

Application

DNR INOL Spark SPO-A is a high quality, low viscosity dielectric fluid designed to perform flawlessly over a broad range of metal removal rates.

Low viscosity of DNR INOL Spark SPO-A provides uniform cooling of both electrode and workpiece while allowing rapid settling of the metal particles. It works as an insulator but deionizes quickly, at applied potentials, to conduct the spark discharge.

DNR INOL Spark SPO-A is a dielectric fluid for general purpose mold and die work where good flushing, close tolerances and optimum rates of metal removal are important. It widely out-performed the common EDM fluids more than tenfold in oxidation stability characteristics, sludge formation and service life.

DNR INOL Spark SPO-A runs successfully in all EDM Spark Erosion machines, CNC EDMs & ZNC EDMs.

Data (Typical Values)

Characteristics	Reference Method	Values
Viscosity @ 40°C	ASTM D 445	2-3 CST
Specific Gravity @ 60°F	ASTM D 792	0.77
Flash Point	ASTM D 92	125°C
Aniline	ASTM D 611	> 90
Odour	ASTM D 1296	NIL
Colour (Saybolt)	ASTM D 156	30

(Indicated values may vary without any prior notices)



"DNR INOL"
Specialist In All Synthetic Tech Oils

Advantages

- ◆ Desirable dielectric properties along with low electrical conductivity.
- ◆ Good heat transfer properties for proper quenching of melted metal.
- ◆ Low viscosity for uniform cooling and optimal flushing and separation.
- ◆ Low volatility reduces excessive top-up.
- ◆ Low level of fuming; no unpleasant odors.
- ◆ Outperforms common EDM fluids more than tenfold in oxidation stability, sludge formation, and service life.



SPO - 'A' Oils are fast setting for simplified purification

Refer to MSDS for proper handling and disposal. Additional advise can be obtained from DNR representative.

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy

Description & Application Areas

Aromatic Rubber Processing Oil is an aromatic type rubber process oil with good solvency. The oil is dark in colour and has good solvency. It is compatible with most rubber polymers.

It is suitable for use in manufacture of automobile rubber tyres, belting, battery case etc. where colour is not an important parameter.

Physio - Chemical Properties

Characteristics	Values
Colour, ASTM. (Max)	Dark Green
Density @ 29.5 °C.gm/ml	0.9900
Kinematic Viscosity @ 100° cSt	20 - 30
Flash Point COC, °C. (Min)	200 Min
Pour Point, °C. (Max)	35
Aniline Point, °C	40C - 50C
Neutralisation Number mg KOH/gm of oil. (Max)	0.10
V.G.C (Viscosity Gravity Constant)	0.9350
Molecular Analysis :	
Aromatics WT. %	75
Polar Compounds WT. %	13
Saturates WT. %	12

(Indicated values may vary without any prior notices)

Performance Benefits

- ◆ Adequate miscibility
- ◆ Excellent plasticizing properties

Available Quantities

Available in a pack size of 210 liter (MS Plain Barrel).



Application

DNR INOL Apple Neat Cut-18 is a non-staining type of synthetic technology straight cutting oil, treated with fortified EP additives with sufficient oiliness suitable for light and medium conditions.

The advanced additive technology of DNR INOL Apple Neat Cut-18 leads to exceptional wetting and lubricating properties. Usage of this oil leads to minimal mist generation, superior cooling of tools and lowest fluid friction because of its low viscosity value.

DNR INOL Apple Neat Cut-18 is suitable for all CNC's lathe, vertical & horizontal machining centers, Grinding, Milling like machining operations in mild steels, stainless steels, carbon steels, nickel and manganese steels. This oil is also suitable for carbide tools, copper and aluminum and their alloys.

Advantages

- ◆ Good for environmental requirements as it reduces the disposal costs and meets the productivity demands.
- ◆ High cutting efficiency delivers extended tool life and it's excellent finish allows for higher productivity.
- ◆ Maintains accuracy of grinding wheels over a long period of time with reduced down time and cooling costs.
- ◆ Good chip flushing.
- ◆ Reduces drag out and improves filtration properties.
- ◆ Good wettability.
- ◆ Good strength of oil film.
- ◆ High resistance to rusting and corrosion

Data (Typical Values)

Characteristics	Reference Method	Values
Viscosity @ 40°C	ASTM D 445	18 CST
Viscosity Index, MIN	ASTM D 2270	103
Flash Point	ASTM D 92	198°C
Pour Point	ASTM D 97	(-) 15°C
Total Acidity (mg KOH/gm)	ASTM D 664	0.0001
Colour (Saybolt)	ASTM D 156	30

(Indicated values may vary without any prior notices)



Apple Neat Cut-18 successfully being used

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



“DNR INOL”
Specialist In All Synthetic Tech Oils

Product Description

DNR INOL SP Direct Series are low viscosity oils manufactured from highly refined base stocks possessing excellent chemical and oxidation stability and further fortified with carefully selected oxidation and rust inhibitors, antiwear and antifoam agents.

