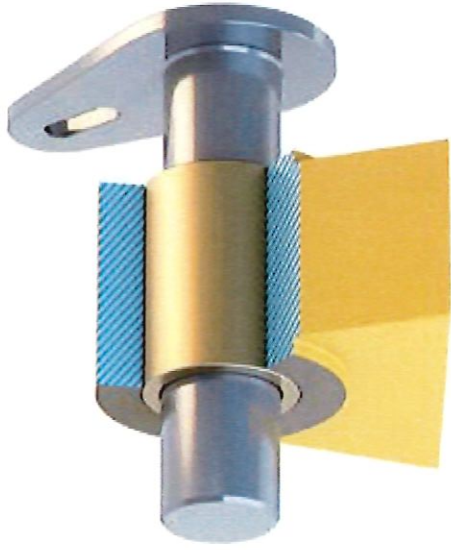
NEEDLE BEARINGS



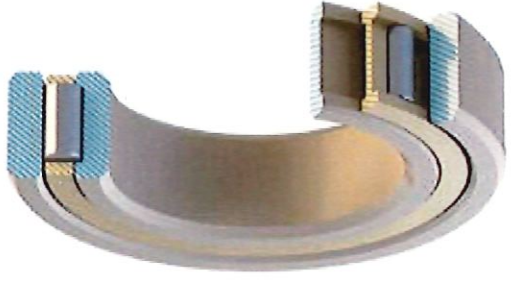
BALL BEARINGS



PIN / BUSHING



ROLLER BEARINGS



Other grease selection factors

NLGI Certification Marks

Some machinery and automotive equipment will specify in the owner manual the specific NLGI Certification Mark to look for on your grease product to ensure proper service. These classifications were made in response to the ASTM D4950 Standard Classification and Specification for Automotive Service Grease, to help make it simpler to find the right products no matter the grease manufacturer and category of product requiring grease application.

NLGI CATEGORIES:

- LA chassis
- LB chassis
- GA wheel bearings
- GB wheel bearings
- GC wheel bearings
- HPM (high-purpose multi-use)



What to look for

After finding the NLGI Certification Mark in your owner manual, look for a label like this on your grease product.

ISO VG	NLGI	Moly	Thickener / Espesante / Épaississant	Color
460	2	5%	Calcium Sulfonate-Complex	Black

Browse Chevron grease products by thickener type

In the previous pages, we shared a brief overview of our how we organize greases by thickener type. Use the following pages to compare thickener types and learn more about the benefits, uses, and applications of each grease.

THICKENER TYPE AND PRODUCT LINES AT A GLANCE

THICKENER TYPE	PRODUCT LINE	OVERVIEW
Calcium Sulfonate Complex	Rykon®	Best grease for heavy duty and extreme pressure applications.
Lithium Complex	Starplex®	Better grease for extra duty, heavy duty and extreme pressure applications.
Polyurea	Black Pearl®	Better grease for heavy duty, extreme pressure and some high-speed motor applications.
Simple Lithium	Multifak® Ultra-Duty	Good multi-purpose grease for some heavy duty and extreme pressure applications.
Specialty	Texclad®	Specialty grease for extra duty, heavy duty and extreme pressure sprayable applications.

CALCIUM SULFONATE COMPLEX

THICKENER OVERVIEW

Calcium Sulfonate Complex offers superior quality in most product performance attributes. It provides outstanding oxidation and thermal stability at higher operating temperatures, as well as water-resistance and load carrying properties.



RYKON® HD 2 M5

A high-viscosity, heavy-duty grease with a thick consistency to enable stability and to keep the grease in place without dripping off in excessive heat.

OVERVIEW:

- ISO VG: 460
- NLGI: 2
- Color: Gray-black
- Moly: 5%

BEST USES:

- Off-road mobile and stationary mining equipment
- Cement, manufacturing, and forestry equipment

APPLICATIONS:

- Off highway, off-road bearings, and centralized systems

CONDITIONS:

- High temperatures
- Heavy duty loads
- Water-resistant

FEATURES:

- Able to meet wide off-road OEM application ranges using one common product line, reducing field inventory



RYKON® HD 2

Grease with superior water-resistance performance to protect your equipment from failures and your operation from downtime. Designed for plain and anti-friction bearing applications operating under high stress/high load conditions, coupled with high ambient temperatures.

