



## **PT. TUMAPEL JAYA SENTOSA**

Ruko Mandoroko Selatan  
Jl. Raya Mandoroko Selatan No. 17C - Banjararum  
Singosari - Malang, 65153 Indonesia  
Tlp. (0341) 3041367, Fax. (0341) 450713  
Email: info@tumapeljaya.com

---

# **COMPANY PROFILE**

## **ABOUT US**

Tumapel Jaya Sentosa established on the basis of experience which has a high standart of work. Basic piping work also welding, electrical installation and thermal/accoustic insulation by European standart makes us very confident and ready to present the result of a very good job. Also we had chemicals for catalyst chemical by Eropen standarts.

We keep the quality very well because it is our strength. Quality in all our works must be supported by three main pillars. Namely TIME – FUNCTIONALITY – RESOURCES.

Tumapel Jaya Sentosa Will be part of the construction community and will joint association or other institutions so that the quality and our credibility will remain intact.

## **VISSION, MISSION, AND STRATEGY**

Construction business develop very rapidly and also with rapid development of global market which makes the level of competition not only among locals but also with international companies.

### **VISSION**

Being a reliable partner of choice in the main business area of chemical for process manufacture, mechanical, electrical and construction that competent through human resources development, customer satisfaction and efficiency in all areas.

### **MISSION**

- Provide benefits and value for all costumer and stakeholders
- Provide a safe working environment, welfare and provides an apportunity to grow professionally and sustainable for employees
- Carrying on business activity in a responsible and environmentally friendly.

### **STRATEGY**

Our Marketing Strategy is to bring The Best Quality, with excalty speed delivery also in accordance to have efficiency to make benefit to Our Customer.

## **OUR PRODUCTS AND SERVICES**

### **1. Contractor**

- Mechanical
- Electrical
- Instrumentations
- Piping
- Lubricants
- Cleanning Chemical



## PT. TUMAPEL JAYA SENTOSA

Ruko Mandoroko Selatan  
Jl. Raya Mandoroko Selatan No. 17C - Banjararum  
Singosari - Malang, 65153 Indonesia  
Tlp. (0341) 3041367, Fax. (0341) 450713  
Email: info@tumapeljaya.com

### 2. Safety and Manufacturing Consultant

- Safety for contractor
- Safety for manufacturing design
- Safety training
- Kaizen
- Manufacturing excellent
- Engineering Design
- 5 S
- TPM & TQM

### 3. Authorized East Java Supplier for Products:

- **Hitachi** Japan – Compressor
- **CHS-Asia** Thailand – Heat Treatment Equipment, Furnace Spare parts, Rubber Belt, SST Moven, Shot Blasting Spare parts, Carburizing Stop Off
- **FUJIFILM** Japan – Prescale, Thermoscale, and UV-scale
- **Metalube** UK - Global Specialists In High-Performance Lubricants
- **Taiyu** Japan - Metalworking Fluid Products
- **Q8 Oils** Belgium - part of KPC (Kuwait Petroleum Corp) , General and Specialty Industrial Lubricants
- **98 Oil** Thailand – Advantages Lubricants for Industry
- **Greenex** Thailand – Cleanner for Oil Spilling/Cooling Tower/Chiller
- **Vestachem** Netherland – Catalyst chemicals
- **Rocket**, by Global Battery Co. Ltd. Korea (Formerly known as Global & Yuasa Battery Co. Ltd) such as: SMF VLRA, Tubular, Diesel Generator Cranking Batteries, Li Ion and UPS
- **Front Wyne** USA - Wire Die Diamond

### 4. Supporting Supplier for Products:

Instrumentations:

- Emerson **Fisher** - Control Valve, Desuperheater CV, Regulator, Displacer Level Transmitter
- Emerson **Bettis** – MOV/Pneumatic/Hydraulic Actuator
- **Topworx/Go Switch** – Emerson Proximity Switch
- Emerson **Rosemount** – ATG, Transmitter: Pressure/Temperature/Level/Flow and Analyzer
- Emerson **Micromotion** – Flow Transmitter Coriolis
- Emerson **Vortex** – Flow Transmitter Ventury

### AFTER SALES SERVICES:

- Lubricants Products
- Technical Training and Seminar
- Routine Check at Field by Technical Services
- Laboratorium
- Warehouse, Local Stock

# HITACHI

Inspire the Next

## Hitachi Industrial Equipment Systems Co., Ltd.

With “Hitachi Industrial Equipment Systems Contributes to the Environment and Saving Energy” as our business concept, we apply the technical ability and expertise we have built up over many years to the building of an affluent society.

Our mission is to rapidly grasp the changes in society and support our customers with all our strength, with creativity and flexible ideas, in countries and regions around the world. We will keep on pushing forward to the next challenge, to provide our customers with products and services that deliver high added value and meet their needs.

### OUR STRENGTH

Energy Saving and High Efficiency Devices and Equipment

We help our customer to save Energy and Labor, by developing, manufacturing, and marketing superior products.

Eco Energy Systems

We propose and provide products and systems aimed at Local production of Energy for Local Consumption

Engineering

Using Data Equipment and Mechatronics technology to the full, we flexibly configure systems for monitoring and managing FA Systems and Equipment, Managing Energy and Similar applications

Maintenance and Services

We diagnose equipment in field base on the customer’s needs, and propose suitable functional upgrades, such as refurbishments. Renewal and environmental improvements. We provide an integrated ranges of Services from Design and Fabrication through construction works to post-installation maintenance



### Air Compressors

- Screw compressors: Oiled type / oil-free type
- Scroll compressors: Oil-free type
- Bebicon compressors: Oiled type / oil-free type
- Nitrogen gas generators



Combined with our principals, we have over years of experience in addressing industry demands with technology and service in Aerospace, Power Generation, Automotive, Electronics, Mining, Ceramics, Commercial Heat Treating and other Industries, which has provided us with valuable insight into the changing needs and rigorous demands of our furnace customer.

In 1991 CHS-ASIA was founded in Kuala Lumpur Malaysia to serviv SEA Thermal Process Industry.

In 1996 CHS-ASIA opened sales, service and manufacturing facility in Bangkok Thailand.

In 2004 CHS-ASIA opened sales, service and manufacturing in Singapore.

In 2005 CHS-ASIA start to design and manufacturing Vacuum Furnace.

In 2010 Represent Inductroheat in section billet heating and induction heating.

In 2012 Certified ISO 9001:2008.

In 2012 Start to contace with Vietnam and Indonesia agent.

In 2013 Represent PowerMax-AFC holcrob from China.

#### Our Services

- Furnace Rebuilding
- Furnace Control System Upgrades
- Vacuum Leak Checked
- Turnkey Furnace Installation
- Metallurgical Consulting Service
- Calibration Service

#### FURNACE

**CHS-ASIA** design and manufactures Vacuum Heat Treating and Brazing Furnace . CHS-ASIA is a team of specialists with many collective years of experiece in vacuum furnace design. We are committed to our objectives of providing vacuum furnace with the lowest cost of ownership achieved through state-of-the-art materials, high performance operation and robust design. CHS-ASIA is a progressive company. This background affords us a distinct advantage in the industrial to assist your in choosing the right vacuum furnace for your application



Vacuum Furnace



Integral Quench  
Furnace Systems



Pit Type Furnace  
Systems



Continuous Furnace



Car Bottom Furnace



Lab Furnaces and  
Air Drying Ovens



Batch Tempering  
Furnace



Induction Hardening

### MESH BELT AND CONVEYOR

CHS-ASIA the leader in belt manufacturing, High Quality Belting Competitive Pricing, And excellent lead times including our expediting service for downtime.

#### Advantages

1. Since the surface is flat and smooth the belts can carry small items and unstable productions.
2. The belt strength against pressure is high, so belt can be used for processing under pressure.
3. The allowable tension is high, so that heavy load can be transported



## SPARE PARTS

CHS-Asia provides comprehensive service to heat treatment industry focusing on supplying high quality spare parts for industrial furnaces.

- One Piece Circulation Fan
- Heating Element
- In-Situ & Extractive Oxygen Sensors
- Thermocouples and Temperature Sensors
- Carbon & Temperature Instruments
- Furnace Chains
- Anti Carburizing, Carbonitriding & Nitriding
- Radiant tube
- Nickel Catalyst
- Tray, Basket
- Retort
- Gas Flow Meter
- Moly Nuts & Bolts





## SHOT BLASTING MACHINES



### Belt surface polishing machine model MN-60 / MN-120

Suitable for cleaning automotive parts Preparation of the surface before rubber compression Or surface preparation before entering the spraying process of casting aluminum parts In addition, it can effectively polish the surface of very small parts such as screws and bolts.



