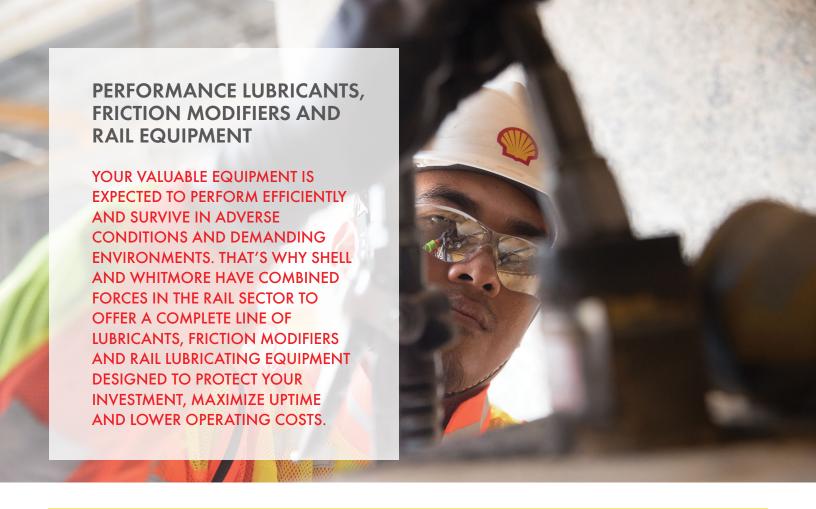
Shell & Whitmore Reliability Solutions



RAIL LUBRICATION SOLUTIONS





TOP OF RAIL FRICTION MODIFIERS

Shell Gadus (TOR Armor & TOR Armor Arctic)

Shell Gadus (TOR Armor) is a superior top of rail friction modifier specifically designed to provide optimum friction at the wheel-rail interface, substantially reducing noise, wear and lateral forces. High lateral forces lead to loosened tie plates and fasteners and can result in low rail rollover and decreases fuel efficiency; Shell Gadus (TOR Armor) greatly reduces lateral creep. When wheel creep occurs, it immediately increases positive friction, reducing the creep condition and returning the wheels to a healthy rolling motion. The result is a substantial reduction in vibrations, corrugations and high-frequency squealing. When wheel creep is not occurring, the coefficient of friction is lowered during normal rolling. The Federal Railroad Administration has conducted studies that show the use of a top of rail friction modifier can increase fuel efficiency, reduce notch dwell times, reduce lateral forces, and optimize coefficient of friction

Users can achieve a year-round solution by using regular Shell Gadus (TOR Armor) in hot to moderate climates and adding Shell Gadus (TOR Armor Arctic) in areas where temperatures dip below 10°F (-12°C) for extended periods of time.

Both grades of Shell Gadus (TOR Armor) are fully compatible and can be mixed in trackside applicators without changes to the performance characteristics other than the low temperature usage. Shell Gadus (TOR Armor) is engineered for use on heavy haul freight, intermodal, and transit rail applications.

Grades - Regular & Arctic

RAIL CURVE LUBRICANTS

Shell GadusRail S2 Wheel Flange Grease

Shell GadusRail S2 Wheel Flange Grease is a lithium soap thickened grease made with highly refined base oils, a special EP additive package and 3% molybdenum disulfide. The molybdenum disulfide acts to enhance anti-wear and load carrying properties, which are critical for the transport of railcars over the track. A highly shear stable tackifier improves grease adhesion to track surfaces and helps prevent oil bleeding. These greases also offer good resistance to the mechanical shear associated with trackside lubricator operation.

NLGI Grades - 0,1 & 2

Shell Gadus (Railmaster LFG)

Shell Gadus (Railmaster LFG) is a performance rail grease with graphite. It provides maximum protection to rails and wheel flanges. The coating that is deposited on the rail is tenacious, dense and unaffected by rain. This dark coating is easily seen several miles from the wayside applicator, making track inspection easy. Shell Gadus (Railmaster LFG) does not cause pump cavitation, rather than forming a vortex at the pump it moves down evenly in the holding tank. This grease forms a vertical bead as it emerges from the port of the wiping bar, and it does not spatter when hit by the wheel. Shell Gadus (Railmaster LFG), can be used over a wide temperature range. In many areas a single grade can be used year-round.

