

# COMPANY PROFILE



# perfisienchemical

## PT. Perfisien Chemical Indonesia

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**PanaOIL**  
WORLD CLASS LUBRICANTS

# About Company

**PT. Perfisien Chemical Indonesia** is a prominent chemical supplier and lubricant distributor. Based in Jakarta, Indonesia. We specialize in providing top-notch chemical products and lubricants tailored to the specific needs of the various industries, especially oil & gas and mining.

## Diverse Technologies

in response to the dynamic development of the industry and growing customer demand, **Perfisien Chemical Indonesia** is committed to providing quality and continually improving product performance.

We offer an extensive range of chemical and lubricant products, carefully designed to meet the unique demands of Oil & Gas industry, Mining Industry and other industries applications.



# VISION

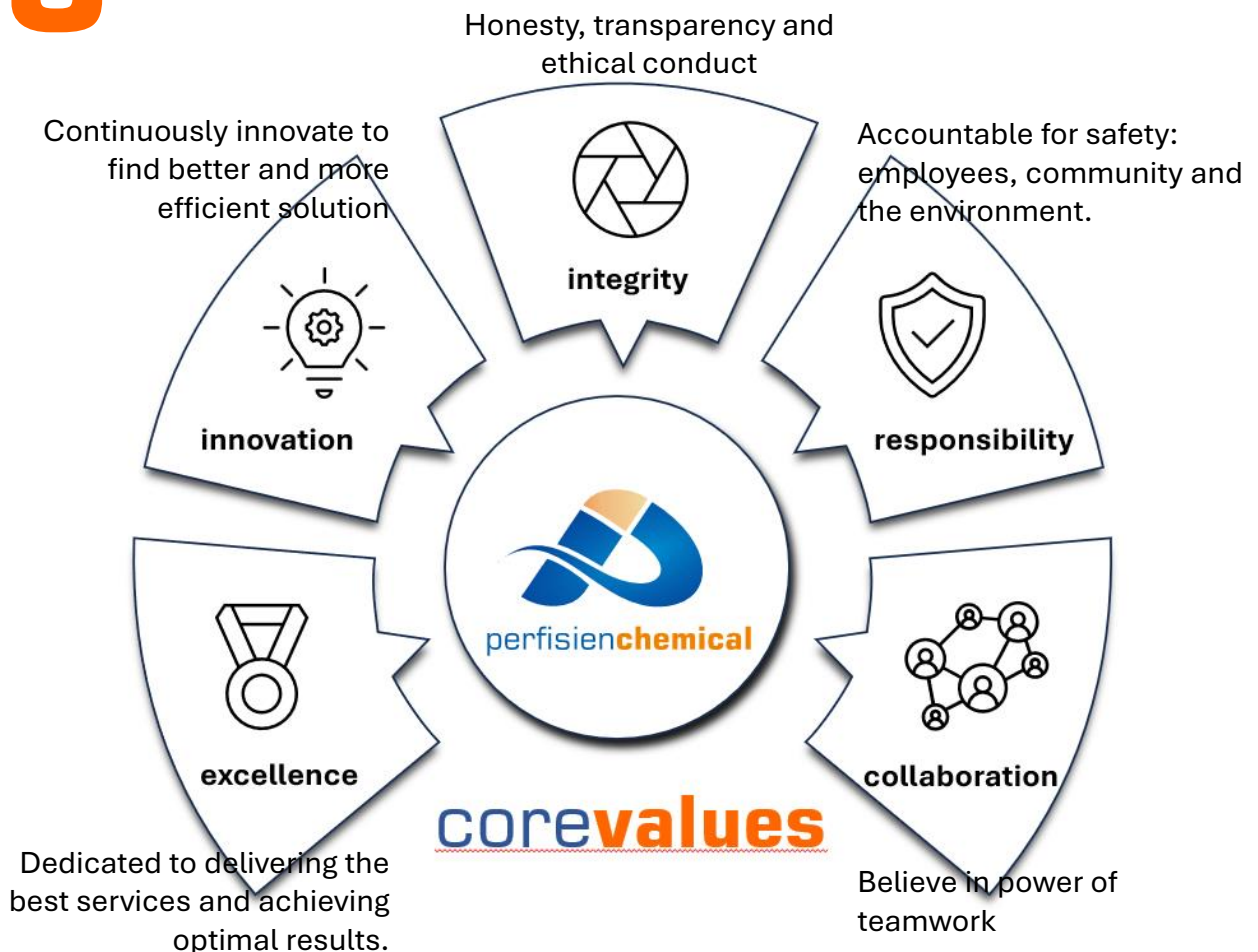
**Our Vision is to deliver innovative, high-quality chemical and lubricants products that exceed our customers expectations, fostering long-term partnerships and driving mutual growth.**

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# MISSION

**Our Mission is to emerge as a leading chemical supplier and lubricant distributor in Indonesia, distinguished by our unwavering commitment to customer satisfaction, quality, and innovation.**

## 5 corevalues



# WE PROVIDE EXCEPTIONAL SERVICES TO OUR VALUED CUSTOMERS



## TECHNICAL EXPERTISE AND SUPPORT

Unlock your business potential with our expert technical support! Our team of specialists is ready to help you overcome technical challenges and ensure your products run smoothly.

Lube Surveys, Used Oil Analysis / Oil Condition Monitoring, On Site Equipment Inspection and Troubleshooting, Trend Chart Data Interpretation, Application Consulting, Cross Contamination Control Audit



## COMPREHENSIVE PRODUCT TRAINING

Become a product expert with our comprehensive training program! Gain in-depth knowledge of our products and features, plus tips and tricks to optimize their use.

Inhouse Technical Training: Fundamental Chemical & Lubrication Product Knowledge



## EFFICIENT LOGISTICS AND DELIVERY MANAGEMENT

Get your products delivered quickly and accurately! Our advanced, integrated logistics system ensures your products reach your customers on time and in perfect condition

Chemical & Lube Selection, Planning, and Inventory Management



## VALUE FOR MONEY

As a local business ourselves, we understand the pressures on our customers to provide quality, service, lower costs and value. We provide international quality standards without the international price premium. We create value by analyzing and integrating our product range in line with our customers operations and marketing offers.

