

Lubchem Wireline Grease Seal Application and Selection Guide



Wireline Products



Product Description

Product Description

Series 10-AG Synthetic Arctic Grade Biodegradable Wireline Lubricant/Sealant Resistant to CO2 and H2S

Series 10-AG (arctic grade) is formulated for use in the most extreme cold climates and is the most technologically advanced wireline lubricant/sealant available.

Series 10-AG is the ONLY cost effective, fully synthetic, biodegradable, non-toxic, arctic grade, CO2/H2S resistant, condensate and down hole chemical insoluble wireline lubricant/sealant on the market. Because Series 10-AG is insoluble in condensate and other down hole chemicals, its lower viscosity will still provide for reduced friction, wireline protective barrier, excellent sealing properties while at the same time allowing the operator to reduce head pressure and reduce amount of lubricant/sealant required on the job.

Benefits:

- Biodegradable/non-toxic
- Extreme low temperature
- Insoluble in condensate, brine water, and down hole chemicals
- Low viscosity reduces pump head pressures
- Pour point -55°C (-67F)
- Resistant to CO2 in concentrations up to 40%
- Contains no silicone - Silicone oil is soluble in condensate and has very poor lubricating properties
- Excellent lubricity
- Reduces splattering and dripping at well location
- Prolongs wireline life expectancy
- Excellent thermal and oxidation stability
- Has no hazardous transportation limit and is not considered hazardous waste

Application:

Series 10-AG is recommended in extreme cold environments for braided wireline, cables, and wire rope where harsh CO2 and H2S corrosive conditions exist. Recommended for applications where ambient temperatures reach -50°C. (-58F).

Solubility:

Toluene	Insoluble @ 77°F Slight Solubility @ 212°F
Cyclohexane	Insoluble @ 77°F Insoluble @ 167°F
Water	Insoluble @ 77°F Insoluble @ 210°F

Viscosity:

Viscosity Table	
ASTM D-446	
Given Temperature	cSt
-40°F	25,894
-30°F	9,722
-20°F	6,740
-10°F	3,385
32°F	328

Packaging Sizes:

16 Gallon drum
55 Gallon drum
325 Gallon tote
ISO Tank

Wireline Products



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Series 10-WG Synthetic Winter Grade Biodegradable Wireline Lubricant/Sealant Resistant to CO2 and H2S

Lubchem's Series 10-WG is a highly advanced biodegradable, synthetic lubricant/sealant that provides superior protection for braided wireline, cables, and wire rope where harsh CO2 and H2S corrosive conditions exist. Series 10-WG will reduce head pressure while being insoluble in water, condensate and other down hole chemicals. Series 10-WG is 100% synthetic grease seal developed to protect wireline exposed to environments where conventional wireline sealants fail.

Benefits:

- Insoluble in condensate
- Insoluble in brine water
- Pour point -20°F
- Resistant to CO2 in concentrations up to 40%
- Biodegradable
- Contains no silicone oil
- Excellent lubricity
- Reduces splattering and dripping at well location
- Prolongs wireline life expectancy
- Excellent thermal and oxidation stability
- Reduces pump head pressure

Application:

Series 10-WG is recommended in cold environments for braided wireline, cables, and wire rope where harsh CO2 and H2S corrosive conditions exist. Recommended for applications where ambient temperatures reach -20°F.

Solubility:

Toluene	Insoluble @ 77°F Slight Solubility @ 212°F
Cyclohexane	Insoluble @ 77°F Insoluble @ 167°F
Water	Insoluble @ 77°F Insoluble @ 210°F

Viscosity:

Custom viscosities available to meet customer specifications

Packaging Sizes:

16 Gallon drum
55 Gallon drum
325 Gallon tote
ISO Tank

Wireline Products



Product Description

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Series 10-RG Regular Grade Synthetic Biodegradable Wireline Lubricant/Sealant Resistant to CO2 and H2S

Series 10-RG is highly insoluble in water, condensate and other down hole chemicals. Made from the most technologically advanced oils, Lubchem's Series 10-RG is fully synthetic and biodegradable. Series 10-RG has superior adhesion capabilities which reduces splatter and drip while providing a protective coating against condensate, CO2, H2S, caustic acids, brine, and other chemicals present down hole. Series 10-RG contains a specially balanced combination of corrosion inhibitors, CO2/H2S inhibitors, anti-oxidants and anti-wear additives for reducing friction and keeping wireline wear down to a minimum even under the most extreme operating environments.

