

Company Profile & Product Information



**PT. SUGIMURA CHEMICAL INDONESIA**

URL : <http://www.sugimura.co.id>



# HIGH QUALITY

## Company Profile

### About PT. Sugimura Chemical Indonesia

PT. Sugimura Chemical Indonesia established in March 2013, is a 50%-50% joint venture between Sugimura Chemical Industrial Co., Ltd and PT Adiguna Eka Sentra (a group company of PT Indochemical Citra Kimia). Core products of PT Sugimura Chemical Indonesia are industrial lubricants and coolant, particularly for metal working and automotive industries. With more than 60 years of experience, Sugimura Chemical Industrial Co., Ltd has become the main supplier for metal working and automotive industries in Japan and their branches throughout the world. High Quality product, comprehensive after sales service, and excellent technical support are the features that make us an ideal partner for industrial lubricant and coolant solution

### Head Office and Factory

Jl. Selayar II Block H15, Kawasan Industri MM2100

Kp. Telajung RT. 002/Rw.010, Ds. Telajung

Cikarang Barat - Bekasi 17845

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# HIGH QUALITY



## PT. SUGIMURA CHEMICAL INDONESIA (Indonesia/Jakarta)

Jl. Selayar II Block H15,Kawasan  
Industri MM2100  
Kp. Telajung R t .002 Rw.010  
Desa Telajung Kec. Cikarang Barat  
Bekasi 17845,Indonesia  
TEL: 021- 2956- 8888  
FAX: 021- 2956- 9999



# HIGH QUALITY

PT Sugimura Chemical Indonesia  
memproduksi oli khusus  
untuk kebutuhan industri

01



Automotive Industry

02



Steel Pipe Industry

03



Automotive part and Motor-part Manufacturing

04



Metal Working company



# HIGH QUALITY

## Facilities

- Ware House Capacity 800 MT for material and 800 MT for finish product



- Storage tank for base oil and solvents



kapasitas storage tank 8 X 60 KL  
kapasitas storage tank 2 X 200 KL

# HIGH QUALITY

► Blending Factory with Capacity 600 MT/Month





# HIGH QUALITY

## Laboratory



01

Memeriksa semua bahan sebelum proses produksi  
(saat materi tiba dari supplier.)



02

Memeriksa produk selama proses produksi dan setelah produksi



03

Memeriksa kondisi minyak bekas dari pelanggan, untuk menjaga kualitas - minyak.



# HIGH QUALITY

## Customer

PT TOYOTA MOTOR Mfc INDONESIA PT HONDA PROSPECT MOTOR PT ASTRA DAIHATSU MOTOR

PT HONDA PRECISION PART MANUFACTURING PT CENTRAL MOTOR WHEEL INDONESIA

PT. DAIJO PT INDONESIA STEEL TUBE WORK PT SANKEI GOHSYU

PT ANGKASA RAYA STEEL PT INDO JAPAN WIRE PRODUCT PT SPINDO

PT AKS BALL INDONESIA PT ASMO INDONESIA PT IRON WIRE WORK INDONESIA PT MEIDOH

PT NIHON PISTON RING INDONESIA PT INDONESIA NIPPON STELL PIPE PT SUPER STEEL KARAWANG

PT NUSATOYO TETSU PT NSK WARNER PT AUTOTECH INDONESIA PT SUGIURA INDONESIA

PT TOYOTA BOSHOKU INDONESIA PT SUMIDEN SINTER INDONESIA PT MMC METAL

PT KOHWA INDONESIA PT NEW ARMADA PT ITO SEISAKUSHO PT FUJIBOLT PT HEKIKAI

PT SHIROKI INDONESIA PT MUROTECH PT SUZUKI INDOMOBIL PT FUTABA PT YOROUZU PT USUI

PT. KOMATSU INDONESIA PT TT METAL INDONEIA PT KAYABA HIDROULIC PT GARUDA METALINDO

PT MATSUYAMA KIGATA PT FINE SINTER PT TJ FORGE INDONESIA PT TOP TUBE INDONESIA

PT AUTOCAR KOMP. INDONESIA PT NIHON SEIKI INDONESIA PT MUSASHI INDONESIA

PT FEDERAL NITTAN INDONESIA PT KRAKATAU STEEL SUMIKIN

PT UNITED STEEL CENTER PT ASTRA HONDA MOTOR PT MURAMOTO

PT KANETA INDONESIA PT OMRON INDONESIA PT IHARA

PT SANNOH INDONESIA PT KANEMITSU PT FUJI SEAT INDONESIA PT STEP

PT YAMAKIN INDONESIA PT KOYAMA INDONESIA PT SANWA PRESS WORK

PT MUGAI INDONESIA PT SANOHASHI PT MARUTAKE MIYAMA PT SELAMAT SEMPURNA

PT MITSUBISHI MOTOR PT G L METAL STAMPING PT KYOWA STEEL

PT KOMATSU KOGYO PT SUN STAR PT INDOCHEMICAL PT KANEFUSA PT SEKISO

PT PANASONIC GOBEL PT CHUHATSU PT TSUZUKI ASAMA PT TPR PT T.RAD PT MTAT

PT INDO JAPAN WIRE PT USUI INDONESIA PT KYOSIN INDONESIA PT KOBELCO TRADING

PT TECHNO HOEI PT MARUHIDE PT IBARA LIOHO PT CHAMPION PP

PT. SAKATA INK PT MOSSI PT NISSIN INDONESIA PT. RAJA BESI

# HIGH QUALITY

## PRODUCT RANGE

### SPECIALITY

**SUGICUT**  
(cutting oil and coolant)

**SUGICOAT**

**HIBIRON**  
(INHIBITOR)

**SUNDRAW**  
(Drawing oil)

**SunRoll**

**Sunformer**

**Sunpress**

**Suncleaner**  
(cleaning agent)

**PRETON**  
(oli anti karat)

### COMMODITY

**Sugiway**  
(Slide Oil)

**Sugilube Marine**  
(Marine oil)

**SUGILUBE**  
(Hydraulic oil))

**SugiGear**  
(Gear Oil)

**Sugilube Engine**  
(Engine oil)

**RAPRO**  
(rubber processing oil)

**COMPERO**  
(compresor oil)

**TROIL**  
(turbin oil)

**HITRO**  
(heat transfer oil)

**SUGIMURA  
CHEMICAL  
INDONESIA**

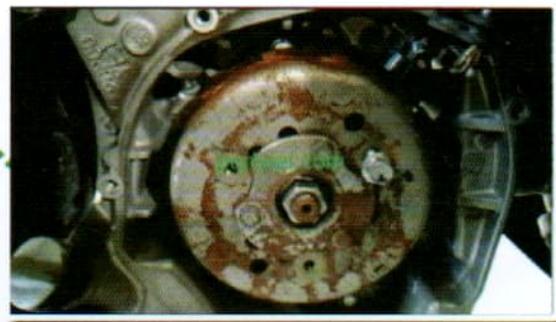
## **PRETON**

PRETON series product are designed to protect parts and materials from rust, discoloration and corrosion. They prevent serious damage to exposed surface. They can be applied as rust prevention for ferrous and non-ferrous materials such as coils, steel pipes, shaft, metalworking parts and wires.

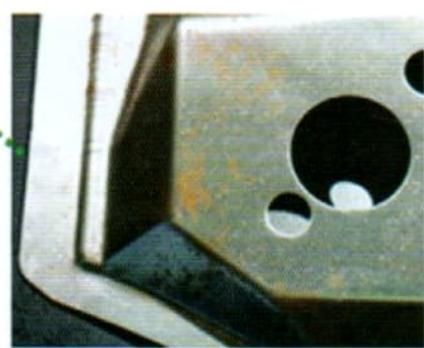
## **PRETON**

Preton adalah oli dirancang untuk melindungi bagian material dan produk dari karat, perubahan warna dan korosi, serta mencegah kerusakan serius pada permukaan besi dan baja dari karat, dapat diterapkan sebagai pencegahan karat untuk bahan besi dan non besi seperti coil, pipa baja, logam dan kawat

### **Besi tanpa minyak anti karat**

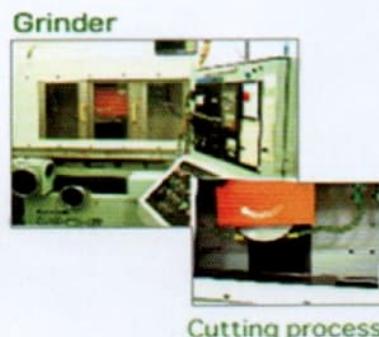
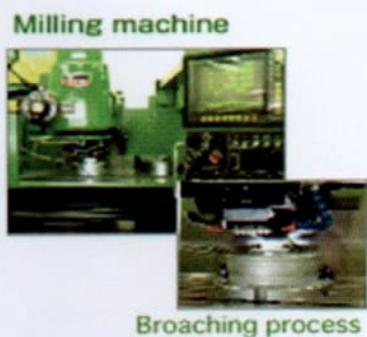


### **Besi tanpa minyak anti karat**



## SUGICUT

SUGICUT series are lubricating oil for cutting processes using various materials such as steel and stainless steel. They can improve the quality of steel, cast iron, and aluminum alloy during the cutting, broaching, grinding and tapping operation.