OVERVIEW:

- ISO VG: 460
- NLGI: 2
- Color: Tan
- Moly: No

BEST USES:

- Off-highway mobile equipment: Cement/aggregate, construction, and mining
- Stationary equipment: Cement/aggregate, forestry, and manufacturing
- Paper products, agriculture, light duty off-road vehicles, steel mills

APPLICATIONS:

- Pins and bushings, pumps, bearings, and general lubrication

CONDITIONS:

- Low temperatures
- Low speeds
- Heavy duty loads
- Water-resistant

FEATURES:

- Overbased calcium complex thickener that produce multi-purpose, high-performance products that protect against corrosion, wear, have high dropping points and good thermal stability
- Specially formulated for plain and anti-friction bearing applications operating under high stress/high load and wet conditions typically found in heavy duty off-road applications
- Designed to lubricate and protect equipment that is subjected to demanding conditions



RYKON® EP 2

A grease that provides extreme pressure high load carrying capability.

OVERVIEW:

- ISO VG: 220
- NLGI: 2
- Color: Tan
- Moly: No

BEST USES:

- Multi-purpose product
- Automobile or truck fleets

APPLICATIONS:

- Multi-purpose, off-road bearings, 5th wheel, and universal joints

CONDITIONS:

- Effective in high temperatures
- High speeds
- Extreme pressure loads
- Water-resistant

FEATURES:

- Good protection from wear, shock loading, and corrosion

LITHIUM COMPLEX

THICKENER OVERVIEW

Lithium Complex provides excellent oxidation and thermal stability performance at high operating temperatures. They provide good water-resistance and load carrying properties, but less effective with cold temperature pumpability.

STARPLEX® SYN XD 1.5

A high-performance grease specially formulated for extreme pressure bearing applications operating under high and low temperature conditions. Suitable for difficult applications requiring extended lubrication intervals.

OVERVIEW:

- ISO VG: 1200
- NLGI: 1.5
- Color: Light tan
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Power generation and oil and gas equipment
- Cement, construction, and forestry equipment
- Inland marine equipment

APPLICATIONS:

- For use in application with operating temperatures up to 232°C (450°F) with a dropping point of approximately 280°C (536°F)



CONDITIONS:

- High temperature stability and low temperature lubrication
- Good at low speeds
- Excellent shock load protection
- Excellent water-resistance

FEATURES:

- Excellent corrosion and rust protection
- Optimal relubrication intervals



STARPLEX® SYN HD 1.5

A high-performance grease specially formulated for extreme pressure bearing applications operating under high and low temperatures.

OVERVIEW:

- ISO VG: 460
- NLGI: 1.5
- Color: Tan
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Power generation and oil and gas equipment
- Cement, construction, and forestry equipment
- Inland marine equipment

APPLICATIONS:

- Recommended for use in applications with temperatures up to 232°C (450°F), with a dropping point of approximately 280°C (536°F)

CONDITIONS:

- High temperature stability
- Excellent water washout performance

FEATURES:

- Excellent corrosion protection
- Low temperature pumpability and lubrication



STARPLEX® SYN EP 1 M5

Designed for plain and anti-friction bearing applications operating under high stress/high load conditions coupled with high ambient temperatures typically found in heavy duty off-road applications.

OVERVIEW:

- ISO VG: 220
- NLGI: 1
- Color: Black
- Moly: 5%

BEST USES:

- Off-road mobile and stationary mining equipment
- Power generation and manufacturing equipment
- Cement and construction equipment

APPLICATIONS:

- For use in the most demanding applications, especially effective in very cold climates where temperature ranges vary dramatically in a short period of time

CONDITIONS:

- Performance across a wide temperature range
- Shock loading capability
- Water-resistance

FEATURES:

- Corrosion and wear protection
- Specifically designed to lubricate and protect equipment that is subjected to demanding conditions



STARPLEX® HD 1, 2

Designed for plain and anti-friction bearing applications operating under high stress/high load conditions coupled with high ambient temperatures typically found in heavy duty off-road applications.