Benefits:

- Insoluble in condensate
- Insoluble in brine water
- Pour point -10°F
- Resistant to CO2 in concentrations up to 40%
- Biodegradable/non-toxic
- Contains no silicone oil
- Excellent lubricity
- Reduces splattering and dripping around equipment being used on the rig floor
- Prolongs wireline life expectancy
- Excellent thermal and oxidation stability
- Has no hazardous transportation limit and is not considered hazardous waste

Application:

Series 10-RG wireline lubricants/sealants are recommended for braided wireline, cables, and wire rope where harsh CO2 and H2S corrosive conditions exist. Series 10-RG is recommended where ambient temperatures do not go below -10°F.

Solubility:

Toluene	Insoluble @ 77°F Slight Solubility @ 212°F
Cyclohexane	Insoluble @ 77°F Insoluble @ 167°F
Water	Insoluble @ 77°F Insoluble @ 210°F

Viscosity:

Custom viscosities available to meet customer specifications

Packaging Sizes:

16 Gallon drum
55 Gallon drum
325 Gallon tote
ISO Tank

Wireline Products



Product Description

Product Description

Lubchem 4I-ISO Lubricant/Sealant

Lubchem 4I-ISO is an excellent lubricant/sealant with extra corrosion inhibitors designed for more effective wireline inhibitors, lubrication and ease of wireline operations. For maximum protection 4I-ISO provides an enhanced inhibitor package for applications where H2S is present.

Application:

Lubchem 4I is recommended for braided wireline. If a higher viscosity is required please see our 4I-24 technical data sheet. This product is also available in ISO grades 5,000 and 10,000.

Typical Properties:

4I-ISO

Grade	68	220	460	680	1500
Appearance	Lt. Yellow	Amber	Amber	Dk Amber	Dk Amber
Flash Point, °F	>300	>300	>300	>300	>300
Viscosity Range cSt@40°C	61.2-74.8	198-242	414-506	612-748	1350-1650
Pour Point, °C	-40	-26	-12	-6	-6
Rust, D-3603	Pass	Pass	Pass	Pass	Pass
Texture	Tacky Liquid	Tacky Liquid	Tacky Liquid	Tacky Liquid	Tacky Liquid

Benefits:

- Provides enhanced corrosion package
- Provides both lubrication and sealing
- Protects against corrosion from down hole chemicals
- Prevents loss of well condensates and gasses during wireline operation
- Reduces corrosive effects of H2S
- Reduces drip and splatter at well location
- Increases wireline life

Packaging Sizes:

16 Gallon drum
55 Gallon drum
325 Gallon tote
ISO Tank

Wireline Products



Product Description

Product Description

Lubchem 4I-24

4I-24 With Formasil

Lubchem 4I is an excellent 24 viscosity lubricating sealant with extra corrosion inhibitors, designed for more effective wireline lubrication and ease of wireline operations. For maximum protection 4I-24 provides an enhanced inhibitor package for applications where H₂S is present.

There are a variety of viscosity grades to select from and special viscosity grades can be manufactured at customers request (24, 16, 12 & 10 are standard viscosities).

Lubchem 4I-24 is recommended for operations where high pressures exist, thus providing better seal retention. In addition to maintaining and holding higher seal pressures. Lubchem 4I-24 will reduce friction of the wireline, thus keeping wear on wireline and flow tubes to a minimum. 4I-24 will help retain higher working pressures, resulting in reducing the loss of condensate, fluids, or gas from the well.

Lubchem 4I is very effective under high shock conditions for the reduction of drip and spatter. The special cohesive and adhesive properties prevent wellsite contaminations.

Lubchem 4I reduces the corrosive effects of acids, caustics, salt water, and hydrogen sulfide (H₂S).