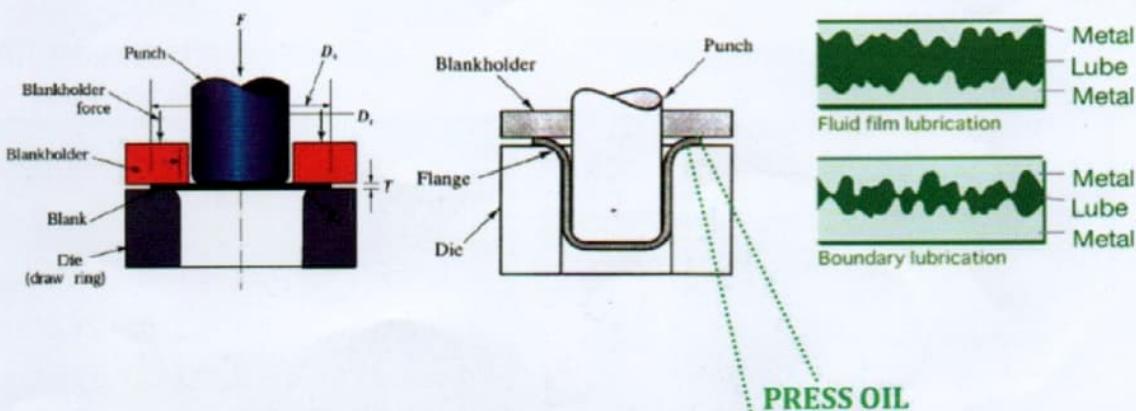


## SUNPRESS

SUNPRESS series are metal forming lubricants used during the metal stamping and forming processs to reduce friction between the dies and work piece.

## SUNPRESS

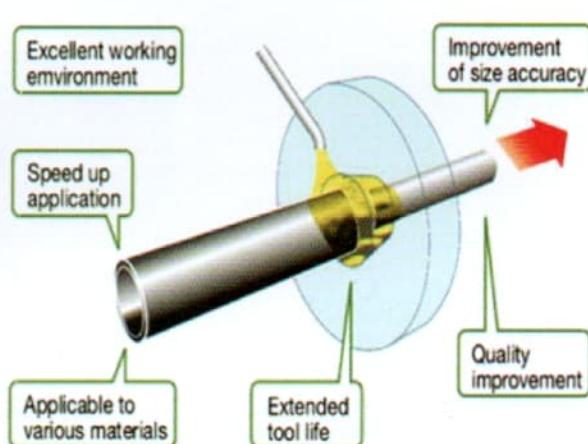
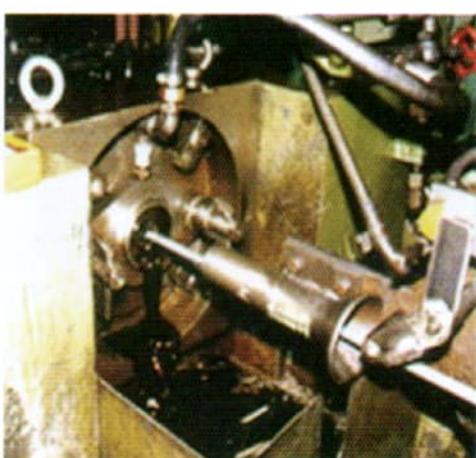
SUNPRESS digunakan dalam proses stamping dan pembentukan material yang mana dalam prosesnya untuk mengurangi gesekan anatara cetakan dan material.



# SUNDRAW SUNFORMER

## SUNDRAW

SUNDRAW series are lubricants for drawing applications using various kinds of steel to produce product such as coils and bars and excellent performance for various metals such as carbon steels, stainless steels and non-ferrous materials.



## SUNFORMER

SUNFORMER series are lubricants used for forging applications and also for molding in particular sizes and shapes which is applicable to various shape operations.



Forming machine

## SUNFORMER

SUNFORMER adalah pelumas yang digunakan untuk proses tempa dan aplikasi pembentukan, di mana dalam prosesnya bisa memerlukan suhu yang tinggi.



Sunformer works



## SUNCLEANER

SUNCLEANER series are specially designed to remove oil and clean parts before processing and help to prevent rust afterwards.

## SUNCLEANER

SunCleaner adalah produk yang dirancang khusus untuk menghilangkan minyak dan partikel asing pada bagian material sebelum dan dalam proses produksi dan membantu mencegah partikel asing menempel kembali pada material.

## waterbased

## solventbased



## SUGILUBE ENGINE

### SUGILUBE ENGINE

Sugilube engine is oil for engine that suitable for various vehicles according to the type. Sugilube engine is made with technologi heating process and by using high quality materials and superior base oil

### SUGILUBE ENGINE

Sugilube engine adalah oli untuk mesin kendaraan yang cocok untuk berbagai kendaraan sesuai dengan tipenya. Sugilube engine di buat dengan technologi heating proses dan dengan menggunakan bahan material berkualitas tinggi dan base oil unggulan



# SUGILUBE ENGINE CF-4/SG

## SUGILUBE ENGINE CF-4/SG

is a high quality heavy duty diesel engine oil which multi grade viscosity and having the highest performance level, based on API Service Category. This lubricant is suitable for heavy duty diesel engines that mostly available in vehicles, heavy equipments, gensets, ship engines and locomotive engines.

### SUGILUBE ENGINE CF-4/SG

provides an effective protection against rust, corrosion, excessive wear and piston deposit formation caused by high temperature. This oil also designed to gives improved control of oil consumption compared to previous oil generation.

#### TYPICAL CHARACTERISTICS

Characteristic	Test method	SUGILUBE ENGINE CF-4/SG	
SAE Viscosity Grade		15W-40	20W-50
Density at 15°C, gr/ml	ASTM D1298	0.8715	0.8830
Kinematic Viscosity at 40°C, cSt at 100°C,cSt	ASTM D445	102.55	160.70
	ASTM D445	14.48	18.63
Viscosity Index	ASTM D2270	146	130
Colour	ASTM D1500	1.5	1.5
Flash Point, °C	ASTM D92	220	224
Pour Point, °C	ASTM D5950	-30	-24
Total Base Number, mgKOH/g	ASTM D2896	11.95	11.97

#### PERFORMANCE LEVELS

### SUGILUBE ENGINE CF-4/SG

complies with API CF, API CF-4/CF/CD/SG, MB227.0/1, ACEA E1-96

#### SUPERIORITIES

- ⊖ Stable viscosity that gives optimum acceleration & engine protection during start up and high temperature operation.
- ⊖ High durability against oxidation & high temperature, combined with improved alkalinity reserve, provides optimum protection from wear and corrosion and proven longer oil drain interval.
- ⊖ Balanced detergency and dispersancy resulting in very good soot control and engine cleanliness that maintain engine and filter performance.

## SUGILUBE ENGINE CF-4/SG

adalah pelumas multi grade mesin diesel tugas berat baik yang menggunakan turbocharged, supercharged, atau naturally aspirated, untuk aplikasi alat transportasi, alat berat, industri atau perkapanan.

### SUGILUBE ENGINE CF-4/SG

memberikan perlindungan yang efektif terhadap karat, korosi, keausan berlebih, dan pembentukan deposit akibat temperatur tinggi. Pelumas ini juga didesain untuk memberikan pengendalian konsumsi pelumas yang lebih baik dibanding pelumas generasi sebelumnya..

