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Tokyo Branch Osaka Branch Nagoya Sales Office Chiba Plant Akoh Plant Customer Center

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## MORE (5' COMPANY

A company is its people A positive corporate culture Aiming to become a more strategic R&D-oriented company Never compromising to tackle new challenges Rapid decision making

Solidifying our foundations as specialists in interface science, In order to achieve both "realization of a sustainable society" and the "improvement of corporate value throughout the medium and long term", we will continue to work on existing businesses and new business fields where future growth can be expected.

## MORESCO Group delivers sustainable one-of-a-kind products

In 1958, as a means to produce domestic lubricants at a time where imported specialty lubricants were dominant in the market, Matsumura Oil Research Corporation, our former company, was established by young researchers. Products including high vacuum pump oil that achieves high vacuum, fire-resistant hydraulic fluids required in the iron, steel, and automobile manufacturing line, and liquid paraffin used for cosmetics due to its extremely safe properties that have been produced since the company's establishment continue to be improved. By entering into the environment-friendly hot melt adhesive industry and grasping the needs of the era in advance through niche domains, we have been able to develop products with the largest international market share including hard disk surface lubricants. Currently, we are progressing into the energy device field that includes development of organic photovoltaics and organic device sealants as well as their preliminary elements including gas and water vapor transmittance measurement devices, and into the life science field making use of our unique synthesis technology. As an R&D-oriented company, we have cherished an open and natural corporate culture that respects humanity since our establishment.

#### Management Philosophy

 Under the motto of "R&D for users," the MORESCO group will contribute to our society by satisfying customer needs in the field of interface science.

2. As specialists in interface science, the MORESCO group will continue expanding into new business fields and providing new interface functions and services.

The MORESCO group will create new value by fostering a working environment that respects an individual and a freewheeling thinking.

> CEO, Representative Director, President Motohisa Morozumi

Aircrafts Cutting Fluids

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MORE SPECIAL

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Cosmetics Nanoemulsion

> Foods & Packaging Liquid Paraffin High Vacuum Pump Oil High Temperature Lubricating Oils

FACTORI

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Hard Disk Drive rd Disk Surface Lubricant

MORESCO products are connected to your daily lives in various aspects.

Attractions

Fire-resistant Hydraulic Fluids

COMPANY

As an R&D-oriented company that competes in the global market, we aim to contribute to development in various industries with our unique and highly technical "production" and "service."

Cosmetics Liquid Paraffin

Automobiles Die Casting Lubricants Fire-resistant Hydraulic Fluids High Temperature Lubricating Oils Hot Melt Adhesives Cutting Fluids High Vacuum Pump Oil

Machine Tools Cutting Fluids

MORESCO

Organic Photovoltaics

(OPV)



Organic EL Device anic Device Sealant

Lithium-ion Batteries Liquid Paraffin

## MORE SPECIAL COMPANY MORESCO



## **Automobiles**

Corporate specialty with various products that rank number one in the domestic market

Our die casting lubricants, fire-resistant hydraulic fluids, and heat-resistant grease base oil have the highest domestic market share, and are used in manufacturing processes for automobile parts produced around the world. Our cutting fluids, lubricants for hot forging, as well as hot melt adhesives for automobile interiors are well received by many customers for their quality and technical capabilities.

## Commodities

Safe and secure high quality products for products that come in contact with skin

Liquid paraffin, a tasteless and odorless transparent oil with high safety properties, is used in the cosmetics field. The oil is human-friendly, and is applied in skincare and haircare products, lipstick, and baby oil. It is also applied in medical fields including ointments and poultices. Our hot melt adhesives are safe and secure for use on human skin. Applied as components for paper diapers and pet sheets.

## **AUTOMOBILES**

#### **Die Casting Lubricants**



Die casting is a casting process performed by forcing molten metals under high pressure into mold cavities and solidified. Die casting lubricants are required to perform parting for high temperature metals and molds.