Applications

DNR INOL SP Direct Series is a series of High quality fluids commended for lubrication of **Engraving Machines, Automatic Double Mitre Saw Machines, Spindle Bearings of CNC VMC Machines and Timing Gears.**

Features & Benefits

Features	Benefits
High cutting efficiency delivers extended tool life and excellent surface finish	<ul style="list-style-type: none"> • Good for your environmental requirements • Reduces disposal costs • Meets your productivity demands
Advanced additive technology leads to exceptional wetting and lubricating properties	<ul style="list-style-type: none"> • Allows higher productivity • Maintains accuracy of grinding wheels over a long time period with reduced down-time and tooling costs, e.g. wheel dressing etc.
Minimal mist generation and low viscosity	<ul style="list-style-type: none"> • Improves working environment • Reduces drag out and improves filtration properties

Data (Typical Values)

DNR SP Direct Series	2	5	12	15	22
Viscosity, cst @40°C	3.75	4.75	11.8	14.8	22.8
Viscosity Index MIN	> 90	> 90	> 90	> 90	> 90
Flash point, (COC), °C, MIN	>120	>130	>150	>160	>180
Pour point, °C, MAX	(-) 6	(-) 6	(-) 6	(-) 3	(-) 3

(These are typical figures and do not constitute a specification)

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



“DNR INOL”
Specialist In All Synthetic Tech Oils

Application

DNR INOL **AppleCut Blue** is a general purpose emulsifiable metal cutting oil which forms a milky blue emulsion when dissolved with water. **DNR INOL AppleCut Blue** is specifically formulated for use in intensive operations on ferrous metals. It is manufactured from specially selected Lube base stocks and blended along with specifically formulated Emulsifier along with other additives, lubricity agents, Corrosion inhibitors and suitable biocides, which ensure its complete dispersion in water, forming a homogenous and stable emulsion in water upto medium hardness (<400 ppm).

The emulsion can be prepared by slowly adding DNR INOL AppleCut Blue to the water and not vice versa to avoid inversion of the emulsion. The required quantity of the Fluid is added with 3- 4 part of water to obtain a concentrated emulsion which is subsequently diluted with the required quantity of the water. The emulsion is copiously applied to flood the work and tool at the machining area. This ensures better performance. Material Compatibility DNR INOL AppleCut Blue is designed for use in medium to heavy duty machining operations of Cast Iron, Carbon Steel, Ferrous metals and Ferrous alloys

Data (Typical Values)

Characteristics	Reference Method	Values
Appearance	Visual	Brown Clear Liquid
Colour after Emulsion	Visual	Light Milky Emulsion
Copper corrosion at 100° C, Min.	ASTM D 130	1a
Cast Iron corrosion test, 18:1 Emulsion with 250 ppm hard water, Max	ASTM D 4627	Less than 1%
pH of 5% solution	Internal	9.3 - 10

(Indicated values may vary without any prior notices)



“DNR INOL”
Specialist In All Synthetic Tech Oils

Advantages

- ◆ Excellent stability.
- ◆ Good surface finish.
- ◆ Good protection against Rust & corrosion.
- ◆ Excellent wetting & cooling properties.
- ◆ Long life without any fowling or rancidity.
- ◆ Compatible with Paint and Sealing materials of older machines.

Material Compatibility

DNR AppleCut Blue is designed for use in medium to heavy duty machining operations of Cast Iron, Carbon Steel, Ferrous metals and Ferrous alloys.

Recomm. Concentration

Metal	Compatibility	Operation	Conc.
Ferrous	Yes	Drilling	01:15
Aluminium	Yes	Broaching	01:10
Brass / Copper	Yes	Grinding	01:25
Titanium	No	Tapping	01:10
Magnesium	No	Miling	01:20

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy

Product Description

DNR INOL Apple Cut Plus is a high-quality multi-purpose water emulsifiable metal working fluid. The Product is specially formulated metal to form a stable superior quality, milky emulsion in a wide range of water hardness upto 400ppm.

Benefits

- ◆ The high oil content gives excellent machining tool lubrication and residual corrosion protection.
- ◆ High level of corrosion protection of machined parts during storage and transfer.
- ◆ Multi metal machining capability and low staining potential ferrous and non ferrous metals, including aluminum and yellow metal alloys.
- ◆ Readily forms emulsion in water.
- ◆ Wide application range allows product rationalization.
- ◆ It gives extended service life in the sump due to specially formulated biocide package.

