

SHELL GADUS ESSENTIAL GUIDE TO GREASES

DESIGNED TO MEET CHALLENGES

KEY CHARACTERISTICS							APPLICATION						
SHELL GREASE	TIER (Higher is better)	THICKENER TYPE	BASE OIL VISCOSITY cSt @ 40°C	NLGI GRADE (Grease consistency)	TEMPERATURE RANGE	COLOUR	PLAIN BEARINGS	ROLLER BEARINGS	ENCLOSED GEARS	GEARED COUPLINGS	SLIDES, LINKAGES AND PINS	ELECTRIC MOTORS	WIRE ROPES
Shell Gadus S5 T460 1.5	S5	Polyurea	460	1.5	-40°C to 180°C	Brown	***	***	-	*	***	-	-
Shell Gadus S4 V2600AD 1.5	S4	Lithium calcium	2600	1.5	0°C to 130°C	Black	***	-	-	-	***	-	-
Shell Gadus S3 V460XD 2	S3	Lithium complex	460	2	-20°C to 150°C	Black	***	**	-	**	***	-	-
Shell Gadus S3 V460D 2	S3	Lithium complex	460	2	-20°C to 150°C	Black	***	**	-	**	***	-	-
Shell Gadus S3 V460 2	S3	Lithium complex	460	2	-20°C to 150°C	Brown	***	**	-	**	**	-	-
Shell Gadus S3 V220C 1	S3	Lithium complex	220	1	-25°C to 140°C	Red	**	***	-	*	*	*	-
Shell Gadus S3 V220C 2	S3	Lithium complex	220	2	-25°C to 140°C	Red	**	***	-	*	**	*	-
Shell Gadus S3 T220 2	S3	Polyurea	220	2	-20°C to 160°C	Brown	**	***	-	*	**	*	-
Shell Gadus S3 T100 2	S3	Polyurea	100	2	-20°C to 160°C	Brown	*	***	-	-	*	***	-
Shell Gadus S3 High Speed Coupling Grease	S3	Lithium	700	0.5	-30°C to 120°C	Brown	-	-	-	***	-	-	-
Shell Gadus S2 V1000AD 2	S2	Lithium calcium	1000	2	0°C to 130°C	Black	***	**	-	-	***	-	-
Shell Gadus S2 V220AC 2	S2	Lithium calcium	220	2	-20°C to 120°C	Red	**	***	-	*	**	*	-
Shell Gadus S2 V220AD 2	S2	Lithium calcium	220	2	-10°C to 120°C	Black	**	**	-	*	***	-	-
Shell Gadus S2 V220 00	S2	Lithium	220	00	-30°C to 110°C	Brown	*	*	***	**	**	-	*
Shell Gadus S2 V220 0	S2	Lithium	220	0	-20°C to 120°C	Brown	*	**	**	**	**	-	-
Shell Gadus S2 V220 1	S2	Lithium	220	1	-20°C to 120°C	Brown	*	***	*	**	**	-	-
Shell Gadus S2 V220 2	S2	Lithium	220	2	-20°C to 120°C	Brown	**	***	-	*	**	**	-
Shell Gadus S2 V100 2	S2	Lithium	100	2	-25°C to 130°C	Brown	*	***	-	-	*	***	-
Shell Gadus S2 V100 3	S2	Lithium	100	3	-20°C to 130°C	Brown	*	***	-	-	*	***	-
Shell Gadus S2 A320 2	S2	Calcium	320	2	-10°C to 60°C	Brown	**	-	-	-	*	-	**

PRODUCT-NAME SUFFIX KEY

A = Wet (aqueous) conditions	K = Low temperatures
C = Coloured grease	L = Low load
D = Contains solids, suitable for shock-load conditions	OG = Open gear
H = Heavy duty	P = Extreme/high pressure
	X = Extra/extreme performance

THICKENER GUIDE LETTERS

T = Extreme-temperature performance using Shell polyurea thickeners
U = Unusual non-melting thickeners or other applications
V = Versatile, multipurpose applications using lithium and lithium complex thickeners

***	Outstanding performance in application
**	Good performance in application
*	Validate use with Shell representative
-	Not suitable for this application
n/a	Not available in Tactic EMV

GREASE FEATURE													SHELL GREASE
OPEN GEARS	HIGH SPEED	LOW SPEED	HIGH TEMP.	LOW TEMP.	EXTREME PRESSURE	VIBRATION	WATER	SHOCK LOAD	LIFE	CONTAINS SOLIDS	PUMP-ABILITY	TACTIC EMV*	
-	*	***	***	***	***	***	***	**	***	-	*	n/a	Shell Gadus 55 T460 1.5
**	-	***	**	-	***	***	***	***	**	***	*	n/a	Shell Gadus 54 V2600AD 1.5
-	*	***	***	**	***	***	**	***	**	***	*	n/a	Shell Gadus 53 V460XD 2
-	*	***	***	**	***	***	**	***	**	***	*	***	Shell Gadus 53 V460D 2
-	*	***	***	**	***	***	**	**	**	-	*	n/a	Shell Gadus 53 V460 2
-	**	**	***	**	**	**	**	*	**	-	**	n/a	Shell Gadus 53 V220C 1
-	**	**	***	**	**	**	**	**	**	-	*	***	Shell Gadus 53 V220C 2
-	**	**	***	**	**	**	***	**	***	-	*	***	Shell Gadus 53 T220 2
-	***	*	***	**	*	**	***	*	***	-	**	n/a	Shell Gadus 53 T100 2
-	***	*	**	***	***	***	**	-	**	-	-	n/a	Shell Gadus 53 High Speed Coupling Grease
*	-	***	**	-	***	***	***	***	**	***	*	n/a	Shell Gadus 52 V1000AD 2
-	**	**	**	**	**	**	***	**	**	-	*	n/a	Shell Gadus 52 V220AC 2
*	*	**	**	*	***	***	***	***	**	***	*	n/a	Shell Gadus 52 V220AD 2
-	*	*	**	***	**	-	*	*	*	-	***	n/a	Shell Gadus 52 V220 00
-	*	*	**	**	**	-	*	*	*	-	***	n/a	Shell Gadus 52 V220 0
-	**	*	**	**	**	*	*	*	*	-	**	n/a	Shell Gadus 52 V220 1
-	**	**	**	**	**	**	*	**	*	-	*	n/a	Shell Gadus 52 V220 2
-	***	*	**	**	-	*	*	-	*	-	*	n/a	Shell Gadus 52 V100 2
-	***	*	**	**	-	*	*	-	*	-	-	n/a	Shell Gadus 52 V100 3
*	-	**	-	-	**	**	***	**	*	-	*	n/a	Shell Gadus 52 A320 2

* Available in Shell Tactic EMV automatic lubricators, designed to provide continuous lubrication, well-suited for difficult to access areas such as remote and hazardous locations.

SHELL GADUS KILN SEAL GREASE

SPECIAL KILN SEALANT GREASE

PREVIOUSLY KILN SEAL TI

DESIGNED TO MEET CHALLENGES

Shell Gadus Kiln Seal Grease is a premium grade lithium complex based sealant formulated specifically for the mineral sands industry.

It is formulated to withstand the high temperatures experienced in the rotary kiln's mechanical seals yet provide an effective seal under heavy loads.

PERFORMANCE FEATURES

Shell Gadus Kiln Seal Grease contains anti-rust and antioxidant additives to control corrosion and suppress premature oxidation of the sealant.

- The tackiness additives in Shell Gadus Kiln Seal Grease assist in adhesion of the product to seal faces.
- Shell Gadus Kiln Seal Grease has good mechanical stability.
- Shell Gadus Kiln Seal Grease has excellent sealing characteristics under heavy loads and low rotary speed conditions.

