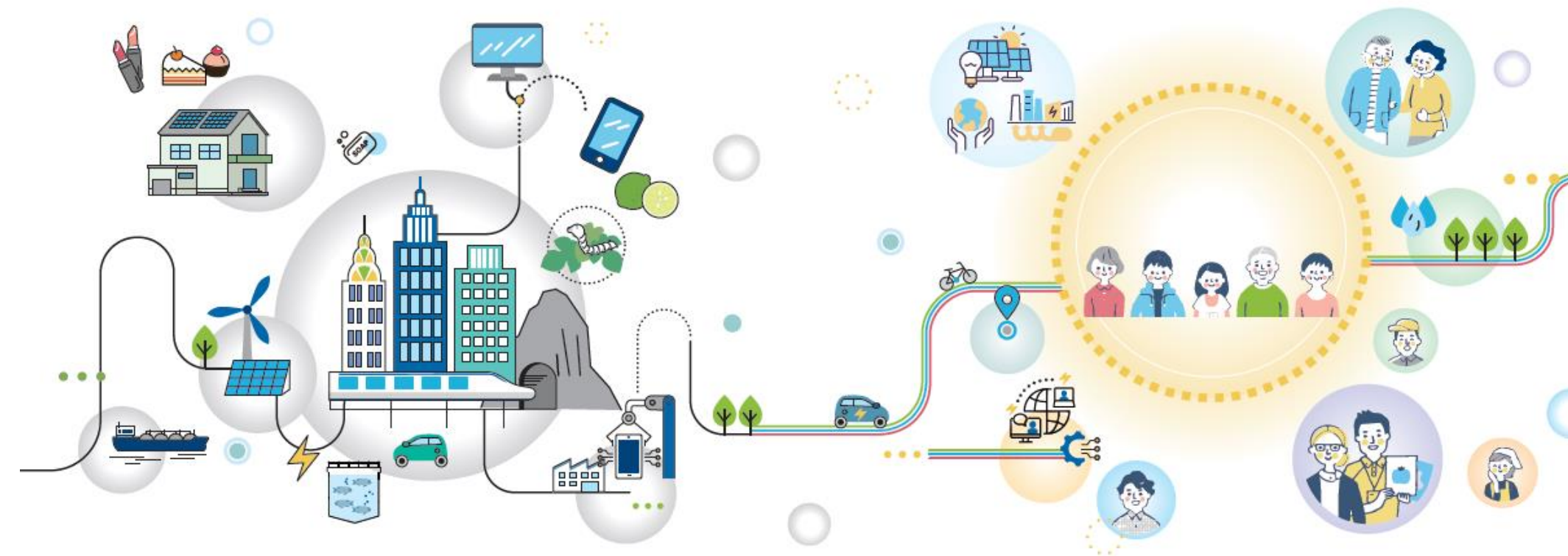


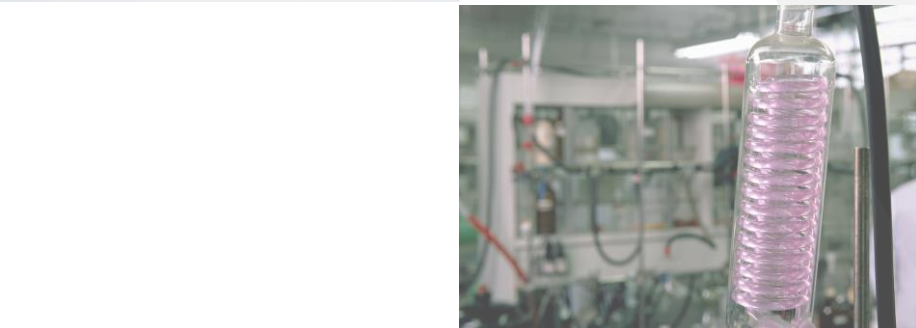
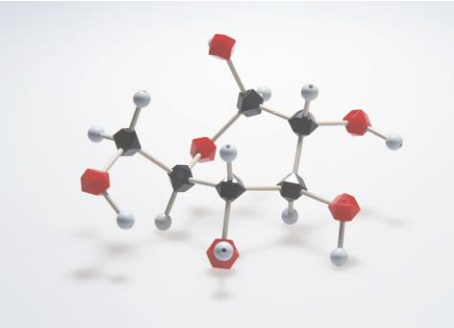
DKS Co. Ltd.