Grades - 0, 1, 1.5 & 2

Shell Gadus (RailArmor)

Shell Gadus (RailArmor) is a proven rail curve wheel flange grease that provides superior protection to extend rail and wheel life and reduce consumption costs. This performance grease raises the bar in all critical performance areas such as rail adhesion, rain resistance, wear protection and carry down from the wiping bar. Shell Gadus (RailArmor) greatly increases carry distance down the track. It reduces consumption by as much as 50% in areas where additional carry has no benefit.

Grades - 1, 1.5 & 2

Shell Gadus (RailArmor M & RailArmor M Arctic)

Shell Gadus (RailArmor M) extreme service rail curve lubricant raises the bar in all critical performance areas such as rail adhesion, rain resistance, wear protection and of course carry down from the wiping bar. It doesn't spatter when hit by the wheel or form strings that contaminate the area around the wayside. Extensive field service has shown that the goal has been achieved. One major railroad has reported that he now had grease on sections of track that had never seen grease before. Others reported that coverage could be maintained with grease volume reduced by 50% as compared to other premium rail lubricants. Gadus (RailArmor M) slumps evenly in the wayside reservoir and does not cause pump cavitation. In the wayside reservoir it moves cleanly down the walls with minimal vortex effect, despite its adhesiveness and robust consistency.

Users can achieve a year-round solution by using Shell Gadus (RailArmor M Arctic) in cold climates where temperatures dip to -40°F (-40°C).

Grade - 1.5, Arctic

Shell Gadus (BioRail)

Shell Gadus (BioRail) is a rail curve grease based on oils from vegetable sources that are 100% biodegradable. It has been certified by the USDA as biobased, and has earned USDA BioPreferred designation. Shell Gadus (BioRail) does not compromise performance to be environmentally responsible. It proves itself, not only in the laboratory but also where it counts, on the rail. Shell Gadus (BioRail) is suitable for lubrication of rail curves where it protects the gauge face and wheel flanges. Its stable chemistry ensures that it pumps, even in the coldest climates and stays on the rail in all weather conditions, even heavy rain.

Grades - 1, 1.5 & 2

SWITCH PLATE LUBRICANTS

Shell Gadus (EZ Switch)

Offering a tough, durable, long lasting shield of protection, Shell Gadus (EZ Switch) coats the switch plate and reduces wear. As the switch operates, the coating becomes denser in the contact area, enhancing wear protection. Shell Gadus (EZ Switch) can be applied to wet switches and resists rain; this lubricant becomes more resistant to rain as it dries

Shell Gadus (EZ Switch Clear)

Shell Gadus (EZ Switch Clear) is a biodegradable switch plate lubricant that facilitates easy movement of the switch and reduces the possibility of operator injury due to stiff switches. It also helps ensure the switch goes fully into position, reducing the risk of derailment. Shell Gadus (EZ Switch Clear) has the advantage of being non-staining to hands and clothing. EZ Switch Clear is inherently biodegradable per the test method OECD 301B.

NLGI Grade - ISO 46

LOCOMOTIVE ENGINE OILS

Shell Caprinus

Shell Caprinus oils are premium grade, heavy-duty engine oils intended mainly for railroad diesel engines of North American origin, particularly those manufactured by General Electric and General Motors Electro-Motive Division (EMD), and those requiring LMOA approval. Shell Caprinus oils use the latest additive technology which offers both environmental benefits and improved performance. Shell Caprinus oils do not contain zinc and are approved for use by GM-EMD for their engines fitted with silver piston-pin bearings and by GE for their latest locomotives.