Benefits

- Provides enhanced corrosion package
- Provides both lubrication and sealing
- Protects against corrosion from downhole chemicals
- Prevents loss of well condensates and gasses during wireline operation
- Reduces corrosive effects of H₂S
- Reduces drip and splatter at well location
- Increases wireline life

Application

Lubchem 4I is recommended for braided wireline, cables and wire rope. It is applied by grease injector control heads and cable lubricators.

4I-24 Typical Observation

ColorAmber
 TextureTacky Liquid
 OdorMild
 API Gravity @ 60F (15C)31
 Density, lb/gal @ 77F (25C)7.25
 Specific Gravity, @ 77F (25C)0.869
 Flash Point, ASTM D-92390F(198C)
 Pour Point, ASTM D-9731F(-0.5C)
 Viscosity, Kinematic @ 40C, cSt.10,500-12000
 Viscosity Index (VI)315
 Rust –Preventive Test, ASTM D-3603
 @140F(60C)PASS

For additional protection, SGS-700 Series & SGS-800 series are recommended for use in wireline operations exposed to CO₂ and H₂S environments.

Wireline Products



Product Description

Product Description

Lubchem

SGS-700 Series

Biodegradable Wireline Honey Oil

Lubchem SGS-700 is a biodegradable series of synthetic grease seal products, developed to protect wireline exposed to environments where conventional wireline sealants fail. The product line is designed for use in deep, high temperature, corrosive oil & gas wells, up to 400°F, in the presence of H₂S and CO₂. Unlike conventional grease seal products, SGS-700 series maintains viscosity at elevated operating temperatures. A down hole corrosion inhibitor and EP additive package are incorporated and provide unequalled protection.

Application

For use with standard wireline grease injection units.

Features

- Completely biodegradable
- Non-hazardous
- Protects against H₂S up to 500,000ppm
- Protects against CO₂ up to 50%
- Fully additive treated

Performance Evaluation of SGS-700 Series Product Description

The 700 series is made from a 100% synthetic polymer which is biodegradable, has no reportable quantity (see note), and is not considered hazardous waste. The products are offered in viscosity grades of 10, 12, 16, 20 & 24 to meet a wide range of operating temperature and handling requirements. Each viscosity grade contains an additive package which includes an EP (extreme pressure) additive and a down hole corrosion inhibitor.

Product Features

The synthetic polymer oil used in the formulation of Lubchem SGS products provides good lubrication qualities, excellent high temperature stability, and is insoluble in down hole environments. The result is a product that provides barrier protection from corrosive fluids and gasses, maintains viscosity at elevated temperatures (better than traditional hydrocarbon based fluids) and remains on the wire line, thereby reducing costs. The SGS-700 series synthetic polymer base oil has been selected due to its unique properties which include the following:

- SGS-700 series maintains viscosity under temperatures encountered at bottom hole environments.
- SGS-700 series is insoluble in down hole environments.
- SGS-700 series is highly impermeable, and is impervious to CO₂, H₂O, O₂, H₂S and water vapor.
- SGS-700 series is non-volatile, has high oxidation stability and is extremely resistant to shear.

Corrosion Inhibitor Package

The synthetic polymer base oil is an excellent sealant which provides a formidable barrier against wear and corrosion to wire line in highly corrosive and high temperature applications. The carrier oil in the SGS-700 series formulations are considered a barrier or protective layer designed to keep the corrosive elements away from the metal. However, it is not the sole source of protection. Lubchem SGS-700 series formulations also incorporate high performance down hole corrosion inhibitor (Lubchem IS-3018) along with an excellent EP (extreme pressure) package. The corrosion inhibitor, Lubchem IS-3018 is effective at levels as low as 5ppm. The inhibitor chemically bonds to the wire line surface and provides an inhibitor film one molecule layer thick. This Inhibitor layer will not degrade under any concentration of H₂S, Acids, O₂, and CO₂.