#### TINGKATAN MUTU

### SUGILUBE ENGINE CF-4/SG

memenuhi persyaratan API CF, API CF-4/CF/CD/SG, MB227.0/1, ACEA E1-96

#### KEUNGGULAN

- ⊖ Kekentalan ganda yang stabil yang memberikan akselerasi dan perlindungan optimal terhadap mesin pada saat start up dan operasi pada temperatur tinggi.
- ⊖ Ketahanan yang tinggi terhadap oksidasi dan panas, dikombinasikan dengan alkalinity reserve yang lebih baik, sehingga mampu memberikan perlindungan optimal terhadap keausan dan korosi serta masa pakai pelumas yang terbukti lebih lama.
- ⊖ Keseimbangan antara detergency dan dispersancy yang memberikan kemampuan soot control yang sangat baik dan kebersihan mesin, sehingga mempertahankan kinerja mesin dan filter.



## SUGILUBE ENGINE XP2

### SUGILUBE ENGINE XP2

is a high quality engine oil formulated with semi synthetic base oil with multigrade viscosity so this oil can easily circulates at low temperature and provides optimum protection against engine wear at high temperature and high speed.

### SUGILUBE ENGINE XP2

adalah minyak lubrikasi kendaraan dengan bahan dasar semi sintetik berkualitas tinggi dengan kekentalan ganda (multigrade) sehingga pelumas mudah bersirkulasi pada temperatur rendah dan memberikan perlindungan optimal terhadap kerusakan komponen.

#### TYPICAL CHARACTERISTICS

Characteristic	Test method	SUGILUBE ENGINE XP2		
SAE Viscosity Grade		5W-30	10W-30	10W-40
Density at 15°C, gr/ml	ASTM D1298	0.8467	0.8656	0.8618
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445 ASTM D445	69.81 11.62	79.05 11.92	91.56 14.03
Viscosity Index	ASTM D2270	162	145	157
Colour	ASTM D1500	2.5	2.5	2.5
CCS	ASTM D5293	5476	5314	4422
Flash Point, °C	ASTM D92	216	224	220
Pour Point, °C	ASTM D5950	<-30	<-30	<-30
Total Base Number, mgKOH/g	ASTM D2896	6.11	6.15	6.10

#### PERFORMANCE LEVELS

**SUGILUBE ENGINE Xp2** meets the performance level of API SJ.

#### SUPERIORITIES

- ⊖ Stable viscosity that gives optimum acceleration & engine protection during start up and high temperature operation.
- ⊖ Prevents piston deposit formation and maintain engine cleanliness that prolongs engine lifetime.

#### APPLICATIONS

**SUGILUBE ENGINE XP2** is highly recommended for the latest gasoline engine equipped with Direct Injection and multivalve system.

#### TINGKATAN MUTU

**SUGILUBE ENGINE Xp2** memenuhi tingkatan mutu API SJ.

#### KEUNGGULAN

- ⊖ Kekentalan ganda yang stabil yang memberikan akselerasi dan perlindungan optimal terhadap mesin pada saat start up dan operasi pada temperatur tinggi.
- ⊖ mencegah pembentukan deposit pada piston dan menjaga kebersihan mesin sehingga memperpanjang umur mesin.

#### PENGGUNAAN

**SUGILUBE ENGINE Xp2** direkomendasikan untuk kendaraan mesin bensin modern yang dilengkapi dengan sistem Direct injection dan multi katup.

## SUGILUBE CF

SAE 10W, SAE 30,  
SAE 40, SAE 50

### SUGILUBE CF Series

is high performance heavy duty lubricant oils are particularly designed for lubrication of diesel engine equipped with supercharger and turbocharger that using high speed diesel fuels. These lubricants are especially designed for high speed diesel mostly installed in the heavy duty equipment, commercial vehicles. They are formulated from high viscosity index base oils, contains high quality additives such as detergent-dispersant, anti-oxidant, anti-corrosion, anti-wear and anti-foam.

### SUGILUBE CF Series

adalah pelumas yang bermutu tinggi terutama untuk pelumasan mesin diesel yang dilengkapi dengan turbocharger dan supercharger maupun naturally aspirated dan mempergunakan bahan bakar solar. Pelumas ini dikhususkan untuk pelumasan mesin diesel dengan putaran tinggi yang banyak dipergunakan untuk mesin alat-alat besar, armada angkutan di mesin stasioner yang menghendaki. Pelumas ini diformulasikan dari bahan dasar yang mempunyai viscosity index tinggi, mengandung aditif detergent-dispersant tinggi, anti oksidasi,anti karat, anti aus dan anti busa.

#### TYPICAL CHARACTERISTICS

Characteristics	ASTM Method	SUGILUBE CF			
SAE Viscosity Grade		SAE 10W	SAE 30	SAE 40	SAE 50
Colour	D1500	L 3.0	L 3.0	L 3.5	L 3.5
Density at 15°C, gr/ml	D1298	0.8676	0.8878	0.8891	0.8931
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	D445	41.06	101.67	138.19	218.71
		6.70	11.58	14.20	19.23
Viscosity index	D2270	118	101	102	99
Flash Point, °C	D92	220	234	240	248
Pour Point, °C	D97	-27	-18	-9	-9
Total Base Number, mgKOH/g	D2896	11.19	11.24	11.20	11.21

#### PERFORMANCE LEVELS

**SUGILUBE CF Series** meet the specification of API CF/CF-4, ACEA E2-96/B2-98, VDS, MTU Type 1, and MAN 271. For CF-10W and CF-30 viscosity grade also meet the Allison C4 specification. For CF-40 and CF-50 also have MB Approval 228.1

#### TINGKATAN MUTU

**SUGILUBE CF Series** memenuhi spesifikasi API CF/CF-4, ACEA E2-96/B2-98, VDS, MTU Type 1, dan MAN 271. Untuk CF-10W dan CF-30 juga juga memenuhi spesifikasi allison C4. Untuk CF-40 dan CF-50 memiliki MB Approval 228.1

#### RECOMMENDED APPLICATION

lubricating oils series are recommended for diesel engine, heavy duty machineries, stationary engine, heavy duty machineries, stationary engines and high speed marine engines completed with supercharger, turbocharger and also naturally aspirated.

#### PENGGUNAAN YANG DISARANKAN

**SUGILUBE CF Series** dianjurkan untuk pelumasan mesin diesel pada kendaraan, mesin alat-alat besar, mesin stasioner maupun mesin perkapalan yang mempunyai putaran tinggi yang dilengkapi dengan turbocharger dan supercharger maupun naturally aspirated.

## SUGILUBE ENGINE

### CI-4/SL

#### SUGILUBE ENGINE CI-4/SL

is a high quality heavy duty diesel engine oil which multi grade viscosity and having the highest performance level, based on API Service Category. This lubricant is suitable for heavy duty diesel engines that mostly available in vehicles, heavy equipments, gensets, ship engines and locomotive engines.

#### SUGILUBE ENGINE CI-4/SL

is specially formulated to be used in the latest heavy duty diesel engine using EGR (Exhaust Gas Recirculation) technology with low NOx and particulate emission level. From high quality base oil and additives so this special oils is highly superior in oxidation stability and soot handling capability, so that the engine can be maintained better, the oil has longer drain interval and can reduce the maintenance cost.

#### SUGILUBE ENGINE CI-4/SL

is a high quality diesel lubricant which design specially for engine using turbocharger that friendly to environment with longer drain interval and also can be use on naturally aspirated diesel machine and supercharger that operate using high or low sulphur fuel.

#### SUGILUBE ENGINE CI-4/SL

is also using additive system which can prevent viscosity oil because formation of soot, durable of oxidant, corrosion and deposit.

#### SUGILUBE ENGINE CI-4/SL

adalah pelumas mesin diesel tugas berat berkualitas tinggi dengan kekentalan ganda, pelumas ini cocok digunakan pada mesin-mesin diesel tugas berat yang banyak terdapat pada kendaraan, alat-alat berat, genset mesin kapal dan mesin lokomotif.

#### SUGILUBE ENGINE CI-4/SL

diformulasikan secara khusus sehingga dapat digunakan pada mesin-mesin tugas berat terkini yang sudah menggunakan teknologi EGR (Exhaust Gas Recirculation) dengan tingkat emisi NOx dan Partikulat yang rendah dan diformulasikan dari bahan baku base oil dan aditif berkualitas tinggi yang sangat unggul dalam ketahanan oksidasi dan kemampuan mengatasi jelaga, sehingga mesin dapat lebih terpelihara dengan baik, pelumas dapat digunakan lebih lama serta dapat menurunkan biaya pemeliharaan.