Grades - 40, 20W40

Shell Rotella T4 Triple Protection (CK-4)

Shell Rotella T4 Triple Protection is a heavy duty synthetic blend engine oil meeting API CK-4. This oil hasbeen formulated to provide Triple Protection technology against wear, deposits and oil breakdown. Shell Rotella T4 Triple Protection oil uses advanced additive technology plus synthetic blend base oil to protect under the most severe engine conditions found in modern, low-emission engines. Recommended by a wide range of OEMs, suitable for both the latest low-emissions and old model equipment.

Grade - 15W-40

ROLLING STOCK & TRACTION MOTOR LUBRICANTS

Shell GadusRail TM Gear Grease

Shell GadusRail TM Gear Grease is a lithium soap thickened gear lubricant containing extreme pressure additives. This grease is especially suitable for the lubrication of railroad locomotive traction motor gears. Shell GadusRail TM Gear Grease offers long term and efficient gear protection against wear.

Shell Morling S4 B 460

Shell Morlina S4 B 460 oil is a high performance synthetic bearing and circulation lubricants, manufactured with high performance base fluids. They offer outstanding lubrication performance, including improved energy efficiency, filterability, and long service life even under challenging operating conditions.

Shell Alvania Grease EPD

Shell Alvania Grease EPD is an AAR specification long-life railroad grease with extreme pressure additives to provide higher load carrying capacity. The extreme pressure additives, when combined with the lithium/calcium thickener, provide jointly improved load carrying capacity and super water resistance, enhancing bearing protection. The overall superior performance of Shell Alvania Grease EPD means it can be used to rationalize grease stocks to one railroad axle bearing grease for all bearing types.

NLGI Grade - 1.5

Shell GadusRail S2 Traction Motor Bearing Grease

Shell GadusRail S2 Traction Motor Bearing Grease is manufactured to specifications that provide excellent mechanical stability and long service life, properties required for numerous critical anti-friction bearing applications. The product offers outstanding mechanical stability, long service life and fill-for-life capability and is targeted specifically at traction motor bearings of General Motors Electromotive Division (EMD) and General Electric locomotives.

Shell Cyprina 963

Shell Cyprina 963 is a premium product formulated for use in lubricating traction motor suspension bearings on locomotives and plain bearings in railcar journal boxes. It is a premium grade, high viscosity index, low pour point product containing a balanced heavy duty additive combination that will protect new journal bearings during the critical bear-in period and minimize friction in heavily loaded bearings. The rust and corrosion protection afforded by the heavy duty additive combination is further enhanced by an additional rust inhibitive additive. The product is formulated for all-year use, especially GE, EMD locomotives and applications requiring AARM-963 approval.

We provide unique solutions for reducing the total cost of lubrication.

GENERAL PURPOSE LUBRICANTS

Shell Gadus S5 V100

Shell Gadus S5 V100 is a multi-purpose, lithium complex grease based on synthetic base oils, containing antioxidants, EP-, wear- and rust preventing additives. The product contains a special friction modifier which is suitable for high speed bearings, taper roller bearings and cylindrical bearing, type NJ, NUP plus applications with an angle ring.

NLGI Grade - 2

Shell Spirax S4 TXM

Shell Spirax S4 TXM is a premium "universal tractor transmission oil" (UTTO) designed for use in transmissions, hydraulic systems, oil immersed brakes and other ancillary systems fitted to agriculture tractors and off-road equipment. Shell Spirax S4 TXM has excellent anti-oxidation, shear stability, anti-wear, anti corrosion and anti-foam characteristics.

Grades - 10W-30

Shell Tellus S2 MX

Shell Tellus S2 MX fluids are high performance hydraulic fluids based on Group II base oils that provide outstanding protection and performance in most manufacturing and many mobile equipment operations. They resist breakdown under heat or mechanical stress and help prevent damaging deposit formation that can decrease the efficiency of your hydraulic power system. Shell Tellus S2 MX fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown, minimizing harmful sludge formation and providing improved reliability and system cleanliness.