SHELL GADUS KILN SEAL GREASE EXHIBITS SUPERIOR PERFORMANCE IN TERMS OF:

- Lower consumption rate than basic lithium greases.
- Excellent pumpability in normal Australian conditions which makes it ideal for automatic centralised pumping equipment even over long distances.
- Compared to basic lithium greases Shell Gadus Kiln Seal Grease offers a reduction in sealant wastage and hence potentially reduced disposal problems and associated cost.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	
Appearance	Brown
Worked Penetration @ 25°C 0.1mm (ASTM D 217)	340
Dropping Point °C (IP 396)	240
Oil Separation 18h @ 40°C %m (IP 121)	4.0
Viscosity of Base Oil @ 100°C mm ² /s (ASTM D 445)	14.5
EMCOR Corrosion Test (IP 220)	0/0

SHELL GADUS S2 A320

HIGH PERFORMANCE MULTI-PURPOSE EXTREME PRESSURE GREASE

PREVIOUSLY SHELL RHODINA EP (LF)

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 A320 is a smooth textured, calcium based grease for undemanding industrial and marine applications at moderate temperatures requiring extreme pressure performance.

PERFORMANCE FEATURES

GOOD WATER RESISTANCE

- Withstands washing with water, helping to prevent loss of protection.

EXTREME PRESSURE PERFORMANCE

- Protects components from excessive wear under heavy loads.

APPLICATIONS

- Plain bearings working under arduous conditions in the presence of water.
- Shell Gadus S2 A320 is not recommended for rolling element bearings.
- Stern Tube Bearings, Cranes, Davits, Winches, Windlass.
- Low or Medium duty open gearing.
- Wire ropes in general use.

ADDITIONAL INFORMATION

- Operating temperature range -10°C to $+60^{\circ}\text{C}$.
- Peak temperatures up to 80°C (short periods).

SEALS

- Shell Gadus S2 A320 is compatible with normal mineral oil seal materials.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Brown
Soap Type	Calcium
Base Oil Type	Mineral Oil
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm^2/s	320
@ 100°C mm^2/s	27
Dropping Point $^{\circ}\text{C}$ (IP 132/ASTM D 566-76)	85
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265-295
Pumpability (long distance)	Fair

SHELL GADUS S2 THREAD COMPOUND

STORAGE AND THREAD COMPOUNDS FOR USE IN THE OIL INDUSTRY

RECOMMENDED REPLACEMENT FOR SHELL MALLEUS GREASE STC

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 Thread Compound are storage and thread compounds, meeting the requirements of the DEA 47(E) Committee for use as 'green' dopes. These greases are based on highly refined mineral oils with a calcium soap thickener and suitable additives to provide excellent corrosion protection, helping to prevent galling of threads and ensure consistent make/break torques.

PERFORMANCE FEATURES

- Shell Gadus S2 Thread Compound contains no metals (Pb, Zn, Cu) in metallic form or other components identified by the Paris Commission (PARCOM) (e.g. PTFE, nylon or other polymers).

PROVEN PERFORMANCE IN FIELD TESTS

- Successfully applied in suitable applications.

EXCELLENT ANTI-CORROSION PERFORMANCE ALSO PROVIDED

- Shell Gadus S2 Thread Compound can be used as an effective corrosion preventive, allowing mills to only use one product and simplifying operations for production and drilling companies who do NOT have to remove protectives before applying a thread compound.

EXCELLENT BRUSHABILITY

- Can be applied even at low temperatures.

EXCELLENT ANTI-GALLING PERFORMANCE

- For carbon steels and up to 13% chromium steels Shell Gadus S2 Thread Compound helps minimise damage to pipe threads from galling.

EXCELLENT WATER WASH-OUT RESISTANCE

- Maintains protection and helps prevent corrosion.
- Essential qualities for vehicles working in wet environments.

APPLICATIONS

- Thread compounds for use with Rotary shouldered connectors.

ADDITIONAL INFORMATION

- Operating temperature range -20°C to 60°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Black
Soap Type	Calcium
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	120
@ 100°C mm ² /s	12.0
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265-295
Dropping Point °C	140
Applicability at low temperatures	Excellent

SHELL GADUS S2 V100

HIGH PERFORMANCE MULTI-PURPOSE GREASE

PREVIOUSLY SHELL ALVANIA RL

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 V100 are general purpose industrial greases based on a new lithium hydroxystearate soap thickener fortified with anti-oxidant, anti-wear and anti-rust additives.

PERFORMANCE FEATURES

RELIABLE HIGH TEMPERATURE PERFORMANCE

- Very good performance up to +130°C.

GOOD OXIDATION AND MECHANICAL STABILITY

- Helps to resist the formation of deposits caused by oxidation at high operating temperatures. Shell Gadus S2 V100 are extremely stable under vibrations.

GOOD CORROSION RESISTANCE CHARACTERISTICS

- Effective protection in hostile environments.

LONG STORAGE LIFE

- Does not alter in consistency during prolonged storage.

APPLICATIONS

- Rolling element and plain grease lubricated bearings.
- Electric motor bearings.
- Sealed-for-life bearings.
- Water pump bearings.
- Shell Gadus S2 V100 may be used under a wide range of operating conditions. They offer very significant advantages over conventional lithium greases at high temperature or in the presence of water.

SHELL GADUS S2 V100 2

- A medium consistency grease designed, mainly, for general industrial lubrication. Ideal for centralised lubrication systems operating at normal temperatures.

SHELL GADUS S2 V100 3

- A medium/hard high performance industrial grease, particularly recommended for the lubrication of electrical motor bearings.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2	3
Soap Type	Lithium hydroxystearate	
Base Oil Type	Mineral	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	100.0 11	100.0 11
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265–295	220–250
Dropping Point °C (IP 396)	180	180

SHELL GADUS S2 V1000AD

HIGH PERFORMANCE MULTI-PURPOSE HEAVY-DUTY 1000 AD GREASE WITH SOLIDS

PREVIOUSLY SHELL ALVANIA SDX 2

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 V1000AD is a super high performance grease for the lubrication of industrial bearings subjected to the most arduous conditions. It is based on heavy-duty semi-synthetic base oils and a mixed lithium/calcium soap thickener. It contains extreme-pressure, anti-wear, anti-corrosion and adhesion additives. The addition of molybdenum disulphide provides additional resistance to shock loading.

PERFORMANCE FEATURES

PROTECTS EQUIPMENT UNDER THE HEAVIEST LOADS

- Contains molybdenum disulphide and specially selected extreme pressure additives to provide lubrication under severe operating conditions such as shock loading, severe vibration and boundary lubrication conditions.

LONGER GREASE LIFE

- Excellent mechanical stability resisting breakdown and softening. Its efficient load carrying ability means that Shell Gadus S2 V1000AD typically performs longer than conventional lithium greases, allowing extended intervals between regreasing.

EXCELLENT WATER RESISTANCE

- Resists water washout ensuring lasting protection against corrosion and ingress of contamination.

SUPERIOR ADHESION

- Forms a tenacious film resisting leakage and flingoff to protect under the most arduous conditions.

APPLICATIONS

- Shell Gadus S2 V1000AD is recommended for the lubrication of severe duty applications even in damp and hostile conditions including:
 - Heavy earth-moving pins and bushes.
 - Turntables.
 - Slow moving industrial journal and rolling element bearings.
- This grease is particularly suited where flingoff, water and vibration are problems and heavy shock loads are experienced. This grease is not recommended for high speed bearings.