### Belt surface polishing machine model MN-1000

Suitable for large surface polishing Can remove sand from cast iron work Eliminate flakes on the surface of hot stamping work. And prepare the surface before compressing the rubber, etc. The machine consists of pook Lifting workpieces and conveyor belts in order to complete the scrub process



### Metal hanging polishing machine model MNFH

Suitable for polishing small and medium size workpieces Hanging cabinet installed in the spraying room Can hang aluminum casting pieces or small cast iron workpieces in small automotive industries In addition, the device is also designed to have a vacuum cleaner attached to it. Thus helping to save space as well



### MRH hanging metal polishing machine

Suitable for alumina surface polishing In front of the machine, there are jigs for work pieces By being able to bring in-out workpieces while the metal surface is working In addition, the device also helps prevent damage to the workpiece as well. Because the work piece is hung on the jig Therefore suitable for surface polishing of automotive parts Especially aluminum workpieces



### Continuous hanging metal polishing machine model MHL



### Metal surface polishing machine, hanging model with MMR electric hoist

Suitable for cleaning Removal of cast sand from cast iron or large forming steel In addition, it can also be shot to loosen the work surface for various work items such as springs, gears and spare parts in various industries as well



### Metal surface polishing machine, cleaning model, MJS model

Suitable for peeling off the coating from the jig. In order to be able to be used again in the future In addition, the machine can also clean the surface of small metal workpieces, copper, zinc or stainless steel, etc., when combined with the head position that is angled to the workpiece Thus making this model Can effectively polish the metal surface



### Metal Polishing Machine Model MRP Rotary Plate

Suitable for cleaning cast parts Remove rust and clean on the work surface. Removal of stains from welding Including cleaning the rough surface Or the piece that has already been coated In addition, it can effectively polish metal surfaces with complex shapes.



### Metal Polishing Machine Model MG Gas Tank

Is one of the most popular models Due to the ease of the gas tank in-out, including the rotation system of the machine that helps to increase the efficiency of the scrub to be more standardized This model of polishing machine is able to adjust the surface of the gas tank before spraying. Also cleaning and removing gas tank paint again



### The metal surface polishing machine model shot through the MSP model.



### The metal surface polishing machine model shot through the MRC model

High efficiency Suitable for cleaning large or very long work surfaces such as various types of steel pipes, steel pipes, steel plates, I-Beam, steel gutters, steel rods, steel shafts etc. This model of polishing machine is widely popular in metal manufacturing plants. Boat repair factory Including the oil and gas industry



### Air Pressure Sandblasting Machine Model MN-9010

Made with modern technology Has the ability to polish, clean the metal surface to be clean, smooth and beautiful E, also saving costs And does not cause pollution in the body and the environment This model of polishing machine is suitable for cleaning spare parts, automotive parts, gear wheels, alloy molds, all types of molds. And work on patterns on clear glass, etc., which can be used with all kinds of abrasive tablets Whether it is iron Aluminum oxide, glass bead etc.



### Metal surface polishing machine model via MHZ model

Suitable for cleaning a single surface such as wheels, alloy, steel, steel sheet, gutter, steel, steel structure, sharpening. This model of polishing machine is popular in the automotive industry



### MBR Spraying Room

We have a spray room of various sizes. And according to the size of the business Both used in metal manufacturing plants Or Sam Sam Boat Factory High pressure spray tank of various sizes Along with the recirculation of iron pellets to be reused



**PROJECTS**



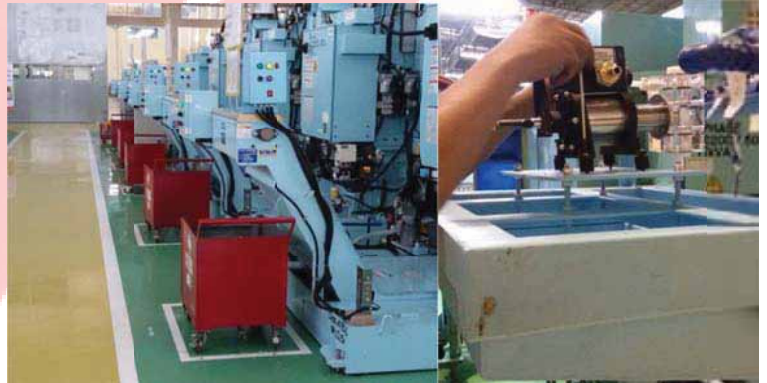
Mixing Coolant



Construction



Piping Installation



Instrument Installation

# FUJIFILM

Value from Innovation

At Fujifilm, we are continuously innovating — creating new technologies, products and services that inspire and excite people everywhere. Our goal is to empower the potential and expand the horizons of tomorrow’s businesses and lifestyles.

We take an open and flexible attitude to innovation, combining our own original technology with human resources, expertise and technology from around the world.

Through this powerful synergy, we rapidly and nimbly develop new solutions that address the true needs of our global customers.

Determined to take on new challenges and deliver new value globally, Fujifilm is very open to collaboration.

A technology company, Fujifilm is engaged in a wide variety of endeavors

Through R&D we refine our core technologies, which we apply to products that improve the quality of life

At the Fujifilm Design Center we use our skills to improve Fujifilm products of all kinds. Visit Dig It! Fujifilm Innovation Gateway to learn about Fujifilm’s innovations and initiatives, and glimpse the shape of the future

## NDT (Non Destructive Testing Systems) PORTABLE

Advanced emulsion science and computerized manufacturing processes assure quality for industrial X-ray applications.

Computed Radiography

- Dynamix HR2, Dynamix VU and Dynamix FXR
- Dynamix HR and Series 5 IX-Film
- IX-Film



## Pressure Measurement Film

Pressure measurement film indicates applied pressure differences as red color density variations.

- Prescale
- Prescale Sheet Type
- Pressure Distribution Mapping System FPD-8010E



## Heat Measurement Film

A revolutionary new film that enables anyone to measure heat distribution easily by observing the variation in density and hue.

- Thermoscale





**METALUBE®** Global specialists in high-performance lubricants

### Specialist industrial lubricants

METALUBE® is a UK-based manufacturer of specialist industrial lubricants, exporting to over 80 countries worldwide.

Research and development is key to our business. We are constantly investing in the METALUBE® Technology Centre based at our Manchester factory, ensuring technical excellence and innovation across our entire range of products and services.

Our success also lies in our ability to be flexible, offering unrivalled technical and after-sales support. It is our priority for customers to run at peak efficiency – and for over 25 years we have delivered a world-class service and superior-performance products



### The METALUBE® Innovation Team

Speed and flexibility in product development are top priorities at METALUBE® and our highly qualified team and state-of-the-art laboratory equipment mean that nothing less than perfect leaves our factory.

We ensure compliance of both raw materials and finished products and carry out condition monitoring and routine used-oil analysis, giving customers total assurance when using the METALUBE® range.

All our products test to **ISO**, **IP** and **ASTM** standards and specifications.

METALUBE® is the proud winner of a Queen's Award for Enterprise in Innovation in 2014 for inventing a new synthetic grease, 'OCG 6000', which protects overhead electrical conductors.



## **ALUMINIUM WIRE DRAWING PROD**

### **Alumol™ – lubricants for drawing pure aluminium and aluminium alloy rod**

Alumol™ is a range of high performance lubricants specifically developed for the drawing of aluminium and aluminium alloy wire. All of the products in the Alumol™ range contain an optimised combination of natural and synthetic lubricity additives. Their high affinity for aluminium provides exceptional film strength to deliver outstanding surface finish and die life. The use of high purity base oil and the latest antioxidant technology minimises thermal degradation and significantly extends service life. In addition all Alumol™ products have the ability to absorb small quantities of water – preventing problems such as wire breaks and surface scratching that are usually caused by ingress of moisture.

Practical experience has shown that Alumol™ drawing lubricants will deliver maximum benefits when used in conjunction with the VRX additive and Filtermet centrifugal filtration system. Together these products deliver significantly enhanced service life, reduce costs and improve production efficiency.

#### Features and benefits

- Provides optimum boundary lubrication to protect dies and provide outstanding surface finish on drawn wire.
- Excellent resistance to thermal degradation extending service life.
- Low viscosity aids separation of aluminium fines and pumpability.
- Able to absorb some moisture without compromising lubrication performance.
- Functions well with both the FILTERMET centrifugal cleaning system and Alumol™ VRX to further extend life and maximise performance, delivering significant cost savings.

