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Industrial lubricant

PT - AWY A special performance hydraulic lubricant recommended for extremely serve load condition that lead to viscosity fluctuations caused by operating temperature changes. It is a shear and thermally stable lubricant that ensures efficient operation of critical hydraulic systems, very low sludge forming tendencies; it has extreme pressure and anti- wear capabilities that particularly provide yellow metal protection.

Grade SAE ISO VG 32, 46, 68 and 100 Type/quality Extra performance hydraulic oil.

Application High pressure hydraulic systems of earth moving equipment, fork lift

trucks, and hydraulic control mechanisms.

| TESTS | 32 | 46 | 68 | 100 |
|-------------------------|-------|-------|-------|-------|
| Gravity,API @15.6 °C | 33.1 | 32.1 | 31.7 | 30.5 |
| Appearance | Clear | Clear | Clear | Clear |
| Flash Point, COC ° C | <1.0 | 1.5 | 2.0 | 2.5 |
| Color, ASTM | 210 | 218 | 220 | 240 |
| Viscosity, cst @ 40 °C | 32 | 48 | 64 | 99 |
| Viscosity, cst @ 100 °C | 6.3 | 8.1 | 11.1 | 13.0 |
| Viscosity index | 148 | 147 | 166 | 127 |

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PT AW A new hydraulic system oil with demonstrated "Universal" performance for meeting serve requirement of major machine tool and mobile hydraulic equipment manufacturers. It is thermally stable, resistant to oxidation and sludging, with good hydrolytic stability that ensures against potential loss of the anti-wear additive due to hydrolysis. It provides anti-wear characteristics to meet the needs of high —severity vane pump application and contain an inhibited anti-wear system of proven performance in piston pumps.

Grade SAE ISO VG 32, 46, 68 and 100
Type/quality Universal performance hydraulic oil.
Application High pressure hydraulic pumps
(Abex-Dension, Sperry Vickers, etc.)

| TESTS | 32 | 46 | 68 | 100 |
|-------------------------|-------|-------|-------|-------|
| Gravity,API @15.6 °C | 30.9 | 29.5 | 28.5 | 27.8 |
| Appearance | Clear | Clear | Clear | Clear |
| Flash Point, COC ° C | 1.0 | 2.0 | 3.0 | 3.5 |
| Color, ASTM | 220 | 234 | 240 | 244 |
| Viscosity, cst @ 40 °C | 30 | 47 | 67 | 107 |
| Viscosity, cst @ 100 °C | 5.2 | 6.8 | 8.6 | 11.6 |
| Viscosity index | 103 | 101 | 99 | 96 |

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PT AW (32) - A highly advanced hydraulic and turbine oil designed to meet the most serves demands of today's gas turbines and hydraulic systems. It contains high performance antiwear additive for maximum efficiency and durability of turbine and hydraulic systems. It exhibits excellent water tolerance and hydrolytic stability tp prevent rusting and corrosion of metal parts and prolong the life of the system.

Grade ISO VG 32

Type/quality Meet the requirements of;

GEC/Alsthom Gas Turbine; Abex-dension HF-0; Vickers VM-2950-S;

Cincinnati Milacron P-68, P-69 and P-70; Rexnord; commercial

shearing

Application Gas turbines; high speed, high pressure hydraulic circuits containing

any combination op pumps operating at maximum output; other

turbines and compressor circulating systems.

| TESTS | 10 |
|-------------------------|-------|
| Gravity,API @15.6 °C | 32.8 |
| Appearance | Clear |
| Flash Point, COC°C | 1.0 |
| Color, ASTM | 216 |
| Viscosity, cst @ 40 °C | 32 |
| Viscosity, cst @ 100 °C | 5.6 |
| Viscosity index | 115 |

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PT 2190 / 77 - Premium quality turbine lubricant blended from hydrofined paraffinic base oils and carefully selected additives to ensure maximum service life. Its high viscosity index, good demulsibility, resistance to rust and foaming and superior anti-wear property make this oil ideal for marine turbine operation. It is an approved MIL-L-1733 1H (SH) product.