OVERVIEW:

- ISO VG: 460
- NLGI: 1, 2
- Color: Red
- Moly: No

BEST USES:

- Stationary and off-road mobile mining equipment
- Agriculture, construction, and forestry equipment
- Inland marine equipment
- Manufacturing and cement equipment
- Waste hauler

APPLICATIONS:

- Wide temperature range applications

CONDITIONS:

- Performance across a wide temperature range
- Shock load protection
- Water-resistant

FEATURES:

- Corrosion and rust protection
- Excellent for use in applications where sustained high operating temperatures are common
- Not intended for high-speed bearing applications such as those found in electric motors due to the greases' high viscosity base stocks formulation



STARPLEX® HD 1, 2 M3, M5

Available with molybdenum disulfide, these greases are designed for plain and anti-friction bearing applications operating under high stress/high load conditions coupled with high ambient temperatures.

OVERVIEW:

- ISO VG: 460
- NLGI: 1, 2
- Color: Black
- Moly: 3%, 5%

BEST USES:

- Stationary and off-road mobile mining equipment
- Agriculture, construction, and forestry equipment
- Inland marine equipment

APPLICATIONS:

- Recommended for applications operating over wide temperature ranges

CONDITIONS:

- Water-resistance in both submerged and direct pressure spray

FEATURES:

- Corrosion and wear protection
- Shock load protection
- Not intended for high-speed bearing applications such as those found in electric motors due to the greases' high viscosity base stocks formulation



STARPLEX® EP 00, 0, 1, 2

High performance, long-service greases for multi-purpose protection of ball and roller bearings under high temperature and extreme operating conditions.

OVERVIEW:

- ISO VG: 220
- NLGI: 00, 0, 1, 2
- Color: Red
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Cement, construction, forestry, and agriculture equipment
- Cars, SUVs, medium/large trucks, and buses
- Gas pick-up trucks or sprinter vans
- Diesel light duty or pick-up trucks
- Automobile or truck fleets
- Oil change centers
- Waste hauler

APPLICATIONS:

- Use in the lubrication of trucks, tractors, and passenger cars
- Use on ball joints, universal joints, chassis points, wheel bearings, water pumps, and fifth wheels
- High temperature disc brake bearing

CONDITIONS:

- Good across a wide range of temperatures and speeds
- Good water-resistance to prevent bearing washout

FEATURES:

- Corrosion and rust protection even in wet conditions
- Low temperature pumpability
- Extreme pressure protection



STARPLEX® EP 1, 2 M3

A comprehensive line of greases that are available with or without molybdenum disulfide. These greases are technically advanced, extreme pressure greases for a wide variety of on-road applications.

OVERVIEW:

- ISO VG: 220
- NLGI: 1, 2
- Color: Gray/Black
- Moly: 3%

BEST USES:

- Off-road mobile and stationary mining equipment
- Agriculture, construction, forestry, and cement equipment
- Inland marine equipment
- Power generation, and oil and gas equipment
- Waste hauler

APPLICATIONS:

- Formulated for plain and anti-friction bearing applications operating under high stress/high load conditions

- Use in heavy duty off-road applications
- On-highway heavy-duty trucks, light-duty off-road vehicles, medium and light-duty trucks and buses, automobiles, and heavy duty on/off-highway road construction and maintenance vehicles

CONDITIONS:

- Low speeds
- Extreme pressure loads

FEATURES:

- Corrosion and wear protection
- Water-resistance
- Shock load protection
- Performance across a wide temperature range



BLACK PEARL® EP 1, 2

Multi-purpose, extreme pressure, water-resistant greases, delivering excellent wear protection in heavy load and shock load conditions. Suited for general lubrication in a variety of applications.