OPERATING TEMPERATURE RANGE

- 0°C to 130°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Black
Soap Type	Lithium/ Calcium
Base Oil Type	Semi-Synthetic
Kinematic Viscosity (ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	1000 60
Dropping Point °C (IP 396)	184
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265–295
Timken OK Load N (ASTM D 2509)	34
4 Ball weld load Kg (ASTM D 2596)	500
Water Washout %m (ASTM D 1264)	<3

SHELL GADUS S2 V220

HIGH PERFORMANCE MULTI-PURPOSE EXTREME PRESSURE GREASE

RECOMMENDED REPLACEMENT FOR SHELL ALVANIA EP (LF)
AND SHELL RETINAX CS, CP



DESIGNED TO MEET CHALLENGES

Shell Gadus S2 V220 greases are high quality multi-purpose, extreme-pressure greases based on a blend of high viscosity index mineral oils and a lithium hydroxystreate soap thickener and contain extreme-pressure and other proven additives to help enhance their performance in a wide range of applications.

Shell Gadus S2 V220 greases are designed for multi-purpose grease lubrication of rolling element and plain bearings as well as hinges and sliding surfaces such as those found throughout most industrial and transport sectors.

PERFORMANCE FEATURES

OUTSTANDING LOAD CARRYING CAPACITY

- Shell Gadus S2 V220 greases contain special extreme-pressure additives which enable them to withstand heavy and shock loads without failure of the lubricant film.

IMPROVED MECHANICAL STABILITY

- This is particularly important in vibrating environments where poor mechanical stability can lead to grease softening with subsequent loss of lubrication performance and leakage.

GOOD RESISTANCE TO WATER WASH-OUT

- Shell Gadus S2 V220 greases have been formulated to offer resistance to water wash-out.

OXIDATION STABILITY

- Specially selected base oil components have excellent oxidation resistance. Their consistency will not alter in storage and they withstand high operating temperatures without hardening or forming bearing deposits.

ANTI-CORROSION PROTECTION

- Shell Gadus S2 V220 greases have an affinity with metal and have the ability to protect bearing surfaces against corrosion, even when the grease is contaminated with water.

APPLICATIONS

SHELL GADUS S2 V220 IS DESIGNED FOR:

- Heavy-duty bearings and general industrial lubrication.
- Heavy-duty plain and rolling element bearings operating under harsh conditions including shock loading in wet environments.
- Operation over the temperature range -20°C to 100°C for bearings operating at 75% of the maximum rated speed (can withstand up to 120°C intermittently).

SHELL GADUS S2 V220 GREASE 1 IS DESIGNED FOR:

- Heavy-duty bearings served by centralised dispensing equipment.
- Extreme-pressure gear grease for applications at normal ambient temperature.
- Heavy-duty plain and rolling element bearings operating under harsh conditions including shock loading in wet environments.
- Low temperature greasing applications.

SHELL GADUS S2 V220 GREASES 00 AND 0 ARE SPECIFICALLY DESIGNED FOR:

- Steel mill lubrication where a softer grease is necessary for specialised dispensing systems.
- Heavy-duty plain and rolling element bearings operating under harsh conditions including shock loading in wet environments.

RE-GREASING INTERVALS

- For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

NOTE: Care should be taken to ensure that the grease does NOT come into contact with hydraulic brake rubber components.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

MEETS THE FOLLOWING SPECIFICATIONS:

- British Timken specification for Steel Mill applications.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	00	0	1	2
Soap Type	Lithium	Lithium	Lithium	Lithium
Base Oil	Mineral	Mineral	Mineral	Mineral
Kinematic Viscosity (IP 71/ASTM D 445)				
@ 40°C mm^2/s	220	220	220	220
@ 100°C mm^2/s	19	19	19	19
Dropping Point $^{\circ}\text{C}$ (IP 396)	–	–	180	180
Cone Penetration worked at 25°C 0.1mm (IP 50/ASTM D 217)	400–430	355–385	310–340	265–295

SHELL GADUS S2 V220AC

HIGH PERFORMANCE MULTI-PURPOSE EXTREME-PRESSURE GREASE

RECOMMENDED REPLACEMENT FOR SHELL ALVANIA HD 2 AND SHELL RETINAX HD2

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 V220AC grease is a high quality multi-purpose grease based on high viscosity index mineral oil and a mixed lithium/calcium soap thickener. It contains extreme-pressure, anti-wear, anti-oxidation and anti-corrosion additives to enhance its performance in a wide range of applications.

PERFORMANCE FEATURES

EXCELLENT MECHANICAL STABILITY EVEN UNDER VIBRATING CONDITIONS

- Consistency retained over long periods, even in conditions of severe vibration.

GOOD CORROSION RESISTANCE

- Helps to provide protection from the elements of corrosion.

EXTENDED LIFE AT MODERATE TEMPERATURES

- Allows longer periods between maintenance schedules reducing down-time and grease consumption. Demonstrated to work in the field with regreasing intervals above 30,000 kms even for demanding applications such as transmission joints.

GOOD OIL SEPARATION

- Ensures effective lubrication and reliable performance.

APPLICATIONS

- Heavy-duty plain and rolling element bearings operating in the following environments:
 - Vibrating conditions
 - Heavy load
 - High temperature
 - Shock load
 - Presence of water.

Multi-purpose convenience, especially in the transport sector where product can be used for both wheel bearings and chassis lubrication of passenger cars, light trucks and heavy-duty trucks. This grease is also suitable for construction equipment exposed to intense water washout.

OPERATING TEMPERATURE RANGE

Shell Gadus S2 V220AC grease are recommended for the grease lubrication of heavy-duty bearings operating up to their maximum rated speed over the temperature range -20°C to 130°C (140°C peak).

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

MEETS THE FOLLOWING SPECIFICATIONS:

- ASTM D4950-08 LB.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Red
Soap Type	Lithium/ Calcium
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	220 18
Dropping Point °C (IP 396)	175
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265-295

SHELL GADUS S2 V220AD

HIGH PERFORMANCE HEAVY-DUTY GREASE CONTAINING SOLID LUBRICANTS

RECOMMENDED REPLACEMENT FOR SHELL ALVANIA HDX AND SHELL RETINAX HDX 2

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 V220AD is a very high performance grease for the lubrication of industrial bearings subjected to the most arduous conditions. It is based on high viscosity index mineral oil and a mixed lithium/calcium soap thickener and contains extreme-pressure, anti-oxidation, anti-wear, anti-corrosion and adhesion additives. It also contains molybdenum disulphide to provide resistance to shock loading.

PERFORMANCE FEATURES

GOOD OXIDATION AND MECHANICAL STABILITY

- Formulated to resist the formation of deposits caused by oxidation at high operating temperatures and maintains consistency, helping to reduce leakage.

GOOD CORROSION RESISTANCE

- Provides protection from the elements of corrosion.

FOR SHOCK LOADED CONDITIONS

- Helps to resist breakdown, softening and subsequent leakage under shock loads.

GOOD ADHESION PROPERTIES

- Helps to reduce losses and grease consumption.

EXTREME PRESSURE PERFORMANCE

- Rig tests confirm EP additives in Shell Gadus S2 V220AD help prolong bearing life when subjected to heavy and shock loads.