#### Fire-resistant Hydraulic Fluids

Fire-resistant hydraulic fluids are applied in hydraulic facilities where there are high risks of fire due to the use of high temperature metals in industries including the steel and automobile industries.



#### Cutting Fluids

utting fluids are used when cutting al parts. Cutting fluids reduce hat occur during processing the tool life span.



#### Lubricants for Hot Forging

Forging is a processing method where metal materials are compressed between molds and formed into a desired shape. Lubricants for hot forging are lubricants that are required when manufacturing engine parts and safety components for automobiles.

#### Hot Melt Adhesives

Hot melt adhesives are applied when attaching vehicle bodies with parts for each part of automobile interior. Does include volatile organic nds that affect the environment

## SANITARY MATERIALS



#### Liquid Paraffin

Liquid paraffin has a wide range of applications including as raw materials for cosmetics and pharmaceuticals. food packaging, and polystyrene resin, due to its transparency, tastelessness and odorlessness, safety, moisturizing and bacteriostatic properties, and high chemical inertness.

#### Hot Melt Adhesives



Human-friendly hot melt adhesives that include no solvents are applied as components and adhesives for medical supplies including paper diapers and pet sheets. Applied for a wide range of uses including automobiles, building materials, air conditioning filters, various labels, and envelope adhesives.



#### High Temperature Lubricating Oils

Base oil for bearing grease that rises o high temperatures in electrical ents for automobiles. These ems are applied in harsh vironments as bearings for OA devices as well as lubricants for baking ovens and driving units for drying furnaces.









#### Application in cosmetics and pharmaceuticals including ointments, cream, and poultices

Applied in cosmetic products including baby oils, lotion, hair treatment, cleansing oils, lipstick, and foundations.





#### For sanitary materials

Applied as components or for displacement-proof tape in products including paper diapers, pet sheets, and sanitary napkins.

#### For adhesive processing

Applied in products including labels, delivery tickets, tape, insect traps, adhesive cleaners, and envelope adhesives.



## Information equipment

Active in various fields with products including some that are unique in the world

MORESCO products are active in various applications starting from the manufacturing process up to the final product. For example, for PC manufacturing, products including die casting lubricants are applied when molding the chassis, high vacuum pump oils are applied in the semiconductor manufacturing process, and motor bearing oils and our unique hard disk surface lubricants are applied for hard disk drives.

## **Energy devices**

Manufacturing for the next generation fully making use of our expertise

MORESCO specializes in organic synthesis, mix design, and denaturalization of polymeric materials. Hybridizing these techniques, we aim to progress into the organic EL (organic electro-luminescence) and organic photovoltaics (OPV) fields where growth can be expected in the future.

ENERGY

## **INFORMATION DEVICE**



#### Liquid Paraffin

Liquid paraffin is a highly pure, chemically stable non-polar saturated hydrocarbon created thoroughly removing unsaturated components or impurities. For its characteristic, liquid paraffin is applied when manufacturing separator film for lithium-ion batteries.



#### High Vacuum Pump Oil

Our high vacuum pump oil is applied in laboratory equipment that require high vacuum devices and ultra-high vacuum including semiconductors, silicon wafers, processes including deposition, heat treatment, and





#### Organic Device Sealant

The disadvantages of organic EL devices are that the organic EL elements degrade and stop emitting light when even the smallest amount of water enters the device. The sealant 'Moisture Cut" prevents water from entering the device and contributes to the long-life of organic EL devices.



#### Hard Disk Surface Lubricant

Specialty lubricants (functional fluids) that lubricates gaps between magnetic disks and magnetic heads of hard disk devices built into equipment including PCs. It contributes to the reliability of hard disk drives by protecting information saved in the disk with nano-scale thin film.





Organic Photovoltaics

The major characteristic of our organic photovoltaics that have power generation layers composed of ultra-thin organic materials is that they are light and can be bent, eliminating the necessity for reinforcement, making it easy to estimate installation locations







#### Gas & Water Vapor Transmittance Measurement Devices

A device that can measure even the smallest amount of permeable water equivalent to the amount of water dropped into a soccer stadium. This device enables the world's highest level ultra-high sensitive measurement and short-time measurement.