#### SUGILUBE ENGINE CI-4/SL

adalah pelumas high performance diesel yang didisain khusus untuk mesin memakai turbocharger yang ramah lingkungan dengan drain interval lebih lama juga dapat digunakan pada mesin diesel jenis naturally aspirated dan supercharger yang beroperasi menggunakan bahan bakar solar.

#### SUGILUBE ENGINE CI-4/SL

juga menggunakan sistem additive yang dapat mencegah pengentalan pelumas karena pembentukan soot, lebih tahan terhadap oksidasi, korosi dan deposit. Performance level melampaui spesifikasi terkini mesin diesel.

#### TYPICAL CHARACTERISTICS

Characteristic	Test method	SUGILUBE ENGINE CI-4/SL	
SAE Viscosity Grade		15W-40	20W-50
Density at 15°C, gr/ml	ASTM D1298	0.8785	0.8895
Kinematic Viscosity at 40°C, cSt at 100°C,cSt	ASTM D445	107.7	164.11
	ASTM D445	14.83	18.97
Viscosity Index	ASTM D2270	143	131
Colour	ASTM D1500	L4.0	L4.0
Flash Point, °C	ASTM D92	220	242
Pour Point, °C	ASTM D5950	-18	-15
Total Base Number, mgKOH/g	ASTM D2896	10.11	10.19

# SUGILUBE ENGINE CI-4/SL

## PERFORMANCE LEVELS

**SUGILUBE ENGINE CI-4/SL** has the highest performance level based on API Service API Service CI-4. The complete performance level of this lubricant are as follows : API CI-4/CH-4/CG-4/CF-4/ SL/SJ, DHD-1, ACEA E5/E3/B4/B3/A3-02, ACEA E7/ A3/B3/B4-04, MB228.3/229.1, MAN3275/271, VOLVO VDS-3, Mack EOM Plus, Cummis 20071/72/76, MTU Category 2, Japanese Engines TD25&4D34T4, JASO DH-1(Capable).

## SUPERIORITIES

- ⊖ Very good oxidation stability and soot handling capability, so it has longer drain interval.
- ⊖ Providing an effective protection against engine part wear and preventing from congealed lubricant resulted by shoot
- ⊖ Very good detergency and dispersancy ability to prevent the formation of deposit and sludge in the engine.
- ⊖ Optimal viscosity either at high or low oil operation temperatures. More efficient because it has low consumption level and
- ⊖ Capable to prevent the foaming formation.
- ⊖ Compatible with many types of seal.
- ⊖ Oil consumption reduction.
- ⊖ Better TBN retention.
- ⊖ Start up protection.

## RECOMMENDED APPLICATION

- ⊖ Used in heavy duty diesel engines, direct injection type, equipped with turbocharger and using high speed diesel fuel with maximum Sulphur content up to 0.5%.
- ⊖ Specially formulated, so it can be used in the latest diesel engine that using EGR (Exhaust Gas Recirculation) technology.
- ⊖ Used in heavy duty diesel engines with precombustion chamber or diesel engines that need performance level of API CH-4/CG-4/CF-4/CF and gasoline engines that need performance level API SL/SJ oil.
- ⊖ Used in heavy duty diesel engines that used in vehicles such as MPV (Multi Purpose Vehicles), buses, trucks, trailer, etc, genset engines, heavy equipments (On highway light and heavy duty truck)

## TINGKATAN MUTU

**SUGILUBE ENGINE CI-4/SL** memiliki tingkat unjuk kerja tertinggi berdasarkan API Service, Yaitu API Service CI-4 secara lengkap tingkat unjuk kerja yang memiliki pelumas ini adalah sebagai berikut : API CI-4/CH-4/CG-4/CF-4/SL/SJ, DHD-1, ACEA E5/E3/B4/B3/A3-02, ACEA E7/A3/B3/B4-04, MB228.3/229.1, MAN3275/271, VOLVO VDS-3, Mack EOM Plus, Cummis 20071/72/76, MTU Category 2, Japanese Engines TD25&4D34T4, JASO DH-1(Capable).

## KEUNGGULAN

- ⊖ Ketahanan oksidasi dan thermal yang tinggi dan kemampuan mangatasi jelaga yang sangat baik sehingga masa pakainya lebih lama.
- ⊖ Memberikan perlindungan yang efektif terhadap keausan dan mencegah pengentalan pelumas yang diakibatkan oleh kontaminasi jelaga dan korosi.
- ⊖ Kemampuan detergency dan dispersancy yang sangat baik untuk mencegah terbentuknya deposit dan sluge pada mesin.
- ⊖ Kekentalan yang tetap optimal baik pada temperatur operasi tinggi maupun rendah dan
- ⊖ Mampu mencegah terbentuknya busa dengan baik.
- ⊖ Kompatibel dengan berbagai jenis seal.
- ⊖ Mereduksi oil consumption.
- ⊖ TBN retensi lebih baik.
- ⊖ Proteksi optimal terhadap keausan pada start up.

## PENGGUNAAN YANG DISARANKAN

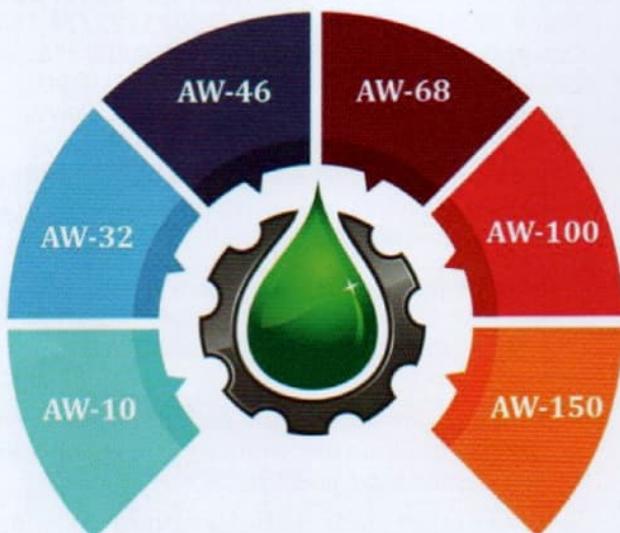
- ⊖ Digunakan pada mesin diesel tugas berat direct injection yang dilengkapi dengan turbocharger dan menggunakan bahan bakar Solar dengan kandungan kadar sulfur maksimum 0.5 % wt.
- ⊖ Diformulasikan secara khusus sehingga dapat digunakan untuk mesin diesel terkini yang sudah menggunakan teknologi EGR (Exhaust Gas Recirculation).
- ⊖ Digunakan pada mesin diesel tugas berat jenis precombustion chamber atau mesin diesel yang membutuhkan unjuk kerja API CH-4/CG-4/CF-4/ CF serta mesin bensin yang memerlukan unjuk kerja API SL/SJ.
- ⊖ Digunakan pada mesin diesel tugas berat jenis yang digunakan pada kendaraan seperti MPV, Bus, Truk, trailer dll, mesin genset, alat berat (On highway light and heavy duty truk).

# SUGILUBE HYDRAULIC OIL



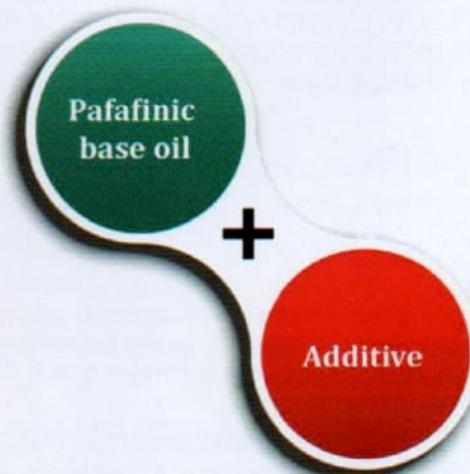
## SUGILUBE

SUGILUBE is HYDRAULIC OIL mixed with high quality paraffin oil and additives, which is suitable for all kinds of hydraulic machines



## SUGILUBE

Sugilube adalah oli hidrolik, campuran dari parafinic base oil kualitas tinggi dan additive yang cocok untuk semua jenis mesin hidrolik