Aluminium wire drawing



## **COOPER WIRE DRAWING**

### **Lubricool™ – water soluble lubricants for copper and other non-ferrous metal-drawing, rolling and annealers**

An extensive and robust soluble wire drawing range of lubricants. Lubricool™ is designed for drawing non-ferrous wire and provides consistent and reliable performance over a wide variety of conditions. The range uses the latest synthetic technologies and has been developed for drawing applications from rod to superfine. The Lubricool™ range also includes products for the rolling of copper strip and continuous annealers. Lubricool™ is currently used by many of the World's leading cable and non-ferrous wire producers. Lubricool™ is also recognised and endorsed by many machine manufacturers such as NIEHOFF, SAMP and SICTRA.

Copper wire drawing



## Features and benefits

- Excellent lubrication properties reduce wear on dies and cones and increases drawing speeds.
- Provides an exceptionally smooth, bright and clean finish to the drawn wire, making it suitable for annealing and plating processes as well as in the manufacture of insulated cable.
- Excellent emulsion stability and resistance to soap formation maximises sump life.
- Increased lubricity of the emulsion reduces wire break frequency.
- Superior detergency maintains the machines in a clean condition.
- Additive package combination produces a high resistance to excessive foaming and bacterial and fungal attack.
- Emulsion structure produces excellent filterability on both media (paper) type and hydrocyclone systems.
- Superior anti-corrosion properties to protect machine parts and the wire surface.

## TUBE DRAWING

### **Tubol™ – drawing lubricants for copper tubes**

A wide and comprehensive range of lubricants specifically designed for use in drawing non-ferrous tubes used for ACR, sanitary and engineering applications. Synthetic and semi-synthetic technology is employed to meet the demanding specifications of users and their customers' requirements. The range is endorsed by leading tube and equipment manufacturers in Europe and Asia.



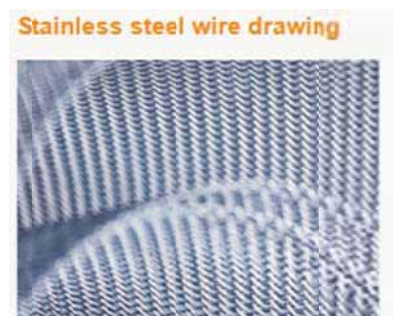
## Features and benefits

- Optimum lubricating properties to ensure long tool life and enhanced surface finish of the drawn tube
- Excellent bright annealing characteristics in heat treatment processes with inert, dry atmospheres
- Low fume characteristics during high speed drawing
- High viscosity index maintains lubricating film even at elevated temperatures
- Lower carbon residues compared with more conventional polymer oils

## STAINLESS STEEL WIRE DRAWING

### **Inoxol™ – a range of semi-synthetic lubricants for drawing stainless steel wire**

Inoxol™ is a range of high-performance lubricants, specifically designed for the wet drawing of stainless steel wire. The unique features of the Inoxol™ range allow our clients to produce consistently bright wire combined with extremely high die life. The range is designed to draw wire from 3.0mm down to 0.1mm.



### Features and benefits

- Provides optimum boundary lubrication to provide outstanding surface finish on drawn wire.
- Contains a high level of anti-wear additives to ensure maximum protection to wire dies and drawing cones.
- Excellent resistance to thermal and oxidative degradation extends service life.
- Low viscosity aids separation of stainless steel fines and pumpability.

### **METAL FORMING FLUIDS**

A range of lubricants and rust preventatives for the roll forming, cutting and pressing of metallic parts

METALUBE's range of metal forming products is comprised of three product groups: Cool-Tek™ - water dilutable concentrates for lubrication during forming and cutting processes, Sol-Tek™ - evaporative lubricants and Meta-Shield™ - water and solvent-based rust preventatives.

Metal forming



### Features and benefits

#### Cool-Tek™

- Provides optimum lubrication and cleanliness to extend roll/tool life and provides outstanding surface finish.
- Excellent fines handling and settling with outstanding corrosion protection.

#### Meta-Shield™

- Range of rust preventatives offering 6 to 24 months protection for bundled sections.
- Solvent-based RPs impart self-healing residual film offering protection against accidental contact.
- Water-based RPs containing unique Meta-Shield Adhesion Technology™.

#### Sol-Tek™

- Solvent-based lubricants which evaporate after use leaving clean, moisture-free sections.
- No need for cleaning or subsequent treatment.

### **OVERHEAD CONDUCTOR GREASE**

#### **OCG™ – protection grease for overhead line conductors**

A comprehensive range of cold applied greases for protection of overhead line conductors. The range is fully compliant with all the latest international standards and specifications and offers excellent protection against fretting, multimetal corrosion and high temperature oxidation. The range exhibits exceptionally low oil bleed characteristics and unrivalled high drop point ensuring migration from the conductor is prevented.

#### Features and benefits

Absolute minimal oil bleed at operational line and post fault temperature.

Optimum levels of anti-corrosion performance to ensure complete protection of the conductor in all environments particularly:

- coastal regions.
- areas of high industrial pollution.

#### Overhead line conductors



- Bespoke range to cover the operational line temperatures from ambient to 210°C.
- Highly specialised synthetic grease to withstand high temperature operations.
- Low temperature stability is controlled down to -50°C.
- Fully reversible and effective over the designated temperature rating.
- The structure and consistency of OCG has been optimised for ease of application and current working practices.

#### WIRE ROPE GREASE SOLUTION

Rope-Tek™ WRD - a range of high performance wire rope lubricants

Steel wire ropes are complex in construction and are subject to arduous operating conditions. Movement such as loading and unloading of the rope, bending and flexing over sheaves and pulleys, creates high load points where wires and strands cross over each other. This can result in fretting wear and corrosion – reducing the life of the rope. The high load carrying solids contained in Rope-Tek™ WRD products form a low friction barrier between the metal surfaces, minimising frictional contact and wear.

#### Wire rope



The following table illustrates the main features and benefits of using Rope-Tek™ products:

#### Features and benefits

- Excellent resistance to moisture and oxidation protects against corrosion induced failure
- High load carrying – minimises friction and wear between wires and strands
- Extreme resistance to water prevents the lubricant being wiped off from the rope

## CHAIN LUBRICANT

### **Metachain™ – a range of fully synthetic chain oils**

The Metachain™ products are a range of fully synthetic high temperature chain oils. The range has been formulated using the latest synthetic base oils, anti-oxidants and anti-wear additives to meet the demands of specific chain applications for use in ovens where conventional oils cannot function properly.



#### Features and benefits

- Highly resistant to carbonisation which leads to a reduction in the amount of oil applied over a defined period
- Excellent resistance to carbonisation will also lead to a lower level of evaporation and carbon build-up on the chain system and internal surfaces of the oven
- A unique combination of anti-wear additives will reduce the friction and metal-to-metal contact on the chain system which will lead to longer chain life and improved consumption of the chain oil.

The traditional challenges faced by any operator of a high temperature oven are that the oil that lubricates the chain will gradually carbonise and lose its lubrication properties. Metachain™ products use the latest synthetic base oils and additives and have been formulated to achieve a balance between the enhanced technological performance provided by the product and the cost to our end users.





Our basic policy is to help customer to solve problem and reduce cost. Our existing or potential customers achieved this through our dynamic sales team which constantly working very closely and listening to their problem they have faced and feedback to our technical specialist or R & D team for immediate action. We believed that by working closely with our customers we can further improved our products and meet the unmet needs from both our existing and potential customers. Our close working relationship between the sales, engineering and manufacturing department demonstrated the ability and multidisciplinary to provide consultation services and cost effective solution to our customer. In order to provide a complete solution in the metalworking fluid industry, we also provide support in both hardware and software including application technology.



### **Advantages of TAIYU HI-CHIP Water Soluble Cutting Fluid**

#### **Long-Term Use**

Excellent anti-bacteria resistance prolongs the coolant life and reduces the frequency on the replacement of the coolant.

#### **Odorless**

The anti-bacteria ability eliminates smell generated from the coolant thus provide cleaner and fresher working environment.

#### **Low Foaming**

The high degree anti-foaming agent prevent foaming when use in high-pressure coolant pump.

#### **Excellent Cooling Ability**

The high degree anti-foaming agent prevent foaming when use in high-pressure coolant pump.

#### **No Damage to Human Body**

Friendly to human body (e.g. skin irritation) and free from organic compounds such as chlorine, phosphorus and sulfur.

#### **Low pH Value**

Low pH value protects the human skin as well as machine paintwork from peeling.

#### **Used on a Wide Range of Material**

Suitable for use on wide range of materials and prevent aluminum and copper materials from corrosion.