# CHEMICAL – OIL & GAS, CEMENTING

Product Name	Application & Advantages	Specification	Packaging
<b>PAGM-066</b>  <b>ANTI GAS MIGRATION</b>	<p>Aqueous dispersion of polymer copolymer made from Butadiene, styrene, and unsaturated carboxylic acid through emulsion polymerization. Used as an additive to cement mortars to control gas migration. Slowing down of the minimum static yield stress and creates ideal conditions for transmission of maximal hydrostatic pressure of cement column onto probable gas-bearing beds.</p> <p><b>PRODUCT FEATURES</b></p> <ul style="list-style-type: none"> <li>Slowing down of the minimum static yield stress.</li> <li>Improves adhesive properties of cement stone and reduces its permeability.</li> <li>Excellent to reduce fluid loss.</li> </ul>	<ul style="list-style-type: none"> <li>Appearance : Milky white solution</li> <li>Solid content wt. % : 50 + 2</li> <li>pH : 8.0 – 9.5</li> <li>Viscosity : &lt; 1000 cps</li> </ul>	55 Gall / Drum  272 Gall /IBC Tank
<b>PASA-016</b>  <b>ANTI SETTLING AGENT</b>	<p>Non ferric or iron free Sodium Silicate Liquid. Cement additives as extender to produce low-slurry densities. These additives help tie up the additional water used for slurries. Sodium silicate additive accelerates and augments the formation of calcium silicate hydrate (CSH) and induces changes in fabric and pore water chemistry that favor enhanced cementation, imparting substantial strength to the cemented soil matrix.</p> <p><b>PRODUCT FEATURES</b></p> <ul style="list-style-type: none"> <li>Shortening thickening time and lightweight extender.</li> <li>Expanding and making contact.</li> <li>Accelerating setting time and strength.</li> <li>Reduces cement density by increasing the water/cement ratio</li> <li>Reduces Free Water.</li> </ul>	<ul style="list-style-type: none"> <li>Appearance : Clear to cloudy Liquid</li> <li>Typical density range: As low as 11.40 ppg</li> <li>Specific Gravity : 1.39 – 1.42</li> </ul>	55 Gall / Drum  272 Gall /IBC Tank
<b>PLMA-013</b>  <b>MONOFILAMENT FIBER</b>	<p>Monofilament fiber made by 100% virgin homopolymer polypropylene multifilament (monofilament) fibers is produced by our patent advanced technology for fiber spinning, modified by adding functional additive and special surface-treating. Mixing into cement concrete, it has many advantages such a good dispersing, better water affinity, strong linking force. It is suited to reinforce and crack-resist to every kind of cement concrete and mortar. A monofilament polypropylene microfiber for concrete reinforcement that complies with ASTM C 1116, standard specification for fiber reinforced concrete and shotcrete, and is specifically designed to help mitigate the formation of plastic shrinkage cracking in concrete. Typically used at a dosage rate of 0.6kg/m3 to 1.8kg/m3.</p> <p><b>PRODUCT FEATURES</b></p> <ul style="list-style-type: none"> <li>Excellent mechanical properties.</li> <li>Good strand integrity, low static and fuzz.</li> <li>Fast and even dispersion in cement slurry, good processibility.</li> <li>Bridges highly permeable and fractured formations to minimize lost circulation.</li> <li>Cost effective.</li> </ul>	<ul style="list-style-type: none"> <li>Appearance : White Fiber</li> <li>Fiber Type : Monofilament</li> <li>Typical concentration range : 0.6kg/m3 to 1.8kg/m3</li> <li>Typical filament diameter: 20 – 25 <math>\mu</math>m</li> <li>Typical chopped length: 10 + 1 mm</li> </ul>	55 Lbs / Sacks

# CHEMICAL – OIL & GAS, CEMENTING

Product Name	Application & Advantages	Specification	Packaging
<b>PCEM-004</b>  <b>MICROFINE CEMENT</b>	<p>Microfine Cement is suited for cementing a narrow fissures in rock, where ordinary cement will not penetrate, hence it is used for remedial cementing in oil and gas wells. Has a well defined and steep particle size distribution with max particle size of &lt;15 microns. Because of its fineness, it offers extremely good penetration into the micro cracks of concrete, rock and soil.</p> <p><b>PRODUCT FEATURES</b></p> <ul style="list-style-type: none"> <li>▪ Excellent Penetration</li> <li>▪ Non-Toxic and Non Hazardous</li> <li>▪ Highly Durable</li> </ul>	<ul style="list-style-type: none"> <li>▪ Specific Gravity (H<sub>2</sub>O): 3.10</li> <li>▪ Bulk Density: 0.70 – 0.90 g/cm<sup>3</sup></li> <li>▪ Typical slurry density range: 13-14 ppg</li> <li>▪ Fine, Blaine cm<sup>2</sup>/g: 9.00</li> <li>▪ Initial setting Time: 4 – 6 hours</li> <li>▪ Final setting Time: &lt; 10 hours</li> <li>▪ Marsh Cone Viscosity: 27 to 38 seconds</li> </ul>	55 Lbs/Sack
<b>PAFA-010</b>  <b>FOAM PREVENTER</b>	<p>Defoamer designed to provide maximum foam control in cement slurry. Besides preventing foam forming, the product also has a good foam killing effect both surface and entrapped foam and is compatible with most cement additives. Usually used undiluted, the most effective way of using the product is to add the product at a position where an adequate mixing is possible. Can be diluted in water and sprayed over the foam or circulated together with the foaming fluids. In general, a dosage of 0.01 – 0.05 gallon per sack cement will be sufficient to obtain a good control.</p>	<ul style="list-style-type: none"> <li>▪ Appearance : Milky White, Emulsion Color</li> <li>▪ pH: 5.5 – 7.5</li> <li>▪ Viscosity: &lt; 2000Cp</li> <li>▪ Soluble in water</li> </ul>	55 Gall / Drum
<b>PTARD-076</b>  <b>RETARDER MT</b>	<p>Extend the initial and final setting time of cement. They also improve the dispersion of cement particles, leading to a more compact and homogeneous concrete structure.</p> <p>Used in oil well cementing to control the fluidity of the cement slurry and prevent rapid setting in Low-Medium Temperature.</p>	<ul style="list-style-type: none"> <li>▪ Appearance : Dark brown liquid</li> <li>▪ pH: 4.0 – 8.0</li> <li>▪ Density : 1.16 ± 0.02</li> <li>▪ Soluble in water</li> </ul>	55 Gall / Drum
<b>PSLT-017</b>  <b>CALCIUM CHLORIDE</b>	<p>Plays a crucial role in oil and gas operations, particularly in drilling and completion fluids, by enhancing wellbore stability, preventing shale swelling, and controlling fluid loss.</p> <p>Here's a more detailed explanation of its applications. Enhancing Wellbore Stability, Shale Inhibition, Fluid Loss Control, Weighting Agent and Viscosity and Flow Characteristics</p>	<ul style="list-style-type: none"> <li>▪ Appearance : White Crystalline solid</li> <li>▪ Purity : 74%</li> <li>▪ Density : 2.15 g/cm<sup>3</sup></li> <li>▪ Soluble in water</li> </ul>	55 Lbs/Sack

# CHEMICAL – OIL & GAS, STIMULATION & FRACTURING

Product Name	Application & Advantages	Specification	Packaging
<b>PACD-020</b>  <b>HYDROCHLORIC ACID (HCL 32%)</b>	<p>Hydrochloric Acid is an industrial strength acid commonly user for the removal of scale, lime, calcium, oxides, efflorescence, bore stains, concrete dust and hard water deposits.</p> <p>Has various industrial applications from water adjustment (primally pH) to cleaning bricks. Hydrochloric acids also utilized in the general mining processes and for commercial dosing systems.</p>	<ul style="list-style-type: none"> <li>Appearance: Colourless Liquid</li> <li>Specific Gravity : min 1.16</li> <li>Assay, Baume: min 20</li> <li>Hydrogen Chloride, wt% as HCl: min 31.45</li> <li>Total organic Compounds, ppm: max 5</li> <li>Iron (Fe), ppm: max 25</li> <li>Fluorinated Organic Compounds, ppm: max 5</li> </ul>	55 Gal/Drum
<b>PSLT-018</b>  <b>POTASSIUM CHLORIDE (KCL)</b>	<p>Used as a shale stabilizer and drilling fluid additive, particularly for water-sensitive clays and shales, helping to prevent swelling and maintain wellbore stability.</p> <p><b>OTHER APPLICATIONS</b>  <b>Weighting Agent:</b> KCl can be used as a weighting agent in drilling fluids to increase their density  <b>Killing Fluids:</b> It can be used in the production of killing fluids, which are used to stop the flow of oil and gas in a well  <b>Grouting Mixtures:</b> KCl can be used as an additive in grouting mixtures, which are used to seal the space between the wellbore and the surrounding rock  <b>Hydraulic Fracturing Fluids:</b> KCl can be used in fluids for hydraulic fracturing, which is a technique used to increase the production of oil and gas from tight formations.  <b>Shale Inhibition:</b> KCl acts as a shale inhibitor by promoting ion exchange, where potassium ions enter between clay platelets, preventing water from entering and causing swelling or sloughing.</p>	<ul style="list-style-type: none"> <li>Appearance : White Crystal</li> <li>Purity : 98%</li> <li>NaCl content : &lt;1.70%</li> <li>Insolubles : &lt;0.20%</li> <li>Moisture : &lt;0.25%</li> </ul>	110 Lbs/Sack
<b>PGELL-025</b>  <b>GUAR GUM</b>	<p>Guar gum, also called guaran is a polysaccharide that has thickening and stabilizing properties. As preferred as thickeners for enhanced oil recovery (EOR). Guar gum and its derivatives account for most of the gelled fracturing fluids. Guar is more water soluble than other gums, and it is also a better emulsifier, because it has more galactose branch points. It shows high low-shear viscosity, but it is strongly shear-thinning. Being non-ionic, it is not affected by ionic strength or pH but will degrade at low pH at moderate temperature (pH 3 at 50degC). Guar derivatives demonstrate stability in high temperature and pH environments. Guar use allows for achieving exceptionally high viscosities, which improves the ability of the fracturing liquid to transport proppant.</p>	<ul style="list-style-type: none"> <li>Appearance : Powder</li> <li>Odor: Odorless</li> <li>Color : White</li> </ul>	55 Lbs / Sacks