## Technologies by Industry



EIMFLEX, NEW FRONTIER, LAMIPROOF, PQ-60,  
CATIOGEN, ELEXCEL, RESISTAT, PYROGUARD,  
DK ESTER, MONOPET, METACLEA, PITZCOL, TRIBIO,  
DD-1760, DD-3800, SUPERFLEX, HITENOL, NOIGEN,  
CELLOGEN, ELASTRON, LAVELIN, DK BE-CLEAR, AIRKEM,  
NIOCAN, RHEOCRISTA, COSMELIKE, NEO-HITENOL,  
AMOGEN, CREEJUS, MONOGEN, Gembu Soaps, MONOACE,  
DK FOAMER, AIPHTACT, KAINOU TOUCHUKASOU,  
AMENICLEAN, DEOPELLET, DIKSSOL, PLYSURF, SHALLOL,  
DK POLYOL, SUPER SRF, KOD-M, SELFLOW and EPAN are  
trademarks or registered trademarks of DKS Co. Ltd.





# Chemistry provides a solution

【Company credo】

Contributing to the nation and society through industry

【Mottoes】

Quality First, Cost Reduction, and R&D Efforts

We aim to be a “Uni-Top” company that is appreciated for its uniqueness, not quantity.

We have a variety of technologies and knowledge gained from our experiences in a wide range of industrial fields. Our thousands of products and services will surely serve the needs of our customers!

## CONTENTS

/ Company Profile	p.4
/ Technology History	p.5
/ Electronics & IT	p.6
/ Semiconductor	p.8
/ Environment & Energy	p.10
/ Mobility	p.12
/ Life & Wellness	p.14
/ Core Materials	p.16
/ Network	p.18



# Company Profile

- Corporate name : DKS Co. Ltd.
- Start of business : April 1909
- Establishment : August 1918
- Headquarters : 48-2 Higashikujo-Kamitonodacho, Minami-ku, Kyoto 601-8002, Japan
- Capital : JPY 8,895,000,000
- No. of employees : 594 (Consolidated 1,138) as of end March 2025



## Electronics & IT



Contribution to a digital society

## Environment & Energy



Contribution to a decarbonized society

## Life & Wellness



Contribution to a healthy society

## Core Materials



Contribution to a circular society

## Uni-Top strategy

Unique×Top

Aim for the top through uniqueness, without pursuing scale

— A company that is chosen by customers for its comprehensive proposal capabilities, including its technologies, quality and services —