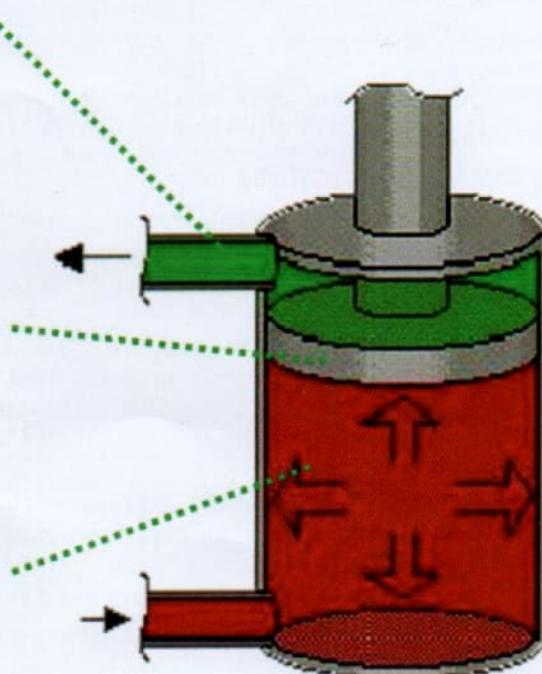


## Keunggulan SUGILUBE :

antioksidan yang sangat baik dan efek panas yangstabil, yang mencegah terjadinya kotoran minyak dan memperpanjang umur filter

kemampuan ketahanan abrasi Luar Biasa, yang membantu efektif menurunkan keausan akibat gesekan dan meningkatkan efisiensi mesin

Standar kemampuan anti-emulsifikasi yang secara efektif menolak air, kemampuan terjadinya busa dan menghilangkan kemungkinan terjadinya busa dan menjaga stabilitas oli hidrolik, yang membantu mencegah terjadinya korosi dan karat



# SUGILUBE AW HYDRAULIC OIL

## SUGILUBE AW

series oils are extremely lubricant suitable for use industrial hydraulic and fluid power transmission systems which are designed by high quality solvent refined mineral oils and anti-wear, anti-oxidant and rust & corrosion additives.

## SUGILUBE AW

adalah pelumas yang sangat cocok untuk industri hidrolik dan untuk cairan sistem tenaga transmisi yang di design dengan oli mineral kualitas tinggi dan anti-wear, anti-oksidan and aditif karat & korosi.

### PHYSICAL PROPERTIES

Characteristics	ASTM Method	HYDRAULIC					
		AW-22	AW-32	AW-46	AW-68	AW-100	AW-150
ISO VG							
Colour	D1500	L 0.5	L 0.5	L 0.5	L 1.0	L 1.0	1.0
Density at 15°C, gr/ml	D1298	0.8505	8593	0.8655	0.8720	0.8795	0.8856
Kinematic Viscosity at 40°C, cSt	D445	22.09	32	46	68	100	150
at 100°C, cSt		4.40	5.5	6.7	8.6	9.5	11.2
Viscosity index	D2270	108	110	106	103	95	95
Flash Point, °C	D92	186	220	230	236	246	260
Pour Point, °C	D97	-21	-18	-18	-18	-15	-12

The above data is typical and does not constitute specification

### APPLICATIONS AND CHARACTERISTICS

- ⊖ High Viscosity Index
- ⊖ Industrial hydraulic transmission and control systems
- ⊖ Superior oxidation resistance
- ⊖ Excellent anti-wear performance
- ⊖ Rust and corrosion protection
- ⊖ Anti-foam property and excellent water separation

### APLIKASI DAN KARAKTERISTIK

- ⊖ Viscosity Index yang tinggi
- ⊖ Industri transmisi hidrolik dan sistem kontrol
- ⊖ Unggul dalam ketahanan oksidasi
- ⊖ Performa anti-wear yang sangat baik
- ⊖ Perlindungan karat dan korosi
- ⊖ Properti anti-foam dan pemisahan dengan air yang sangat baik

## **SUGIWAY**

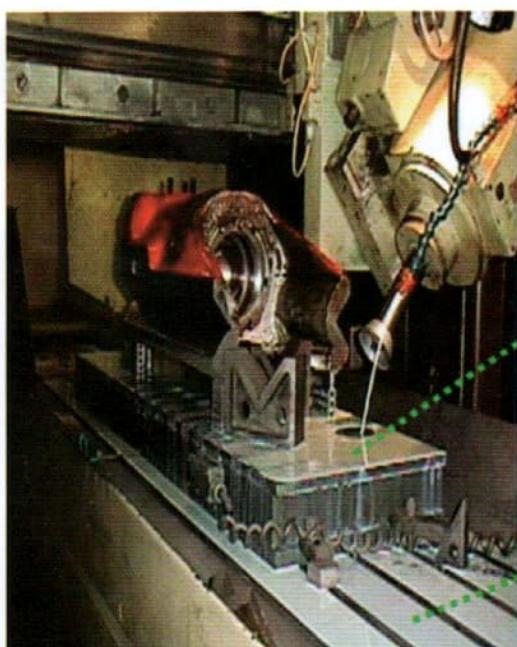
SugiWay is SLIDE OIL that is suitable for delicate machine tools with slideway system

## **SUGIWAY**

Sugiway adalah oli Slide yang cocok untuk peralatan mesin halus dengan sistem slideway yang mana aditif khusus ditambahkan untuk menjamin film minyak bisa berada di slideway dan mencegah terjadinya kemacetan dan meningkatkan akurasi produksi



## **Keunggulan SUGIWAY :**



kemampuan anti-emulsifikasi, yang secara efektif menolak air serta cairan bekas water soluble cutting oil dapat terpisah dan kemampuan anti-korosi, yang memungkinkan membantu melindungi bagian permukaan mesin dari karat

kemampuan ketahanan abrasi Luar Biasa, yang membantu efektif menurunkan keausan di bawah

## **SUGIWAY**

series oils are suitable for machine tool slideway and tool hydraulic system which are designed by high quality solvent refined mineral oils and special additives.

## **SUGIWAY**

adalah pelumas yang sangat cocok untuk pelaratan mesin slideway dan peralatan sistem hidrolik yang di desain dari olahan oli mineral yang berkualitas tinggi dan aditif spesial.

### PHYSICAL PROPERTIES

Characteristics	ASTM Method	SUGIWAY		
		T-32	T-68	T-220
ISO VG				
Colour	D1500	L0.5	L0.5	L2.5
Density at 15°C, gr/ml	D1298	0.8582	0.8707	0.8900
Kinematic Viscosity at 40°C, cSt	D445	32.16	68.91	224.58
at 100°C, cSt		5.68	8.99	19.27
Viscosity index	D2270	117	104	97
Flash Point, °C	D92	220	238	260
Pour Point, °C	D97	-15	-12	-9

The above data is typical and does not constitute specification

### APPLICATIONS AND CHARACTERISTICS

- ⊖ High Viscosity Index
- ⊖ All machine tool, hydraulic systems and slideways
- ⊖ Oxidation resistant and anti-wear performance
- ⊖ Excellent anti-wear performance
- ⊖ Stain free and Anti-corrosion
- ⊖ Excellent seal compatibility

### APLIKASI DAN KARAKTERISTIK

- ⊖ Viscosity Index yang tinggi
- ⊖ Semua alat mesin, sistem hidrolik dan slideways
- ⊖ Unggul dalam ketahanan oksidasi dan Performa anti-wear yang sangat baik
- ⊖ Performa anti-wear yang sangat baik
- ⊖ Bebas dari pewarna dan anti korosi
- ⊖ Kompatibilitas seal yang sangat baik

# SUGIGEAR

## INDUSTRIAL GEAR OIL

### SUGIGEAR

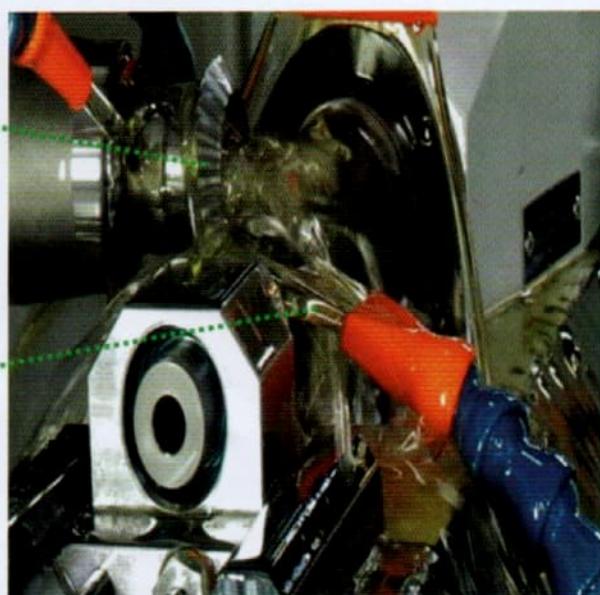
SugiGear is a GEAR OIL which contains parathion-type extreme pressure additive and has an excellent extreme pressure performance, high load carrying capacity and anti-friction ability. SugiGear is designed for enclosed industrial gear systems.