Grade ISO VG 77

Type/quality Extreme Pressure Turbine Oil

Application Marine steam turbine, geared turbines

| TESTS | 10 |
|-------------------------|------|
| Gravity,API @15.6 °C | 29.8 |
| Flash Point, COC°C | 258 |
| Color, ASTM | 1.5 |
| Viscosity, cst @ 40 °C | 76.3 |
| Viscosity, cst @ 100 °C | 9.6 |
| Viscosity Index | 105 |
| Pour Point, °C | -7 |

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PT –TOUR - versatile circulating oil manufactured from selected base stocks and additives to control rusting, provide additional oxidation stability, inhibit foaming, and exhibit excellent demulsibility. Recommended primary for industrial application where the oil is recirculated or re-used for extensive periods such as in hydraulic and steam turbines. Formulations are compatible with sealing materials used in hydraulic system.

Grade ISO VG 32, 46, 68,100,125,150, 185 and 400

Type/quality Premium quality circulating oil

Application Plain and anti-friction bearing, hydraulic system, turbines,

compressors, crankcases, chain drives, open and closed gear, and

as heat transfer medium.

Typical Inspections

| TESTS | 32 | 46 | 68 | 100 | 125 | 150 | 185 | 400 |
|-------------------------|------|------|------|------|------|------|------|------|
| Gravity,API @15.6 °C | 31.9 | 31.6 | 30.4 | 27.2 | 27.7 | 26.5 | 26.1 | 24.9 |
| Flash Point,COC °C | 210 | 218 | 228 | 254 | 245 | 260 | 268 | 290 |
| Color, ASTM | 0.5 | 1.0 | 1.5 | 3.5 | 3.5 | 3.5 | 4.0 | 4.5 |
| Viscosity, cst @ 40 °C | 31 | 45 | 65 | 105 | 125 | 149 | 187 | 407 |
| Viscosity, cst @ 100 °C | 5.4 | 6.8 | 8.6 | 11.5 | 12.8 | 14.5 | 16.8 | 27.8 |
| Viscosity index | 105 | 105 | 105 | 96 | 95 | 95 | 95 | 95 |
| Pour Point, °C | -9 | -9 | -6 | -9 | -9 | -9 | -9 | -9 |

HYPEX EP - Premium quality general purpose lead-free gear and bearing lubricant designed for continuous use at operating temperatures up to 110°C (230 °F). It

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contains an EP agent to minimize metal seizure when operating under overload conditions at temperatures above 80 °C (176°F), non-corrosive to iron, copper and bronze alloys and has excellent additive-retention properties that provide protection against wear in continuous overload conditions. It has particularly good water-separation properties and excellent thermal stability.

Grade ISO VG 100, 150,220,320,385,460,570,680,3K AND 4K

Type/quality Extreme pressure industrial gear oil

Application Worm and hypoid gearboxes; plain and anti-friction bearing, and

gears subjected to heavy shock loads.

Typical Inspections

| | Gravity,API @15.6 °C | Flash Point, °C | Color, ASTM | cst @ 40 °C | cst @ 100 °C | VI |
|-----|-------------------------|--------------------|-------------|-------------|-----------------|----|
| 100 | 27.6 | 232 | 3.0 | 100 | 11.2 | 96 |
| 150 | 26.9 | 232 | 4.0 | 144 | 14.0 | 94 |
| 220 | 25.6 | 234 | <4.5 | 218 | 18.5 | 94 |
| 320 | 25.0 | 234 | 4.5 | 318 | 23.9 | 95 |
| 385 | 24.9 | 236 | <5.0 | 390 | 28.0 | 98 |
| 460 | 24.7 | 236 | <5.5 | 467 | 31.2 | 97 |
| 570 | 23.1 | 238 | 8.0 | 564 | 34.3 | 94 |
| 680 | 22.1 | 238 | >8.0 | 663 | 36.4 | 89 |
| 3K | 13.4 | 232 | O Green | 3661 | 63.1 | 14 |
| 4K | 17.9 | 274 | Black | 3865 | 91.1 | 75 |

GEARFLUID - Solvent-cutback adhesive type lubricant compounded with additives to impart extreme pressure and anti-rust characteristics. To obtain the desire viscosity for easy application under normal temperature conditions, a non-flammable solvent is added to allow application without heating. After application, the solvent evaporates, leaving a

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lubricating film that adheres tenaciously to the moving surfaces; similarly provides superior rust corrosion resistance.