# Technology History

## History

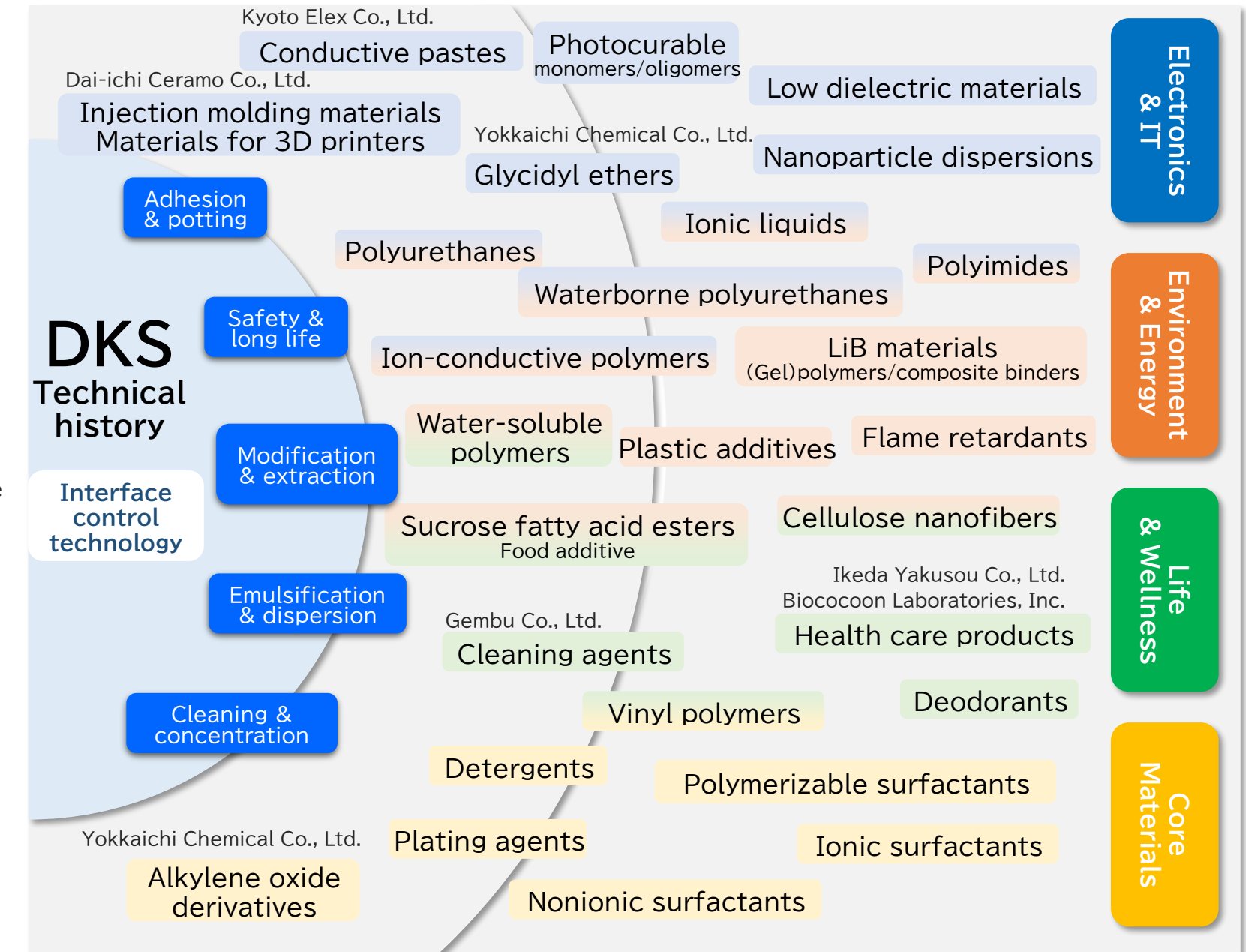
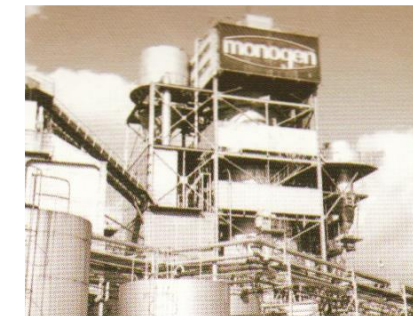
1909  
Business started at Ohno Kungyokudo  
Launched cocoon unwinding agent

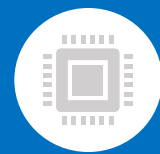


1915  
Launched Gembu Marseille Soap



1934  
Launched a higher alcohol-based detergent (later MONOGEN)





# Electronics & IT

# ◎ Materials to connect the world

Adding high-functions to IT and electronic parts for PCs, smartphones, etc.