Solubility:

Toluene	Insoluble @ 77°F Slight Solubility @ 212°F
Cyclohexane	Insoluble @ 77°F Insoluble @ 167°F
Water	Insoluble @ 77°F Insoluble @ 210°F
Ethanol	Slight Solubility @ 77°F Partial Solubility @ 170°F



Product Description

Lubchem SGS-800 Series

Biodegradable Wireline Honey Oil

Lubchem SGS-800 is a biodegradable series of synthetic grease seal products, developed to protect wireline exposed to environments where conventional wireline sealants fail. The SGS-800 line is designed for use in deep, high temperature, corrosive oil & gas wells, up to 475°F, in the presence of H₂S and CO₂.

Unlike conventional grease seal products SGS-800 series maintains viscosity at elevated operating temperatures. A downhole corrosion inhibitor and EP additive package are incorporated and provide unequalled protection.

Application

For use with standard wireline grease injection units.

Features

- **Completely biodegradable**
- **Non-hazardous**
- **Protects against H₂S up 500,000 ppm**
- **Protects against CO₂ up to 50%.**
- **Fully additive treated.**

Performance Evaluation of SGS-800

Product Description

The SGS-800 series is made from a 100% synthetic polymer which is biodegradable, has no hazardous transportation limit and is not considered hazardous waste. The products are offered in viscosity grades of 10, 12, 16, 20 & 24 to meet a wide range of operating temperature and handling requirements. Each viscosity grade contains an additive package which includes an EP (extreme pressure) additive and a downhole corrosion inhibitor.

Product Features

The synthetic polymer oil used in the formulation of Lubchem SGS products provides good lubrication qualities, excellent high temperature stability, and is insoluble in down hole environments. The result is a product that provides barrier protection from corrosive fluids and gasses, maintains viscosity at elevated temperatures (better than traditional hydrocarbon based fluids) and remains on the wire line, thereby reducing costs. The SGS-700 synthetic polymer base oil has been selected due to its unique properties which include the following:

- SGS-800 maintains viscosity under high temperatures encountered at bottom hole temperatures.
- SGS-800 is insoluble in down hole environments.
- SGS-800 is highly impermeable, and is impervious to CO₂, H₂O, O₂, H₂S and water vapor.
- SGS-800 is non-volatile, has high oxidation stability and is extremely resistant to shear

Product Description

Corrosion Inhibitor and EP Package

The synthetic polymer base oil is an excellent sealant which provides a formidable barrier against wear and corrosion to wire line in highly corrosive and high temperature applications. The carrier oil in the SGS-800 formulations is considered a barrier or protective layer designed to keep the corrosive elements away from the metal. However, it is not the sole source of corrosion protection. Lubchem SGS-800 formulations also incorporate a high performance downhole corrosion inhibitor (Lubchem IS-3018) along with an excellent EP (extreme pressure) Package. The corrosion inhibitor, Lubchem IS-3018 is effective at levels as low as 5 ppm. The inhibitor chemically bonds to the wire line surface and provides an inhibitor film one molecule layer thick. This inhibitor layer will not degrade under any concentration of H₂S, Acids, Oxygen or CO₂.

Solubility:

Toluene	Insoluble @ 77°F Slight Solubility @ 212°F
Cyclohexane	Insoluble @ 77°F Insoluble @ 167°F
Water	Insoluble Insoluble @ 210°F
Ethanol	Slight Solubility @ 77°F Partial Solubility @ 170°F

Standard Viscosities

Synthetic Grease Seal 816 (SGS-816)

Viscosity Class	16 visc
Viscosity CPS @ 77°F	5000-6000
Pumpable Temperature	-15°F

Synthetic Grease Seal 820 (SGS-820)

Viscosity Class	20 visc
Viscosity CPS @ 77°F	14500-16500
Pumpable Temperature	-0°F

Synthetic Grease Seal 824 (SGS-824)

Viscosity Class	24 visc
Viscosity CPS @ 77°F	21000-24000
Pumpable Temperature	10°F

Custom Viscosities

Custom viscosities are available in ranges from 1000 cSt to 260,000 cSt. Custom viscosities can be controlled to within 1% of the customers specification. In other words if a viscosity of 26,781 cSt provides the sealing you require, your product will be 26,781 cSt every time you use it.