### Keunggulan SUGIGEAR :

Mempunyai efek besar terhadap daya anti-korosi, yang membantu menjaga gigi dan bantalan dalam kondisi baik

Stabilitas panas yang konstan, sehingga membuat mencegah terjadinya kotoran minyak, serta kemampuan ketahanan abrasi yang membantu dan efektif menurunkan keausan antara gigi dan bantalan



## **SUGIGEAR HD**

is a premium lubricant suitable for use heavy duty industrial gear transmissions which are designed by high quality refined mineral oils and a special sulphur & phosphorus additive.

## **SUGIGEAR HD**

adalah pelumas yang sangat cocok untuk proses industri berat transmisi gear yang di design dengan oli mineral kualitas tinggi dan spesial sulfur & fosfor aditif.

### **PHYSICAL PROPERTIES**

Characteristics	ASTM Method	SUGIGEAR					
		HD-68	HD-100	HD-150	HD-220	HD-320	HD-460
ISO VG		HD-68	HD-100	HD-150	HD-220	HD-320	HD-460
Colour	D1500	1.0	L1.5	2.0	L3.0	L3.0	L3.5
Density at 15°C, gr/ml	D1298	0.8842	0.8905	0.8945	0.8956	0.8978	0.9174
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	D445	68.51 8.70	102.15 11.31	150.00 14.54	222.24 18.91	328.42 24.54	455.05 30.14
Viscosity index	D2270	98	96	95	95	95	95
Flash Point, °C	D92	226	240	246	250	254	256
Pour Point, °C	D97	-12	-9	-9	-9	-9	-9

The above data is typical and does not constitute specification

### **APPLICATIONS AND CHARACTERISTICS**

- ⊖ High Viscosity Index
- ⊖ Heavy duty industrial gear transmissions and Bearings
- ⊖ Excellent oxidation and anti-wear performance
- ⊖ Rust and corrosion protection

### **APLIKASI DAN KARAKTERISTIK**

- ⊖ Viscosity Index yang tinggi
- ⊖ Industri berat transmisi gear dan bearing
- ⊖ Unggul dalam ketahanan oksidasi dan performa anti wear
- ⊖ Perlindungan karat dan korosi

# SUGIGEAR GL -4

## 85W-90, 85W-140

### SUGIGEAR GL-4 Series

are high performance gear lubricating oil which formulated from high quality base oil with selected Extreme Pressure additive.

### SUGIGEAR GL-4 Series

type is not recommended for automatic transmission.

### SUGIGEAR GL-4 Series

adalah pelumas roda gigi berkemampuan tinggi ini diformulasikan dari bahan dasar bermutu tinggi dengan aditif Extreme Pressure.

### SUGIGEAR GL-4 Series

tidak direkomendasikan untuk transmisi otomatis..

### TYPICAL CHARACTERISTICS

Characteristic	Test method	SUGIGEAR GL-4 Series	
SAE Viscosity Grade		85W-90	85W-140
Density at 15°C, gr/ml	ASTM D1298	0.8861	0.8912
Kinematic Viscosity at 40°C, cSt at 100°C,cSt	ASTM D-445	188.42	308.56
Viscosity Index		17.83	24.96
Colour	ASTM D1500	L2.0	L3.0
Flash Point,°C	ASTM D92	222	234
Pour Point, °C	ASTM D97	-21	-18

### PERFORMANCE LEVELS

SUGIGEAR GL-4 Series comply with API GL-4, MAN 341 E-1, MAN 341 Z-1, ZF TE-ML 02A and Mercedes Benz Sheet 235.1.

### APPLICATION SUGIGEAR GL-4 Series

are suitable for lubricating hypoid type gear wheel or spiral bevel at transmission, axle and steering box of vehicles engine with moderate duty operating condition.

### TINGKATAN MUTU

SUGIGEAR GL-4 Series memiliki memenuhi persyaratan kerja API GL-4, MAN 341 E-1, MAN 341 Z-1, ZF TE-ML 02A dan Mercedes Benz Sheet 235.1.

### PENGGUNAAN YANG DISARANKAN

#### SUGIGEAR GL-4 Series

Digunakan untuk melumasi roda gigi jenis hypoid atau spiral bevel pada transmisi, gardan dan rumah/kotak kemudi kendaraan bermotor yang mempunyai persyaratan kerja tugas sedang.

# SUGIGEAR GL-5 SAE 90, SAE 140 INDUSTRIAL GEAR OIL

## SUGIGEAR GL-5 SERIES

**SUGIGEAR GL-5 Series** are high performance gear lubricating oil which formulated from high quality base oil with selected Extreme Pressure additive.

**SUGIGEAR GL-5 Series** type is not recommended for automatic transmission..

## SUGIGEAR GL-5 SERIES

**SUGIGEAR GL-5 Series** adalah pelumas roda gigi berkemampuan tinggi ini diformulasikan dari bahan dasar bermutu tinggi dengan aditif Extreme Pressure.

**SUGIGEAR GL-5 Series** tidak direkomendasikan untuk transmisi otomatis.

### PHYSICAL PROPERTIES

Characteristics	Test Method	SUGIGEAR GL-5 Series	
SAE Viscosity Grade		SAE 90	SAE 140
Colour	ASTM D1500	3.0	L3.5
Density at 15°C, gr/ml	ASTM D1298	0.8955	0.9101
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445	193.56	419.76
		17.25	28.95
Viscosity index	ASTM D2270	95	95
Flash Point, °C	ASTM D92	226	232
Pour Point, °C	ASTM D5950	-18	-12

### PERFOMANCE LEVEL

**SUGIGEAR GL-5 Series** comply with API GL-4, MAN 342 M2, ZF TE-ML 05A, 7A, 12E, 16B, C & D, 17B, 19B, 21A.

### TINGKATAN MUTU

**SUGIGEAR GL-5 Series** memiliki memenuhi persyaratan kerja API GL-4, MAN 342 M2, ZF TE-ML 05A, 7A, 12E, 16B, C & D, 17B, 19B, 21A.

### APPLICATION

**SUGIGEAR GL-5 Series** are recommended for lubrication of heavy duty hypoid gears and spiral bevel gear on final drive of motor vehicles

### PENGGUNAAN YANG DISARANKAN

**SUGIGEAR GL-5 Series** Digunakan untuk melumasi roda gigi jenis hypoid atau spiral bevel pada gardan dan rumah/kotak kemudi kendaraan

# SUGIMARINE 2T TC - W3 MARINE OIL

## SUGILUBE MARINE 2T TC-W3

is a lubricating oil for two stroke gasoline engine with water cooling system such as jetski, outboard motor or speed boat. This oil is formulated from ashless additives to prevent spark-plug fouling and piston ring clogging.

## SUGILUBE MARINE 2T TC-W3

adalah pelumas mesin bensin dua langkah yang berpendingin air seperti mesin jetski, mesin tempel atau speed boat. Pelumas ini diformulasikan dari aditif ashless sehingga mampu mencegah pengotoran busi dan kemacetan cincin torak.

### TYPICAL CHARACTERISTICS

Characteristics	Test Method	SUGILUBE MARINE 2T TC-W3
SAE Viscosity Grade		SAE 20
Density at 15°C, gr/ml	ASTM D1298	0.872
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445	34.4
	ASTM D445	6.81
Viscosity index	ASTM D2270	161
Colour	ASTM D1500	2.5
Flash Point, °C	ASTM D92	84
Pour Point, °C	ASTM D97	-36
Total Base Number, mgKOH/g	ASTM D2896	6.19

### PERFORMANCE LEVELS

SUGILUBE MARINE 2T TC-W3 complies with NMMA TC-W3 requirement.

### SUPERIORITIES

Designed with special detergent technology that provides optimum protection from deposit, excessive wear and rust.

### APPLICATIONS

SUGILUBE MARINE 2T TC-W3 is applied as a lubricant for two stroke gasoline engines with water cooling system such as jetski or motor boat, the latest model of high-powered outboard motor but also very suitable for smaller outboard motor.

### TINGKATAN MUTU

SUGILUBE MARINE 2T TC-W3 memenuhi persyaratan NMMA TC-W3.