#### **<THE LONG RECORD OF COOLANT LIFE>**

Most of our customers have kept using the same coolant for more than 1 year without replacement (just topping up to keep the concentration.). The long records are more than 3 to 4 years.

#### **<OTHER ADVANTAGES OF USING TAIYU COOLANT>**

1) Long life of coolant provides below merits.

- Saving down time of machines for coolant replacement.
- Saving the amount of disposal coolant.

2) Changing from Emulsion-type to Fully Synthetic Coolant provides below merits.

- Slippery dangerous floor turns to safety & clean floor.
- Smoky work place turns to clear view factory.
- Very gentle to human since its pH is moderate, and it doesn't contain Nitrite & Chlorine.
- Free from foam problem even under high-pressure operation.

## ***PRODUCTS RANGES***

### ***Water Soluble Cutting and Grinding Fluids***

#### **Hi-Chip NC series**

Fully-synthetic cutting fluids designed for light to medium duty cutting on both CNC Lathe and Machining Center as well as Grinder. These products have excellent resistance to bacteria and fungus attack, thus provide longer life than other types of cutting fluid. Besides the fluids transparency and good anti-foaming agent provide excellent visibility during cutting even with high pressure pump.

#### **Hi-Chip SX & EX series**

Semi-synthetic and emulsion type cutting fluids designed for light to heavy duty cutting on both CNC Lathe and Machining Center. These products have strong anti-corrosive ability especially used for cutting non-ferrous materials such as aluminum, and with its excellent lubricity it provides good finishing and prolongs tools life.

#### **Hi-Chip WX series**

Fully-synthetic chemical type solution designed for grinding operation on ferrous and non-ferrous materials. This product has good operating performance in the grinding process due to its excellent anti-foaming and grind stone clogging preventive ability.

### ***Chlorine-Free, Smoke-Free and Low Mist Oil Cutting Fluid***

1. **N-Cut series** : Non-Extreme Pressure Type Cutting Fluid (For Light to Middle Duty Cutting)
2. **S-Cut series** : Extreme Pressure Type Cutting Fluid (For Light to Heavy Duty Cutting)
3. **H-Series** : Conventional Type (H-1 300)
4. **DAIKEN** : Grinding Oil
5. **PEC (Protection of Environment Coolant) series**
  - a. Smoke less oil type : SF-series
  - b. Mist less type : M-series
  - c. Biodegradable type : BD-series
  - d. Semi Dry type : SD-series

### ***Press Drawing and Forging Oil***

(for punching, stamping and drawing processing oil)

1. **Drawing, Blanking Processing Press Oil**
2. **Punching, Stamping Dry-Type Press Oil**
3. **Former Oil** : Castoal No. 1000 series: Cold Forging Oil (designed for light to heavy duty processing such as low carbon steel bolts/nut former, stainless steel nut former and purpose-made former)

### ***Rust Preventive Oil***

1. **D Series** : Solvent base rust preventives, hard resin film-type
2. **F Series** : Solvent base rust preventives, soft wax filme-type
3. **S Series** : Solvent base rust preventives with water displacement, soft filme-type
4. **C Series** : Solvent base rust preventives, finger print removal-type or detergent-type
5. **W Series** : Oil base rust preventives
6. **V Series** : VCI (Volatile Corrosive Inhibitor) Oil
7. **M Series** : Water-soluble rust preventives

### **Cleaner Agent**

1. Supporl J and JA series (water soluble cleaner)
2. Supporl F series (solvent cleaner)
3. Supporl K series (de-rust fluid)
4. Supporl W series (solvent cleaner for removing water on the metal plate)
5. Saviden Cleaner B series (agent for cleaning of equipment, machine surface and floor)

### **Heat-Treating Oil**

1. DSQ Series : Quenching Oil
2. DST Series : Tempering Oil

### **Coolant Maintenance Equipment**

1. Belt and Disk type Oil Skimmers
2. Coolant Auto Mixer
3. Handy Refractometer and pH meter
4. Coolant Recycle System
5. Electric and Compress Air vacuum pump for dry and wet



# Q8 Oils



Kuwait Petroleum International, known by the Q8 brand, refines and markets fuel, lubricants and other petroleum derivatives outside Kuwait. Its main activities are focused on Europe and the Far East.

Established in 1983, Kuwait Petroleum International is the international subsidiary of Kuwait Petroleum Corporation.

It brings together all the state owned elements of the Kuwait oil sector under one corporate umbrella and is one of the world's top ten energy conglomerates.

Q8 Oils' lubricant blending plants are located in Belgium, Italy, and Sweden. As part of the OK Q8 joint venture, the plant in Sweden is operated and managed as a separate company.

Every plant is fully compliant with local safety, security, health and environmental regulations.

Q8Oils produces oils and lubricants for the following sectors:Fleet & Commercial

**Energy**

**Metal Industry**

**General Industry**

**Marine**

**Mining**

**And more..**

### Hydraulic Oils Overview

	Zinc Based		Ashless				Biodegradable		Food Grade	Fire Resistant	
	No Detergent	Detergent	No Detergent			Detergent	Unsaturated	Saturated		HFC	HFDU
	Main Line	Shear Stable	Main Line	Brugger >30	Brugger >50	Low Pour Point					
VI : 100	Q8 Hydri		Q8 Heinken	Q8 Holst	Q8 Holst EP	Q8 Holst XEP		Q8 Hubble			
VI : 150	Q8 Heller		Q8 Hoffmeister	Q8 Hanson			Q8 Huygens		Q8 Rossini HMG	Hydrolix	Estin 5
VI : 180	Q8 Heller	Q8 Hogarth		Q8 Halley				Q8 Holbein NWG/ Q8 Holbein ECO	Q8 Holbein RP-SE		
VI : 300						Q8 Hindemith					

### industrial gear oils overview

Type	Application	Base Oil	DIN 51517 Part 3	ISO 12925-1	AGMA 9005-D94
Q8 Goya	General Purpose	Mineral	Category CLP	Category CKC-CKD	9005-D94 EP
Q8 SL Gear Lubricant	Heavy Shock Loads	Mineral	Category CLP	Category CKB-CKC-CKE	9005-D94 EP
Q8 Goya NT	General Purpose, Resistant against high load	Mineral	Category CLP	Category CKC-CKD	9005-D94 EP
Q8 El- Greco	Extended Drain, Resistant against high load	Mainly PAO, partly mineral	Category CLP	Category CKC-CKD	9005-D94 EP
Q8 Schumann	Extended drain	PAO	Category CLP		
Q8 Gade SF	High load	Polyglycol	Category CLP P6	Category CKE	

### air compressor oils



Product	Q8 Scarlatti	Q8 Schubert	Q8 Schumann
ISO VG	46, 68	32, 46, 68, 100, 150	32, 46, 68, 100, 150, 220
<b>Base Oil</b>			
Mineral	✓	✓	
PAO			✓
<b>Application</b>			
Screw air compressors	✓	✓	✓
Reciprocating air compressors		✓	✓
Vacuum pumps			✓

### airtool lubricants



**Q8 Chopin**  
32, 46, 150, 220

Pneumatic tools and rock drill equipment with outstanding protection against wear, rust and corrosion even in the presence of condensed water. Has a high resistance against washing effect of water through strong oil

## refrigerator compressor lubricants

Product	Q8 Stravinsky	Q8 Stravinsky N	Q8 Stravinsky AB	Q8 Stravinsky POE
ISO VG	68	30, 55, 68	32, 68	32, 68
<b>Base Oil</b>				
Mineral		✓		
PAO				
PAO + Alkyl Benzene	✓			
Alkyl Benzene			✓	
Polyol Ester				✓
<b>Application</b>				
Reciprocating and Rotating refrigerator compressors Natural, eg Ammonia (R717)	✓	✓	✓	
Reciprocating and Rotating refrigerator compressors, (RFR (R12) HCFC (R22), natural (R717))		✓	✓	
Reciprocating and Rotating refrigerator compressors, HFC (134a)				✓

## slideway lubricants

### Q8 Wagner NS

32, 68, 150, 220

Q8 Wagner NS slide way lubricants are developed for ways and other sliding surfaces of machine tools such as grinders, milling machines, saws, etc. Q8 Wagner NS is formulated with mineral base oils and contains adhesive, anti-wear and anti-corrosion additives. Q8 Wagner NS has an excellent resistance against high pressure splashing of water based cutting fluids. Q8 Wagner NS is approved for Cincinnati-Milacron CM P-47, P-50 and P-53 specifications and has a very good stick-slip ratio of 0.78.

