

Dirghayu

Green Bio-based Wire Rope Greases



Engineering The Grease Technology

World Class Greasing Solutions

Sustainability Through **Green Future**



The Superior Eco-Friendly Wire Rope Solution

Wire ropes are integral components of cranes employed across various industries. These ropes consist of numerous strands wound in a twisted configuration around a core. During lifting operations, these strands endure significant stress due to the weight being hoisted and the friction generated between them and the core as they move. Consequently, standard greases are unsuitable for this application.

The primary attributes of wire rope greases include a high level of lubricity to minimize friction between individual strands and the core while in operation. Additionally, these greases must possess the capability to effectively penetrate from the outermost layer of the wire rope all the way to the core, which is intertwined with twisted wire ropes.

Furthermore, the specific properties of wire rope greases are contingent on their intended use. Various types of wire rope greases are tailored for distinct applications, each of which is explained in detail separately. These greases collectively fall under the category of Dressing Greases because they necessitate regular application at specified intervals for re-lubrication. The frequency of re-lubrication depends on the particular application and can be administered either manually or automatically using specialized auto lubricators equipped with pumps.

**Very High
Lubricity**

**Excellent
Penetration**

**Strong
Adhesion
Due To
Polar Nature**

**High Viscosity
Index**

**Rust &
Corrosion
Prevention**



Handling & Storage temperature (0 to 40°C)



Packing's available in 5 Kg, 18 Kg & 180 Kg



Exclusive Properties

Very High Lubricity: In comparison to petroleum and synthetic lubricants, bio-based lubricants exhibit exceptional lubricity. This quality substantially reduces friction between the wire rope strands and the core, ultimately extending the wire rope's lifespan.

Penetration: Bio-based lubricants, particularly those derived from vegetable oils, naturally have a polar nature. This characteristic allows them to penetrate into wire rope strands without the need for additional solvents. This superior penetration ensures excellent wear and corrosion resistance, as the lubricant reaches every strand core effectively.

Polar Nature: Bio-based lubricants, due to their polar nature, exhibit strong adhesion to each wire strand. They form a fine protective film around each strand, enabling them to withstand temperature variations and resist rubbing off during operation.

High Viscosity Index: Bio-based lubricants maintain nearly uniform viscosity under all temperatures. Their viscosity and grade remain consistent even at elevated temperatures, providing reliable performance.

Rust & Corrosion Prevention: These lubricants effectively prevent corrosion by displacing moisture and forming a thin, continuous lubricant film that shields against corrosion.

Biodegradable & Non-Toxic: In line with environmental regulations in developed countries, bio-based lubricants are mandatory for marine applications due to their eco-friendly properties. Additionally, they meet toxicity requirements, making them suitable for use in the food and pharmaceutical industries. Being bio-based simplifies disposal, posing no harm to the environment.

High Thermal & Mechanical Stability: Bio-based lubricants exhibit remarkable thermal and mechanical stability, allowing for extended re-lubrication intervals.

Tackiness & Water Resistance: Their tacky nature prevents fling-off, and they are water-resistant, effectively displacing moisture to safeguard against corrosion.

Resistance to Water Washout: Bio-based lubricants resist water washout or emulsification, forming a protective layer that guards against rust and corrosion.

Non-Soap Process: The selection of a non-soap manufacturing process offers numerous advantages, such as the ability to operate at high temperatures, a higher dropping point, and increased maximum bearing speed when compared to simple or complex soap-based lubricants.



Dirghayu General Purpose Wire Rope Dressing Grease WRD-UR-GP (LD & HD)

Test	Test Method	Unit	STD VALUE	WRD-UR-GP-LD	WRD-UR-GP-HD
Color			Dark Brown	Dark Brown	Dark Brown
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		189.9	189.9
NLGI GRADE			0-1	0-1	0-1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 - 385	320	320
Worked Penetration after 10,000 Strokes	ASTM D 217	mm	310 - 385	360	360
Four Ball Weld Load	ASTM D 2596	Kg		200	450
Four Ball Scar Dia.	ASTM D 2266	mm		0.51	0.5
Drop point	ASTM D 556	0C		190	190
Copper Strip corrosion Test	ASTM D 4048		1a	1a	1a
Operating Temperature	In-house Method	0C		-10 to 120	-10 to 120