# CHEMICAL – OIL & GAS, STIMULATION & FRACTURING

Product Name	Application & Advantages	Specification	Packaging
PROPPANT 20/40	High-performance, low-density ceramic proppant technology has a bulk density and specific gravity similar to sand, yet delivers higher conductivity and flow capacity to enhance production and your estimated ultimate recovery (EUR). Particularly effective for enhanced production rates in moderate-depth oil wells.	<ul style="list-style-type: none"><li>Appearance : Gray solid spheres</li><li>Odor : Odorless</li><li>Crush @ 10.000psi : 7%</li><li>Melting point : &gt;2,000 oC</li><li>Relative density : 2.70</li><li>pH : Not applicable</li><li>Solubility : Not available</li></ul>	3307 Lbs/BB

# CHEMICAL – OIL & GAS, LCM

Product Name	Application & Advantages	Specification	Packaging
WALNUT SHELL	<p>Walnut shells are used as a granular lost circulation material (LCM) in oil and gas drilling to seal fractures and permeable zones, preventing fluid loss and improving drilling efficiency.</p> <ul style="list-style-type: none"><li><b>Effective sealing:</b> Walnut shells provide good sealing in fracture zones and thief areas, reducing fluid loss</li><li><b>Biodegradable and sustainable:</b> They are a natural and biodegradable alternative to synthetic LCMs, aligning with environmental goals.</li><li><b>Improved drilling performance:</b> By controlling fluid loss, they contribute to better drilling efficiency and cost-effectiveness.</li><li><b>Versatile:</b> They can be customized for different drilling conditions and used in various applications.</li></ul>	<ul style="list-style-type: none"><li>Mesh : # 8 to # 48</li><li>Bulk Density : 0.75 g/cm3</li><li>pH : 4.0 – 6.0</li><li>Moisture : 3.0% – 6.0%</li><li>Oil Removal Efficiency: 95%</li><li>Suspended Solid Removal Rate: 98%</li></ul>	
MONOFILAMANET FIBER	<p>Monofilament fiber made by 100% virgin homopolymer polypropylene multifilament (monofilament) fibers is produced by our patent advanced technology for fiber spinning, modified by adding functional additive and special surface-treating. Mixing into cement concrete, it has many advantages such a good dispersing, better water affinity, strong linking force. It is suited to reinforce and crack-resist to every kind of cement concrete and mortar. A monofilament polypropylene microfiber for concrete reinforcement that complies with ASTM C 1116, standard specification for fiber reinforced concrete and shotcrete, and is specifically designed to help mitigate the formation of plastic shrinkage cracking in concrete. Typically used at a dosage rate of 0.6kg/m3 to 1.8kg/m3.</p> <p><b>PRODUCT FEATURES</b></p> <ul style="list-style-type: none"><li>Excellent mechanical properties.</li><li>Good strand integrity, low static and fuzz.</li><li>Fast and even dispersion in cement slurry, good processibility.</li><li>Bridges highly permeable and fractured formations to minimize lost circulation.</li><li>Cost effective.</li></ul>	<ul style="list-style-type: none"><li>Appearance : White Fiber</li><li>Fiber Type : Monofilament</li><li>Typical concentration range : 0.6kg/m3 to 1.8kg/m3</li><li>Typical filament diameter: 20 – 25 uM</li><li>Typical chopped length: 10 + 1 mm</li></ul>	55 Lbs/Sack



# CHEMICAL – COAL MINING

Product Name	Application & Advantages	Specification	Packaging
<b>COAL DUST SUPPRESSANT</b>	<p>A synthetic formula made from concentrated emulsion polymer to suppress coal dust. This chemical is specially made for light dust, safe to use, non-toxic, and environmentally friendly. A dust suppressor to control dust at the time of unloading, shipping and storing coal in cement plants, power plants and other factories that easily emit dust. In addition, coal dust suppressant can increase the wet-ability of coal, and reduce the use of water in wetting coal, thereby minimizing the increase in the total moisture content of coal.</p> <p><b>Recommended usage :</b> Dosage is recommended using a dilution with a ratio of 1:250 to 1:1000 (concentration 0.1% - 0.4%). Spray dust suppressant when the coal is poured from the crusher to the transfer conveyor or when loading into the holding carriage. It is recommended to apply with a ratio of 2-9 Liters of coal dust suppression solution per ton of material to be applied. Spraying systems are recommended at dust source points.</p>	<ul style="list-style-type: none"> <li>Appearance : Clear colorless to white Liquid</li> <li>Specific Gravity : 1.010 ± 0.100</li> <li>pH : 6.5 – 8.5</li> <li>Soluble in water</li> </ul>	<p>Pail @ 25 Liters</p> <p>Drum @ 200 Liters</p> <p>IBC Tank @ 1000 Liters</p>
<b>SPONCOMB PROTECTION COAL</b>	<p>A polymer-based liquid chemical suitable for protecting coal combustion. The function of chemical is to coat the particles to reduce the occurrence of sponcomb due to oxidation of coal during extreme weather. In addition, these chemicals can also function to reduce coal dust and can maintain the stability of the water content of coal.</p> <p><b>Recommended usage :</b> Application For Transport on <b>Conveyors</b> The recommended dosage with a dilution ratio of 1:40 to 1:200 (concentration 0.5% - 2.5%). Spray while material is being transported from the conveyor to the conveyor, between transfer points or while loading onto the cart/barge. Apply at a ratio of 2-9 Liters of chemical solution per ton of material to be applied. The spray system should be installed at points of maximum turbulence to maximize application over the entire surface of the particles. Application on the Coal Pile, Dilute chemical with water in a ratio of 1:40 (2.5%). Spray chemical over the surface of the coal pile. Use 3-5 Liters of chemical solution per square meter.</p>	<ul style="list-style-type: none"> <li>Appearance : White Emulsion Liquid</li> <li>Specific Gravity : 1.020 ± 0.100</li> <li>pH : 5.0 – 7.0</li> <li>Soluble in water</li> </ul>	<p>Pail @ 25 Liters</p> <p>Drum @ 200 Liters</p> <p>IBC Tank @ 1000 Liters</p>
<b>SPONCOMB PROTECTION COAL + ROAD DUST CONTROL</b>	<p>Coating agent to fix particles in solid form. It is easily dissolved without the need of agitation. The product is free of organic solvents, surfactants and volatile organic compounds (VOCs). It is recommended preparing dissolutions over cold water and neutral pH at concentrations within the range of 1-5%. The product reaction starts quickly either with drying, sun or soil pH effect. It is recommended to work in a range of 30 to 50 g / m<sup>2</sup> depending on the type of material treated, the weather conditions and the dosing equipment.</p> <p>The results of the product application is observed after the treated material is dry. Between 1 and 3 hours depending on the weather conditions. The durability of the treatment is approximately 30 days at room temperature.</p>	<ul style="list-style-type: none"> <li>Appearance : White Milky Liquid</li> <li>Specific Gravity : 1.20 ± 0.100</li> <li>pH : 2.0 – 4.0</li> <li>Soluble in water</li> </ul>	<p>Pail @ 25 Liters</p> <p>Drum @ 200 Liters</p> <p>IBC Tank @ 1000 Liters</p>