APPLICATIONS

- Shell Gadus S2 V220AD is recommended for the lubrication of shock loaded heavy-duty bearings working in damp hostile conditions.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	1	2
Colour	Black	Black
Soap Type	Lithium/ Calcium	Lithium/ Calcium
Base Oil Type	Mineral	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	220	220
@ 100°C mm ² /s	18	18
Dropping Point °C (IP 396)	170	175
Cone Penetration worked at 25°C 0.1mm (IP 50/ASTM D 217)	310–340	265–295
4 Ball Weld Load Kg (IP 239)	315	315
Operating Temperature Range	-10°C–120°C	-10°C–120°C

SHELL GADUS S3 HIGH SPEED COUPLING GREASE

PREMIUM GEAR COUPLING GREASE

PREVIOUSLY SHELL ALBIDA GC 1

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 High Speed Coupling Grease is a special grease for flexible gear coupling. Shell Gadus S3 High Speed Coupling Grease is a lithium polyethylene complex grease based on mineral oil, containing anti-oxidants, rust inhibitors, extreme pressure and anti-wear additives.

PERFORMANCE FEATURES

HIGH SPEED-RESISTS SEPARATION

- The grease has a unique design that resists separation during extreme centrifugal accelerations. While conventional products separate rapidly in centrifugal high speed gear couplings resulting in severe oil leakage, the structure and composition of Shell Gadus S3 High Speed Coupling Grease remains intact at accelerations up to 36,000 G.

EXTRA PROTECTION

- Helps to reduce components failure due to corrosion.
- Excellent load-carrying performance and reduced wear rates.

APPLICATIONS

- Shell Gadus S3 High Speed Coupling Grease was especially designed for lubrication of flexible gear couplings operating at speeds from 300rpm and up.

ADDITIONAL INFORMATION

- Operating temperature range -10°C to 120°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	1
Colour	Dark Brown
Soap Type	Lithium / Complex
Soap Content °C	<3%
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	700
@ 100°C mm ² /s	34
NLGI	1
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	310-340
Dropping Point °C (IP 396)	>150

SHELL GADUS S3 REPAIR

PREMIUM OPEN GEAR RUNNING IN GREASE CONTAINING SOLIDS

PREVIOUSLY SHELL MALLEUS RN

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 Repair is a high performance sprayable running in aluminium complex grease, based on a part synthetic base oil blend and contains micronised graphite as solid lubricant. The product chemistry is designed to cause a well-controlled smoothing process to reduce surfaces roughness on new and damaged open gearing.

PERFORMANCE FEATURES

Shell Gadus S3 Repair not only designed to reduce surface roughness of first time operating open gears but also improves used tooth flanks surface with a 'cleaning' and corrective effect.

The product can also be used in case of light tooth damage smoothing surface roughness on the load carrying tooth flanks and increasing the contact area.

SUPERIOR RUNNING IN PERFORMANCE

- Shell Gadus S3 Repair advanced formulation is designed to ensure a well-controlled smoothing process through chemical reaction in the zones being under higher load. This controlled wear process is designed to allow the gearing to obtain the maximum load distribution between the girth and pinion gearing.

PERIODIC SMOOTH LAPPING OF TOOTH PROFILE

- It is considered to be a good maintenance practice to apply a 180 kg drum of Shell Gadus S3 Repair once per year, or every 6,000 hours of operation, to remove fatigue micro-cracks or micro-pitting (not really visible to the naked eye) well before they increase in size, causing long-term future irreversible damage.

ENDORSED BY LEADING OPEN GEAR MANUFACTURERS

- Ferry Captain, one of the major open gear manufacturers, endorses Shell Gadus S3 Repair.

ENVIRONMENTAL ADVICES

- Shell Gadus S3 Repair is bitumen and solvent free.

APPLICATIONS

For mining, cement, steel industries and power stations, open gears on:

- Grinding mills
- Rotary kilns and dryers.

Shell Gadus S3 Repair is a ready-to-use product, which can be applied through conventional automatic lubrication spraying systems or manual pressurised-air hand spraying equipment.

It is important to consult the appropriate consumption charts to determine the specified quantities of lubricant to apply. Incorrect consumption quantities could result in tooth damage.

OPERATING TEMPERATURE RANGE

- Automatic spraying system from -15°C to 100°C.
- Lubrication film from -30°C up to 200°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	00
Colour	Black
Soap Type	Al Complex
Texture (visual)	Tacky
Base Oil Type	Part-Synthetic
Solid Lubricant	-
Density at 15.5°C kg/m ³ (Gardener method)	1.0
Kinematic Viscosity (ISO 3104)	
@ 40°C mm ² /s	520
@ 100°C mm ² /s	32
Base Oil Viscosity (IP 71/ASTM D 445)	
@ 40°C mm ² /s	-
@ 100°C mm ² /s	-
Dropping Point °C (IP 396/ASTM D 566-76)	240
Cone Penetration worked @ 25°C 0.1mm (ASTM D 217)	400-430
4 Ball Weld Load N	8000
4 Ball Test Kg (ASTM D 596)	-
4 Ball Wear Scar mm (ASTM D 2266)	-
4 Ball Load Wear Index (ASTM D 2596)	-
FZG A/2.76/50 (DIN 51354) Load Stage pass	-
Rust Test (ASTM D 1743)	Pass
Copper Strip Corrosion 3h @ 100°C	18

CONSUMPTION QUANTITY GUIDELINES

APPLICATION TYPE	DOUBLE-PINION MILL DRIVE (TYPE 4)	SMALL ROTARY DRUM (TYPE 2)
1. Small rotary drums (e.g. dryer units) <750kw	4	-
2. Small single-pinion kiln drives <750kw	5	-
3. Average single-pinion drives of mills and kilns >751- <2500kw	6	-
4. Large single-pinion mill drives and double-pinion kiln drives >250kw	7	-
5. Double-pinion mill drives	8	-
The above recommended consumption quantities only apply to Shell Gadus S3 Repair. kw = Kilowatt power rating of the electrical motor, driving the gear train		
Required specific consumption quantity [cc/[cm x op. hour]]	- 7	5
Flank width (cm)	- 85	40
Consumption quantity/op. hour (cc) cc to kg/by 1000	- 7 x 85 = 595cc	5 x 40 = 200cc
Consumption quantity/24 op. hours (kg)	- 0.59cc x 24op = 14.28kg per day	0.20cc x 24op = 4.8kg per day

In the case of double-pinion drives with pinion lubrication the consumption quantity should be doubled and distributed evenly to both spray bars.
cc = cubic centimeters cm = centimeters of the tooth flank width
op = operating hours per day kg = Kilograms

SHELL GADUS S3 OG 2

SPECIAL PURPOSE OPEN GEAR AND WIRE ROPE GREASE

RECOMMENDED REPLACEMENT FOR SHELL MALLEUS GREASE OGM EXTRA HEAVY

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 OG 2 is primarily designed for applications in mining equipment, shovels and excavators in open cut operations.

Shell Gadus S3 OG 2 is based on Aluminium Complex soap thickener dispensed in a high viscosity base oil containing enhanced extreme pressure-antiwear chemistry.

PERFORMANCE FEATURES

LOAD CARRYING CAPACITY UNDER SEVERE OPERATION CONDITIONS

- Shell Gadus S3 OG 2 contains selected components to help ensure excellent resistance to shock and permanent heavy load.

VERY HIGH MECHANICAL AND THERMAL STABILITY

- Shell Gadus S3 OG 2 thickener structure is designed to resist mechanical stress and high temperature.

WITHSTANDING SEVERE OPERATION CONDITIONS

- Like dust and dirt contamination, water, changes in temperature.

MAINTAIN OVER TIME ADHESIVE CHARACTERISTICS

- Formulated with performing and advanced polymer technology to help ensure durable protection.

APPLICATIONS

Typical applications for Shell Gadus S3 OG 2 are:

- Open gears
- Sticks
- Circle Rail and rollers
- Antifriction bearings
- Bushings.