Dirghayu High temperature Wire Rope Dressing Grease WRD-UR-HT & WRD UR-HT-HD

Test	Test Method	Unit	STD VALUE	WRD-UR-HT	WRD-UR-HT- HD
Color			Black	Black	Black
Additive			MoS2	MoS2	MoS2
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		208.7	330
NLGI GRADE			1	1	1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 - 340	310	315
Worked Penetration after 10,000 Strokes	ASTM D 217	mm	310 - 340	340	345
Four Ball Weld Load	ASTM D 2596	Kg		280	620
Four Ball Scar Dia.	ASTM D 2266	mm		0.39	0.38
Drop point	ASTM D 556	0C		250	250
Copper Strip corrosion Test	ASTM D 4048		1a	1a	1a
Operating Temperature	In-house Method	0C		-10 to 220	-10 to 220



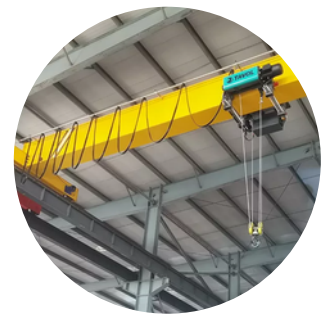
Dirghayu Continuous Duty Wire Rope Dressing Grease WRD-UR-CD

Test	Test Method	Unit	STD VALUE	WRD-UR CD-LD	WRD-UR CD-HD
Color				Brown	Black
Additive				-	MoS2
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		208.7	208.7
NLGI GRADE			1	1	1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 - 340	310	310
Worked Penetration after 10,0000 Strokes	ASTM D 217	mm	310 - 340	340	335
Four Ball Weld Load	ASTM D 2596	Kg		220	480
Four Ball Scar Dia.	ASTM D 2266	mm		0.41	0.39
Drop point	ASTM D 556	0C		190	250
Copper Strip corrosion Test	ASTM D 4048		1a	1a	1 a
Operating Temperature	In-house Method	0C		-10 to 140	-10 to 220



Dirghayu Under roof chemical vapor Wire Rope Dressing Grease WRD-UR CV

Test	Test Method	Unit	STD VALUE	WRD-UR - CV
Color			Grayish Black	Grayish Black
Additive			Graphite	Graphite
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		208.7
NLGI GRADE			0-1	0-1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 - 385	320
Worked Penetration after 10,000 Strokes	ASTM D 217	mm	310 - 385	355
Four Ball Weld Load	ASTM D 2596	Kg		250
Four Ball Scar Dia.	ASTM D 2266	mm		0.486
Drop point	ASTM D 556	0C		190
Copper Strip corrosion Test	ASTM D 4048		1a	1a
Water Spray off test	ASTM D 4049	%	<5	3.95
Operating Temperature	In-house Method	0C		-10 to 140



Dirghayu Outer field Wire Rope Dressing Grease WRD-OFO & WRD-OFO-EP

Test	Test Method	Unit	STD VALUE	WRD-OFO	WRD-OFO-EP
Color			Dark Brown	Dark Brown	Dark Brown
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		208.7	208.7
NLGI GRADE			0-1	0-1	0-1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 - 385	320	320
Worked Penetration after 10,000 Strokes	ASTM D 217	mm	310 - 385	360	355
Four Ball Weld Load	ASTM D 2596	Kg		220	450
Four Ball Scar Dia.	ASTM D 2266	mm		0.52	0.47
Drop point	ASTM D 556	0C		190	250
Copper Strip corrosion Test	ASTM D 4048		1a	1 a	1a
Water Spray off test	ASTM D 4049	%	<5	4.86	3.42
Operating Temperature	In-house Method	0C		-10 to 140	-10 to 200



Dirghayu Wire Rope Dressing Grease for Mining WRD-Mining

Test	Test Method	Unit	STD VALUE	WRD-Mining
Color			Black	Black
Additive			MoS2	MoS2
Base Oil Viscosity @ 40°C	ASTM D 445	cSt		278.6
NLGI GRADE			1	1
Worked Penetration after 60 Strokes	ASTM D 217	mm	310 – 340	310
Worked Penetration after 10,000 Strokes	ASTM D 217	mm	310 – 340	340
Four Ball Weld Load	ASTM D 2596	Kg		320
Four Ball Scar Dia.	ASTM D 2266	mm		0.39
Drop point	ASTM D 556	0C		250
Water Spray off test	ASTM D 4049	%	<5	3
Operating Temperature	In-house Method	0C		-10 to 220