### Q8 Wagner NST

68, 220

Slide way lubricants are developed for ways and other sliding surfaces of machine tools such as grinders, milling machines, saws, etc. Q8 Wagner NST is formulated with mineral base oils and contains excellent adhesive, anti-wear and anti-corrosion additives. Q8 Wagner NST is developed for customers who prefer better sticking properties. Note: Adhesive agents can cause filter blocking and in that case Q8 Wagner NST should be used. Q8 Wagner NST has an excellent resistance against high pressure splashing of water based cutting fluids. Q8 Wagner NST is approved for Cincinnati-Milacron CM P-47, P-50 and P-53 specifications and has a very good stick-slip ratio of 0.78.

## degreasing fluids

Degreasing fluids are used to clean workpieces or parts which are contaminated with an oil or a grease.

### Q8 Degreasing Fluid B

Degreasing fluid for cleaning of machinery, vehicles and floors of workshops. (Biodegradable according to the OECD 301 D closed bottle test).

### Q8 Degreasing Fluid HFB

A high flash point, emulsifiable degreasing fluid for cleaning machinery, vehicles and floors of workshops with strong penetration performance of dirty oily deposits. It may be applied undiluted and rinsed afterwards with cold water without gel formation. (Biodegradable according to the OECD 301 D closed bottle test).

## circulation oils

Circulation oils are considered when light duty hydraulic, gear, turbine and compressor applications are involved.

### Q8 Verdi

22, 32, 46, 68, 100, 150, 220,  
320, 460, 550

For hydropower turbines, bearing systems, light loaded gears, hydraulic systems not requiring anti-wear performance and compressor lube oil systems for which no specific compressor oils are required.

Specifications: DIN 51524, Part 1, category HL (Hydraulic); DIN 51515, category L-TD (Turbines); DIN 51517 Part 2, category CL (Gears); DIN 51506:2013, category VBL, VCL (Compressor) (VCL is obsolete in DIN 51506:2013).

# greases



Product	NLGI Class	Soap Type	Operating Temperature Range (Peak) °C	4 Ball Weld Load N	DIN 51502	ISO 67439
Q8 Glotto Complex	0.5	LiCo-X	-30/140(180)	>7500	KPGOG0.5N-30	L-XCDIB0.5
Q8 Multi LCK 1	1	LiCa	-20/140	3100	KP1K-20	L-XBCDB1
Q8 Multi LCK 2	2	LiCa	-20/140	3100	KP2K-20	L-XBCDB2
Q8 Redon PTFE	1.5	PTFE	-35/250(270)	7500	KFK1.5U-35	L-XCGHA1.5
Q8 Rembrandt EP 00 WV	00	Li	-30/100(110)	2400	KP00G-30	L-XCBEB00
Q8 Rembrandt EP 00	00	Li	-30/120	2450	KP00K-30	L-XCCHB00
Q8 Rembrandt EP 0	0	Li	-30/120(130)	2450	KP0K-30	L-XCCFB0
Q8 Rembrandt EP 1	1	Li	-30/120(130)	2450	KP1K-30	L-XCCFB1
Q8 Rembrandt EP 2	2	Li	-30/120(130)	2450	KP2K-30	L-XCCFB2
Q8 Rembrandt EP 3	3	Li	-20/120(130)	2600	KP3K-20	L-XBCFB3
Q8 Rembrandt Moly	2	Li+MoS2	-30/120(130)	2750	KPF2K-30	L-XCCHB2
Q8 Renor EP 142	2	LiCa	-18/145	3900	KP2H	L-XABIB2
Q8 Rodin EP 202	2	CaSul-X	-30/140(220)	7500	KP2N-30	L-XB(F)DIB2
Q8 Rodin EP 415	1.5	CaSul-X	-20/140(220)	5000	KP1.5N-20	L-XB(F)DIB1.5
Q8 Rossini EP 2	2	Al-X	-20/120(140)	6000	KP2K-20	L-XBCEB2
Q8 Rubens 00	00	Li-X	-35/100(120)	2350	KP00G-35	L-XCBIB00
Q8 Rubens EM 2	2	Li-X	-30/140	2600	KP2N-30	L-XCDHB2
Q8 Rubens EM 3	3	Li-X	-30/140(160)	2600	KP3N-30	L-XCDEB3
Q8 Rubens HT 2	2	Li-X	-20/140(220)	3400	KP2N-20	L-XBDIB2
Q8 Rubens PMS 222	2	Li-X	-40/150(220)	3400	KPHC2N-40	L-XDDIB2
Q8 Rubens PMS 462	2	Li-X	-40/150(220)	3400	KPHC2N-40	L-XDDIB2
Q8 Rubens WB /b	2	Li-X	-30/150(230)	2750	KP2N-30	L-XCDIB2
Q8 Ruysdael CL 2	2	LiCa	-20/120(130)	6650	KP2K-20	L-XBCIB2
Q8 Ruysdael SG	2.5	LiCa	-20/120(130)	3200	KP2.5K-20	L-XBCHB2.5
Q8 Ruysdael WR	2	AnhCa	-20/120(130)	2800	KP2K-20	L-XBCIB2



Advantages Lubricant Engineering for Industry

## CHS-ASIA CHEMICAL CO.,LTD

22/6 Moo 4 RinchockchaiSoi,  
Samutprakarn 10540 Thailand.



We are Metal Working Products Company was founded on simple desire to solve a problems that would benefit all, we still operate on the same principle.

This sincere commitment to help ours customer succeeded has made us a market leader and global product. We are proud to be participants and competitor in a global, high-tech industry in which our leadership is the result of our fierce dedication and desire to provide the market with Quality, sustain ability and innovative solutions.

We offer a wind rang of Rust Preventive and Metal Working Lubricant which meet the best products as suitable with your Application requirewments.

### **Metalworking Product**

- Machining and Grinding Fluids
- Cleaners
- Surface Treatment
- Rust Preventives
- Die Casting Release Agent
- Stamping and Forming Compounds
- Wire Drawing Compounds
- Forging Agents
- Heat Treating
- Ferrous and Non-Ferrous Rolling Oils

### **Hydraulic Fluids Fire Resistant**

- Water Glycol, Phosphate and Polyol Ester

### **Environmental Friendly Bio-Chemical**

- Rust Remover
- Water-based Cleaner (for Ferrous and Non-Ferrous Material)
- Cooling System Maintenance Chemical

### **EDM Fluids**

“LC-EDM” is a unique combination of high dielectric strength and low power factor and sets a new benchmark for Synthetic EDM lluid. Faster cutting, higher quality tinish, shorter burn time and longer lluid life while improving health and safety for the operator are among the main benefits.

LC-EDM Series are highly refined mineral oils, specially developed for use in electrical discharge machining of dies, molds and other complex shapes which processing of aluminium, brass, copper and ferrous materials. Their very low aromatic content obtained from the deep hydrogenation of highly selectedfeedstocks results in very low odor and better environment acceptance.



ECO GREEN SOLUTIONS CO.,LTD.  
1/292 M.9 T.Bangpood A.Parkkret  
Nonthaburi 11120  
Thailand

## GREEN WATER TREATMENT PROGRAM

### COOLING WATER TREATMENT

Scaling, Fouling, Algae & Slime are major problems in Cooling Water as well as corrosion. GREENEX™ with selective additive can be used effectively in cleaning not only those mentioned but also help reduce few problems e.g.



- Reduce environmental problem from dangerous chemical solvent usage in cooling system treatment
- Energy saving from cleaner heat exchanger surface and reduce pipe friction loss
- Enhance Zero blow down process
- Improve waste water treatment efficiency
- No chemicals need provides better environment and health
- Provide higher efficiency in Cooling System

### WATER FLUSHING

One of the main problem of Cooling Water System that is used for a long period of time involves deposited Scaling and Fouling in Cooling Fill, Heat Exchanger, Piping, Basin. Although Chemical Treatment Program is used.



GREENEX™ can help solve in Cooling Tower Flushing Program by applying Biochemical Cleaning. The process can remove dirt stain off in the system and can be applied to:

- Cooling Tower Water
- Evaporative Condensing Unit
- Chiller Water
- Fire Protection Water Sprinkler System
- Machine Cooling Water System
- Packaged Water Cooled Air Conditioner
- Heat Exchanger CIP

### WASTE WATER TREATMENT

While the Waste Water Treatment System can be thoroughly cleaned, undesired factors are still existed and it always involves unnecessary upkeep cost, these are:



- Foul Odor
- Oil, Grime & Grease

GREENEX™ can help solve the problems in a short time as it will help protect the building up of such undesired factors above such as Hydrogen ( H ), Nitrogen ( N ) and will not create H<sub>2</sub>S or NH<sub>3</sub>. GREENEX™, as stated, acts like tiny blades that will minimize oil or grease particles to reduce blockade in pipe work.