## MORE STRATEGIC COMPANY MORESCO

## Introduction of R&D

#### Finely refined materials are the result of our researchers' creativity.

Moresco, which has introduced various products to the world as specialists in interface science, is expanding its technical field into the life science field. Inheriting the spirit of research established as an R&D-oriented company, we also employ the creativity and spontaneousness from each our researchers to carefully nurture various seeds of technologies.

#### Applied research on nanoemulsion

Achieves high permeability of functional ingredients

Nanoemulsion is emulsified particles (small capsules) containing functional ingredients dispersed in water. MORESCO's nanoemulsion is extremely small at 10 nm, is transparent, and has high penetration. Various nano-emulsified functional ingredients can penetrate more efficiently with a smaller amount, contributing to functional improvement and resource saving.

Research and develop

ment

Fusing our base blending and synthesis technologies to create unique products

- Functional Fluids Division R&D Group
- Hot Melt Adhesive Division R&D Department
- Synthetic Lubricants Division R&D Department
- Liquid Paraffin & Sulfonates Division Technology Department
- Metal Working Fluids Division Global R&D Group
- Device Materials Division R&D Department
- Life science R&D Department
- Corporate R&D Department

Creating unique products

### Allergy therapeutic agents

Aim to solve the social problem of allergies

In recent years, it is said that one in two people in Japan suffers from some kind of allergic disease, which is one of the major social problems. MORESCO is conducting drug discovery research on new allergy treatments in collaboration with Ehime University Graduate School (Medicine). Applying the synthesis and purification technology cultivated in the development of MORESCO's lubricating oil, we are advancing drug discovery research toward the development of radical therapeutic agents for a wide range of allergic diseases such as bronchial asthma, allergic rhinitis, and atopic dermatitis... We will promote joint research and development toward the early commercialization of therapeutic agents.

The motivation of innovation. Pursuing new developments

At the 2nd R&D building established in 2015, studies are being performed for various products that are to become key pillars for the future of MORESCO.

at our 2nd R&D building



our customers and the world

with our sales team to swiftly implement the needs of our customers and the market in our products



#### Autophagy activator

Control autophagy and contribute to improving healthy life expectancy

Autophagy has been attracting a great deal of attention in recent years as it has been found to be involved in various phenomena and diseases related to lifestyle-related diseases and aging. Autophagy is the action of decomposing and reusing unnecessary proteins and pathogenic bacteria in cells. MORESCO is conducting drug discovery research on new compounds that control autophagy with Osaka University Graduate School (Medicine), which is a ultra-fine research institute for human autophagy. In an aging society, we will contribute widely to society through this activity.



Jointedly working with the sales team to pursue the needs of

In order to provide better products to our customers, we work in close coordination Further pursuit to achieve reliable results

MORESCO uncovers needs by communicating with customers and takes on challenges to tackle new R&D fields to achieve further value creation



### Establishing MORESCO as a global company by developing global human resources.

MORESCO's global strategy is not limited simply advance in search of bases with low production cost. Performing production in optimal regions and expanding sales in optimal sales networks. In order to do so, staff that are sent to each location from Japan thoroughly confer with local communities, taking time to seep MORESCO's corporate culture into each location. This is a fine example of MORESCO's human resources development.

We aim to heighten our corporate value with a global perspective

## MORE SPEEDY COMPANY MORESCO

### Community-based activities with a global perspective.

Our first step in overseas expansion began with the establishment of MORESCO Thailand in 1995. Starting with the automobile industry, various main domestic industries shifted their production bases overseas, and we had also decided that production and sales was required in locations with demand. After Thailand, we continued to expand our bases to China, North America, and Indonesia, and in 2017, MORESCO HM&LUB INDIA was established.

We have established a global manufacturing and sales system. Our North American branch is considered the "2nd MORESCO Japan" that we aim to establish as a total corporate structure including R&D as well as to become the engine that drives the growth of our Chinese and Indian branches.