# CHEMICAL – COAL MINING

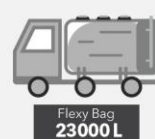
Product Name	Application & Advantages	Specification	Packaging
<b>WATER BASE DEGREASER</b>	<p>A water-based cleaner that can clean oil, grease quickly and effectively. Can be applied in the automotive industry, mining, construction etc. In addition, these chemicals are very biodegradable and do not irritate the skin.</p> <p>Recommended usage a dilution of 20% - 100%, depending on the type of impurities and the point of application.</p>	<ul style="list-style-type: none"><li>▪ Appearance : Clear Green Liquid</li><li>▪ Specific Gravity : 1.006 ± 0.100</li><li>▪ pH : 8.0 – 10.0</li><li>▪ Soluble in water</li></ul>	Pail @ 25 Liters
<b>SOLVENT BASE DEGREASER</b>	<p>Solvent-based cleaner that is suitable for applications in general maintenance cleaning, automotive, marine and transportation equipment. In addition, it can also remove grease, wax, lubricating oil, from metal surfaces as well as other surfaces. Does not cause rust and is safe to use on all types of metal and leaves no residue so no rinsing with water is required after application. Does not support use on materials sensitive to aliphatic hydrocarbons such as rubber and has flash point higher than the room, so they are not flammable.</p> <p>Recommended use : ready to use to the point of application with brush and immersion.</p>	<ul style="list-style-type: none"><li>▪ Appearance : Clear Colorless Liquid</li><li>▪ Specific Gravity : 0.70 – 0.90</li><li>▪ pH : Not Applicable</li><li>▪ Flash Point : &gt; 40</li><li>▪ Soluble in Oil</li></ul>	Pail @ 25 Liters
<b>SOIL STABILIZER</b>	<p>A specialty chemical resulting from our extensive research and development, revolutionizing soil stabilization. The innovative formula is designed to eliminate the need for additional materials during application, simplifying the process, saving time, and resources for users. This product demonstrates our commitment to providing effective, efficient, and sustainable solutions for various industries such as construction, agriculture, and landscaping.</p>		Pail @ 25 Liters Drum @ 200 Liters IBC Tank @ 1000 Liters

# LUBRICANT – DIESEL OIL ENGINE



Product Name	Application & Advantages	Specification	Packaging
<b>CRUISER ADVANCE PLUS</b>  SAE 15W-40; 20W-50	<p>Primarily recommended for use in high speed diesel engines, especially the latest direct injection low emission diesel engines and pre-combustion chamber diesel engines requiring a lubricant that meets CI-4/SL standards.</p> <p>This is very superior in preventing the formation of carbon deposit, sludge and soot control. This lubricant has been proven with a longer oil life because it is equipped with detergent-dispersant, anti-wear, anti-oxidant, anti-foam, anti-corrosive, anti-rust and other additives functions.</p> <p>It can also be used in heavy-duty diesel engines that use exhaust gas recirculation technology (EGR) with fuel biosolar B0 - B40 such as in bus vehicles, dump trucks, generators, heavy equipment and ship engines.</p>	<ul style="list-style-type: none"> <li>API Service CI-4, CG-4,</li> <li>CH-4, CF-4, CF, SL</li> <li>Mack EO-M+, Mack OE-N</li> <li>ACEA E7-12</li> <li>MB 228.3</li> <li>MAN M3275</li> <li>Renault RDL-2</li> <li>Volvo VDS-3</li> <li>Cummins CES 2076/77/78</li> <li>Cat ECF-1A, Cat ECF-2</li> <li>Deutz III</li> <li>JASO DH-1</li> <li>Global DHD-1</li> <li>DDC93K215</li> <li>Allison C-4 standard</li> </ul>	Bottle @ 1 Liter*  Bottle @ 4 Liter*  Drum @ 205 Liter
<b>CRUISER SUPER HDX</b>  SAE 15W-40	<p>Recommended for use in high-speed diesel engines, especially direct injection low emission diesel engines, re-combustion chamber diesel engines, and common rail diesel engine. Suitable for heavy-duty diesel engines that use exhaust gas recirculation technology (EGR). Suitable for use in diesel engines bus/fleet vehicles, dump trucks, heavy equipment, generators and ships that use Biosolar B40 fuel oil.</p> <p>High oxidation stability to give optimum performance against oil thickening. Effective wear protection to prolong engine part lifetime. Effective high-temperature piston deposit control. Good soot control to prevent lubricant thickening. Stay in grade characteristics to provide optimum viscosity during high and low temperature operation.</p>	<ul style="list-style-type: none"> <li>API Service CI-4/CH-4/SL</li> <li>MB 228.3</li> <li>MAN 3275</li> <li>MTU 2.0</li> </ul>	Drum @ 205 Liter
<b>CRUISER HDA</b>  SAE 10, 30, *40, 50	<p>Recommended for lubrication of both diesel engines and gasoline engines, supercharged or turbocharged, in vehicles, heavy equipment, stationary machinery and marine applications. Referring to the Cat TO-2 &amp; Allison C-4 specification, this product can be used in several types of mining and construction applications, including:</p> <ul style="list-style-type: none"> <li>SAE 10W, 30 for hydraulic.</li> <li>SAE 30 for transmission, Final Drive &amp; Differential.</li> <li>SAE 50 for final drives, tandem &amp; swing drive.</li> </ul>	<ul style="list-style-type: none"> <li>API service CF/CF-2/SF</li> <li>ACEA E2-96</li> <li>MB Sheet 228.0</li> <li>MTU Type 1</li> <li>Caterpillar TO-2</li> <li>Allison C-4</li> </ul>	Bottle @ 1 Liter*  Bottle @ 4 Liter*  Drum @ 205 Liter

*\*Please request if you  
desire to have our products  
in any other size form.*