Grade ISO VG 2K, 5K and 8K Type/quality Asphalt-based lubricant

Application Big open gear, wire ropes and cable, large open chains and

sprockets.

Typical Inspections

| TESTS | 2K | 5K | 8K |
|-------------------------|-------|-------|-------|
| Gravity,API @15.6 °C | 10.1 | 9.6 | 7.7 |
| Color, ASTM | Black | Black | Black |
| Viscosity, cst @ 40 °C | 2058 | 5057 | 8220 |
| Viscosity, cst @ 100 °C | 87.7 | 149.1 | |

GEARKOTE - Sometimes known as Gear Grease, it is also classifies as a lubricating oil. When applied, it leaves a thick film which protects the lubricated surface

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from corrosion and rust. Due to it's highly adhesives properties, it provides long lasting protecting and minimizes lubrication costs.

Grade ISO VG 3K, 22K and 68K Type/quality Asphalt- based lubricant

Application Big open gear, wire ropes, large open chains and sprockets such as

those found in mining and construction equipment and other types of

machinery.

| TESTS | 3K | 22K | 68K |
|-------------------------|-------|-------|-------|
| Gravity,API @15.6 °C | 11.5 | 10.4 | 9.6 |
| Flash Point, °C | 230 | 228 | 232 |
| Color, ASTM | Black | Black | Black |
| Viscosity, cst @ 40 °C | 3215 | 21411 | 71000 |
| Viscosity, cst @ 100 °C | 76.5 | 202.3 | 413 |

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MILROL 5K black viscous oil specially formulated for sugar mill roll brass and crown gears, possessing the qualities needed to prolong the life of brass gear and bearings. It contains extreme pressure additives and is resistant to the washing action of cane juice.

Grade ISO VG 5K

Type/quality Extreme pressure industrial gear oil

Application Sugar mill roll brass, crown gear and plain bearings.

| TESTS | |
|-------------------------|-------|
| Gravity,API @15.6 °C | 17.7 |
| Flash Point, °C | 260 |
| Color, ASTM | Black |
| Viscosity, cst @ 40 °C | 5440 |
| Viscosity, cst @ 100 °C | 115 |

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AXELUBE - Low-cost lubricant especially formulated for axle once through lubrication or where make-up rates are high. It can also be used as industrial gear oil in non-critical applications.

Grade ISO VG 195 and 460 Type/quality Low-cost axle lubricant

Application Grade 195 is recommended for non-critical plain bearing and gears

such as those in railroad cars. Grade 460 is recommended for cane

car axle bearings.

| TESTS | 195 | 460 |
|-------------------------|-------|-------|
| Gravity,API @15.6 °C | 21.6 | 17.9 |
| Flash Point, ° C | 205 | 135 |
| Color, ASTM | Black | Black |
| Viscosity, cst @ 40 °C | 196 | 430 |
| Viscosity, cst @ 100 °C | 17.0 | 29.5 |
| Viscosity index | 92 | 97 |

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PETROCYL S-390 - High steam cylinder oil recommended for steam engines operating on saturated steam. It is a suitable lubricant for worm gear drives. It has superior oxidation stability, high viscosity index and is non- susceptible to formation of carbon deposits. Being adhesives and tacky, it is very suitable for equipment lubricant under wet conditions generally encountered with saturated steam. The tackiness agent reduces consumption, provides better adhesion to cylinder walls and improves oil separation from exchaust steam.

Grade ISO VG 390

Type/quality Adhesive, compounded cylinder oil

Application saturated steam engine at steam pressures below 175 psig, enclosed

gears, plain and anti-friction bearings, worm gear drives.

| TESTS | |
|-------------------------|-----------|
| Gravity,API @15.6 °C | 21.9 |
| Flash Point, °C | 243 |
| Color, ASTM | Oli Green |
| Viscosity, cst @ 40 °C | 388 |
| Viscosity, cst @ 100 °C | 28.9 |
| Viscosity index | 95 |

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PETROCYL 680 - A high viscosity mineral oil with superior demulsibility characteristics and stability properties. It is recommended for the lubrication of Morgoil bearing in steel rolling mills and for industrial gear sets requiring a heavy bodied lubricant. It gives excellent service in medium superheated steam above 175 psig.