OPERATING TEMPERATURE RANGE

- 0°C to 60°C

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

MEETS THE REQUIREMENTS OF:

- Liebherr Specification.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
NLGI Consistency	2
Colour	Black
Soap Type	Aluminium Complex
Base Oil Type	Mineral
Solid Lubricant	Yes
Base Oil Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	3200
@ 100°C mm ² /s	110
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	275–295
Dropping Point °C (IP 132/ASTM D 566-76)	240
4 Ball Test Kg (IP 236)	620
4 Ball Wear Scar mm (ASTM D 2266)	max. 0.7
4 Ball Load Wear Index (LWI) kg (ASTM D 2596)	120
Rust Test (ASTM D 1743)	Pass
Copper Strip (ASTM D 4048)	1b

SHELL GADUS S3 T100

PREMIUM QUALITY INDUSTRIAL BEARING GREASE

RECOMMENDED REPLACEMENT FOR SHELL STAMINA RL

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 T100 is a high technology grease designed to give optimum performance for grease lubrication in industrial bearings. Shell Gadus S3 T100 is based on mineral oil with a special diurea thickener to give long life, low wear and shear-stable properties at high temperatures.

PERFORMANCE FEATURES

- Outstanding life at high temperatures
- Excellent wear protection
- Excellent mechanical stability at high temperatures
- Excellent oxidation resistance
- Good protection against false brinnelling
- Low oil separation
- Excellent corrosion resistance
- Provides protection from the elements of corrosion
- Versatile
- Water resistant
- Withstands washing with water, preventing loss of protection.

HIGH TEMPERATURE PERFORMANCE

- The diurea thickener used in Shell Gadus S3 T100 has a high melting point and the grease performance is limited only by the properties of the base oil and additive components.
- The low volatility and excellent oxidation stability of the base oil are such that they give it an excellent service life in bearings operating between -20°C and 150°C. With caution, Shell Gadus S3 T100 may, in some circumstances, be used at temperatures up to 180°C, but only if the re-lubrication period is suitably adjusted.

CORROSION PROTECTION

- When a bearing is running, most high quality greases can maintain an adequate lubricating film even when the grease is loaded with water. However, when the grease bearing is idle, corrosion may occur causing pitting which can be destructive. Shell Gadus S3 T100 is formulated with corrosion inhibitors to help protect bearing surfaces even when the grease is contaminated with water.
- The lubrication properties of Shell Gadus S3 T100 have been used very successfully in slow moving, loaded large bearings such as those found in continuous casters in steel plants.

APPLICATIONS

- Shell Gadus S3 T100 is particularly recommended for use in high temperature (150°C), lightly loaded industrial bearings.
- It is recommended for use where long operational life and extended re-greasing intervals are an important consideration.

OPERATING TEMPERATURE RANGE

- -20°C to 150°C.

RE-LUBRICATION

Grease life varies considerably from application to application, even with bearings operating under normally identical conditions. Variables such as air flow, dirt and humidity can have a considerable effect in addition to the more commonly recognised parameters of load, speed and temperature.

The use of Shell Gadus S3 T100 usually permits considerable extension of the re-lubrication interval.

OXIDATION STABILITY

Shell Gadus S3 T100 has a high temperature oxidation inhibitor system to help ensure that it will withstand high operating temperatures without forming deposits. Unlike the soap thickeners used in most greases, the diurea thickener in Shell Gadus S3 T100 does not catalyse grease oxidation, indeed the diurea thickener offers inherent anti-oxidant properties. This contributes to longer grease life at higher temperatures.

The base oil component of Shell Gadus S3 T100 is a specially selected high viscosity index mineral oil with excellent oxidation and evaporation resistance.

SEALING

The rheology of Shell Gadus S3 T100 is such that at low shear rates and with heating the consistency increases. Consequently, in bearings operating at high temperatures the grease remains in place providing good sealing and continuous lubrication even in the presence of vibration.

WATER WASHOUT

Shell Gadus S3 T100 exhibits very good resistance to water washout by immersion or spray.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Brown
Soap Type	Diurea
Base Oil Type	Mineral
Base Oil Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	100
@ 100°C mm ² /s	11
Dropping Point °C (IP 132/ASTM D 566-76)	250
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265-295
Pumpability (long distance)	Fair

SHELL GADUS S3 T220

ULTIMATE PERFORMANCE EXTREME PRESSURE DIUREA GREASE

PREVIOUSLY SHELL STAMINA EP

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 T220 Greases are high technology greases designed to give optimum performance for grease lubrication in industrial bearings. They are based on mineral oil with a special diurea thickener to give long life, low wear and shear-stable properties at high temperatures.

PERFORMANCE FEATURES

POTENTIAL COST SAVINGS VIA:

- Formulated to reduce grease consumption at high temperatures, as grease resists melting and subsequent leakage, due to the use of the latest diurea thickener technology developed by Shell's 'in house' expertise in Japan.
- Helps to reduce maintenance costs since lower bearing replacement rates can be achieved, due to the excellent anti-wear properties that are available from the latest technology diurea thickened greases.
- Helps to lower total labour costs, due to the extended lubrication intervals and less downtime that results from using the latest in high performance greases.
- Simplified maintenance programs can be established, resulting from the multi-purpose capabilities of this grease and long service lives that are possible.

APPLICATIONS

- Steel
- Paper
- Aluminium
- Chemical
- and many others.
- Recommended as an extreme pressure grease for highly loaded ball, roller and plain bearing applications at high temperatures where extended service life is required. Proven in the following applications:
 - Hot strip mills
 - Paper mill bearings (dry end)
 - Electrical motors (large).

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

IS RECOMMENDED FOR USE:

- Over the temperature range -10°C to 160°C (even up to 180°C with suitable adjustment of relubrication interval).

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Light Brown
Soap Type	Diurea
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	220 19
Dropping Point °C (IP 396)	260
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	280
Pumpability (long distance)	Fair

SHELL GADUS S3 V220C

PREMIUM MULTI-PURPOSE EXTREME PRESSURE GREASE

RECOMMENDED REPLACEMENT FOR SHELL ALBIDA EP AND SHELL RETINAX LX



DESIGNED TO MEET CHALLENGES

Shell Gadus S3 V220C Greases are premium multi-purpose greases based on high viscosity index mineral oil and a lithium complex thickener. They contain the latest additives to offer excellent high temperature oxidation performance and other additives to enhance their anti-oxidation, anti-wear and anti-corrosion properties.

Shell Gadus S3 V220C Greases are especially suitable for bearings operating at high temperature and under load.

PERFORMANCE FEATURES

EXCELLENT MECHANICAL STABILITY EVEN UNDER VIBRATING CONDITIONS

- Consistency retained over long periods, even in conditions of severe vibration.

ENHANCED EXTREME PRESSURE PROPERTIES

- Excellent load-carrying performance.

GOOD WATER RESISTANCE

- Ensures lasting protection even in the presence of large amounts of water.

HIGH DROPPING POINT LONG OPERATIONAL LIFE AT HIGH TEMPERATURES EFFECTIVE CORROSION PROTECTION

- Helps ensure components/bearings do not fail due to corrosion.

APPLICATIONS

Shell Gadus S3 V220C Greases are used for the grease lubrication of heavy-duty bearings used in machinery found in the following applications:

- Continuous casting
- Vibrating sieves
- Quarries
- Breakers
- Roller conveyors
- Automotive wheelbearings.