Wireline Products



Product Description

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Lubchem LCI-966

Formulated For CO2 Applications

Lubchem LCI-966 is a 100% synthetic formulation which protects wireline cable from the corrosive effects associated with CO₂ environments. Unlike hydrocarbon based lubricants, LCI-966 is totally impervious to CO₂ and H₂S.

LCI-966 provides for excellent seal retention, surface adhesion, and lubricity in wireline operations where extreme corrosive elements and high pressures exist.

Benefits

- 100% Synthetic
- Impervious to CO₂ and H₂S
- Less viscosity change with temperature fluctuations
- Prolonged wireline life expectancy
- Low surface tension
- Chemically inert and resistant to harsh downhole chemicals
- Reduces splatter and dripping at well location
- Provides enhanced corrosion package
- Very economical
- Pour point on all LCI-966 viscosities is -65°F
- Excellent oxidation and thermal stability

Application

LCI-966 is recommended for braided wireline, cables, and wire rope where harsh CO₂ and H₂S corrosive environments exist.

Standard Viscosities

Product Code: LCI-966 10V

Viscosity Class.....10 visc
Viscosity cSt275-375

Product Code: LCI-966 12V

Viscosity Class.....12 visc
Viscosity cSt750-850

Product Code: LCI-966 16V

Viscosity Class.....16 visc
Viscosity cSt1720-1920

Product Code: LCI-966 20V

Class.....20 visc
Viscosity cSt7000-8000

Product Code: LCI-966 24V

Class.....24 visc
Viscosity cSt10500-12000

Custom Viscosities

Custom viscosities are available in ranges from 275 cSt to 100,000 cSt.

Packaging Sizes

16 gallon
55 gallon
325 gallon

Color – Green

Wireline Products



Product Description

Product Description

Lubchem BWL-700

Biodegradable Wireline Lubricant & Preservative

BWL-700 is a non-petroleum preservative lubricant incorporating polymers and corrosion inhibitors. BWL-700 is nontoxic and nonhazardous and formulated to penetrate, lubricate, and protect wireline from the effects of corrosive environments. BWL-700 penetrates between the wires and strands down to the core. It forms a self healing skin which is resistant to petroleum hydrocarbons and chlorinated compounds. This compound will protect against corrosion caused by organic acids, caustics, and brine water. BWL-700 will not run off at elevated temperatures and will not form a sheen on water.

Lubchem BWL-700HV

This is a high viscosity version of the BWL-700 and shares the same qualities. It has the viscosity of a honey oil.

Application

For use on braided wireline, cable and wire rope. Apply with standard wireline spray equipment, brush or spatula.

Features

- Water insoluble and washout resistant.
- Fully additive treated.
- Low Staining
- Allows for visual inspection of wire rope.
- Film forming to protect against atmospheric conditions.

Physical Properties

- Color/ Texture Dark Amber / Tacky
- Viscosity #4 Ford Cup @ 77°F 20 seconds
- Rust Prevention, D-1743, rating Pass
- Specific Gravity92
- Density lbs/gal @ 77°F 7.38
- Flash Point ASTM D-92 485°F

Product Code

BWL700 or BWL700HV

Lubchem WL-600 Penetrant Biodegradable Wireline Spray

WL-600 is formulated to penetrate, lubricate, and protect wireline from the corrosive environments encountered in downhole applications. The corrosion inhibitor package in WL-600 shields braided wireline from corrosion caused by organic acids, caustics and brine water. The extreme pressure package in WL-600 incorporates a proprietary wetting agent which enables the product to quickly penetrate to the inner core of the wireline. The fast penetrating action of WL-600 provides immediate and thorough protection from wear and corrosion.

Application

For use on braided wireline, cable and wire rope. Apply with standard wireline spray equipment.

Features

- Outstanding low temperature performance.
- Water insoluble and washout resistant.
- Fully additive treated.
- Low Staining

Physical Properties

- Color/ Texture Dark Amber / Tacky
- Viscosity #4 Ford Cup @ 77°F 14 - 18 seconds
- Rust Prevention, D-1743, rating Pass
- Specific Gravity88 - .89
- Density lbs/gal @ 77°F 7.38
- Flash Point ASTM D-9235 500 °F

Product Code

WL600