Grade ISO VG 680 Type/quality Heavy mineral oil

Application Superheated steam equipment lubricant up to 250°C; gears and anti-

friction bearing with heavy loads.

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 22.4 |
| Flash Point, °C | 300 |
| Color, ASTM | 6.5 |
| Viscosity, cst @ 40 °C | 654 |
| Viscosity, cst @ 100 °C | 36.1 |
| Viscosity index | 89 |

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CUT EMULSION - A premium quality, general purpose, emulsifiable oil which provides optimum cooling and lubricant in metal cutting and grinding operations. It mixes readily with water to from stable emulsions, has good rust- preventive properties and is inhibited against foaming. It resistance to bacterial attack prolongs the storage life of the emulsion. Recommended water-oil ratio is 3:1 or higher. The most common mixtures are 20:1 for machining and 30:1 for grinding.

Grade ISO VG 25

Type/quality Emulsifiable cutting oil

Application Cutting and grinding fluid for machining operations

| TESTS | |
|-------------------------|-------------|
| Gravity,API @15.6 °C | 25.9 |
| Color, ASTM | 2.5 |
| Viscosity, cst @ 40 °C | 35.2 |
| Viscosity, cst @ 100 °C | 5.6 |
| Emulsion appearance | Milky white |

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PT CUT27 - Compounded cutting oil used in machining operations where cutting fluid transparency in needed for good metal working visibility. It is formulated with various proportions of sulfur compounds and fatty material for superior performance. Its relatively high flash point helps prevent smoking in service. It gives superior surface finish and prolongs tool life. It is non- staining and has high degree of chemical activity which is important in cutting ferrous alloys in such operations as broaching, grinding and threading.

Grade ISO VG 27

Type/quality Non-emulsifiable sulfurized cutting oil

Application Transparent cutting fluid for machining operations

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 28.3 |
| Flash Point, °C | 204 |
| Color, ASTM | 1.0 |
| Viscosity, cst @ 40 °C | 28.6 |
| Viscosity, cst @ 100 °C | 5.0 |

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AIRLUBE - First line quality rock-drill lubricant specially formulated for pneumatic tool of the oil-lubricant type. It contain an adhesive agent that enables it to cling to rapidly moving parts of most air tools, affording low oil consumption and longer tool life. It has an extreme pressure additive, a rust and corrosion preventive, and agent to emulsify moisture that may enter the drill.

Grade ISO VG 100, 220 and 320

Type/quality Extreme pressure air tool lubricant

Application Air-operated tools such as jack- hammers, stoppers, drifters, wagon

drill, chippers, tampers, pavement breakers and stern tubes.

| TESTS | 100 | 220 | 320 |
|-------------------------|------|------|------|
| Gravity,API @15.6 °C | 26 | 24.1 | 22.5 |
| Flash Point, °C | 204 | 264 | 224 |
| Color, ASTM | 6.5 | 7.5 | 7.5 |
| Viscosity, cst @ 40 °C | 107 | 216 | 297 |
| Viscosity, cst @ 100 °C | 12.0 | 17.6 | 21.5 |

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SPIN OIL - Premium quality lubricant for high speed machine elements in the textile industry such as twister spindles and spinning rings it possesses outstanding oxidation stability, making it strongly resistant to gumming sludging and discoloration. Its high film strength provides minimum wear under shock loads. It has excellent rust protection, very light color and does not stain the fabrics.

Grade ISO VG 15 Type/quality Spindle oil

Application Premium grade twister or spinning ring oil in textile machinery, high-

speed machine tool spindle and very high speed bearings.

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 34.2 |
| Flash Point, COC°C | 188 |
| Color, ASTM | 0.5 |
| Viscosity, cst @ 40 °C | 15.9 |
| Viscosity, cst @ 100 °C | 3.5 |
| Viscosity Index | 103 |

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VOLTRAN - An important highly refined coolant and insulating oil for electric equipment. Its low viscosity, high flash point and dielectric strength, low volatility and pour point, resistance to oxidation, freedom from acid and corrosive sulfur, and compatibility with materials used in transformer construction makes it ideal for all types of transformers and electrical circuit breakers which use petroleum- based oil as insulator and arcquencher, respectively. This product meets the quality requirements of the largest transformer and circuit breaker manufactures in the world.