RE-GREASING INTERVALS

For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

MEETS THE FOLLOWING SPECIFICATIONS

- Meets ASTM D 4950-68 C7C-L13.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	1	2
Colour	Red	Red
Soap Type	Lithium/Complex	Lithium/Complex
Base Oil Type	Mineral	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	220	220
@ 100°C mm ² /s	19	19
Dropping Point °C (IP 396)	240	240
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	310–340	265–295
Pumpability (long distance)	Good	Fair

SHELL GADUS S3 V460

PREMIUM MULTI-PURPOSE HEAVY-DUTY GREASE

RECOMMENDED REPLACEMENT FOR SHELL RETINAX SD AND SHELL ALBIDA HD

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 V460 Grease is a premium, high temperature greases for heavy-duty industrial applications. This product is based on high viscosity index mineral oil and a lithium complex soap thickener and contains the latest additives to offer excellent high temperature oxidation performance and other additives to enhance its anti-oxidation, anti-wear and anti-corrosion properties.

Shell Gadus S3 V460 Grease is especially suitable for slow moving, heavy-duty bearings operating at high temperature and under severe load.

PERFORMANCE FEATURES

HIGH BASE OIL VISCOSITY TO MEET LEADING OEM REQUIREMENTS FOR SLOW MOVING LARGE BEARINGS

- Proven in workroll bending operations in steel plants.

EXCELLENT MECHANICAL STABILITY EVEN UNDER VIBRATING CONDITIONS

- Consistency retained over long periods, even in conditions of severe vibration.

ENHANCED EXTREME PRESSURE PROPERTIES

- Excellent load-carrying performance.

EXCELLENT WATER RESISTANCE

- Ensures lasting protection even in the presence of large amounts of water.

EFFECTIVE CORROSION PROTECTION

- Helps ensure components/bearings do not fail due to corrosion.

HIGH DROPPING POINT

- Resistant to high temperatures.

APPLICATIONS

Shell Gadus S3 V460 Grease are used for the grease lubrication of heavy-duty, slow moving bearings used in heavy industries:

- Steel (continuous casters, workroll bearings, etc.)
- Cement
- Paper
- Chemical industry
- Mining.

RE-GREASING INTERVALS

For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Light Brown
Soap Type	Lithium/ Complex
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	460 31
Dropping Point °C (IP 396)	250
Cone Penetration Worked @ 25°C 0.1mm (IP 50/ASTM D217)	265–295
Pumpability (Long distance)	Fair

SHELL GADUS S3 V460D

PREMIUM MULTI-PURPOSE HEAVY-DUTY GREASE WITH SOLIDS

RECOMMENDED REPLACEMENT FOR SHELL ALBIDA HDX

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 V460D Grease is a high performance, high temperature grease for slow moving heavily loaded large bearings subject to shock loads. It is based on high viscosity index mineral oil and a lithium complex thickener. Apart from containing the latest additives to ensure excellent high temperature, anti-corrosion and anti-oxidation performance, it also contains Mos2 to ensure the grease can handle shock loads.

PERFORMANCE FEATURES

HIGH BASE OIL VISCOSITY TO PROVIDE EXCELLENT LOAD CARRYING PERFORMANCE

- Meets the recommended base oil viscosity recommended by leading OEMs.

EXCELLENT MECHANICAL STABILITY EVEN UNDER VIBRATING CONDITIONS

- Consistency retained over long periods, even in conditions of severe vibration.

ENHANCED EXTREME PRESSURE PROPERTIES AND RESISTANT TO SHOCK LOADS

- Excellent load-carrying performance enhanced by the presence of Mos2.

EXCELLENT WATER RESISTANCE

- Ensures lasting protection even in the presence of large amounts of water.

EFFECTIVE CORROSION PROTECTION

- Helps ensure components/bearings do not fail due to corrosion.

HIGH DROPPING POINT

- Resistant to high temperatures.

APPLICATIONS

Shell Gadus S3 V460D Grease is used for the grease lubrication of heavy-duty, slow moving bearings subject to shock loads found in the following industries:

- Mining
- Steel.

RE-GREASING INTERVALS

For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

LISTED BY THE FOLLOWING OEMS:

- Komatsu Mining (Germany)
- Terex
- BE (certified)
- Dieffenbacher
- Hitachi
- Konecranes
- CMI
- Flat Products Equipments
- Pfeiffer
- Voith Paper Environmental.

MEETS THE REQUIREMENTS OF:

- The 3% Mos2 grease Caterpillar specification.

HAS APPROVAL FROM:

- Rothe Erde.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Black
Soap Type	Lithium/Complex
Base Oil Type	Mineral
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s @ 100°C mm ² /s	460 31
Cone Penetration Worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265–295
Dropping Point °C (IP 396)	>240

SHELL GADUS S3 V460XD

PREMIUM MULTI-PURPOSE HEAVY-DUTY GREASE WITH EXTRA SOLIDS

RECOMMENDED REPLACEMENT FOR SHELL ALBIDA MDX

DESIGNED TO MEET CHALLENGES

Shell Gadus S3 V460XD Grease is a premium heavy-duty grease designed for use in a wide range of industrial and mining applications. It is based on a high viscosity index mineral oil and lithium complex thickener. It contains selected additives to offer excellent high temperature oxidation performance and enhanced extreme pressure, anti-wear and anti-corrosion properties. It also contains molybdenum disulphide to provide additional resistance to shock loading.

PERFORMANCE FEATURES

WIDE OPERATING TEMPERATURE RANGE

- Ball and rolling element bearings operating continuously at temperatures between -15°C and 150°C.

PROLONGED GREASE SERVICE LIFE

- Enhanced oxidation resistance helps prolong grease life at higher temperatures, allowing extended re-greasing intervals.

EXCELLENT MECHANICAL STABILITY

- Maintains consistency over long periods even in the most severe conditions.

FOR SHOCK LOADED CONDITIONS

- Resists break down, softening and subsequent leakage under shock loads.

ENHANCE EXTREME PRESSURE AND ANTI-WEAR PROPERTIES

- Rig tests confirm E.P. additives in Shell Gadus S3 V460XD prolong the life of bearings subject to heavy loads and shock loads.

LOW WATER WASH-OUT

- Good water resistant properties.

EFFECTIVE CORROSION PROTECTION

- Helps ensure components/bearings do not fail due to corrosion.

APPLICATIONS

- Shell Gadus S3 V460XD Grease is used for the lubrication of shock loaded, heavy-duty slow moving bearings and non-bearing applications such as those found in large mobile mining equipment. Shell Gadus S3 V460XD Grease is available as NLGI 2 grease and also as an NLGI 1 version where a more pumpable grease is required.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

LISTED BY THE FOLLOWING OEMS:

- Komatsu
- Komatsu Trucks
- Terex
- Liebherr Trucks
- P&H
- BE (certified).

EXCEEDS THE SPECIFICATIONS OF:

- Caterpillar.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Black
Soap Type	Lithium/ Complex
Base Oil Type	Mineral
Kinematic Viscosity (ASTM D 445) @ 40°C mm ² /s	460
@ 100°C mm ² /s	31
Dropping Point °C (IP 396)	250
4 Ball EP Test Kg (IP 239)	620
Molybdenum Disulphide Content %	5
Molybdenum Disulphide Particle Size (microns)	<5
Worked Penetration @ 25°C (ASTM D 17) (dmm)	265–295

SHELL GADUS S4 V2600AD

ADVANCED PLAIN BEARING GREASE (MALLEUS)

PREVIOUSLY SHELL MALLEUS JBZ

DESIGNED TO MEET CHALLENGES

Shell Gadus S4 V2600AD is a unique Lithium/Calcium thickened part-synthetic grease with superior adhesion and load carrying properties. It is formulated specially for very large and slow moving bearings, slides, bushes and other heavy-duty industrial applications.