Hence, it will therefore enhance the efficiency as well as reduce treatment time considerably

## WATER BASED CLEANING SOLUTION



### HEAVY DUTY INDUSTRY CLEANING

In Heavy Industry such as Oil Refinery, Gas Aromatics, Power Station, Steel Factory, Petrochemical Factory and Paper and Pulp etc., shut down for service seems to be quite a big issue. High efficiency cleaning protocol is therefore a must to reduce a complete shut down.



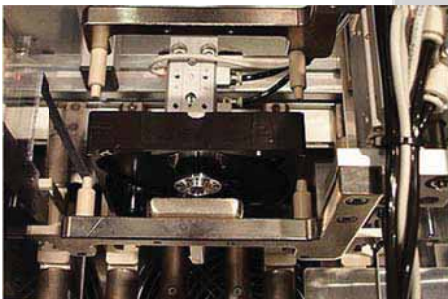
GREENEX™ has developed Cleaning Agent which is effective, safe to use, and also is environmentally friendly and be used for

- Tank Farm , Reactor Tank and Storage Tank Cleaning
- ISO Tank , Oil Truck ,Slop tank and Oil Tanker Ship Cleaning
- Fin Fan , Heat Exchanger , Cooling Tower and Tower Pack Cleaning
- Wet Scrubber Media and Activated Carbon Cleaning
- Pipe Cleaning
- Green Cleaning Application

### CRITICAL INDUSTRY CLEANING

Critical Industry Cleaning Solution (Precision Cleaning) by using GREENEX™ product combined with Ultrasonic machine it will easy for production process.

Hence GREENEX™ is water based cleaning agent no harsh chemical ,solvent , Silicone ,HF free and PBB & PBDE substances high safety profile for the worker and work place can be use in :



- Electronic Industry such as PCB Cleaning , HDD Cleaning
- Automotive Industry such as Mould , Bearing Cleaning
- Electrical Wire Cleaning
- Extruder Cleaning
- Pharmaceutical industry Cleaning
- Gasket Cleaning
- Food Industry Cleaning
- Telephone Part Cleaning

### OIL, GREASE & RUST REMOVER

Oil & Grease always occur on heavy machine surfaces including in food processing plants or restaurants, hotels etc. Normally, Sodium hydroxide (Na OH) or Cutting oil is used to remove such dirt, these cleaners still cling to the surfaces and are hard to remove.



GREENEX™ can be effectively used in lieu of those strong chemical substances. It can be safely applied on equipment as such:

- Frying and Grilling equipment
- Paint Drying Chamber
- Fume Hood
- Greasy or Oily surfaces
- Oily parts or components from steel lathes, molds or rusts
- automotive engines or machines

## POLLUTION TREATMENT PROGRAM



### ODOR SUPPRESSOR

Unpleasant Odor from refuse, foul water, chemical odor is one of the main problems which affects the general environment and lifestyle severely. Methods of solving such problems are not easy and costly.

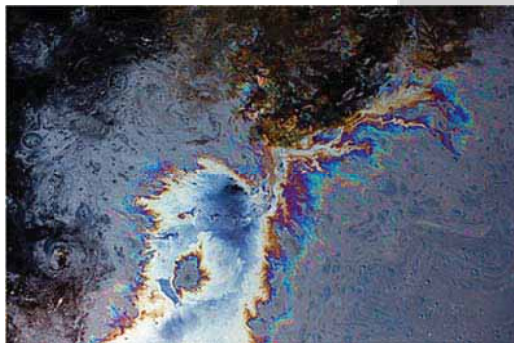
GREENEX™ can be the answer to those troublesome effectively. The process of clearing of GREENEX™ is simply blocking the chemical reaction of Nitrogen ( N ) and Hydrogen ( H ) with other matters not to create H<sub>2</sub>S or NH<sub>3</sub> and can be applied by mixing with water and spray on required areas to suppress the odor such as



- Waste Water Treatment
- Refuse tip
- Ablution areas, smoking areas
- Raw Rubber stock area
- Hospital, theaters or food courts, restaurants
- Animals wastes e.g. poultry farms, pig farms, bio gas plants etc.
- Odor from pets

### OIL SPILL

Oil Spill can affect environment badly and takes a long process to cure.



GREENEX™ team can help solve such problems with our Turnkey Service Advisor or Supervisor who is willing to listen and assist on the problems GREENEX™ realizes the said problem and has developed a particular product to fight against such pollution:

- Oil leakage from factory to natural watercourses
- Oil tankers accidents on public access.
- Oil tankers accidents in the sea
- Other accidents that cause oil spill

### WET SCRUBBER & VOC CONTROL

Volatile Organic Compound (VOC) is recently introduced to be exercised for those factories who are preparing to enter ISO 18000 standard. This standard involves safety and bio health stated by OSHA.

Again GREENEX™ can help sole VOC resulted by all kinds of Hydrocarbon e.g. Benzene ( C<sub>6</sub>H<sub>6</sub> )

The purpose of Wet Scrubber is to prevent air pollution which can occur during production process. These could be chemical fume, poison fume etc. By applying GREENEX™ Wet Scrubber, the escalation in work efficiency can be detected such as:



- Higher efficiency in catching poisonous matters
- Lengthen the life of Media or Activated Carbon
- Reduce waste water treatment problems
- Reduce corrosive action in Wet Scrubber
- Reduce leaked foul odor or poisonous matters

## GENERAL CLEANING

GREENEX™ does not kill micro organism but will help minimize dirt particles which results effective waste water treatment. GREENEX™ is not only suitable for industrial use, the products are also suitable superbly for household such as:



- Hand Washer
- Dish Washer
- Cloth washing both hand wash and machine wash as there is no starch mixed in the product and will not create foul odor for long time soaking
- Floor Cleaning
- Toilet / bathroom, sanitary ware and ablution area cleaning
- Carpet cleaning
- Glass cleaning
- Fin Coil in Air Conditioning system both automotive and household



## VESTACHEM

by



We facilitate the decision making process by bridging the geographical and time gaps and with the right economy of scale in handling specialty chemicals we help to minimize the costs in the exchange of goods. We do this by implementing best business practices and treat our suppliers and customers as business partners by promoting a code of business conduct that is based on honesty, integrity, and protection of the interest of our stakeholders.

Sustainability and the environmental care as part of our business philosophy can be found back in our permanent efforts to search for environmentally friendly alternatives to the catalysts and additives used at present by the chemical industry.

### VESTACHEM PROD RANGES:

#### AEROGEL

##### **QUARTZENE Z1**

**CAS number:** 68909-20-6

Silicon dioxide (amorphous) , methylated  
Coatings, Mortars, Silicone Rubber

#### AMINE CATALYSTS

Polyurethane foams are produced by the reaction of polyol, polyisocyanate and water in the presence of catalysts and other auxiliary agents.

Catalysts play an important role not only in the control and balance between the gelling and blowing reactions, but also in the optimization of the foam properties and the curing speed during the foam formation. Tertiary amines either alone or in combination with tin octoate are most widely used catalysts in the manufacture of polyurethane foams.

Depending on their chemical structure they speed up the reaction between the hydroxyl and the isocyanate groups, accelerate the blowing reaction between isocyanate and water resulting in formation of CO<sub>2</sub>, or when blocked with carboxylic acids show delayed activity after being deblocked at elevated temperatures. Amine catalysts can accelerate the surface reaction speed and improve the surface properties of the finished goods by migrating to the foam mold surface.



Those containing hydroxyl groups will react with the isocyanate groups becoming bonded to the polyurethane polymer matrix, which renders zero-emission of amine catalyst during the service life of the end product.

## **AZO INITIATORS**

Iniper azo-initiators are symmetrical azonitrile compounds decomposing thermally by cleavage of the two carbon–nitrogen bonds to form two alkyl radicals and a nitrogen molecule. The resulting tert-alkyl radicals are generally more stable than most of the radicals generated from peroxide initiators. In addition, these radicals do not abstract hydrogens from the polymer backbones, which results in formation of linear polymers since the branched grafting is suppressed.

Azonitrile decomposition rates show minor solvent effects and are not affected by transition metals, acids, bases and many other components of the environment. These result in two advantages of azo-initiators; their decomposition rates are predictable and they can be used for curing resins that contain a variety of extraneous materials. A drawback of azonitriles over peroxides, however, is the formation of toxic tetrasubstituted succinonitrile derivatives due to recombination of the alkyl radicals.