OVERVIEW:

- ISO VG: 220
- NLGI: 1, 2
- Color: Black
- Moly: No

BEST USES:

- Manufacturing and power generation equipment
- Injection molding and circulating equipment
- Lifts, compressors, and conveyors
- Steel mills and paper machines

APPLICATIONS:

- General lubrication service in many types of automotive and industrial applications

POLYUREA

THICKENER OVERVIEW

Polyurea is non-metallic with antioxidant capabilities. Provides good thermal stability and high temperature performance, but less effective for shear stability. Polyurea greases are an ideal choice for sealed-for-life applications.

CONDITIONS:

- Effective in a wide range of temperatures, especially high temperatures
- Water-resistance

FEATURES:

- Corrosion and rust protection
- Excellent pumpability at low temperatures
- High load capacity with shock load and low wear protection
- Excellent adhesion allows grease to stay in place and continue lubricating under most operating conditions



BLACK PEARL® SRI 2

A high temperature ball and roller bearing grease suitable for a wide range of applications and high RPM operations. This grease delivers excellent oxidation stability and bearing protection at operating temperatures up to 177°C (350°F).

OVERVIEW:

- ISO VG: 100
- NLGI: 2
- Color: Green
- Moly: No

BEST USES:

- Electric motors
- Off-road mobile and stationary mining equipment
- Cement, manufacturing, circulating, and injection molding equipment
- Power generation and oil and gas equipment
- Lifts, compressors, and conveyors
- Steel mills and paper machines

APPLICATIONS:

- Wide range of automotive and industrial applications

CONDITIONS:

- Recommended for operating temperatures of 150°C (302°F) and higher
- Suitable anti-friction bearings operating at high speeds (10,000 rpm and greater)

FEATURES:

- Excellent rust protection



BLACK PEARL® HM 1

A general purpose automotive and industrial grease where extreme low temperature performance is required.

OVERVIEW:

- ISO VG: 22
- NLGI: 1
- Color: Black
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Cement, construction, agriculture and forestry equipment
- Power generation and oil and gas equipment
- Diesel pick-up trucks or sprinter vans
- Automobile or truck fleets
- Cars, SUVs, passenger vehicles, and buses
- Commercial trucks
- Inland marine equipment

APPLICATIONS:

- Recommended where extreme low temperature performance is required
- Also recommended for environments with a wide ambient temperature range

CONDITIONS:

- Designed to lubricate in Arctic climates

FEATURES:

- Good rust protection
- Good pumpability at low temperatures down to -30°C (-22°F)
- Good load carrying capacity

SIMPLE LITHIUM

THICKENER OVERVIEW

Simple Lithium is a good general-use grease with low temperature properties such as pumpability and good working stability. It has good load carrying, shear stability and water-resistance properties.



MULTIFAK® CG

Grease specifically designed for lubricating high-speed flexible couplings where high centrifugal forces are present.

OVERVIEW:

- ISO VG: 700
- NLGI: N/A
- Color: Brown
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Cement, construction, manufacturing, and forestry equipment
- Power generation and oil and gas equipment
- Inland marine equipment

APPLICATIONS:

- For high-speed grease lubricated flexible couplings where high centrifugal forces are present

- Recommend for use in high-speed grid, gear, or chain couplings

CONDITIONS:

- Designed for high speeds
- High load-carrying capacity

FEATURES:

- Extreme pressure, rust, and oxidation protection
- Excellent low temperature pumpability down to 0°C (32°F)
- Exceptional film strength and excellent adhesion



ULTRA-DUTY XD 00

Ultra-Duty XD is a lithium based semi-fluid grease recommended for gear drives that specify an NLGI 00 grease.

OVERVIEW:

- ISO VG: 680
- NLGI: 00
- Color: Amber
- Moly: No

BEST USES:

- Medium, large, and commercial trucks
- Cement, mining, construction, forestry, and agricultural equipment
- Off-road mobile and stationary mining equipment

APPLICATIONS:

- Recommended for gear drives that specify an NLGI 00, semi-fluid grease

CONDITIONS:

- Low temperature lubrication
- A tacky consistency minimizes the risk of water washout

FEATURES:

- Excellent rust and corrosion protection
- Provides a thick film of lubricant to critical parts to help ensure long equipment life
- Unsuitable for applications requiring an extreme pressure grease



ULTRA-DUTY HD 0, 1, 2

Versatile, high-pressure greases with good adhesive properties. Performs and protects against wear and corrosion in a wide variety of automotive and industrial applications, including wet, muddy or dusty conditions.