### KEUNGGULAN

Didesain dengan teknologi detergent khusus yang memberikan perlindungan optimal bagi mesin dari deposit, keausan berlebih dan karat.

### PENGGUNAAN

SUGILUBE MARINE 2T TC-W3 digunakan sebagai oli samping untuk pelumasan mesin bensin dua langkah dengan sistem pendingin air seperti jetski, motor boat, motor tempel modern yang bertenaga besar dan juga dapat digunakan pada motor tempel yang lebih kecil.

### **SUGIMARINE MR-5070**

SUGIMARINE MR-5070 is a diesel engine cylinder lubricant formulated with high quality base oil and special additives designed for cylinders of two-step crosshead vessel cylinders with the latest technology.

SUGIMARINE MR-5070 has a minimum Total Base Number (TBN) of 70 mg KOH / g, so as to neutralize the combustion acid, and provide maximum protection from corrosion, corrosion and excessive wear especially on liner cylinders and piston rings.

SUGIMARINE MR-5070 has a good balance between oxidation and detergency stability to prevent the formation of piston deposits while maintaining the cleanliness of the combustion chamber and exhaust valve.

#### **TYPICAL CHARACTERISTICS**

Characteristic	Test method	SUGIMARINE MR-5070
SAE Viscosity Grade		SAE 50
Density at 15°C, gr/ml	ASTM D1298	0.935
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445	216.3
		19.5
Viscosity Index	ASTM D2270	102
Flash Point, °C	ASTM D92	260
Pour Point, °C	ASTM D97	-12
Total Base Number, mgKOH/g	ASTM D2896	70

#### **PERFORMANCE LEVELS**

SUGIMARINE MR-5070 has received approval from Mitsubishi Heavy Industries (MHI), MAN B & W and Wartsila so it can be used in all two-step MHI, MAN B & W, Wartsila and Sulzer.

#### **SUPERIORITIES**

SUGIMARINE MR-5070 it is advisable to lubricate the cylinder of shipping diesel engine as well as industrial type crossheads that use fuel oil with high sulfur content

### **SUGIMARINE MR-5070**

SUGIMARINE MR-5070 adalah pelumas silinder mesin diesel yang diformulasikan dengan base oil berkualitas tinggi dan aditif khusus yang di desain untuk pelumas silinder mesin diesel kapal tipe crosshead dua langkah dengan teknologi terkini.

SUGIMARINE MR-5070 memiliki Total Base Number (TBN) minimum 70 mgKOH/g, sehingga mampu menetralisir asam hasil pembakaran, serta memberikan perlindungan yang maksimal dari karat, korosi dan keausan berlebih khususnya pada silinder liner dan ring piston.

SUGIMARINE MR-5070 memiliki keseimbangan yang baik antara ketabilan oksidasi and detergency untuk mencegah pembentukan piston deposit sekaligus menjaga kebersihan ruang bakar dan katup gas buang.

#### **TINGKATAN MUTU**

SUGIMARINE MR-5070 telah mendapatkan approval dari Mitsubishi Heavy Industries (MHI), MAN B&W dan Wartsila sehingga dapat digunakan disemua varian mesin dua langkah buatan MHI, MAN B&W, Wartsila

#### **KEUNGGULAN**

SUGIMARINE MR-5070 disarankan untuk melumasi silinder mesin diesel perkapalan maupun industri tipe kepala silang (crosshead) yang menggunakan bahan bakar minyak dengan kandungan sulfur yang tinggi

# SUGIMARINE MR-4030 MARINE OIL

## SUGIMARINE MR-4030

SUGIMARINE MR-4030 formulated from HVI (High Viscosity Index) base oils with a well balanced additive package especially designed for diesel engine lubricant.

SUGIMARINE MR-4030 have sufficient TBN to neutralize combustion acid; provides optimum protection against rust, corrosion & excessive wear; has a good balance between oxidation stability, detergency and dispersancy to prevent piston deposit formation and maintain engine cleanliness; and also able to easily separate from dirts and water at centrifugal separator

### TYPICAL CHARACTERISTICS

Characteristics	Test Method	SUGIMARINE MR-4030
SAE Viscosity Grade		SAE 40
Density at 15°C, gr/ml	ASTM D1298	L 4.5
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445	0.9058
	ASTM D445	137.70
Viscosity index	ASTM D2270	14.30
Flash Point, °C	ASTM D92	102
Pour Point, °C	ASTM D97	258
Total Base Number, mgKOH/g	ASTM D2896	-12

### PERFORMANCE LEVELS

SUGIMARINE MR-4030 Series meet performance level of API CF. SUGIMARINE MR-4030 is approved by the leading medium-speed engine manufacturers, such as : WÄRTSILÄ, Yanmar and, Daihatsu.

### APPLICATION

SUGIMARINE MR-4030 for medium-speed trunk diesel engines in marine applications and in power generation engines, which burn poor-quality heavy fuel oils with different sulphur content.

## SUGIMARINE MR-4030

SUGIMARINE MR-4030 ini diformulasikan dari bahan dasar yang mempunyai Viskositas index yang tinggi (High Viscosity index) dengan bahan aditif yang didesain khusus untuk pelumas mesin diesel.

SUGIMARINE MR-4030 memiliki nilai TBN yang memadai untuk netralisasi asam dari hasil pembakaran; memberikan perlindungan optimal terhadap karat, korosi dan keausan berlebih; memiliki keseimbangan yang baik antara ketabilan oksidasi, detergency dan dispersancy untuk mencegah pembentukan piston deposit dan menjaga kebersihan mesin; dan juga dapat terpisah dengan mudah dari kotoran dan air melalui centrifugal separator.

### TINGKATAN MUTU

SUGIMARINE MR-4030 Series memiliki tingkatan mutu API CF. SUGIMARINE MR-4030 disetujui oleh produsen mesin berkecepatan menengah terkemuka, seperti: WÄRTSILÄ, Yanmar dan, Daihatsu.

### PENGUNAAN

SUGIMARINE MR-4030 untuk mesin diesel trunk kecepatan sedang dalam aplikasi kelautan dan dalam mesin pembangkit listrik, yang membakar bahan bakar berat yang berkualitas buruk dengan kandungan sulfur yang berbeda.

# HITRO HR HEAT TRANSFER OIL

## HITRO HR-32, 100

HITRO HR Series are high quality heat transfer oil that have good oxidation stability, suitable for use in enclosed heat transfer system, with operating bulk temperatures from -8°C up to 300°C.

HITRO HR-32 has the relatively low viscosity so it has good viscosity versus temperature characteristic and high heat transfer coefficient. HITRO HR-100 has higher viscosity suitable for higher operation temperature.

## PHYSICAL PROPERTIES

Characteristics	Test Method	HEAT TRANSFER OIL	
		HR-32	HR-100
Grade No.			
Colour	ASTM D1500	L0.5	L1.0
Density at 15°C, gr/ml	ASTM D1298	0.8570	0.8795
Kinematic Viscosity at 40°C, cSt	ASTM D445	33.45	101.15
at 100°C, cSt		5.77	11.22
Viscosity index	ASTM D2270	114	96
Flash Point, °C	ASTM D92	220	256
Pour Point, °C	ASTM D5950	-21	-18

The above data is typical and does not constitute specification

## SUPERIORITIES

- ⊖ Good oxidation and thermal stability that extend the oil drain interval.
- ⊖ Provide better protection against corrosion, deposit, and sludge to produce optimum system performance.
- ⊖ Exhibit good heat transfer ability.

## APPLICATION

HITRO HR Series are suitable for enclosed heat transfer system that requires mineral oil.

## KEUNGGULAN

- ⊖ Stabilitas oksidasi dan termal yang baik sehingga dapat memperpanjang masa pakai pelumas.
- ⊖ Memberikan perlindungan yang lebih baik terhadap korosi, deposit, dan sludge untuk menghasilkan kinerja sistem yang optimal
- ⊖ Memiliki kemampuan mengantar panas yang baik.

## PENGGUNAAN

HITRO HR Series disarankan untuk digunakan sebagai media pemindah panas pada sistem peralatan pemindahan panas tertutup yang membutuhkan pelumas mineral.

# **COMPERO CR**

## **COMPRESSOR OIL**

### **COMPERO CR-32, 46, 68, 100**

COMPERO CR Series are compressor oil that's specifically formulated from highly refined paraffinic base oils and leading-edge technology additives for the lubrication of rotary and reciprocating air compressors. The uniquely formulated compressor oil provides enhanced thermal and oxidative stability at high temperatures to make possible trouble free operation with minimum malfunctions.