Grades - ISO 32, 46 & 68

Shell Tonna S2 M

Shell Tonna S2 M oils are specially designed for the lubrication of machine tool slides, tables and feed mechanisms. Their enhanced tackiness and stick-slip characteristics combine to offer superior frictional performance on slideways. They are specially recommended in cases where high exposure to soluble cutting fluids exist. Provide anti-wear protection of slideways, gears, bearings and hydraulic system components.

Grade - ISO 68

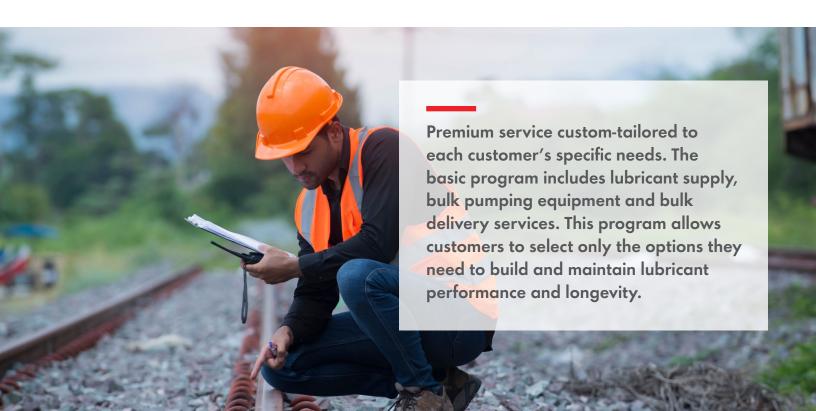
Shell Corena S2

Shell Corena S2 range of air compressor oils has been developed to enable equipment operators to select the oil that will deliver optimum value to their operations through enhanced wear protection, long oil life and high system efficiency. Shell Corena S2 oils are designed to promote system efficiency by suppressing foaming, releasing trapped air and rapidly separating out condensed water.

Shell Corena S4

Shell Corena S4 range includes dedicated rotary compressor oils designed to control vane, bearing and screw wear, and oils for reciprocating compressors specifically to control cylinder, piston ring and valve wear. The gas-to-liquids (GTL) base oil in Shell Corena S4 products give them a higher viscosity index and a lower pour point than mineral-based oils. This means that the oils remain close to their optimal viscosity over a wider range of ambient temperature.

Grades - ISO 32 & 46



GENERAL PURPOSE LUBRICANTS

Whitmore® AccuTrack®

Whitmore AccuTrack electric trackside applicators provide technological advancements that mechanical and hydraulic applicators can't offer. Using Whitmore Accutrack can reduce the total applicators required for complete lubrication coverage of an area compared to older, non-electrical applicators. These innovative applicators can be powered by a combination of sources. Patent Pending - Weight Recognition, for level control and remote monitoring can be added to these applicators, allowing you 24/7 access to performance.

Whitmore® LubriCurve®

Whitmore LubriCurve is a highly efficient, cost-effective mechanical trackside applicator. It provides adjustable grease output when and where it's needed, increasing rail and wheel life while reducing wheel squeal and flanging noise. Whitmore LubriCurve is ideal for lower volume freight traffic, rail, spur and transit applications.

Whitmore® Wiping Bars

Whitmore Wiping Bars that pair with electric, mechanical or hydraulic trackside applicators distribute precisely the right amount of grease, saving time and money. The durable, easy-maintenance gauge face wiping bars are available in 24" and 60" lengths.

Whitmore® PolyTOR™

Whitmore PolyTORTM, a top of rail wiping bar, offers protection and resistance to impact that no other bar can match. These top of rail bars are specifically designed for friction modifiers and are 36" long. Both the gauge face and top of rail wiping bars are suitable for freight and transit applications. Our bars have proprietary and patented technology that gets the majority of your friction modifier on the wheel instead of being splashed onto the field. Our bars have been recently updated to reduce the impact of maintenance of way vehicles or dragged objects causing damage to the bars. Also, we have added a replaceable polystrip that can be replaced after normal wear or damage at a fraction of the cost of replacing with a new bar.