#### Group Companies

#### North America

#### Diversified development by arranging the R&D system

Enhanced system of product improvement, development, and customer service. We aim to diversify development by applying the entire MORESCO business to the American





MORESCO USA Inc

#### China

Co., Ltd.

#### Further growth by enhancing the local network

Arranging local sales networks in order to enhance sales, not only to Japanese funded corporations, but also to Western and Chinese companies. Also, we are making efforts to augment local community-based product development and customer service by enhancing local development capabilities.











MORESCO HANANO DIE-CASTING COATING (SHANGHAI) CO., LTD.



TECHNOLOGY CO..LTD

#### Thailand

#### Enhancing the foundation for profits

Developing the lubricant business with a focus on fields related to the automobile industries. We are promoting contract manufacturing in order to support



MORESCO (Thailand) Co.,Ltd

#### Indonesia

Business development in automobile related and sanitary material fields

Focusing on hot melt adhesives for automobile related fields and sanitary materials. We aim to further raise the shares in the midst of high economic growth



PT.MORESCO INDONESIA



#### India



PT.MORESCO MACRO ADHESIVE

#### Initiating local production and sales in a growing market

We are further proceeding to develop the hot melt adhesive business and lubricant business in the Indian market that is expected to grow even more.



MORESCO HM&LUB INDIA PRIVATE LIMITED

## MORE STRONG COMPANY MORESCO

### mother factory

## Akoh **35,000**m<sup>2</sup>

The Akoh Plant started operating in 1986, reviewing hot melt production methods as well as doubling production volume and efficiency through full automation in 2008. In recent years, we have realized the introduction of automatic bag opening machines as well as inventory control of certain product lines using barcodes. Also, following the completion of our new warehouse, our products are collectively managed within the same site. In the future, we will take on the role of the mother plant of the world by similarly applying our accumulated production techniques overseas as well as globally enhancing productivity and quality.



Main products of the Akoh Plant

Hot melt adhesives, fire-resistant hydraulic fluids, die casting lubricants, cutting fluids, high vacuum pump oil, and high temperature lubricating oils

#### Hot Melt Adhesives

"Holt melts are liquefied, mixed, forced out into cold water, and shaped into a pillow ape. The molded pillow is cooled in a pool water and checks for foreign nd stains as well as the form are ugh visual inspection.





Main products of the Chiba Plant

Liquid paraffin & Sulfonate



# Sulfonate

#### [Fire Drill]

Evacuation drills, fire-fighting exercises, cardiopulmonary resuscitation using AED, oil recovery training in preparation for oil spills at nearby ocean areas, and emergency convocation training are also carried out.



#### [QC Circle] <Chiba & Akoh>

Members from various sections collectively aim to attain achievements by finding solutions through task discovery.



#### [Goi Joint Disaster Prevention Council] We are affiliated with the "Goi Joint Disaster

Prevention Council," an organization composed of periphery corporations and w are prepared for disasters



#### **Domestic Offices**



Tokyo Branch

This is the office for staff in sales, work related to trade, and the support team. The main support areas are eastern to northern regions of Japan.



Osaka Branch

This is the office for staff in sales, purchasing and the support team. The main support area is the western regions of Japan including the Kansai and Kyushu regions.



Nagoya Sales Office

This is the office for staff in sales for lubricants used in automobiles and aircrafts, as well as the support team. The main support area is the central regions of Japan.

#### **Key Subsidiaries**



MATSUKEN CO., LTD.

Handles all of MORESCO Group's environment related products with a focus on water treatment equipment and water treatment chemicals as well as washing machines and cleaning agents.



substances.

Liquid paraffin and sulfonate is created by refining sulfonated base oil (petrol lube-oil distillate). Sulfonate acts as a surfactant which attaches on to metal surfaces achieves anti-rust effects.