OVERVIEW:

- ISO VG: 460
- NLGI: 0, 1, 2
- Color: Red
- Moly: No

BEST USES:

- Construction and forestry equipment
- Off-road mobile mining and agriculture equipment

APPLICATIONS:

- For use in automotive and industrial equipment under most conditions

CONDITIONS:

- Good for low speeds
- Load-carrying protection
- Water-resistant

FEATURES:

- Corrosion and rust protection
- Shock load protection
- Not for use in applications with very high operating temperatures



MULTIFAK® EP 000 / 00, 0, 1, 2

Multi-purpose extreme pressure greases that deliver water-resistance, rust and corrosion protection, and oxidation stability across a wide range of industrial and commercial applications.

OVERVIEW:

- ISO VG: 220
- NLGI: 000 / 00, 0, 1, 2
- Color: Red / Amber
- Moly: No

BEST USES:

- Cement, manufacturing, forestry, and agricultural equipment
- Off-road mobile and stationary mining equipment
- Power generation and oil and gas equipment
- Inland marine equipment

APPLICATIONS:

- 000: Formulated to meet the lubrication requirements of machinery having enclosed gear cases where housings and seals have lost their ability to retain conventional gear oils.

- 00, 0, 1, 2: Suitable for use in typical centralized lubrication systems

CONDITIONS:

- 000: Good in low temperatures
- 00, 0, 1, 2: Good water-resistance to prevent bearing washout

FEATURES:

- Good corrosion protection to protect bearing surfaces
- Simplified lubrication and low oil separation tendency



TEXCLAD® 2

A calcium-based grease that resists washout, provides good film strength and load carrying capabilities.

OVERVIEW:

- ISO VG: 1000
- NLGI: 2
- Color: Black
- Moly: No

BEST USES:

- Off-road mobile and stationary mining equipment
- Cement, construction, forestry, and agriculture equipment
- Power generation and oil and gas equipment
- Inland marine equipment
- Waste hauler

APPLICATIONS:

- Recommended for ball mill gears, traveling water screens, and forklifts
- For chain and sprocket lubrication and as a tenacious fifth wheel lubricant

SPECIALTY

THICKENER OVERVIEW

Our specialty thickener provides good shear stability and pumpability at lower temperatures. It demonstrates good water-resistance and high-temperature performance.



SECTION 4

**GET
MORE
FROM
YOUR
GREASE**

General grease guidelines

Greased bearing/component failures can normally be attributed to several consistent factors: lack of lubrication, contamination, incompatibility, over-greasing, grease usefulness.

Addressing these items as outlined below can help improve greased bearing/component life when applied:

1. LACK OF LUBRICATION

- Ensure all critical greased components are identified and scheduled in maintenance plan/intervals
- Tag/color code fittings/equipment that may be hard to locate
- Utilize delivery systems to help ensure grease gets to the component
- Check or replace blocked fittings/inspect delivery system
- Clean out or replace any blocked bearing/component areas

2. CONTAMINATION

- Ensure all grease pumping or application equipment is contaminant free
- Understand how to change out old and new grease containers and associated pumping equipment to eliminate contamination
- Wipe grease fittings before application of grease
- Do not leave grease containers open to the environment

3. INCOMPATIBILITY

- Try to consolidate number of greases used on site
- Refer to page 38 for changeover and incompatibility reference

4. OVER-GREASING

- Seals may rupture allowing grease to leak out of bearings into the environment or into other components like electric motor windings
- Ensure correct amount is applied at appropriate intervals
- Check for any grease hardening/thickener separation that may block grease application

5. GREASE USEFULNESS

- Visually check new grease containers and contents when they are opened
- A thin layer or small pools of separated oil on top of the grease in a newly opened container is acceptable
- Check containers for dents/broken seals/general condition to ensure grease can be applied appropriately
- Check color and texture with previous grease to ensure no noticeable changes from shelf life or wrong grease being utilized

As always, consult your local Chevron representative if there are any questions or if a product needs to be verified for application or useful life.