Product Name	Application & Advantages	Specification	Packaging
<b>LORENT ZNF</b>  ISO VG 46, 48	<p>The oil is recommended for all kind of hydraulic systems operating under high pressure and high temperature. Suitable for hydraulic fluid and electrohydraulic servo controls, valve controls, shock absorbers, marine equipment, mining equipment and other hydraulic equipment. For the control and power transmission systems of most types of machinery design or heavy-duty operating conditions that require oils with an extremely high viscosity index.</p> <p>Good antiwear and extreme pressure properties. Superior thermal stability avoids the formation of sludge even at high temperature. Extends the life of hydraulic pump and motor parts in circuits. Excellent shear stability and oxidation stability ensure a long service life of the fluid. Good anti-foam, demulsibility, and air release properties.</p> <p>Excellent filterability properties even in the presence of water. The addition anti seal swelling agent give excellent seal compatibility properties and prolong seal lifetime.</p>	<ul style="list-style-type: none"> <li>DENISON HF-0, HF-1, HF-2 (HM)</li> <li>Eaton Vickers M-2950-S</li> <li>Fives Cincinnati P68, P69, P70 (HM)</li> <li>DIN 51524 Part II (HM)</li> <li>ISO 11158 (HM)</li> <li>ASTM D6158</li> <li>SAE MS 1004</li> <li>BOSCH REXROTH RE 90220</li> <li>GM LS-2</li> <li>CONESTOGA Pump Test</li> <li>ISO 20763</li> </ul>	Drum @ 205 Liter
<b>LORENT HVI</b>  ISO VG 46, 48	<p>It is also recommended for all kind of hydraulic systems operating under high pressure and high temperature (limit &lt;100 °C). It suits the hydraulic fluid, electrohydraulic servo controls, valve controls, shock absorbers, marine equipment, mining equipment, and other hydraulic equipment. For the control and power transmission systems of most types of machinery design or heavy-duty operating conditions that require oils with an extremely high viscosity index.</p> <p>Excellent oxidation stability. Capable to extend the oil drain interval. Good sludge and particulate control. Improved filterability and consequently less downtime. Improved protection of critical components with tight tolerances. Superior wear protection for maximum equipment life. Greater energy saving potential. Excellent hydrolytic stability for improved protection and extended life of yellow metal part of the equipment.</p>	<ul style="list-style-type: none"> <li>Parker (formerly Denison) HF-0, HF-1, HF-2 (HV)</li> <li>Eaton Vickers M-2950-S and I-286-S3typical Data</li> <li>Fives Cincinnati P68, P69, P70 (HV)</li> <li>DIN 51524-3 (HV)</li> <li>ISO 11158 (HV)</li> <li>ASTM D6158 (HV)</li> <li>SAE MS 1004 (HV)</li> <li>Bosch Rexroth RE 90235 (eligible for RDE 90245 listing)</li> <li>ANSI/AGMA 9005-E02-RO</li> <li>GM LS-2</li> <li>AIST 126, 127</li> </ul>	Drum @ 205 Liter
<b>LORENT Z</b>  ISO VG 32, 46, 68, 100	<p>It is effective for systems that use both vane and piston pumps based on either steel-steel or steel-bronze metallurgy.</p> <p>Excellent oxidation stability. Capable to extend the oil drain interval. Good sludge and particulate control. Improved filterability and consequently less downtime. Improved protection of critical components with tight tolerances. Superior wear protection for maximum equipment life. Greater energy saving potential. Excellent hydrolytic stability for improved protection and extended life of yellow metal part of the equipment</p>	<ul style="list-style-type: none"> <li>Parker (formerly Denison) HF-0, HF-1, HF-2 (HM)</li> <li>Eaton Vickers M-2950-S and I-286-S3</li> <li>Fives Cincinnati P68, P69, P70 (HM)</li> <li>DIN 51524-2 (HM)</li> <li>ISO 11158 (HM)</li> <li>ASTM D6158 (HM)</li> <li>SAE MS 1004 (HM)</li> <li>Bosch Rexroth RE 90235 (eligible for RDE 90245 listing)</li> <li>JCMAS P041 HK Hydraulic Specification</li> <li>ANSI/AGMA 9005-E02-RO</li> <li>GM LS-2</li> <li>AIST 126, 127</li> <li>SEB 181222</li> </ul>	Drum @ 205 Liter



# LUBRICANT – AXLE & TRANSMISSION OIL



Product Name	Application & Advantages	Specification	Packaging
<b>GOTRA TRANSYN</b>  SAE 75W-80, 75W-90	For heavy duty manual transmission, On and Off-highway application in wide range of operation temperature, suitable for extended drain interval applications, capable for operating in severe low temperature condition.  Improved efficiency and fuel economy. Improved anti wear and extreme pressure performance resulting in longer equipment life and extended oil drain interval. Outstanding thermal and oxidation performance. Compatible with the seal and gasket materials used in most conventional vehicles. Provides excellent synchronizer performance.	<ul style="list-style-type: none"> <li>API GL-4</li> <li>MB Sheet 235.5</li> <li>MAN 341 E-2</li> <li>MAN 341 Z-2</li> <li>ZF TE-ML 02B, 08B</li> </ul>	Drum @ 205 Liter
<b>GOTRA TM</b>  SAE 80W-90, 85W-140, 140	It is used for lubrication of hypoid or spiral bevel gears in transmissions, gearboxes and steering systems in heavy duty vehicles. Excellent stability in operation conditions. Excellent anticorrosion, antifoam and antirust properties. High extreme pressure properties.	<ul style="list-style-type: none"> <li>API service GL-5</li> <li>MT-1 performance standards</li> </ul>	Drum @ 205 Liter
<b>GOTRA</b>  SAE 90, 140	Used for the lubrication of spiral bevel gears in heavy duty automotive transmissions, gearboxes and steering systems. Excellent oxidation stability to prevent damage to components operating at high temperatures.	<ul style="list-style-type: none"> <li>API service GL-4</li> <li>MT-1 performance standards</li> </ul>	Drum @ 205 Liter
<b>GOTRA DEX III</b>  SAE 90, 140	Can be used for service fill and top up of all passenger car and light truck automatic transmission fluid for which Dexron III H products are specified. Gotra Dex-III is backward compatible with Dexron II G and Dexron II, therefore can be used in an automatic transmission that requires both specifications.  Excellent anticorrosion, antifoam and antirust properties. excellent anti-wear properties to prevent wear gears and bearings.	<ul style="list-style-type: none"> <li>General Motor's Dexron III H</li> <li>Ford Mercon</li> <li>Allison C-4</li> </ul>	Drum @ 205 Liter
<b>UNITRANS HD</b>  SAE 10, 30, 50, 60	Can be used for service fill and top up of all passenger car and light truck automatic transmission fluid for which Dexron III H products are specified. Gotra Dex-III is backward compatible with Dexron II G and Dexron II, therefore can be used in an automatic transmission that requires both specifications.	<ul style="list-style-type: none"> <li>ZF TE-ML-03C</li> <li>ZF TE-ML-07F</li> <li>CAT TO-4 and TO-4M</li> <li>Allison C4</li> <li>Komatsu KES 07.868.1</li> <li>(2002)</li> <li>API MT-1</li> </ul>	Drum @ 205 Liter
<b>UNITRANS UTTO</b>  SAE 10W-30 (80W)	It is recommended for automatic, torque converting or hydrostatic transmissions that require a GL-4 or 10W-30 (80W) level lubricant. Also excellent for hydraulic systems, oil immersed or wet systemised brakes.	<ul style="list-style-type: none"> <li>API Service GL-4</li> <li>Massey Ferguson CMS</li> <li>M1143/1135/1145</li> <li>John Deere JDM J 20C/D</li> <li>Case New Holland MAT</li> <li>3525/3526</li> <li>Ford M2C 134D</li> <li>ZF TE-ML 03E/ 05F</li> <li>Case MS</li> <li>1204/1206/1207/1209</li> <li>Volvo WB101</li> <li>Kubota UDT</li> <li>Caterpillar TO-2</li> <li>Allison C-4</li> </ul>	Drum @ 205 Liter