## Chiba 25,000 m<sup>2</sup>

The Chiba Plant began its operations as a plant to produce liquid paraffin and petrol sulfonate in 1996. A process computer was introduced in 1990 and sulfonation reaction apparatus from America in 2009. In recent years, steam boilers for natural gases were introduced as an effort for environmental consideration. Also, shipping fields for tankers were expanded as a measure to smoothly increase production volume. In 2016, a radioactive waste evaporator was introduced to perform biological treatment as a measure to reduce waste liquid treatment costs.

#### [Beautification of Plant Surroundings]

Cleanup activities of the area around the plant are carried out every third Wednesda at the Chiba Plant





MORESCO TECHNO CO., LTD

Handles analysis services that contribute to user environment safety including analyses of lubricants in general, management tests, and analyses of toxic



ETHYLENE CHEMICAL CO., LTD.

Handles manufacturing and sales of chemical products for automobiles and Naiburain (heat transfer medium

## MORE SENSIBLE COMPANY MORESCO

#### [Activities to Achieve Global Environment Conservation]

### Applying our technical capabilities to reduce of environmental load as a chemical manufacturer.

#### [Environmental Policy]

We recognize that we have responsibilities to ensure a better environment for the generations to come. We are making efforts for the maintenance of environmental conservation through activities of each unit including R&D and manufacturing. Also, with "R&D for users" as our principle, we are making efforts to deliver products and services with consideration for the environment.

[Activities for Quality]

[Quality Policy]

and society.

We deliver products that live up to customer expectations through our quality assurance activities based on our quality policies. We will achieve the high quality by creating a quality assurance system that requires all our staff to think and act together.



#### Resource saving and production efficiency through small quantity application of die casting lubricants

In the die casting production process, die casting lubricants are applied in order to easily remove the product from the die casting Generally, die casting lubricants are diluted several ten to several hundred times for use, but at MORESCO, water-soluble minimum quantity spray type that is applied optimal amount was developed, and is available commercially. The amount applied is approximately 1/100 and there is essentially zero liquid waste that drips from the die casting machine. Up to approximately 30% of dummy trials can be reduced. Prevents heat cracks in molds, extending the molds lifespan to approximately twice the original length.



Due to the small quantity application technique, the environment of the plant is improved, eliminating stickiness and staining through prevention of oi smoke occurrence

#### Techniques of hot melt adhesives that prevent air pollution and sick building syndrome

VOC (Volatile Organic Compounds) included in adhesives, wallpaper, and coating materials is one of the causative agents of photochemical smog and air pollution, and there is a risk of sick building syndrome indoors and inside vehicles. hot melt adhesives that do not use organic solvents are environment-friendly adhesives Currently, in addition to pursuing a technique that can eliminate remaining solvents (under 0.1%) which occur during material synthesis that are included in hot melt adhesives that do not use organic solvents, we are focusing on technical development to eliminate bad oder which is a characteristic of adhesives



#### From wastewater to reusable treated water through wastewater treatment with UF membrane units

UF membrane treatment is a physical treatment method that separates and filters wastewater such as oil and water with membranes (UF membrane) that have microscopic holes instead of chemical treatment applying conventional wastewater treatment agents. Since energy for its operation requires only power for the pump that delivers wastewater to the membrane. the unit possesses high energy-saving properties. Also, since the unit is fully automatic and does not require adjustment and chemical management for concentration fluctuation of wastewater, it can help achieve labor saving at the plant. In addition to reduction of environmental load, the unit is effective in reducing load on personnel, and contributes greatly to improving laborer shortage in the modern world.



Commercialization system for our users and society

MORESCO applies design reviews (DR) during the planning, development, and production stages of each product. In the 5 steps of DR including the start of development to the design assessment. trial assessment, and market assessment steps, we continue to exchange feedback at each step. By going through inspection processes such as this one, products with high reliability that match customer needs are created. We believe our meaning of existence is to contribute to society through these products.