Data (Typical Values)

Characteristics	Reference Method	Values
Appearance	Visual	Reddish Brown Liquid
Specific gravity @ 29.5°C	ASTM D 792	0.86
Emulsion type	ASTM G 205	Milky Emulsion
pH @ 5% emulsion (20 : 1)	ASTM D 1293	8.8 - 9.2
Corrosion test Breakpoint %	Internal	4%

(Indicated values may vary without any prior notices)



“DNR INOL”
Specialist In All Synthetic Tech Oils

210 Ltrs : Barrel

35 Ltrs : Carboy

Application

The superior emulsion stability, high level of lubricity and wide application range like CNC, General Machining's make DNR INOL Apple Cut Plus an extremely cost-effective general-purpose water emulsifiable metal working fluid. The product is free from nitrites, phenols and chlorinated additives characteristics, sludge formation and service life.

Mixing

Mixing DNR INOL Apple Cut Plus should be added gradually into the full volume of water - never the reverse, and gentle agitation maintained until all the oil has been added and a uniform emulsion obtained. Use lower concentration for top-up to achieve recommended mix ratios.

Recomm. Concentration

	%	Ratio
Grinding	2-3	50:1- 30:1
General Machining Non-Ferrous Materials	5-7	20:1 - 20:3
General Machining Ferrous Materials	5	20:1

Available Quantities

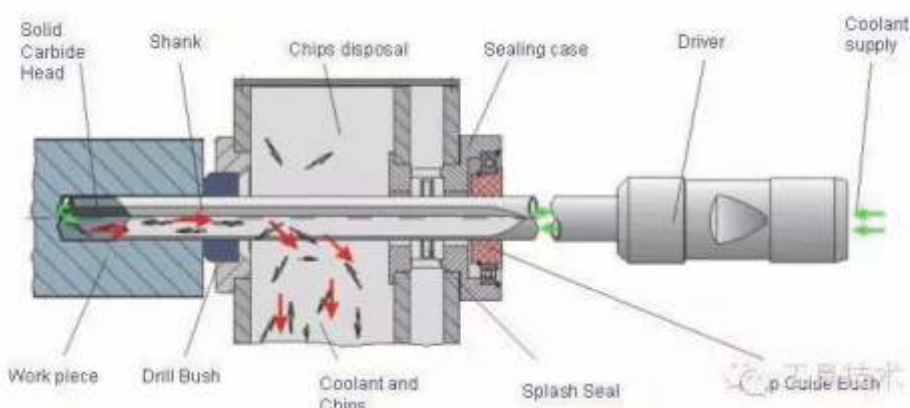


Product Description

DNR INOL GD-2 Gun Drilling Oil is heavy-duty oil developed for deep-hole drilling or gun drilling of cast iron, steel, high-speed steel, and other alloys. It is specially formulated with oiliness additives and extreme-pressure additives that provide reduced friction and good anti-weld properties at the chip-tool interface, resulting in extended cutting tool life and good surface finishes on the machined parts

DNRINOL GD-2 Gun Drilling Oil is recommended for Deep hole drilling, Boring, Broaching, Gun drilling, Tapping, Milling, Threading and honing operations of cast iron, steel and highspeed steel alloys. It is also used in machine tool industries, Vertical machining centers, Conventional lathe machine, Milling machine, Radial drilling machine and in multi spindle drilling.

DNRINOL GD-2 Gun Drilling Oil is not recommended for use on non-ferrous metals.



Cross Section of a Gun Drill Machine

Data (Typical Values)

Characteristics	Reference Method	Values
Colour	Internal	Visual
Odour	Internal	Mild
Flash Point, COC, °C	ASTM D 93	154
Copper Strip Corrosion, 3 Hrs / 100°C	ASTM D 130	4
Sap Value, mg KOH/gm	ASTM D 5558	14

(Indicated values may vary without any prior notices)

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy

Benefits

- ◆ Excellent performance in most difficult machining operations.
- ◆ Reduced friction.
- ◆ Helps extend cutting tool life.
- ◆ Good surface finish.
- ◆ Permits clear view of the work piece.



“DNR INOL”
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Synthetic Tech. Long Life Power Saving Hydraulic Oils

Application

DNR INOL Hydim HVI Series oils are formulated from hydrocracked base stocks with inherent oxidation and thermal stability. The products are further fortified with antioxidant, antirust, antifoam and antiwear additives, plus a special shear stable viscosity index improver which assists in maintaining viscosity under continuous use & severity of operation.