## LUBRICANT – AXLE & TRANSMISSION OIL



Product Name	Application & Advantages	Specification	Packaging
<b>UNITRANS FD</b>  SAE 60	Recommended for use on all Caterpillar Final Drives & Axles that require Cat FD-1 lubricants specifications. Can also be used on transmission that require TO-4 lubricants specifications that do not contain friction material. Suitable for heavy load operation condition of haul truck. Suitable Off-highway application in wide range of operation temperature, Extended drain interval applications. It is not recommended for use in diesel engines, transmission or hydraulic system.	<ul style="list-style-type: none"> <li>Caterpillar FD-1</li> </ul>	Drum @ 205 Liter

## LUBRICANT - CIRCULATING OIL

Product Name	Application & Advantages	Specification	Packaging
<b>CIRCO</b>  ISO VG 150, 220, 320, 460	It is recommended for hydraulic circuits, air compressors, circulation systems, speed reducers, electric motor bearings and many other industrial applications. The product is abilities to separate excellent water, resist oxidation, deposit formation and ashless.	<ul style="list-style-type: none"> <li>Danieli, Italy 2000</li> <li>SMS Germany 1998</li> <li>R&amp;O Oil</li> <li>ISO 6743/4 Category HL</li> <li>ISO 6743/6 Category CKB</li> </ul>	Drum @ 205 Liter
<b>CIRCO</b>  ISO VG 100	This product is specially designed for use in most electric motor bearings, air compressors, gears, hydroelectric turbines and non-heavy duty hydraulic systems where OEM recommends R&O type lubricant. Excellent oxidation and thermal stability. Good filter ability characteristics. Excellent rust and corrosion protection for maximum equipment life. Excellent demulsibility performance. Superior water separation performance. Resistant to sludge formation. Good foaming resistant.	<ul style="list-style-type: none"> <li>Denison HF-1, HF-0</li> <li>General Electric</li> <li>GEK-32568</li> <li>Solar Turbine ES9-224</li> <li>MIL-H-17672D</li> <li>US Steel 126</li> <li>Afnor E-48600 HL</li> <li>Cincinnati Milacron P-38,</li> <li>P45, P54, P-55, P-57, P62</li> <li>standard</li> <li>ISO 6743/4 Category HL.</li> </ul>	Drum @ 205 Liter

## LUBRICANT – TURBINE OIL

Product Name	Application & Advantages	Specification	Packaging
<b>TURN0</b>  ISO VG 32, 46, 68	This is product specially designed for the lubrication of steam or gas turbines. They can also be used in compressors, turbochargers, vacuum pump and hydraulic system. Good rust and corrosion protection. Good filter ability characteristics. Demulsibility strong performance and excellent water separation helps in draining excess moisture from the circulatory system. Resistant to sludge formation. Foam protection.	<ul style="list-style-type: none"> <li>Denison HF-1, HF-0</li> <li>General Electric</li> <li>GEK-32568</li> <li>Solar Turbines ES9-224</li> <li>MIL-H-17672D</li> <li>US Steel 126</li> <li>Afnor E-48600HL</li> <li>Cincinnati Milacron P-38,</li> <li>P-45, P-54, P-55, P-57,</li> <li>P-62 standards</li> </ul>	Drum @ 205 Liter

*\*Please request if you desire to have our products in any other size form.*

## LUBRICANT – MARINE



Product Name	Application & Advantages	Specification	Packaging
<b>NEPTUN TP XT</b>  SAE 315, 412, 4,15 420, 430, 440	Main and auxiliary diesel engine of all type that used diesel oil or marine fuel oil with sulfur content less than 5% wt. This product is also suitable for bearings, stern-tubes and reduction gear lubricant. Recommended application of SAE 315, 415 for medium speed diesel engines with HSD fuel and SAE 330, 430, 440 can be used for marine oil (MFO) fuel	<ul style="list-style-type: none"> <li>API Service CF</li> <li>Man - B &amp; W</li> <li>New Sulzer Diesel</li> <li>Yanmar</li> <li>Daihatsu</li> <li>Wartsila</li> <li>Akasaka</li> </ul>	Drum @ 205 Liter

## LUBRICANT – INDUSTRIAL GEAR OIL

Product Name	Application & Advantages	Specification	Packaging
<b>IGO</b>  ISO VG 100, 150, 220 320, 460, 680	Can be used for all types of closed systems industrial gears in conditions ranging from normal to heavy-duty operation with high loads requiring this type of lubricant. This product is also suitable for use in circulatory lubrication system, spraying or misting.	<ul style="list-style-type: none"> <li>DIN 51 517 Part III CLP</li> <li>ISO 12925-1 CKD</li> <li>AGMA 9005 - D94 EP</li> <li>US Steel 224</li> <li>CINCINNATI MILACRON</li> <li>DAVID BROWN</li> <li>SEB 181226 type CLP</li> </ul>	Drum @ 205 Liter

## LUBRICANT – HEAT TRANSFER OIL

Product Name	Application & Advantages	Specification	Packaging
<b>HITERM 300</b>	It is suitable for enclosed heat transfer system that required mineral oil. It has maximum boiler outlet temperature of 300 °C and maximum boiler wall temperature of 320 °C. Excellent resistance to thermal cracking and decomposition up to maximum boiler temperature of 320 °C. Good oxidation and thermal stability. Good rust and corrosion protection. Good filter ability characteristics. High heat and thermal conductivity provide more rapid heat dissipation. Resistant to sludge formation. Foam protection.	DIN 51522 requirement, classified as ISO 6743-12 Family Q	Drum @ 205 Liter
<b>CLEAN 88</b>	Use this product only for cleaning operations Dilute this product in the fluid of thermal heating system that requires cleaning. Minimum, add 5% of the heat transfer fluid volume of this product into the thermal heating system during 48 hours maximum, before oil change and while maintaining the fluid circulation at the normal use temperature. Replace the filters or reclean the strainers before refilling the thermal heating system with new oil Drain cleaned oil as much as possible by opening all drain valve in each pipe or part/unit. Use the pneumatic air to blow all pipe or part/unit and clean mechanically if necessary. Completely miscible with all mineral based heat transfer fluids. High detergency-dispersancy level. Excellent thermal stability.		Drum @ 205 Liter

## LUBRICANT – SPECIALITIES OIL



Product Name	Application & Advantages	Specification	Packaging
<b>POWER ED EP</b>  ISO VG 100	<p>The oil is recommended for the following pneumatic equipment manufactured, such as: High-speed and low-speed drills, Jackhammers, Paving breakers, Stoppers, Drifters, Wagon drills, Self-propelled drills. Good lubrication and cooling properties. Excellent EP and anti-foaming properties. Good thermal and oxidation stability. Excellent water-separability. Good compatible with seals, cooper, steel, and alloy part.</p>		Drum @ 205 Liter
<b>GOSLIDE</b>	<p>Machine tool slideways, tables and feed mechanisms. For use on a wide range of surface materials, including cast iron and synthetic materials. GOSLIDE is intended for horizontal slide lubrication. Enable machine tool carriages to start easily and smoothly, event after long standing, provides smooth chatter-free carriage operation, protect against wear and corrosion, resist gel formation in the presence of water base coolant, adhere tenaciously to metal surfaces.</p>		Drum @ 205 Liter