## **CURING AGENTS**

Resins suitable to be combined with Vicura curing agents contain carboxyl, hydroxyl or epoxy groups. With right resin choice and corresponding Vicura curing agent coatings with desired storage stability, pot-life, curing temperature, curing speed, flow behaviour, mechanical properties, chemical resistance and weatherability can be formulated.

Products in which Vicura curing agents are used include polyester powder coatings for indoor and outdoor application and functional epoxy powder coatings. Vicura crosslinkers can be used in combination with ViaCat tin catalysts in both liquid and powder coatings.



## **ORGANIC PEROXIDES**

Organic peroxides possess one or more oxygen–oxygen bonds, which decompose thermally to produce two radicals. The rates of decompositions can be enhanced by specific promoters or activators being mostly multivalent metals such as iron, cobalt or vanadium. They significantly decrease the energy necessary to break the oxygen–oxygen bond. Such accelerated decompositions occur below the normal application temperatures of the peroxides usually resulting in generation of only one useful radical, instead of two



## **PHASE TRANSFER CATALYSTS**

CatOnium phase transfer catalysts (PTC) are quaternary ammonium and phosphonium salts, which are widely used in the production of:

- Additives Monomers Agrochemicals Organic fine chemicals Dyes Pharmaceuticals Explosives Petrochemicals Flavors Resins Fragrances Rubber
- Monomers Surfactants Paint & Coatings Zeolite templates In addition CatOnium Phase Transfer Catalysts are also used in polymer modifications and pollution treatment and the removal or destruction of impurities in wastes and product streams.

Typical reactions where CatOnium phase transfer catalysts are employed include:

Aldol condensation Dehydrohalogenation N-, C-, and S-alkylation, Borohydride reduction Etherification Oxidation and epoxidation, Carbene reactions Esterification and transesterification Reduction, Carbonylation Hydrohalogenation Transition metal co-catalysis, Chloromethylation Hydrogenation Wittig reaction, Darzens condensation Michael addition,

Displacements reactions using:

Acyl halides Bromides Iodides, Alkyl halides Cyanates Phosphoro halides, Allyl chloride Cyanides Thiocyanates, Anhydrides Epichlorohydrin Sulfides, Aryl halides Fluorides Sulfonyl halides, Azides Inorganic nucleophiles,



### **BENEFITS**

The use of phase CatOnium phase transfer catalysts offers number of benefits from synthetic, economic, manufacturing and engineering point of view. This includes:

Easy and reliable up-scaling Low investments costs

Elimination of expensive and dangerous reactants such as metal alkoxides Mild reaction conditions with increased process reliability

Flexibility in solvent choice Minimization of industrial waste

High yield and purity of the end Reduced reaction time

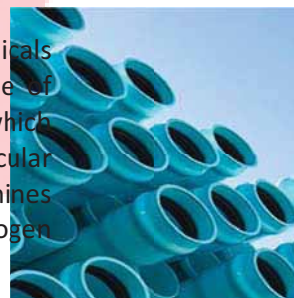
Increased reaction rates that leads to enhanced selectivity Reduction of side products output

Increased reactor volume efficiency Reduction or even elimination of the use of organic solvents

Low energy consumption Simplicity of the synthetic procedure

### **PHOSPATES**

The oxidative degradation of polymers as a result of formation of free radicals by heat, UV light or impurities is retarded to a great extent by the use of antioxidants. Polymers that are not stabilized against oxidation degrade, which is manifested by loss of mechanical properties due to decrease of molecular weight, discoloration and brittleness. Hindered phenols and aromatic amines are the so called primary antioxidants which by donation of reactive hydrogen to the peroxy radicals prevent Phosphites



### **TIN CATALYSTS**

ViaCat dibutyltin and monobutyltin compounds are used as esterification catalysts for the manufacture of organic esters and/or polyesters. Examples of simple organic esters include plasticizers, lubricants and heat-transfer fluids. The esterification reactions catalyzed by ViaCat organotin compounds require temperatures above 200°C, which is much higher than those involving strong acid catalysts, such as p-toluenesulfonic acid. Though, number of advantages justify the use of organotin catalysts. The side reactions are minimized so the end products have better color and odor properties because fewer by-products are formed, there is no need for refining to remove the catalyst residues and the equipment corrosion is eliminated. Usual levels of tin catalysts are 0.05–0.3 wt % based on the total reactants charged.



## **SPECIAL TREATMENT**

Next to phase transfer catalysts, esterification catalysts, antioxidants and amine catalysts for polyurethane foams we supply other materials which do not belong to our standard product groups. Although they are not typical commodities, they are supplied in bigger quantities compared to the catalysts. Chemicals that belong to this groups are optical brighteners for the detergent industry, hydroxyl functional acrylic monomers used in manufacturing of acrylic resins, Other chemicals - glycoluril, benzoguanamine, silanes etc

Tetrabromo bisphenol A that imparts flame retardant properties to the epoxy resins, benzoguanamine and glycoluril used in specialty amino resins and/or crosslinkers, hydroxy pivalyl hydroxy pivalate, a diol that enhances the hydrolytic stability of the polymers, dimethylol propionic acid used in manufacturing of polyurethane dispersion etc. Specifically in the case of low volume chemicals, with our storage and distribution capabilities we assist our customers in reducing the inventory and all over logistic costs.





**GLOBAL BATTERY CO., LTD IS THE COMPANY REPRESENTING KOREAN BATTERY INDUSTRY.  
Formally as brand YUASA**

Global Battery Co., Ltd has led the battery industry in Korea with the brand of 'Rocket' for over half century since the establishment in 1952.

Global Battery has put forth its strength to the continuous management innovation corresponding to the rapid changing market environment, and has concentrated ceaseless efforts to the technology development in order to produce the best product.

As a result, Global Battery Co., Ltd has grown not only as the maker of batteries representing Korea but also the top five manufacture exporting to more than 130 countries in the world.

Now, Global Battery Co., Ltd is concentrating the efforts in order to jump to be the top battery manufacturer in the world.

And we, Global Battery Co., Ltd, will do our best to develop the high-tech clean energy, which enable us to enjoy and to comfort in the clean environment.

**SMF VRLA**

**2V SERIES**

MODEL	VOLT	CAPACITY
ESG SERIES	2V	200AH - 3000AH
CARBON BATTERY SERIES	2V	200AH - 2000AH
HIGH TEMP BATTERY SERIES	2V	HIGH TEMP BATTERY 200AH - HTB 200AH

**6V SERIES**

MODEL	VOLT	CAPACITY
ESU SERIES	6V	620AH

**12V SERIES**

MODEL	VOLT	CAPACITY
ES SERIES	12V	5AH - 80AH
ESC SERIES	12V	100AH - 250AH
ESU SERIES	12V	ESU 12-100W - ESU 12-540W
ESH SERIES	12V	ESH 12-370W - ESH 12-760W
ESFT SERIES	12V (FRONT TERMINAL)	ESFT 50-12 - ESFT 205-12
HRL SERIES	12V	HRL140 - HRL700

## Tubular

### 2V SERIES

MODEL	VOLT	CAPACITY
ESTG SERIES	2V	ESTG 200AH – ESTG 300AH
ESF SERIES	2V	EST 200AH – EST 3000AH

### 12V SERIES

MODEL	VOLT	CAPACITY
C-10 SERIES	12V	EST 20AH – EST100AH
C-20 ENDURA SERIES	12V	TTB/LTTB 100 – TTB/LTTB 200
C-20 JUMBO SERIES	12V	STB 100 – STB 180

## Consumer Segment

### CAR SEGMENT

MODEL	CAPACITY
CALCIUM MF/SMF SERIES [DIN]	DIN 44 – DIN 100

### CAR / HEAVY VEHICLE SEGMENT

MODEL	CAPACITY
CALCIUM MF/SMF SERIES [JIS]	MF/SMF 35B19R/L – MF/SMF N200R

### 2-WHEELER SEGMENT

MODEL	CAPACITY
CALCIUM MF/SMF SERIES	EMC 2.5 – EMC LBX

### ELECTRIC WHEELER SEGMENT

MODEL	CAPACITY
CALCIUM MF/SMF SERIES	EV 20 – EV 40



## Lithium Ion

### LITHIUM ION PHOSPHATE

Lithium Ion Phosphate (LFP) is a special kind of lithium battery that addresses the 4 major issues with current lithium technologies:  
Safety, Life, Power, and Environmental Friendliness.