DNR INOL Hydim HVI Series oils are recommended for all hydraulic applications including critical systems in industrial and mobile equipment using high pressure vane, gear & piston pumps & are suitable for use in various types of earthmoving equipments.

DNR INOL Hydim HVI Series oils are specially designed for forging units, die casting machines and for moulding machines

Advantages

- ◆ A shear-stable viscosity modifier ensures correct viscosity at operating temperatures.
- ◆ Excellent antiwear properties.
- ◆ Excellent resistance to oxidation.
- ◆ Good demulsibility.
- ◆ Good protection against rust & corrosion.
- ◆ Long service life.

Health & Safety

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are mentioned.

Data (Typical Values)

Typical Characteristics	Reference Method	Typical Test Data			
		32	46	68	100
Specific Gravity	ASTM D 792	0.840	0.843	0.858	0.879
Kinematic Viscosity @ 100° cSt	ASTM D 445	6.8	8.33	10.45	14.18
Kinematic Viscosity at 40°C, cSt	ASTM D 445	34.24	44.88	66.44	100.8
Viscosity Index	ASTM D 2270	162	164	145	144
Pour Point, °C	ASTM D 97	(-)27	(-)30	(-)30	(-)24
Flash Point COC, °C	ASTM D 92	230	230	232	240

(Indicated values may vary without any prior notices)

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



“DNR INOL”
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DNR Hyd-Therm Fluid 50

Product Description

DNR INOL Hyd-Therm 50 is a thermic fluid manufactured from petroleum stocks produced by special refining process in which the thermally unstable components are removed.

Features

- ◆ Excellent oxidation & chemical stability
- ◆ Good heat transfer properties
- ◆ Low volatility
- ◆ Non-corrosive and non-toxic

Data (Typical Values)

Characteristics	Values
Kinematic Viscosity @ 40 °C, cSt	29 - 33
Flash Point (COC), °C, MIN	202
Viscosity Index, °C MAX	95
Pour Point, °C MAX	0
Copper Strip Corrosion 3HR @ 100 °C (ASTM), MAX	1
Neutralisation Number mg KOH/gm, MAX	0.13
Specific Heat Kcal/kg Cat	
260 C	0.724
280 C	0.756
300 C	0.767
Thermal Conductivity, Kcal/HR-MT °C at	
260 C	0.095
280 C	0.094
300 C	0.093

(Indicated values may vary without any Prior notices)

DNR Hyd-Therm Fluid 60

Product Description

DNR INOL Hyd-Therm 60 is a thermic fluid derived from the finest quality petroleum base stocks and is fortified with high performance additives to enhance performance at higher temperatures

Features

- ◆ Ability to provide superior performance in indirect closed fluid heat transfer system up to bulk operating temperature up to 320°C
- ◆ Increased life, reduced oxidation and thermal degradation
- ◆ Minimal fouling and deposit formation on heat transfer surface. Hence sustained heat transfer characteristics.

Data (Typical Values)

Characteristics	Values
Kinematic Viscosity @ 40 °C, cSt	29 - 36
Flash Point (COC), °C, MIN	218
Viscosity Index, °C MAX	100
Pour Point, °C MAX	0
Copper Strip Corrosion 3HR @ 100 °C (ASTM), MAX	1
Neutralisation Number mg KOH/gm, MAX	0.13
Specific Heat Kcal/kg Cat	
260 C	0.735
280 C	0.764
300 C	0.787
Thermal Conductivity, Kcal/HR-MT °C at	
260 C	0.098
280 C	0.097
300 C	0.095

(Indicated values may vary without any Prior notices)

Application

DNR Hyd-Therm 50/60 are recommended for all types of heat transfer applications. The products find extensive application in textile, pharmaceuticals, chemical and processing industries.



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210 Ltrs : Barrel



35 Ltrs : Carboy

Purpose 4T (10W-40)

Synthetic Tech. 4 Stroke Motorcycle engine Oil

Product Description

DNR INOL Purpose 4T is made from clear base oil extracted from natural gas, combined with a motorcycle-specific additive pack helping to keep the engine cleaner that helps in providing a much better motorcycle engine efficiency, performance, and protection.

Benefits

- ◆ Helps in keeping engine cleaner.
- ◆ Protects and increases the engine life.
- ◆ Helps in decreasing engine noise & vibration.
- ◆ Efficient and enhanced power delivery and responsiveness.