PERFORMANCE FEATURES

PROTECTS EQUIPMENT UNDER THE HEAVIEST LOADS

- Contains molybdenum disulphide and specially selected extreme pressure additives to provide lubrication under severe operating conditions such as shock loading, severe vibration and boundary lubrication conditions.

LONGER GREASE LIFE

- Excellent mechanical stability resisting breakdown and softening. Its efficient load carrying ability means that Shell Gadus S4 V2600AD typically performs longer than conventional lithium greases, allowing extended intervals between re-greasing.

RESISTS GREASE LOSS AND CORROSION

- Excellent water and juice washout resistance helps to prevent grease loss and provide corrosion protection.

CLEANER WORKING ENVIRONMENT

- Contains no bitumen, solvents, highly aromatic base oils, lead or sodium nitrite, and this, together with reduced usage, minimal fling-off or leakage, provide a cleaner and safer working environment.

APPLICATIONS

Shell Gadus S4 V2600AD is recommended for the lubrication of:

- Sugar mill bearing
- Cement mill journals
- Plain bearings
- Pivot pins
- Slow speed cams and followers
- Open gears.

OPERATING TEMPERATURE RANGE

- 0°C to 130°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	1.5
Colour	Black
Soap Type	Lithium/ Calcium
Base Oil Type	Part-Synthetic
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	2600
@ 100°C mm ² /s	120
NLGI Consistency	1.5
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	305
Dropping Point °C (IP 396)	180
Timken OK Load °C (ASTM D 2509)	38.6
4 Ball Weld kg (IP 239)	820
Copper Corrosion (ASTM D 130)	1b
Emcor Corrosion in Distilled Water (IP 220)	0.0

SHELL GADUS S4 V460D

ADVANCED MULTI-PURPOSE HEAVY-DUTY GREASE

PREVIOUSLY SHELL ALBIDA GREASE HDZX

DESIGNED TO MEET CHALLENGES

Shell Gadus S4 V460D Grease is a high performance high temperature grease for slow moving heavily loaded pins, bushes and large bearings subject to shock loads. They are based on PAO synthetic oil and high viscosity index mineral oil and a lithium complex thickener. Apart from containing the latest additives to ensure excellent high temperature, anti-corrosion and anti-oxidation performance, they also contain Mos2 to ensure the grease can handle shock loads. The enhancement of PAO synthetic base oil allows the grease to be pumped and perform in lubrication systems at much lower temperatures.

PERFORMANCE FEATURES

HIGH BASE OIL VISCOSITY TO PROVIDE EXCELLENT LOAD CARRYING PERFORMANCE

- Meets the recommended base oil viscosity recommended by leading OEMs.

EXCELLENT MECHANICAL STABILITY EVEN UNDER VIBRATING CONDITIONS

- Consistency retained over long periods, even in conditions of severe vibration.

ENHANCED EXTREME PRESSURE PROPERTIES AND RESISTANT TO SHOCK LOADS

- Excellent load-carrying performance enhanced by the presence of Mos2.

EXCELLENT WATER RESISTANCE

- Ensures lasting protection even in the presence of large amounts of water.

EFFECTIVE CORROSION PROTECTION

- Helps to ensure components/bearings do not fail due to corrosion.

HIGH DROPPING POINT

- Resistant to high temperatures.

APPLICATIONS

Shell Gadus S4 V460D Greases are used for the grease lubrication of heavy-duty, slow moving pins and bushes and bearings subject to shock loads found in the following industries:

- Mining
- Steel.

RE-GREASING INTERVALS

For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

LISTED BY THE FOLLOWING OEMS:

- Komatsu
- Komatsu Trucks
- Terex
- Liebherr Trucks
- P&H
- BE (certified).

EXCEEDS THE SPECIFICATIONS OF:

- Caterpillar.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Black
Soap Type	Lithium/Complex
Base Oil Type	Mineral/Syn
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	460
@ 100°C mm ² /s	32.0
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265–295
Dropping Point °C (IP 396)	250
4 Ball Weld Load kg (ASTM D 2596)	620

SHELL GADUS S4 OG CLEAR OIL 20000

ADVANCED OPEN GEAR AND WIREROPE LUBRICANT

DESIGNED TO MEET CHALLENGES

Shell Gadus S4 OG Clear Oil 20000 is an advanced part-synthetic, non-bitumastic viscous lubricant specifically developed to satisfy the demands of heavily loaded open gearing.

PERFORMANCE FEATURES

HIGH VISCOSITY

- The very high viscosity of Shell Gadus S4 OG Clear Oil 20000 has been achieved by combining synthetic oil with thickening effect and high viscosity mineral oils. The use of synthetic oil with thickening effect has also produced a lubricant with high viscosity index, which provides good pumpability at low temperatures while maintaining high viscosity at elevated temperatures.

GEAR INSPECTIONS

- Static and dynamic inspections are much easier to view the gear condition without cleaning off the grease or oil as the lube film is clear and you can inspect the gearing through the lube film.

EXTREME PRESSURE PERFORMANCE

- The high viscosity base oils are combined with extreme pressure additives to give the lubricant very high film strength and extreme load carrying capability needed for the protection of heavily loaded open gearing.

PUMPABILITY

- Shell Gadus S4 OG Clear Oil 20000 can be applied in automatic lubrication systems previously used for bitumastic lubricants (e.g. Farval, Wakefield, Tecalmit and Lincoln). The viscous oil nature of the lubricant allows it to be gravity fed into equipment centralised lubricators if required.

APPLICATIONS

Developed specifically for the lubrication of medium-size to large girth gear drives.

It provides good adhesion, excellent resistance to high pressure and protection against wear.

Shell Gadus S4 OG Clear Oil 20000 incorporates synthetic oil with thickening effect and high viscosity mineral oils blended with extreme pressure additives to give a modern high performance open gear lubricant.

RE-GREASING INTERVALS

For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	
Base Oil Type	Semi-Synthetic
Kinematic Viscosity (IP 71/ASTM D 445)	
@ 40°C mm ² /s	20,000
@ 100°C mm ² /s	500
4 Ball Weld Load N (ASTM D 2596)	8000
Flash Point °C	220
Pour Point °C	-5
FZG Scuffing Load Stage	>12

SHELL GADUS S5 T100

ADVANCED MULTI-PURPOSE GREASE

PREVIOUSLY SHELL STAMINA RLS



DESIGNED TO MEET CHALLENGES

Shell Gadus S5 T100 Grease is a very high technology grease designed to give optimum performance for grease lubrication in industrial bearings.

It is based on synthetic oil with a special diurea thickener to give long life, low wear and shear-stable properties at high temperatures.

PERFORMANCE FEATURES

- Outstanding life at high temperatures
- Excellent wear protection
- Excellent mechanical stability at high temperatures
- Excellent oxidation resistance
- Low oil separation
- Versatile.

EXCELLENT CORROSION RESISTANCE

- Provides protection from the elements of corrosion.

WATER RESISTANT

- Withstands washing with water, preventing loss of protection.

APPLICATIONS

Shell Gadus S5 T100 Grease is particularly recommended for use in high temperature up to 180°C, lightly loaded industrial bearings. It is recommended for use where long operational life and extended re-greasing intervals are an important consideration.

HIGH TEMPERATURE PERFORMANCE

The diurea thickener used in Shell Gadus S5 T100 has a high melting point and the grease performance is limited only by the properties of the base oil and additive components.

The low volatility and excellent oxidation stability of the base oil are such that they give an excellent service life in bearings operating between -40°C and 180°C.