The importance of compatibility

If you're adding more lubricant to an already in-service grease or switching suppliers, it's important to follow a complete drain, flush and refill procedure. In situations where this isn't possible, it's critical to check the compatibility of the two greases. Some greases are not compatible with one another. The mixing of incompatible greases can lead to softening, hardening, or separation of base oils from the thickener. Compromised grease can leak out of the bearing and cause overheating or damage.

Check your grease compatibility

	Lithium	Lithium Complex	Aluminum Complex	Calcium	Calcium Sulfonate Complex	Barium Complex	Sodium	Bentone (Clay)	Polyurea
Lithium	Compatible	Compatible	Not Compatible - Full Clean Out Required for Change	Compatible	Check Compatibility with Chevron Lubetek*	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*
Lithium Complex	Compatible	Compatible	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*	Compatible	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*
Aluminum Complex	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Compatible	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change
Calcium	Compatible	Check Compatibility with Chevron Lubetek*	Not Compatible - Full Clean Out Required for Change	Compatible	Check Compatibility with Chevron Lubetek*	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*
Calcium Sulfonate Complex	Check Compatibility with Chevron Lubetek*	Check Compatibility with Chevron Lubetek*	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*	Compatible	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*
Barium Complex	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Compatible	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change
Sodium	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Compatible	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change
Bentone (Clay)	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Compatible	Compatible	Not Compatible - Full Clean Out Required for Change
Polyurea	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Not Compatible - Full Clean Out Required for Change	Check Compatibility with Chevron Lubetek*

COMPATABILITY CHART

- Compatible
- Check Compatibility with Chevron Lubetek*
- Not Compatible - Full Clean Out Required for Change

Table 1 should be used only as a guideline for determining compatibility. For the purpose of changing products in the field, the compatibility of the greases in question should be determined by laboratory testing.

Additional greasing procedures and considerations

PROPER GREASING INTERVALS AND AMOUNTS

Proper greasing intervals should be based on a number of factors including: OEM recommendations, ambient conditions, equipment operating hours, criticality of equipment or component, and maintenance plan.

Key notes on high temperature application

- Greases fail more rapidly as temperature of operation increases. This failure typically lies in the melting point of the thickener or dropping point of the grease. Oxidation also increases rapidly as temperature rises.
 - Most mineral-oil-based greases (of adequate dropping point) will operate successfully to about 121°C (250°F) at more frequent re-lubrication intervals. As service temperature rises, frequency of re-lubrication must increase.
 - If speed is high, bearing is large, or load severe, re-lubrication intervals should be even shorter. Where service is severe and/or contamination is unavoidable, re-lubrication is best carried out with a centralized lubrication system, and lubrication intervals may be measured in hours or minutes.
- Care should be taken when operating machinery at these elevated temperatures:
 - Evaluate the oil(s) used in the grease to ensure that the flash point of the oil(s) has not been exceeded
 - Proper quantity of grease to be pumped into greased bearings/components should be determined by your Lubrication or Maintenance Engineer who will typically utilize: OEM recommendations, bearing dimensions, severity of conditions, grease selection criteria, and maintenance plan to ensure correct amount is applied
- As a guideline the following formula can be used as reference:
Ounces of Grease required in Bearing = $0.114 \times \text{Bearing Outside Diameter (O.D.)} \times \text{Width (W)}$
 - Under/over-greasing reduces equipment reliability and increases potential failure rates and costs

General re-lubrication interval guidelines for rolling element bearings.*

As always, check specific OEM recommendations, ambient conditions and application before finalizing specific greasing intervals:

- 82°C (180°F) 6 months
- 104°C (220°F) 3 months
- 149°C (300°F) 1 month
- >149°C (300°F) 1 day to 1 month — check OEM recommendations and review grease type to determine correct interval at high temperatures.

*Assuming eight work hours per day



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