Data (Typical Values)

Characteristics	Reference Method	Values
Kinematic Viscosity @ 100°C mm ² /s	ASTM D 445	14.8
Kinematic Viscosity @ 40°C mm ² /s	ASTM D 445	90.8
Viscosity Index	ASTM D 2270	165
Density @ 15°C kg/m ³	ASTM D 4052	855
Flash Point °C	ASTM D 92	235
Pour Point °C	ASTM D 97	-36

(Indicated values may vary without any prior notices)

Application

DNR INOL Purpose 4T is suitable for motorcycle engines with high-performance air and are water cooled four stroked.

It is also suitable for motorcycle engines which are raced tuned with integral gearboxes and wet clutches

Available Quantity



35 Ltrs : Carboy



210 Ltrs : Barrel



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Purpose 5W-40

Synthetic Tech. Motor Oil

Product Description

DNR INOL Purpose 5W-40 has been specially formulated to protect much better than conventional motor oils by continuously preventing dirt and sludge build-up, for a very much improved performance and better responsiveness. This helps your engine to operate at its full potential right up to the next oil change.

Benefits

- ◆ High Shear stability.
- ◆ Low Viscosity & Friction.
- ◆ Long term oxidation stability.
- ◆ Engine noise and vibration is minimized.

Data (Typical Values)

Characteristics	Reference Method	Values
Kinematic Viscosity @ 100°C cSt	ASTM D 445	13.4
Kinematic Viscosity @ 40°C cSt	ASTM D 445	74.8
Hths Viscosity @ 150°C m PaS	ASTM D 4741	3.59
Density @ 15°C kg/l	ASTM D 4052	0.820
Flash Point °C	ASTM D 93	210
Pour Point °C	ASTM D 97	-37

(Indicated values may vary without any prior notices)

Application

DNR INOL Purpose 5W-40 is suitable for petrol engines that are fuel injected and fitted with 'blow-by' gas recirculation and catalytic converters that is used and driven in very extreme conditions.

Available Quantity



35 Ltrs : Carboy



210 Ltrs : Barrel



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Synthetic Tech. Long Life High Temperature Greases

DNR Metal HT 550 (High Temperature Grease)

Product Description

DNR INOL Metal HT 550 is a high-quality grease that contains high percentage of Moly Gel with Synthetic carriers and special additive package.

Application

DNR INOL Metal HT 550 is recommended for use in lubrication of Bearings, Bushes, Furnace joints, Oven Conveyor Motors & spares part operating at very high temperature where any of the conventional soap base grease cannot be recommended

Data (Typical Values)

Characteristics	Reference Method	Values
Appearance	Visual	Smooth Homogeneous
Colour	Visual	Greyish Black
% Solid	NA	-
Worked penetration @ 25°C 60 double	ASTM D 217	265 - 295
Dropping Point	ASTM D 2265	None
Usable Temperature	NA	Can withstand upto 550°C

(Indicated values may vary without any prior notices)

DNR Metal HT 1100 (High Temperature Grease)

Product Description

DNR INOL Metal HT 1100 is a high-quality grease which is an organometallic complex of copper reinforced with molybdenum disulphide & other solids to form a protective film on metal surfaces ensuring protection against seizure, corrosion pitting & galling of metal surface. This is further fortified with highly effective oxidation & corrosion inhibitors to combat environmental severities.

Application

DNR INOL Metal HT 1100 is recommended for applications on all static fasteners and mechanisms prone to seizure where other copper based anti-seize products may fail to perform. It is designed for use in threaded connections, nuts and bolts, studs, pipes and couplings, bearings, joints, lock-nuts etc. of steam / gas / chemical pipelines, assembly compound for cylinder heads, press fits, slipper pads, propeller shafts, heavy-duty marine, and oil rig machines. As a lubricant for slow speed heavily loaded swivel and journal bearings, large gears, and rotary kilns.

Data (Typical Values)

Characteristics	Reference Method	Values
Appearance	Visual	Smooth Grease
Colour	Visual	Copperish Red
Base Oil	NA	Mineral
Solid Lubricants	NA	Yes
Consistency	ASTM D 217	NLGI 2
Dropping Point, °C	ASTM D 2265	None

(Indicated values may vary without any Prior notices)

Features & Benefits

- Exceptional high temperature performance (Temperature Range : 12 C to + 1100 C for DNR HT 1100 & -12 C to +550 C for DNR HT 550)
- Excellent load carrying capability prevents seizure under heavy loads, for all threaded connections
- Reliable and Quick dismantling of mechanical parts reduces maintainance downtime
- Effective even in the most aggressive environments and is completely insoluble in water.

Available Quantities

Available in pack sizes of 5 kg/18 kg/182 kg (FOR INDUSTRIAL PURPOSES ONLY)



“DNR INOL”
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Synthetic Tech. Rotary/Screw Compressor Oils

Application

DNR INOL S2S Series is a series of Rotary and Screw Compressor oils which is acclaimed highly for extending compressor efficiency and reducing maintenance costs and downtime. It assures long functional life of lubricants and has low carbon foaming tendency to minimize deposits.