With caution, Shell Gadus S5 T100 Grease may, in some circumstances, be used at temperatures up to 200°C, but only if the re-lubrication period is suitably adjusted.

OXIDATION STABILITY

Shell Gadus S5 T100 has a superior high temperature oxidation inhibitor system to ensure that it will withstand high operating temperatures without forming deposits. Unlike the soap thickeners used in most greases, the diurea thickener in Shell Gadus S5 T100 does not catalyse grease oxidation, indeed the diurea thickener offers inherent anti-oxidant properties. This contributes to longer grease life at higher temperatures.

The base oil part of Shell Gadus S5 T100 is a specially selected synthetic component with excellent oxidation and evaporation resistance.

CORROSION PROTECTION

When a bearing is running, most high quality greases can maintain an adequate lubricating film even when the grease is contaminated with water. However, when the grease bearing is idle corrosion may occur causing pitting which can be detrimental. Shell Gadus S5 T100 is formulated with corrosion inhibitors to help protect bearing surfaces even when the grease is contaminated by water.

The lubrication properties of Shell Gadus S5 T100 is unimpaired by small quantities of salt water.

Grease life varies considerably from application to application, even with bearings operating under nominally identical conditions. Variables such as air flow, dirt and humidity can have a considerable effect in addition to the more commonly recognised parameters of load, speed and temperature.

The use of Shell Gadus S5 T100 usually permits considerable extension of the re-lubrication interval.

SEALING

The rheology of Shell Gadus S5 T100 is such that at low shear rates and with heating the consistency increases. Consequently, in bearings operating at high temperatures the grease remains in place providing good sealing and continuous lubrication even in the presence of vibration.

WATER WASHOUT

Shell Gadus S5 T100 exhibits very good resistance to water washout by immersion or spray.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	2
Colour	Brown
Soap Type	Polyurea
Base Oil Type	Synthetic
Kinematic Viscosity (IP 71/ASTM D 445) @ 40°C mm ² /s	100
@ 100°C mm ² /s	14
Cone Penetration Worked @ 25°C 0.1mm (IP 50/ASTM D 217)	265-295
Dropping Point °C (IP 132/ASTM D 566-76)	250
FAG FE-9 Test L50 hrs @ 180°C	>100
Pumpability (long distance)	Fair

SHELL GADUS S5 T460

ADVANCED MULTI-PURPOSE HEAVY-DUTY GREASE

PREVIOUSLY SHELL STAMINA HDS



DESIGNED TO MEET CHALLENGES

Shell Gadus S5 T460 is a high performance, high-temperature, long life grease for heavy-duty industrial applications. It uses fully synthetic base stocks and the latest technology diurea thickener. It contains the latest additives to offer excellent high temperature oxidation performance and other additives to enhance its anti-oxidation, anti-wear and anti-corrosion properties.

Shell Gadus S5 T460 is especially suitable for sealed and semi-sealed applications involving slow moving, heavy-duty bearings operating at high temperatures and under severe loads.

PERFORMANCE FEATURES

HIGH BASE OIL VISCOSITY TO MEET LEADING OEM REQUIREMENTS FOR SLOW MOVING LARGE BEARINGS

- Based upon the latest diurea grease technology proven in steel, paper, wind mills and other industries.

EXCELLENT RESISTANCE TO HIGH TEMPERATURES AND 'HEAT SOAK'

- Synthetic base stocks combined with the inherent oxidation resistance of the diurea thickeners combine to give class leading performance in this area.

ENHANCED EXTREME PRESSURE PROPERTIES

- Excellent load-carrying performance.

EXCELLENT WATER RESISTANCE

- Ensures lasting protection even in the presence of large amounts of water.

HIGH DROPPING POINT

- Resistant to high temperatures.

EFFECTIVE CORROSION PROTECTION

- Helps to ensure components/bearings do not fail due to corrosion.

APPLICATIONS

- Steel, paper, aluminium, chemical, wind power.
- Heavy-duty slow moving plain and rolling element bearings operating in the severe environment, especially when semi or fully sealed for life.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

IS RECOMMENDED FOR USE:

- 40°C to 180°C.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	1.5
Colour	Light Brown
Soap Type	Diurea
Base Oil Type	Fully-Synthetic
Kinematic Viscosity @ 40°C mm ² /s	460
Cone Penetration worked @ 25°C 0.1mm (IP 50/ASTM D 217)	295
Dropping Point°C (IP 132)	250
Pumpability (Long distance)	Good

SHELL GADUS S2 OG

SUPERIOR PERFORMANCE OPEN GEAR GREASE

DESIGNED TO MEET CHALLENGES

Shell Gadus S2 OG is a range of a premium quality, full EP lubricants developed for the lubrication and protection of open gears and wire ropes subjected to extremes of ambient temperature and operating conditions. They are a unique blend of high quality paraffinic mineral and synthetic base oils with carefully selected additives to provide optimum performance. Its balanced formulation allows the lubricant to stay soft and pliable over long periods, thus helping to minimise the build-up of lubricant in the roots of the gear teeth.

PERFORMANCE FEATURES

EXCEPTIONAL PHYSICAL AND MECHANICAL STABILITY

- Shell Gadus S2 OG retains its natural protective properties over its long working life.

EXCELLENT ANTI-WEAR PERFORMANCE

- At working temperatures, speeds and pressures, Shell Gadus S2 OG forms a protective cushion between the large gear (girth, bull etc) and pinion teeth.

SUPERB LOAD CARRYING CAPACITY

- Molybdenum disulphide and other solid lubricants combine to reduce tooth contact zone temperatures, reduce gear surface pitting and help alleviate 'stick-slip' conditions.

WATER REPELLENT

- Effectively resists water 'wash-off' by immersion or spray.

CORROSION PROTECTION

- Protects metal surfaces from corrosion in hostile environments such as salt-water conditions. Repels dirt and dust.

APPLICATIONS

- Heavily loaded open gears, particularly those found in grinding mills, kilns, shovels, draglines, ship loaders, stackers and reclaimers and excavator applications. When choosing a product to suit your ambient temperature conditions, always consult with your Shell representative for the appropriate grade.
- Multi service lubricant that can be used as the one grease (multi-purpose and open gear) for the entire machine on most shovels, excavators and draglines (excluding electrical motors bearings).
- Surface dressing of slow moving gears open to the atmosphere.
- Plain bearings, pivot pins/bushings and articulations found in earth moving equipment.
- Mooring, static and slow moving wire ropes including those intermittently immersed in salt water.
- Wide variety of heavy-duty mining and industrial applications.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

APPROVED BY:

- FLSmith (Shell Gadus S2 OG 500, 400, 205)
- Norberg (Shell Gadus S2 OG 400)
- Ferry Capitain (Shell Gadus S2 OG 500, 400, 205)
- Falk (Shell Gadus S2 OG 400)
- Lincoln (All Shell Gadus S2 OG).

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	80	85
Kinematic Viscosity (ISO 3016) (Base Oil) @ 40°C mm ² /s @ 100°C mm ² /s	1600 80	1600 80
Density @ 15°C kg/m ³ (ISO 12185)	1.018	1.070
Flash Point (COC) °C (ISO 2592)	min. 130	min. 130
4 Ball Extreme Pressure Test (ASTM D 2596, ASTM D 2266)	min. 6200	min. 6200
Weld Load N Scar Diameter mm	max. 0.8	max. 0.8
Timken OK Load without solids N (ASTM D 2509)	min. 45	min. 45
Falex Continuous Load Failure N (ASTM D 3233)	min. 20450	min. 20450