### **COMPERO CR-32, 46, 68, 100**

COMPERO CR Series merupakan pelumas yang diformulasikan secara khusus dari base oil parafinik yang diolah dengan baik dan aditif dengan teknologi terkemuka untuk melumasi kompresor udara jenis rotary maupun reciprocating. Pelumas kompresor yang diformulasikan secara khusus ini mempunyai stabilitas termal serta stabilitas oksidasi pada temperatur yang tinggi yang sangat baik sehingga memungkinkan operasi yang bebas dari masalah.

### **PHYSICAL PROPERTIES**

Characteristics	ASTM Method	COMPRESSOR OIL			
ISO VG		CR-32	CR-46	CR-68	CR-100
Colour	D1500	L 0.5	L 0.5	L 0.5	L 1.0
Density at 15°C, gr/ml	D1298	0.8581	0.8670	0.8742	0.8778
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	D445	32.72 5.63	46.60 7.01	68.57 8.73	100.32 11.09
Viscosity index	D2270	111	104	99	95
Flash Point, °C	D92	222	228	236	248
Pour Point, °C	D97	-21	-18	-18	-15

### **PERFORMANCE LEVELS**

COMPERO CR meet the performance requirements of DIN 51506 VDL air compressor lubricant standards.

### **TINGKATAN MUTU**

COMPERO CR memenuhi standar performance pelumas kompresor udara DIN 51506 VDL.

# COMPERO FG-55 REFRIGERATION OIL

## COMPERO FG

COMPERO FG oil are premium oils refrigeration designed for use as refrigeration compressor lubricant. They are highly stable and are essentially wax free. They have long histories of satisfactory service in many types of equipment and are approved by most manufacturers for both factory fill and maintenance fill of their equipment.

### PHYSICAL PROPERTIES

Characteristics	ASTM Method	FG-55
Density at 15°C, gr/ml	D1298	0.9025
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	D445	55.88 5.95
Flash Point, °C	D92	198
Pour Point, °C	D97	-36

The above data is typical and does not constitute specification

### APPLICATION

COMPERO FG oils can be used in virtually any installation regardless of compressor or evaporator temperatures. They are ideally suited for low temperature systems where evaporator temperatures are below -18°C including residential and commercial refrigeration and air-conditioning systems. Particularly with HCFC and CFC refrigerants such as R-22, R-502 and R-12. Furthermore they perform excellently with natural refrigerants such as R-717, R600a and R-290.

### SUPERIORITIES

- ⊖ Chemical stability to extend service life, reducing maintenance costs.
- ⊖ Cleaner operation of the compressor with fewer deposits and failures due to valve sticking.
- ⊖ Excellent low temperature

## COMPERO FG

COMPERO FG adalah pendingin oli premium yang dirancang untuk digunakan sebagai pelumas kompresor pendingin. Mereka sangat stabil dan pada dasarnya bebas lilin. Mereka memiliki sejarah panjang layanan yang memuaskan dalam berbagai jenis peralatan dan disetujui oleh sebagian besar produsen untuk pengisian pabrik dan perawatan.

### PENGGUNAAN

COMPERO FG oli dapat digunakan di hampir semua instalasi terlepas dari suhu kompresor atau evaporator. Mereka sangat cocok untuk sistem suhu rendah di mana suhu evaporator di bawah -18°C termasuk pendingin perumahan dan komersial dan sistem pendingin udara. Terutama dengan pendingin HCFC dan CFC seperti R-22, R-502 dan R-12. Dan kinerja mereka sangat baik dengan refrigeran alami seperti R-717, R600a dan R-290.

### KEUNGGULAN

- ⊖ Stabilitas bahan kimia untuk memperpanjang masa pakai, mengurangi biaya perawatan.
- ⊖ Pengoperasian kompresor yang lebih bersih dengan deposit dan kegagalan yang lebih sedikit karena kelekatan pada katup.
- ⊖ Performa suhu rendah yang sangat baik tanpa ada deposit wax/litin yang menyumbat sistem.

# TROIL TR

## TURBINE OIL

### TROIL TR-32, 46, 68, 100

TROIL TR Series are high performance quality turbine oil formulated from highly refined base oils and premium rust and oxidation inhibitor package

### TROIL TR-32, 46, 68, 100

TROIL TR Series adalah pelumas turbin yang memiliki kualitas tinggi, diformulasikan dari base oil dan aditif rust dan oxidation inhibitor bermutu tinggi.

### PHYSICAL PROPERTIES

Characteristics	ASTM Method	TURBINE OIL			
		TR-32	TR-46	TR-68	TR-100
ISO VG					
Colour	D1500	L 0.5	L 0.5	L 0.5	L 1.0
Density at 15°C, gr/ml	D1298	0.8580	0.8669	0.8740	0.8777
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	D445	32.74 5.64	46.63 7.02	68.60 8.75	100.37 11.10
Viscosity index	D2270	111	104	99	95
Flash Point, °C	D92	222	228	236	248
Pour Point, °C	D97	-21	-18	-18	-15

The above data is typical and does not constitute specification

### PERFORMANCE LEVELS

TROIL TR meet the requirements of Siemens TLV 9013 04 (EP), Siemens TLV 9013 05 (EP), Alstom HTGD 90 117 V0001Y (EP), DIN 51515 part I & II, GEK 32568J, GEK 27070, GEK 46506E, GEK 101941A, AIST 120 and 125, Fives P-38, P-55, P-54.

TROIL TR-32 and TROIL TR-46 has been approved by Siemens (TLV 9013 04/05).

### TINGKATAN MUTU

TROIL TR memenuhi persyaratan dari Siemens TLV 9013 04 (EP), Siemens TLV 9013 05 (EP), Alstom HTGD 90 117 V0001Y (EP), DIN 51515 part I & II, GEK 32568J, GEK 27070, GEK 46506E, GEK 101941A, AIST 120 dan 125, Fives P-38, P-55, P-54.

TROIL TR-32 dan TROIL TR-46 memiliki approval Siemens (TLV 9013 04/05).

# RAPRO 30

## RUBBER PROCESSING OIL

### RAPRO 30

RAPRO 30 is a Parafinic neutral rubber oil to prevent the rubber from mixed raw materials sticked on the seal mixer equipment (Banbury).

RAPRO 30 has an optimal solubility and form a stable film coating that provides optimum protection against seal.

RAPRO 30 is made from Parafinic oil materials that safe to use in the production process.

### RAPRO 30

RAPRO 30 adalah pelumas parafin rubber neutral yang berfungsi untuk mencegah karet dari bahan baku yang dicampur menempel pada seal peralatan rubber mixer (Banbury).

RAPRO 30 memiliki daya larut yang optimal dan membentuk lapisan film yang stabil sehingga memberikan perlindungan yang optimal terhadap seal.

RAPRO 30 diformulasikan dari bahan baku yang bersifat parafin netral sehingga aman digunakan dalam proses produksi.

### PHYSICAL PROPERTIES

Characteristics	Test Method	RAPRO 30
Density at 15°C, gr/ml	ASTM D1298	0.935
Kinematic Viscosity at 40°C, cSt at 100°C, cSt	ASTM D445	30.41
	ASTM D445	5.22
Viscosity index	ASTM D2270	101
Colour	ASTM D1500	0.5
Flash Point, °C	ASTM D92	>200
Pour Point, °C	ASTM D5950	-15

The above data is typical and does not constitute specification

### SUPERIORITIES

- ⊖ Excellent dissolve the rubber that it does not stick to the rubber seal mixer or banbury.
- ⊖ Establishing a stable film coating to provide optimum protection against seal wear.
- ⊖ Raw materials are Solvent neutral, non-corrosive, that saves for equipment and production process.

### APPLICATION

RAPRO 30 is used to dissolve the rubber sticked on the rubber equipment mixer or Banbury with once through lubrication.

### KEUNGGULAN

- ⊖ Melarutkan karet secara efektif sehingga karet tidak menempel pada seal rubber mixer atau banbury.
- ⊖ Membentuk lapisan film yang stabil untuk memberikan perlindungan optimal terhadap keausan seal.
- ⊖ Bahan baku bersifat netral dan tidak bersifat korosif sehingga aman bagi

### PENGGUNAAN

RAPRO 30 digunakan untuk melarutkan karet yang menempel pada peralatan rubber mixer atau Banbury dengan pelumasan sekali pakai.

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