DNR INOL S2S Series is very useful in rotary air compressors lubrication and cooling of these rotary screw compressors.

The usage of DNR INOL S2S Series is recommended whenever the discharge temperature exceeds 90°C and /or the discharge pressure exceeds 9 bars.

Data (Typical Values)

Characteristics	Reference Method	Typical Test Data						
		32	46	68	100	150	220	320
Viscosity at 40°C	ASTM D 445	32	46	68	100	150	220	320
Viscosity Index	ASTM D 2270	136	139	147	143	141	140	139
Pour Point	ASTM D 97	<-42	<-42	<-42	<-39	<-38	<-37	<-36
Flash Point (Open Cup)	ASTM D 92	255	265	272	285	284	283	280

(Indicated values may vary without any prior notices)

Advantages

- ◆ Allows a good oil/air and oil/condensates separation.
- ◆ Protects the screws against wear and corrosion.
- ◆ High resistance to oxidation.
- ◆ Optimizes the compressor efficiency.
- ◆ Extends the drain intervals.
- ◆ Eco - friendly.
- ◆ Has anti-clogging properties that ensures the efficiency of the filters for a long period (upto 7000 hours).
- ◆ Extends the service life of separating filter elements.

Drain Intervals

The possible drain intervals of DNR S2S Series that can be achieved is :

- ◆ From 3000 to 6000 hours for fixed compressors in standard use
- ◆ Up to 7000 hours with lubricant analysis monitoring

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



“DNR INOL”
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Description & Application Areas

DNR INOL S2S Gear Oil Series lubricants are exceptional performance gear and bearing oils designed to provide outstanding service in terms of equipment protection, oil life and problem-free operation helping to enable increased customer productivity. DNR INOL S2S Gear Oil Series products feature excellent low temperature properties, as well as improved air release performance in the lower viscosity grades. These products are resistant to mechanical shear, even in heavily loaded gear and high shear bearing applications, so that there is virtually no loss of viscosity.

DNR INOL S2S Gear Oil Series lubricants are recommended for use in a wide variety of gear and bearing applications where high or low temperatures are encountered or where operating temperatures or bulk oil temperatures are such that conventional lubricants give unsatisfactory life, or where improved efficiency is desired. They are particularly effective in applications where the maintenance costs of component replacement, system cleaning and lubricant changes are high. Specific applications require selection of the appropriate viscosity grade and include:

- ◆ Filled for life gearboxes, especially high ratio/ low-efficiency worm gears.
- ◆ Remotely located gearboxes, where oil change-out is difficult.
- ◆ Low temperature applications, such as ski lifts where seasonal oil changes can be avoided • Mixer roll bearings and roll neck bearings where high temperatures are encountered.
- ◆ Plastic calenders
- ◆ Severe centrifuge applications, including marine centrifuges
- ◆ Railroad A/C Traction Drives

Typical Data

Characteristics	Reference Method	Typical Test Data									
		624	625	626	627	629	630	632	634	636	639
Viscosity @ 40°C, mm ² /s	ASTM D 445	33	47	66	100	150	222	320	461	682	1000
Viscosity @ 100°C, mm ² /s	ASTM D 445	6.2	8.7	11.3	15.4	21.2	28.5	37.8	51.0	70.0	99.1
Viscosity Index	ASTM D 2270	147	160	166	164	165	170	175	176	180	182
Pour Point	ASTM D 97	-55	-52	-52	- 49	- 49	- 49	- 49	-43	-43	-40
Flash Point , Cleveland Open Cup	ASTM D 92	237	229	229	234	223	223	226	225	223	220
Density @ 60°F, cm ³	ASTM D 4502	0.87	0.87	0.88	0.88	0.88	0.89	0.89	0.89	0.89	0.89

(Indicated values may vary without any prior notices)



“DNR INOL”
Specialist In All Synthetic Tech Oils

Features & Benefits

Features	Benefits
Superb high temperature thermal/oxidation resistance	Helps extend equipment high temperature operating capability. Long oil life, helps reduce maintenance costs. Helps minimize deposits to enable trouble-free operation and long filter life.
High Viscosity Index and absence of wax	Maintains viscosity and film thickness at high temperatures. Helps enable exceptional low temperature performance, including start-up.
Low traction coefficient	Helps reduce friction and increase efficiency in sliding mechanisms such as gearing, with potential for reduced power consumption and lower steady-state operating temperatures. Helps reduce friction and increase efficiency in sliding mechanisms such as gearing, with potential for reduced power consumption and lower steady-state operating temperatures.
High load carrying capability	Helps protect equipment and extends life; helps minimize unexpected downtime and extends service periods.
Balanced additive combination	Provides excellent performance in terms of rust and corrosion prevention, water separability, foam control and air release performance enabling problem-free operation in a wide range of industrial applications, and reduced operating costs.