## Diesel Generator Cranking Batteries

MODEL	VOLT	CAPACITY
CALCIUM MF/SMF SERIES (JIS)	12V	MF/SMF N 88 – MF/SMF N 200



ROCKET  
Since 1952



INSTRUMENTATIONS

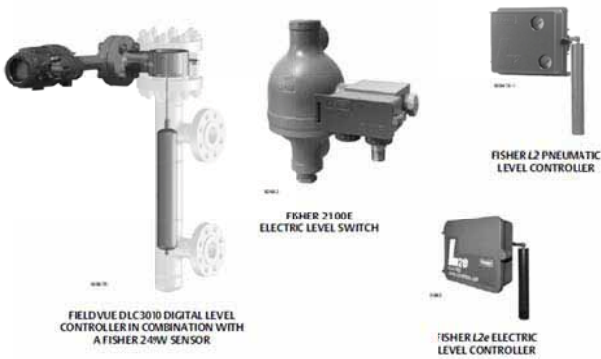


**FISHER**



**BAUMANN**

Fisher® Level Instruments



**TOPWORX**

**GO SWITCH**



**TOPWORX** A GLOBAL LEADER IN VALVE CONTROL AND PROXIMITY SENSING

# BETTIS™

## Scotch Yoke Actuators Available

Bettis CBB-Series




Bettis CBA-300 Series



Bettis G-Series



**Valve Automation Technologies from Emerson –**  
The most comprehensive and proven portfolio available everywhere



**EMERSON.** CONSIDER IT SOLVED.

# ROSEMOUNT™

Rosemount Pressure

Rosemount Temperature

Rosemount Flow

Rosemount Level

Rosemount Wireless

Rosemount Tank Gauging



Pressure



Temperature



Level



Flow



Nuclear/High Integrity



Wireless



## Rosemount Liquid Analysis Product Line

**Loop-Powered Transmitters**

**4-Wire Analyzers**

**Model 5081 Family**  
Transmitter with HART or FOUNDATION Fieldbus communications

**Solu Comp Model Xmit Family**  
I.S. Smart Transmitter

**Model 54e Family**  
Smart Analyzer with HART communications

**Model 1056 Dual Input Family**  
Smart Analyzer

**ROSEMOUNT Analytical**

**Special Sensors**

**Model 400 Series**  
ENDURANCE Conductivity Sensor

**pH Sensors**

**Model 200 Series**



## Rosemount Gas Analysis Product Line

**Model 5081FG**  
High Temperature In-Situ Oxygen Analyzer with HART or FOUNDATION Fieldbus communications

**Oxymizer 4000/5000**  
In-Situ Oxygen Transmitter with optional FOUNDATION Fieldbus communications

**OCX4000**  
O<sub>2</sub> / Combustible Gas Analyzer

**X-Stream O<sub>2</sub>**  
Combustible Gas Analyzer

**ROSEMOUNT Analytical**

**X-Stream Process Gas Analyzers**  
Single or Dual channel gas analyzer. Can measure two different measuring principles

**Process Gas Chromatograph**

**NO<sub>x</sub> Zirconium CO<sub>2</sub>**  
**IR H<sub>2</sub> SO<sub>2</sub> CH<sub>4</sub> THC**  
**NO<sub>x</sub> CO<sub>2</sub> UV FID GC**




## Emerson Flow and Density Measurement

Best-in-class technology for outstanding results



## Fort Wayne Wire Die



**Single crystal diamond dies**  
For optimum wire roundness, uniformity and surface finish



**Poly-Di® polycrystalline diamond dies**  
For superior die life and long-term production efficiency



**Matched elongation die sets**  
For optimum performance efficiency of high-speed, multiwire machines



**Tungsten carbide dies**  
When cost savings take precedent over wire surface finish and die wear resistance



**Custom-made shaped wire dies**  
For uniquely shaped ferrous and nonferrous wire applications



**Poly-Strand™ stranding, bunching & compacting dies**  
For economy and die wear resistance in stranded conductor applications

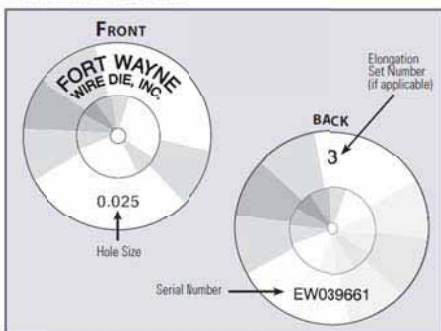


**Wire drawing extrusion tips & dies**  
For extruding insulating materials over wire, cable and fiber-optic cable

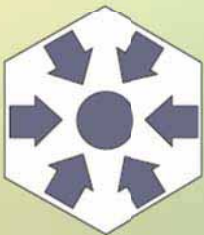


**Die room equipment & accessories**  
To ensure the lasting performance quality of your wire dies

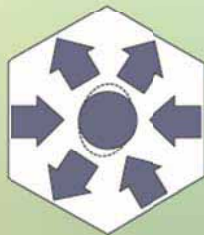
### STANDARD DIE STAMPING



*With X-ray orientation, the proper orientation plane provides more uniform wear characteristics around the bore circumference, producing rounder wire.*



**X-ray-oriented die**



**Nonoriented die**

### TYPICAL DIE SIZES BY WIRE TYPE

WIRE TYPE	DIE SIZE RANGE											
Stainless Steel	[Range bar]											
Tungsten	[Range bar]											
Brass Covered Steel	[Range bar]											
Copper Coated Steel	[Range bar]											
Bare Copper	[Range bar]											
Tinned Copper	[Range bar]											
Aluminum	[Range bar]											
<b>INCHES</b>	.005	.01	.02	.04	.08	.16	.32	.64	1.28	2.56	5.12	
<b>MILLIMETERS</b>	0.125	0.25	0.5	1.0	2.0	4.0	8.0	1.60	3.20	6.40	12.80	



Fort Wayne, Indiana, USA



Columbus, North Carolina, USA



London, Ontario, Canada



Metro Manila, Philippines

---

## **COMPANY LEGALITY**

---

### **Akte Pendirian Perseroan Terbatas PT. TUMAPEL JAYA SENTOSA**

Nomor : 02

Tanggal : 11 Juli 2016

---

### **Hukum Perseroan dari Menteri Kehakiman RI**

Nomor : AHU-0032725.AH.01.01.TAHUN 2016

---

### **Surat Izin Usaha Perdagangan (SIUP)**

Nomor : 503/0185/SIUP-M/ 35.07.303 / 2016

---

### **Tanda Daftar Perusahaan Perseroan Terbatas (TDP)**

Nomor : 132514701476

---

### **Surat Keterangan Domisili Usaha**

Nomor : 145/46/35.07.24-2005/2017

---

### **Surat Pengukuhan Pengusaha Kena Pajak**

Nomor : S-105PKP/WPJ.12/KP.1003/2016

Tanggal : 15 Agustus 2016

---

### **Nomor Pokok Wajib Pajak (NPWP)**

Nomor : 76.522.555.2-657.000

---

### **Referensi Bank (IDR)**

PT. Bank Mandiri (Persero) Tbk.

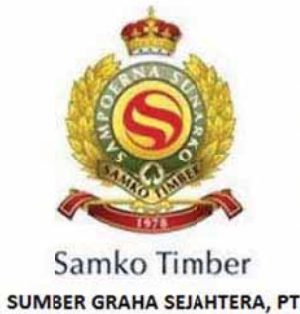
KCP Malang Singosari

Jl. Raya Singosari No. 141 Singosari Malang 65153

Nomor : 144-002155566-6

---

## CUSTOMER LIST MECHANICALS & LUBRICANTS



---

**CUSTOMER LUBRICANTS LIST**

PT. ASTRA HONDA MOTOR  
PT. BANDRO ENGINEERING SEMESTA  
PT. EDICO UTAMA  
PT. MURAMOTO ELEKTRONIK INDONESIA  
PT. BUKAKA FORGING  
PT. YKT GEAR  
PT. ASANO GEAR  
PT. INDONESIA TRC INDUSTRY  
PT. INDOSEIKI METAL UTAMA  
PT. JAKARTA MARTEN LOGAMINDO  
PT. PULOGADUNG TEMPA JAYA  
PT. FUKOKU INDUSTRIES INDONESIA  
PT. PK MANUFACTURING INDONESIA  
PT. FSCM MANUFACTURING INDONESIA  
PT. NITTO ALAM INDONESIA  
PT. TIMUR SURYA JAYA  
PT. MITSUBA INDONESIA  
PT. KD HEAT INDONESIA  
PT. KOHWA PRECISION INDONESIA  
PT. THEIKOKU PISTON RING INDONESIA  
PT. ISHIDA PRECISION INDONESIA  
PT. YAMAGUCHI INDONESIA  
PT. AFTECH RAND PERKASA

**CUSTOMER GREENEX**



**PATKOL**  
Public Company Limited



**NTN**



**DSST**



**Haier**