Grade ISO VG 10

Type/quality Petroleum0based insulating oil
Application Transformers and circuit breakers

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 27.8 |
| Flash Point, COC°C | 160 |
| Color, ASTM | L0.5 |
| Viscosity, cst @ 40 °C | 9.0 |
| Viscosity, cst @ 100 °C | 2.3 |
| Viscosity Index | 40 |
| Dielectric strength | 38 |

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ZERFLO 68 - A lubricant with very low pour point and natural oxidation resistance suitable for the lubrication of refrigeration equipment. It is resistance to thermal breakdown and sludge formation; does not react chemically with the refrigerant or with metals of the system. It is recommended for all types of ammonia and halogenated refrigeration equipment

.

Grade ISO VG 68

Type/quality Low pour point lubricant

Application Refrigeration and air conditioning compressors

Typical Inspections

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 26.2 |
| Flash Point, COC°C | 166 |
| Color, ASTM | 2.5 |
| Viscosity, cst @ 40 °C | 67 |
| Viscosity, cst @ 100 °C | 8.0 |
| Pour Point, °C | -36 |

MARINE LBRICANT OILS

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DCL 100 - Premium diesel cylinder oil designated specifically to minimize corrosive wear in turbocharged engines burning residual fuel. It combines a unique additive formulation with high quality distillate type stocks. Its high alkaline reserve and load-carrying ability provide excellent anti-wear performance and superior engine cleanliness for extended engine operation even under severe operating conditions.

Grade SAE 50

Type/quality Diesel cylinder lubricant

Application Bunker-burning diesel engines

Typical Inspections

| TESTS | |
|-------------------------|---------|
| Gravity,API @15.6 °C | 19.6 |
| Flash Point, COC°C | 220 |
| Color, ASTM | D brown |
| Viscosity, cst @ 40 °C | 211 |
| Viscosity, cst @ 100 °C | 18.6 |
| Viscosity index | 98 |
| Pour point, °C | -9 |
| TBN,mg KOH/g | 67 |

PT S - A solution type diesel cylinder lubricant available in two viscosity grades (SAE 40 and 50) for use in diesel engines operating with separate cylinder lubricant. It contains

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high alkalinity additives that neutralize combustion acid and reduce cylinder and piston ring wear while maintaining a high degree of engine cleanliness.

Grade 75(SAE 40), 95(SAE 50)

Type/quality Solution type diesel cylinder lubricant

Application Bunker-burning low and medium speed diesel engines

| TESTS | 75 | 95 |
|-------------------------|------|------|
| Gravity,API @15.6 °C | 20.7 | 20.8 |
| Flash Point, COC °C | 230 | 238 |
| Color, ASTM | 5.5 | 5.5 |
| Viscosity, cst @ 40 °C | 146 | 206 |
| Viscosity, cst @ 100 °C | 14.6 | 18.1 |
| Viscosity index | 97 | 97 |
| Pour point, °C | -6 | -6 |
| TBN,mg KOH/g | 40 | 40 |

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PT 4040 - Top quality detergent lubricant recommended for use in medium speed, high specific output trunk piston engine burning residual fuels. It is formulated with high quality paraffinic base stocks and a specially designed additive package that provides superior margin of protection against piston deposits, ring sticking, and ensures good viscosity control when used under serve operating conditions. Its excellent alkalinity retention properties control corrosive wear and ensures long service life. It meet s the lubricating oil quality requirements of major engine manufactures like Sulzer and SEMT-Pielstick.

Grade SAE 40

Type/quality Series 3, API Service CD

Application "Bunker C" fuel burning diesel engines

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 23.9 |
| Flash Point, COC°C | 220 |
| Color, ASTM | 7.5 |
| Viscosity, cst @ 40 °C | 146 |
| Viscosity, cst @ 100 °C | 14.6 |
| Viscosity index | 99 |
| Pour point, °C | -6 |
| TBN,mg KOH/g | 42 |

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PT 3000 SERIES - A new generation 30TBN crankcase and cylinder oil for medium and low speed trunk piston diesel engine used in marine propulsion or in stationary power generating units. These lubricants are recommended for use in engines operating under serve service, burning either intermediate fuel grades or straight residual fuels. These oils are specially formulated with high quality base stocks and a new additive chemistry package for balanced detergency/ dispersancy and wear protection. Their high alkalinity characteristic maintains the desired engine cleanliness, minimized wear and ensures long service life over a wide range of fuel quality.