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



**“DNR INOL”
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Description & Application Areas

DNR INOL Paraffinic Rubber Processing Oil 245 is a Predominant Paraffinic type rubber process oil which can quite suitably used as plastisizers.

It is suitable for use in EPDM RUBBERS, Butyl & Ethylene Propylene & Light colored Rubbers.

Typical Data

Characteristics	Values
Kinematic Viscosity @ 40° cSt	26 - 34
Flash Point COC, °C. (Min)	189 - 192
Aniline Point, °C (Min)	95
Copper Corrosion @ 100° C, 3 Hrs, Max	1
Clay Gelanalysis	NIL
Molecular Analysis :	
Asphaltenes WT. %	0.6
Polar Compounds WT. %	0.6
Aromatics WT. %	20.3
Saturates WT. %	79.1

(Indicated values may vary without any prior notices)

Performance Benefits

- ◆ Adequate miscibility
- ◆ Excellent plasticizing properties

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy



“DNR INOL”
Specialist In All Synthetic Tech Oils

Application

DNR INOL Hydrim AW Series oils are high performance hydraulic oils. These oils provide superior antiwear protection, excellent oxidation and thermal stability, outstanding hydraulic stability and good demulsibility.

DNR INOL Hydrim AW Series oils are recommended as a fluid media in hydraulic systems, operating under extremely severe conditions. These oils are recommended for sophisticated high performance electro-hydraulic or numerically controlled systems.

DNR INOL Hydrim AW Series oils are also recommended for lubrication of screw compressors requiring oil of excellent thermal stability and low CCR value. These oils are not suitable where the components are of silver or silver coated. These oils find wide usage as gear and bearing lubricants in coal pulverizers and a variety of other one and rock crushing machinery. These oils are also extensively used for long, trouble free operation of compressors, machine tools, hydraulic systems, circulating oil systems and small enclosed gears where EP lubricants are not necessary.

Data (Typical Values)

Typical Characteristics	Reference Method	Typical Test Data							
		32	46	68	100	150	220	320	
Density@29.5C, kg/1	ASTM D 1298	0.862	0.865	0.870	0.872	0.891	0.863	0.899	
Kinematic Viscosity @ 100 cSt	ASTM D 445	5.690	6.89	9.08	11.88	15.10	19.3	24.3	
Viscosity at 40C cSt	ASTM D 445	34.24	46.94	69.43	106.5	153.8	227.2	319.9	
Viscosity Index	ASTM D 2270	105	102	105	100	98	96	97	
Pour Point, C	ASTM D 97	(-)27	(-)24	(-)24	(-)21	(-)15	(-)9	(-)6	
Total Acid Number ,mg KOH/g	ASTM D 2896 (E)	0.45	.37	0.44	36	0.663	0.691	0.44	
Flash Point COC, C		230	240	250	260	276	278	282	

(Indicated values may vary without any prior notices)



“DNR INOL”
Specialist In All Synthetic Tech Oils

Advantages

- ◆ Ensure long service life due to outstanding oxidation and thermal stability.
- ◆ Provide sludge free high temperature performance and excellent filter ability characteristics. Readily separate from water due to excellent demulsibility characteristics.
- ◆ Provide superior long term protection against rust and corrosion.
- ◆ Have resistance to the formation of sludge and deposits in the system.
- ◆ Provide long life to moving parts due to adequate anti-wear properties.
- ◆ Have reduced foaming tendency.
- ◆ Ensure longer intervals between oil changes and system clean ups.
- ◆ Ensure problem free performance.

Health & Safety

These oils are unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of industrial and personal hygiene are mentioned.

Available Quantities



210 Ltrs : Barrel



35 Ltrs : Carboy

Description & Application Areas

DNR INOL RP Gear Oil Series are extra high performance gear oils having outstanding extreme pressure characteristics and load-carrying properties, intended for use in all types of enclosed gear drives with circulation or splash lubrication systems. DNR INOL RP Gear Oil Series is designed to stay ahead of the changing needs of gearbox technology. Gearbox technology design trends are towards smaller units with similar power throughput. This increase in power density places increased demands on gear oils. DNR INOL RP Gear Oil Series are formulated to meet the stress by providing extra protection for gears, bearings and seals.