*\*Please request if you desire to have our products in any other size form.*

## LUBRICANT – COMPRESSOR OIL

Product Name	Application & Advantages	Specification	Packaging
<b>AMON SH</b>  ISO VG 32, 46, 68	<p>This product is suitable for the use of compressors equipment such as pumps compressors. The main function of lubrication in screw and reciprocating compressors is : Cooling the compressed air. Bearing lubrication. Sealing the chambers, Corrosion protection, Preventing the formation of deposits. Excellent viscosity temperature behaviour (high natural viscosity index), shear stable. Excellent oxidation stability. Low evaporation losses. Excellent wear protection. Good demulsifying properties. Excellent corrosion protection. Good compatibility with elastomers. Low foaming/good air release. Suitable for high temp applications</p>	<ul style="list-style-type: none"> <li>▪ DIN 51 506 (VBL, VCL, VDL),</li> <li>▪ ISO/DP 6521 (DAA, DAB, DAH, DAG) standard</li> </ul>	Drum @ 205 Liter
<b>AMON SHC</b>  ISO VG 32, 46, 68	<p>It is effective for the lubrication and cooling of rotary screw air compressor and rotary sliding vane compressor, It also extends the drain intervals. The possible achieved drain intervals can be: from 4000 - 6000 hours for fixed compressor in standard use. Up to 8000 hours with lubricant analysis monitoring. Good rust and corrosion properties. Good filter ability characteristics. Strong performance demulsibility and excellent water separation help in draining excess moisture from circulatory system. Resistant to sludge formation.</p>	<ul style="list-style-type: none"> <li>▪ ISO/DP 6521 (DAA, DAB, DAH, DAG)</li> <li>▪ DIN 51 506 (VBL, VCL, VDL)</li> </ul>	Drum @ 205 Liter



RADIATOR COOLANT



Product Name	Application & Advantages	Specification	Packaging
FRIZGUARD HD 50	<p>FrizGUARD HD 50 provides a remarkable performance. In diesel engines, it can last approximately 200,000 KM or 4,000 hours. While in gasoline engines, it can last approximately 100,000 KM or 2,000 hours. FrizGUARD HD 50 is ready to use and does not need to be diluted further with water. Provide corrosion protection for metals such as brass, coppers, soldes, steel, cast iron and aluminum. Provide anti freeze and boil protection. Compatible with gaskets, elastomer and others non-metallics in the engine. In general, this product is compatible with other engine coolants with the same specification</p>	<p>ASTM D 3306 / D 4985 / D 6210, AS/NZS 2108:2004, Type A, SAE J1034/J1941, Caterpillar EC-1 (Sec 2.3 - 4.5 incl.), Cummins Bulletin #3666132, Detroit, Diesel Bulletin #7SE298, GM 1825M/1899M, JD JDM HD24, MAN 324 TUC 1637/77, MTU (EVP 1 1827/MTL 5048) &amp; NA, MB DBL 7700, Saab/Scania 6901, TMC RP 329</p>	<p>Drum @ 209 Liter</p>

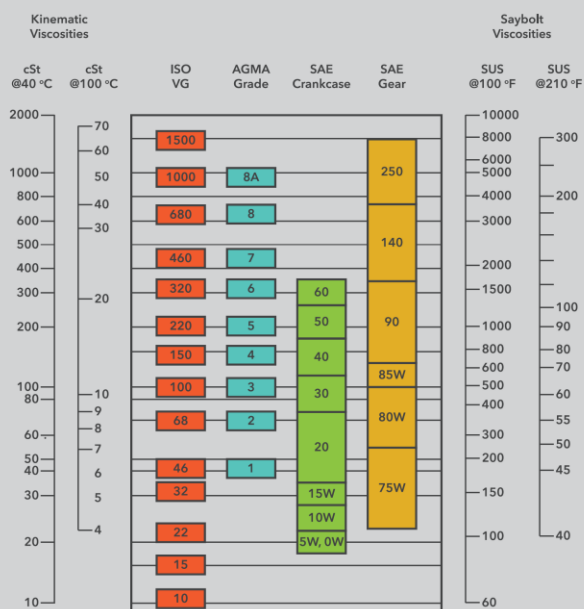


Lubricant quality is critical to ensuring equipment performance and reliability in the industrial sector. However, selecting a premium lubricant alone is insufficient - proper storage plays a vital role in maintaining formulation stability and product integrity. **PanaOIL** recognizes the importance of adhering to industry-standard storage practices to ensure that every drop of lubricant remains in optimal condition, maximizing operational efficiency and equipment longevity.

Product Name	Application & Advantages	Thickener, Base Oil, Key Properties	Specification	Packaging
<b>FETT LM</b>  NLGI Grade 2  ISO VG 460	<p>Recommended for the lubrication of slow moving, heavy duty bearings under heavy loads, shock load and vibration usually in mining operation and steel industry. The presence of extreme pressure to form a layer of lubricant film is able to withstand the mechanical stresses caused by a combination of shock loading and sliding contact. The weilding point test (Foul Ball EP) provides up to 560 kgf minimum tolerance. In general, it can be used for centralized grease systems, e.g. for systems used in rolling mills and on the slideways to suppress the formation of the heat.</p> <p>Excellent mechanical stability . Very good rust and oxidation characteristics. Very good extreme pressure performance under heavy load condition and high temperature. Excellent water resistance properties. High dropping point. Highly adherent properties. Lead and nitrite free.</p>	Lithium complex, mineral, EP, solid EP additive (MoS2)		Drum @ 180 Kg
<b>FETT LC-EP</b>  NLGI Grade 2  ISO VG 220	<p>Suitable for lubrication of all types of heavy duty bearing operation under higher than ambient temperature condition under heavy load. Continous Casting, Vibrating sieves, Quarries, Breakers, Roller Conveyors, Automotive Wheelbearings.</p> <p>Excellent mechanical stability even under vibrating condition. Enhance extreme pressure properties. Good water resistance. High dropping point. Long operational life at high temperature. Effective corrosion protection.</p>	Lithium complex, mineral, EP.	<ul style="list-style-type: none"> <li>ISO 6743-9: L-XBEHB 2, L-XBEHB 3</li> <li>DIN 51502: KP2P-20, KP3P-20</li> </ul>	Drum @ 180 Kg
<b>FETT LT-EP</b>  NLGI Grade 2  ISO VG 220	<p>Recommended for loaded side-ball and roller bearings, wheelbearings, universal joints, chassis and various shock loaded or vibrating applications operated in various conditions : wet, dry or dusty. Generally suitable for industrial applications that require extreme pressure greases. Maximum allowable application temperature &lt;120C.</p> <p>Great load carrying performance. Geart eater wash-out resistance. Good oxidation stability. Good resistance to corrosion. Good mechanical stability</p>	Lithium, mineral, EP.	<ul style="list-style-type: none"> <li>ISO 6743-9: L-XBCDB 000, L-XBCDB 0, L-XBCDB 1, L-XCDB 2, L-XCDB. 3 specification.</li> </ul>	Drum @ 180 Kg
<b>FETT CHS</b>  NLGI Grade 3  ISO VG 100	<p>Recommended for all types of chassis lubrication requirements such as ball joint, suspension, steering system, plain bearing, bushings and pin in automotive chassis assemblies, even in wet operating conditions. Also recommended for slow rotating slide bearings and articulations where wide variety of outdoor and inland marine requirements are necessary. In wide range of outdoor applications where contacts with Water are frequent, This product is also suitable as non "EP" general purpose grease.</p> <p>Great water wash-out resistance. Great rust and corrosion protection. Good and trusted equipment reliability and availability. Balance lubrication properties ensure longer service life. Great protection against dirt and moisture contamination. Controlled oil release</p>	Calcium, mineral, EP.	<ul style="list-style-type: none"> <li>ISO 6743-9: L-XBAHA 3</li> <li>DIN 51 502: M2/3C-20 specification</li> </ul>	Pail @ 14Kg