Grade SAE 30 and 40

Type/quality Series 3, API Service CD

Application Intermediate grade or straight residual fuel burning diesel engines.

| TESTS | 3030 | 3040 |
|-------------------------|------|------|
| Gravity,API @15.6 °C | 24.1 | 23.6 |
| Flash Point, COC°C | 220 | 230 |
| Color, ASTM | 6.0 | 6.5 |
| Viscosity, cst @ 40 °C | 108 | 150 |
| Viscosity, cst @ 100 °C | 11.6 | 14.6 |
| Viscosity index | 97 | 97 |
| Pour point, °C | -6 | -6 |
| TBN,mg KOH/g | 32 | 32 |

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PT 1500 SERIES- A high quality heavy-duty detergent type lubricant of medium alkalinity, primarily recommended for crankcase and cylinder lubrication of medium and low speed trunk piston marine and stationary diesel engines under serve conditions burning distillate as well as low viscosity residual fuels. These oils are specially formulated with high quality base stocks and a new additive chemistry package for balanced detergency/dispersancy and medium (15 TBN) alkalinity characteristics needed to maintain desired engine cleanliness, minimize wear and obtain long service life over a wide range of fuel quality.

Grade SAE 30 and 40 Type/quality API Service CD

Application Trunk piston diesel engine operating on distillate and low viscosity

residual fuels with up to 2% sulfur.

| TESTS | 1530 | 1540 |
|-------------------------|------|------|
| Gravity,API @15.6 °C | 26.2 | 25.3 |
| Flash Point, COC°C | 230 | 242 |
| Color, ASTM | 5.5 | 6.0 |
| Viscosity, cst @ 40 °C | 103 | 145 |
| Viscosity, cst @ 100 °C | 11.4 | 14.1 |
| Viscosity index | 97 | 96 |
| Pour point, °C | -6 | -6 |
| TBN,mg KOH/g | 16 | 16 |

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PT 9250 - Military approved lubricating oil formulated for use in advance design highoutput shipboard main propulsion and auxiliary diesel engine. It is a stable blend of high quality paraffinic oil fortified with additives guaranteed to provide satisfactory lubrication in marine diesel engine parts and engine driven generator bearings and associated equipment.

Grade SAE 40

Type/quality MIL-L- 9000H (SH)

Application Marine-diesel engines where military approved oil are specified by

the customer.

Typical Inspections

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 25.4 |
| Flash Point, COC°C | 220 |
| Color, ASTM | 8.0 |
| Viscosity, cst @ 40 °C | 122 |
| Viscosity, cst @ 100 °C | 12.9 |
| Viscosity index | 98 |
| Pour point, °C | -12 |
| TBN,mg KOH/g | 14 |

PT HD SERIES- Heavy-duty detergent lubricant fortified with additives that gives moderate levels of alkalinity and detergency. They are clean burning oils formulated from

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high quality paraffinic base stocks, intended primarily for less critical medium trunk piston diesel engines using ASTM 2-D type diesel fuel.

Grade SAE 30, 40 and 50 Type/quality API Service CD

Supplement 1 level detergency

Application Medium and low-speed diesel engines

Typical Inspections

| TESTS | 30 | 40 | 50 |
|-------------------------|------|------|------|
| Gravity,API @15.6 °C | 26.4 | 25.7 | 25.3 |
| Flash Point, COC°C | 240 | 242 | 250 |
| Viscosity, cst @ 40 °C | 105 | 140 | 224 |
| Viscosity, cst @ 100 °C | 11.5 | 14.1 | 19.1 |
| Viscosity index | 97 | 97 | 97 |
| Pour point, °C | -6 | -6 | -6 |
| TBN,mg KOH/g | 12 | 12 | 12 |

PT HD MARINE - A detergent type marine lubricant formulated from refined paraffinic base stocks. Commonly used as crankcase oil for in board engines used in small fishing boats.

Grade SAE 30 and 40

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Type/quality Detergent system oil

Application In-board engines used in moderate service conditions such as small

fishing boats or bancas.