DNR INOL RP Gear Oil Series are used in a wide range of industrial applications, especially spur, helical, bevel and worm gearing. Specific applications include:

- ◆ Industrial gearing for conveyers, agitators, dryers, extruders, fans, mixers, presses, pulpers, pumps (including oil well pumps), screens, extruders and other heavy duty applications.
- ◆ Non-gear applications include shaft couplings, screws and heavily loaded plain and rolling contact bearings operating at slow speeds.

Features & Benefits

Features	Benefits
Excellent resistance to oil oxidation and thermal degradation	Helps extend lubricant life with lower lubricant and lubrication costs and reduced scheduled downtime
High resistance to sludge and deposit formation	Cleaner systems and reduced maintenance
Optimised resistance to rust and corrosion of steel and corrosion of copper and soft metal alloys	Excellent protection of machine parts, with reduced maintenance and repair costs
Enhanced gear wear protection from micropitting	Less gear and bearing wear resulting in less unexpected downtime
Improved bearing wear protection	Improved bearing life resulting in higher productivity

Typical Data

Characteristics	Reference Method	Typical Test Data						
		68	100	150	220	320	460	680
Viscosity @ 40°C, mm ² /s	ASTM D 445	68	100	150	220	320	460	680
Viscosity @ 100°C, mm ² /s	ASTM D 445	8.6	11.3	14.9	19.0	24.0	30.9	38.5
Viscosity Index	ASTM D 2270	103	96	96	96	96	95	90
Pour Point	ASTM D 97	-26	-23	-23	-23	-23	-13	-10
Flash Point, Cleveland Open Cup	ASTM D 92	230	230	230	240	240	240	285
Density @ 15.6°C, kg/l	ASTM D 4502	0.87	0.87	0.88	0.88	0.89	0.89	0.9
EP Properties, Timken OK Load, lb	ASTM D 2782	65	65	65	65	65	65	65

(Indicated values may vary without any prior notices)

Available Quantities



“DNR INOL”
Specialist In All Synthetic Tech Oils

Application

DNR INOL EP Grease is a multipurpose, Extreme pressure (EP) Lithium grease developed for use in a wide variety of Industrial and automotive applications. It is a Versatile, General-Purpose grease recommended for use in applications where operating temperatures and loads are moderate

DNR INOL EP Grease Synthetic Tech as per NLGI Grades has an Excellent Worked Penetration with wide range of 265 to 475 depends upon grades Such as EP-1,2,0,00,000 and has an Excellence Fluid Consistency

Data (Typical Values)



(Indicated values may vary without any prior notices)

Advantages

- ◆ Multipurpose grease for use in a wide variety of applications.
- ◆ Good extreme-pressure and antiwear properties.
- ◆ Good shear stability.
- ◆ Good oxidation resistance and thermal stability.
- ◆ Protects against rust and corrosion.
- ◆ Resists water washout.
- ◆ Good low-temperature pumpability.
- ◆ Suitable for use in centralized lube systems.



Available Quantities

Available in pack sizes of 5 kg/18 kg/182 kg
(FOR INDUSTRIAL PURPOSES ONLY)

Product Description

DNR INOL Purpose 5W-30 uses unique base oils from natural gas that helps to reduce engine friction and provide enhanced fuel economy. It also helps high-performance engines work at maximum efficiency by protecting them from deposits and wear that decreases power.

Benefits

- ◆ Low viscosity and low friction.
- ◆ Superior resistance to oil degradation.
- ◆ Low evaporation formulation.
- ◆ Exceptional low temperature performance.
- ◆ Multi-fuel capability.
- ◆ Low speed pre-ignition protection.

Data (Typical Values)

Characteristics	Reference Method	Values
Kinematic Viscosity @ 100°C cSt	ASTM D 445	11.5
Kinematic Viscosity @ 40°C cSt	ASTM D 445	65.8
Viscosity Index	ASTM D 2270	174
MRV @ - 40°C cP	ASTM D 4684	13 800
Density @ 15°C kg/m ³	ASTM D 4052	843
Flash Point °C	ASTM D 92	235
Pour Point °C	ASTM D 97	-36

(Indicated values may vary without any prior notices)

Application

DNR INOL Purpose 5W-30 synthetic tech. formulation provides maximum protection where there is extremely hot and extremely cold climates, and extreme driving conditions.

DNR INOL Purpose 5W-30 is suitable for direct injection turbocharged gasoline engines where protection against low-speed pre-ignition (LSPI) is required.

DNR INOL Purpose 5W-30 can be used for all modern gasoline engines, diesel engines which are without particulate filters and gas engines. It is also suitable for use with bio diesel and ethanol/gasoline blend

Available Quantities



210 Ltrs : Barrel



**“DNR INOL”
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