## To be a corporation that delivers safety and security for our customers

#### Maintaining a high quality based mind through a positive and accepting organization

MORESCO established the Quality Assurance Group and Chemical Laws and Regulations Group within the Quality Assurance Department in 2018, and enhanced each promotion system.

The Quality Assurance Group further enhances the link between the development department, production department, and quality management department of each plant and promotes better quality assurance activities.

The Chemical Laws and Regulations Group flawlessly collects both domestic and international legislations that are frequently revised, and takes actions to observe the environment as well as laws and regulations that continue to change in a global scale by working closely with other related departments



## MORE **SMILE** COMPANY MORESCO

#### [Actions for Employees]

### Enhancing each employee's potential in an environment with diverse human resources and diverse ways to work.

#### [Human Resources Policy]

Based on the key words self-realization, harmony, development, proactiveness, and global mind, we aim to improve the business skills of each employee, allowing them to demonstrate their uniqueness, which will then lead to raising the level of satisfaction for all employees.

#### [Activities for Society]

[Social Contribution Policy] As an R&D-oriented company that competes in the global market, we aim to contribute to the development of society with our unique and highly technical "production" and "service.



#### MORESCO's work style reform

MORESCO strives to create a work environment where employees can understand each other's positions and work with abundant feelings. We have enhanced the system that allows employees to choose various work styles.

In the future, we will promote Creating a workplace where employees can play an active role while feeling rewarding by improving the work environment using DX, Improving labor productivity through RPA (Robotic Process Automation), enhancement of retirement age reemployment system, etc.

We are promoting reforms to make our emplovees smile.



#### Fair and equitable assessment and educational system

What are our employees goals? What kind of visions do they have? Having our employees share these goals and offering support to achieve them is our responsibility as a corporation. We support self-realization in each of our employees through hearings and self-return systems as well as through in-house seminars and career training. We aim to enhance the skills our employees have by providing support for foreign language learning and acquisition of qualifications.



#### Diversity management that respects the unique traits of individuals

We have many employees with various personalities and backgrounds, and we believe that dedicatedly enhancing their potential will fuel the capabilities of MORESCO to newer levels. We offer maternity leaves, childcare leaves, and childcare hours. When these workers return to work, they will return to their former departments and maintain continuity of their work so that they will be capable of applying their knowledge and experiences. We have a proactive stance in recruiting foreigners as well



#### Assistive vehicles

As a part of social contribution activities, since 2014, we have annually been donating assistive vehicles to Kobe City where our headquarters and research center is located, Akoh City where the Akoh Plant is located, and Ichihara City where the Chiba Plant is located. The donated vehicles are applied for uses including home visits for the elderly, visits to retirement homes, and as transportation to facilities for the disabled. The donations are contributing to the development of community welfare.

#### "MORESCO" scholarship to Sichuan University

The "MORESCO" scholarship to Sichuan University was established in November 2013 as a means to support the development of educational businesses at Sichuan University. Donations are annually provided by MORESCO Group and the scholarships are awarded to full-time undergraduates and researchers that are officially registered to School of Chemical Engineering, Sichuan University.

#### Introduction of organic photovoltaics

In March 2018, our organic photovoltaics (OPV) that we had been developing was introduced at the "Minamisanriku Sun Sun Shopping Village." OPVs are the next generation of solar cells, greatly differing from conventional silicon type solar cells for their see-through and high design properties, ecological properties throughout the production to disposal stages, as well as their ultra-thin and light film properties. Other than applications in electronic paper and power for sensors, they are expected to be applied in various scenarios such as for buildings and greenhouses.



### Social activities applying unique techniques for the future.

#### Recycling water-glycol hydraulic fluids

Water-glycol hydraulic fluids are ultra safe and highly fire-resistant hydraulic fluids, but their performances drop as time passes. Conventionally, deteriorated water-glycol hydraulic fluids must be disposed as industrial waste, but environmental loads that arise as a result of incineration was deemed a major problem. We have developed a technique that enables us to extract only the deteriorated additives, which make up 20% of the hydraulic fluids, and recycle the clean water-glycol components