Typical Inspections

| TESTS | 30 | 40 |
|-------------------------|------|------|
| Gravity,API @15.6 °C | 26.4 | 25.7 |
| Flash Point, COC°C | 240 | 244 |
| Color, Visual | Red | Red |
| Viscosity, cst @ 40 °C | 111 | 140 |
| Viscosity, cst @ 100 °C | 12.0 | 14.0 |
| Viscosity index | 97 | 97 |
| Pour point, °C | -6 | -6 |
| TBN,mg KOH/g | 12 | 12 |

PT MOTOR OIL- An ashless outboard engine oil formulated meet the critical requirements of all water-cooled, two-stroke marine engines. It gives maximum engine protection against rust, corrosion, and deposits. Peak performance is ensured even at a high fuel-to-oil ratio up to 50:1, the ratio recommended for engines by many out board engine manufactures.

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Grade SAE 20

Type/quality API Service TD (BIA TC-W)
Application Two-stroke outboard engines

Typical Inspections

| TESTS | |
|-------------------------|--------|
| Gravity,API @15.6 °C | 30.1 |
| Flash Point, Tag°C | 60 |
| Color, Visual | Purple |
| Viscosity, cst @ 40 °C | 46 |
| Viscosity, cst @ 100 °C | 7.1 |
| Viscosity index | 117 |
| TBN,mg KOH/g | 3 |

PT 65 - A low detergent system oil company used as crosshead engine crankcase oil and in other low and intermediate speed engines running under mild service conditions.

Grade SAE 30

Type/quality Low detergent system oil

Application Crosshead engine crankcase marine lubricant

SPECIALIST IN CUT EMULSION, WOOL EMULSION & DEALS IN ALL KIND OF INDUSTRIAL OILS AND GREASES

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Typical Inspections

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 27.0 |
| Flash Point, COC°C | 248 |
| Color, ASTM | <4.0 |
| Viscosity, cst @ 40 °C | 109 |
| Viscosity, cst @ 100 °C | 11.8 |
| Viscosity index | 96 |
| TBN,mg KOH/g | 5 |

SPECIAL PRODUCTS

DISTLLATE MP - waxy process oil suitable for various industrial uses. It can be used as a softener for processing raw abasa, jute, and other natural fibers. It improves tensile strength and elongation properties of these fibers and provides better processing workability.

Type Mineral Oil 150

Application As is, may be applied by dipping or spraying or an emulsifier may be

added and the emulsion in water used by spraying.

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Typical Inspections

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 22.7 |
| Flash Point, COC°C | 218 |
| Color, ASTM | 2.5 |
| Viscosity, cst @ 40 °C | 34.3 |
| Viscosity, cst @ 100 °C | 5.2 |
| Viscosity index | 72 |

PT 50R AND OIL 17 - Low-cost versatile process oils recommend for rope manufacturing, to improve tensile strength and lessen the stiff and harsh qualities of raw abaca hemp and other fibers.

Application

As is, may be applied by dipping or spraying or an emulsifier may be

added and the emulsion in water used by spraying.

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Typical Inspections

| TESTS | 50R | 17 |
|-------------------------|------|------|
| Gravity,API @15.6 °C | 29.5 | 29.1 |
| Flash Point, COC°C | 140 | 136 |
| Viscosity, cst @ 40 °C | 6.7 | 16 |
| Viscosity, cst @ 100 °C | 2.0 | 3.6 |
| Viscosity index | 83 | 110 |
| Color ASTM | 4.0 | 3.0 |

OIL 150 - A pale green —colored, wire-drawing compound containing a lubricity agent and an anti-oxidant. Its main uses are for wire drawing aluminum and as special rolling oil for ferrous and non- ferrous materials. Wires drawn with the aid of Aldro Oil 150 accquire a desirable luster.

Type Wire-drawing oil; rolling oil

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Application

Wires of larger diameter are immersed in this oil before they are drawn into smaller sizes.

Typical Inspections

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 22.2 |
| Flash Point, COC°C | 292 |
| Viscosity, cst @ 40 °C | 470 |
| Viscosity, cst @ 100 °C | 30.5 |
| Color ASTM | 6.5 |

RUBBEX 130 - An aromatic, dark green oil used for rubber extending and compounding and has been approved Goodyear, Sime Darby and Firestone. It can also be used as an excellent vehicle for newspaper ink.