## VISCOSITY CLASSIFICATION EQUIVALENT

Source: [www.acculube.com](http://www.acculube.com)



## CONSISTENCY NLGI OF LUBRICATING GREASES ACCORDING TO DIN 51 518

NLGI Class	Penetration Number (mm/10)	General Consistency	Use Scope
000	445 a 475	Fluid	GE, Z
00	400 a 430	Fluid Poorly	GE, Z
0	355 a 385	Semi Fluid	GE, Z
1	310 a 340	Many Slack	GE, WL, GL, Z
2	265 a 295	Slack	WL, GL, Z
3	220 a 250	Semi Solid	WL, GL
4	175 a 205	Solid	WL, WP
5	130 a 160	Many Solid	WP
6	85 a 115	Hard	

**GL** Sliding friction bearing lubrication  
**WL** Rolling contact bearing and wheel bearing lubrication  
**WP** Water pump lubricant  
**GE** Gear lubricant  
**Z** Forced circulation lubrication

Source:  
[khkgears.net](http://khkgears.net) (Viscosity System for Industrial Lubricants)  
[masterlineworld.com](http://masterlineworld.com) (Consistency Class NLGI of Lubricating Greases According to DIN 51 518)

Penggunaan	FETT CHS	FETT MP	FETT LT EP	FETT LC	FETT LM	FETT PU
Chassis	✓	✓	✓	✓	✓	✓
Multi Purpose		✓	✓	✓	✓	✓
Universal Joints			✓	✓	✓	✓
Pin Joints		✓	✓	✓	✓	✓
Ball Joints		✓	✓	✓	✓	✓
Wheel Bearings				✓	✓	
Journal Bearings		✓	✓	✓	✓	✓
Bucket Pins						
Electric Motors				✓		✓
Fan Bearings				✓		✓
Conveyor Chains			✓	✓	✓	✓
Mining & Marine Equipment			✓	✓		✓
Bearings-High Temp. (75-150°C)				✓		✓
Bearings-Low Temp. (-10-20°C)			✓	✓		
Bearings-High Speed (ndm=>300 000)				✓		
Bearings - Low Speed (ndm=<125 000)			✓	✓		
Bearings - Heavy Load			✓	✓		✓
Bearings - Water Resistance				✓	✓	✓
Couplings				✓	✓	

## VISCOSITY SYSTEM FOR INDUSTRIAL LUBRICANT

ISO Grade	Mid-Point Viscosity cSt @40 °C	Viscosity, cSt @40 °C	
		Minimum	Maximum
2	2.2	1.98	2.42
3	3.2	2.88	3.52
5	4.6	4.14	5.06
7	6.8	6.12	7.48
10	10	9.00	11.0
15	15	13.5	16.5
22	22	19.8	24.2
32	32	28.8	35.2
46	46	41.4	50.6
68	68	61.2	74.8
100	100	90.0	110
150	150	135	165
220	220	198	242
320	320	288	352
460	460	414	506
680	680	612	748
1000	1000	900	1100
1500	1500	1350	1650



## VISCOSITY GRADE FOR AUTOMOTIVE GEAR OILS SAE J306

SAE Viscosity Grade	Maximum Temperature for a viscosity of 150,000 cP (°C) ASTM D 2983	Kinematic Viscosity Minimum* (cSt) a 100 °C ASTM D 445	Kinematic Viscosity Maximum* (cSt) a 100 °C ASTM D 445
70W	-55 °C	4.1	-
75W	-40 °C	4.1	-
80W	-26 °C	7	-
85W	-12 °C	11	-
80	-	7	<11.0
85	-	11	<13.5
90	-	13.5	<18.5
110	-	18.5	<24.0
140	-	24	<32.5
190	-	32.5	<41.0
250	-	41	-

\* Must maintain viscosity after 20 hours in the CEC L-45-99 tests.

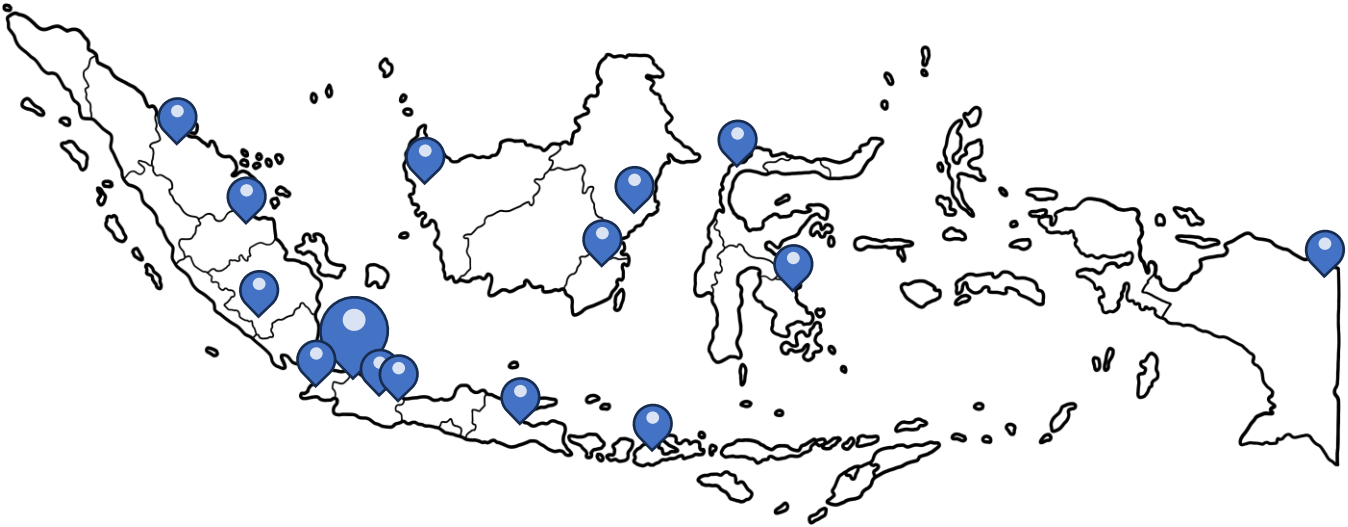


## VISCOSITY GRADE FOR ENGINE OILS SAE J300

SAE Viscosity Grade	Low Temp. Cranking (cP)	Low Temp. Pumping (cP)	Minimum Kinematic (cSt)	Maximum Kinematic (cSt)	Hi-Temp. Hi-Shear (cP)
0W	6,200 @ -35 °C	60,000 @ -40 °C	3.8	-	-
5W	6,600 @ -30 °C	60,000 @ -35 °C	3.8	-	-
10W	7,000 @ -25 °C	60,000 @ -30 °C	4.1	-	-
15W	7,000 @ -20 °C	60,000 @ -25 °C	5.6	-	-
20W	9,500 @ -15 °C	60,000 @ -20 °C	5.6	-	-
25W	13,000 @ -10 °C	60,000 @ -15 °C	9.3	-	-
8	-	-	4	<6.1	1.7
12	-	-	5	<7.1	2
16	-	-	6.1	<8.2	2.3
20	-	-	6.9	<9.3	2.6
30	-	-	9.3	<12.5	2.9
40	-	-	12.5	<16.3	3.5
40	-	-	12.5	<16.3	3.7 (0W-30, 5W-40, 10W-40)
50	-	-	16.3	<21.9	3.7 (15W-40, 20W-40, 25W-40, 40 monograde)
60	-	-	21.9	<26.1	3.7



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PROFILE**



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