Type Rubber Extender Oil and Ink vehicle

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Application

For compounding with natural or synthetic rubber in the manufacture of tires and other rubber products.

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 10.9 |
| Flash Point, COC°C | 242 |
| Viscosity, cst @ 40 °C | 1094 |
| Viscosity, cst @ 100 °C | 26 |
| Pour point,°C | 18 |
| Aniline point,°C | 112 |

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PT DUST STOP OIL - A premium quality oil formulated from refined napthenic base oils suitable as lubricant and dust seal for Banbury Mills.

| TESTS | |
|----------------------------|-------|
| Sp.Gravity, @15.6/15.6 °C | 0.863 |
| Flash Point, °C | 250 |
| Color ASTM | 3.5 |
| Viscosity, cst @ 40 °C | 255 |
| Viscosity, cst @ 100 °C | 18.5 |
| Viscosity index | 78 |
| Pour point,°C | -12 |
| Neutralization No,mg KOH/g | 0.03 |

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QUENZO 69 - Quenching oil produced from a highly refined base stock and fortified with an additive package that makes it more superior than conventional quenching oils. It is oxidation stable and has a rapid quenching rate which allows use of less expensive steels without any loss in product quality. Produces cleaner quenched parts and is safer to use due to its high flash point property.

Type Quenching oil

Application As heat transfer or tempering oil in open baths.

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 26.2 |
| Flash Point, COC°C | 260 |
| Color ASTM | 4.0 |
| Viscosity, cst @ 40 °C | 102 |
| Viscosity, cst @ 100 °C | 11.4 |

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PRINTSOL 600 - A highly aromatic and heavy mineral oil used primarily as newspaper ink vehicle.

| TESTS | |
|---------------------------|---------|
| Sp.Gravity, @15.6/15.6 °C | 1.012 |
| Flash Point, COC°C | 270 |
| Color | O Green |
| Viscosity, cst @ 40 °C | 1764 |
| Viscosity, cst @ 100 °C | 32.9 |
| Viscosity index | <0 |

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GLASS MOLD OIL - A combination of base oils used as carrier release agent and non-staining compound in the manufacture of glass bottles. As a release agent, it is applied by swabbing the inner mold portion of the Individual System (IS) machine.

| TESTS | |
|-------------------------|------|
| Gravity,API @15.6 °C | 30.9 |
| Flash Point, COC°C | 146 |
| Color ASTM | 0.5 |
| Viscosity, cst @ 40 °C | 15 |
| Viscosity, cst @ 100 °C | 3.0 |
| Viscosity index | <0 |

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SOLVENT 1425 AND 3040- Highly refined paraffinic distillates used in the formulation of paints, varnishes, lacquers, adhesives, and protective coating.

Typical Inspections

| TESTS | 1425 | 3040 |
|--------------------------------|----------|----------|
| Appearance | Clear | Clear |
| Color Saybolt | +30 | +30 |
| Specific Gravity, 15.6/15.6 °C | 0.7199 | 0.7879 |
| Corrosion, Cu 3 hrs.,100 °C | la | la |
| Doctor test | Negative | Negative |
| Flash Point, °C | -23 | 40 |
| Aromatics,% Vol | 5 | 18 |
| Distillation, °C | | |
| IBP | 70 | 154 |
| 10% Recovery | 87 | 164 |
| 50% Recovery | 98 | 174 |
| 90% Recovery | 112 | 181 |
| Dry point | 121 | 183 |
| FBP | 125 | 199 |

STEMOL - A Lubricant formulated from highly refined basestock and fortified with a lubricity agent and an antioxidant. It is used mainly as continuous steel casting mold oil.

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| TESTS | 32 | 68 |
|-------------------------|-------|-------|
| Gravity,API @15.6 °C | 29.6 | 28.1 |
| Flash Point, COC ° C | 200 | 240 |
| Viscosity, cst @ 40 °C | 25 | 59 |
| Viscosity, cst @ 100 °C | 4.7 | 8.1 |
| Viscosity index | 105 | 105 |
| Appearance | Clear | Clear |
| Color ASTM | 1.0 | 1.5 |