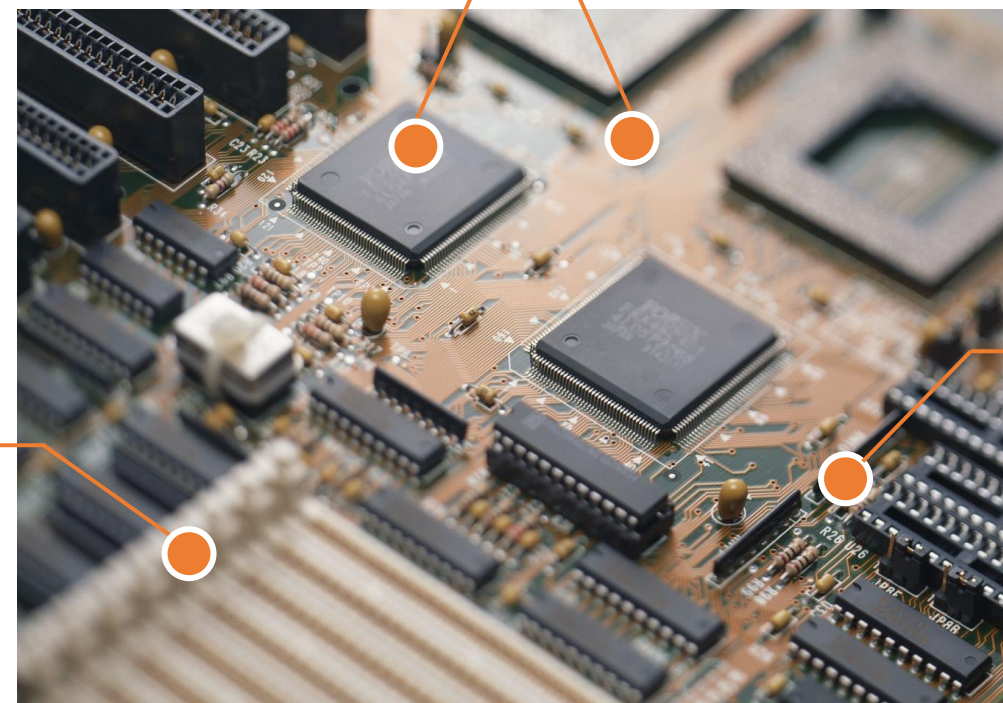
## Mounting boards

Our products are used to remove flux used in processing and as surface modifier, antioxidant and protective layers.

- ▶ EIMFLEX, NEW FRONTIER (potting and coating agents)
- ▶ DK BE-CLEAR (solder/flux remover)
- ▶ LAMIPROOF (antioxidant)
- ▶ Conductive pastes

## Printed circuit board (PCB) materials

- ▶ Thermal crosslinking low-dielectric resins



## Packaging materials

We have various high-function materials e.g. halogen-free phosphorus flame retardants for low dielectric resins and heat dissipating gap fillers.

- ▶ PQ-60 (phosphorus flame retardant)
- ▶ Heat-dissipating gap filler
- ▶ Two-component polyurethane resins (sealant, adhesive)

## Glass cloth

- ▶ CATIOGEN (antistatic agent)

## Display materials

We provide materials suitable for various parts e.g. anti-reflection films, polarizing plates, and backlight units.

- ▶ Adhesion improving primer
  - Waterborne polyurethanes
- ▶ High refractive index photocurable coating resins
  - High-reactive low-viscous polyfunctional monomers
  - Inorganic nanoparticle dispersions
- ▶ ELEXCEL, RESISTAT, CATIOGEN (antistatic agents)



## Other materials

- ▶ Materials for 3D printing
- ▶ Zirconia feedstock (optical fiber connector component)

## Frames

- ▶ PYROGUARD (flame retardants)

## TOPIC

With our sucrose derivative technology which uses natural raw materials, we are always looking for applications in new areas. By an application to optical materials, we are contributing to carbon neutralization.

- ▶ DK ESTER (sucrose esters of fatty acids)
- ▶ MONOPET SOA (sucrose octa-acetate)
- ▶ MONOPET SB (sucrose benzoate)





# Semiconductor © From front- to back-end processes

Semiconductor technology is evolving day by day as our life becomes more and more digitalized. We offer process agents, sealants, etc., based on our core surfactant technology.



## Cleaning agents

We provide cleaning agents essential to semiconductor manufacturing processes based on our surfactant technology.

- ▶ DK BE-CLEAR, METACLEA (cleaning agents)
- ▶ Penetrants, dispersants

## Photoresist materials

We develop photoresist materials that protect certain areas of wafers. We also develop photomask-related materials, and our cleaning agents are widely used.

- ▶ Photocurable resins
- ▶ Cleaning agents

### Wafer-making

● Cutting silicon ingot  
● **Wafer polishing**  
● Silicon wafer

### Front-end process

● Cleaning  
● Thin film deposition  
● **Photolithography**  
● Etching  
● Ion implantation  
● **Planarization (CMP)**

## Agents for CMP

We have a lineup of materials for chemical mechanical polishing (CMP) processes.

- ▶ PITZCOL (polymer dispersant)
- ▶ High-functional cleaning agents
  - Organic bases

## Agents for tapes

We develop agents for back grinding and dicing tapes.

- ▶ ELEXCEL (antistatic agent)
- ▶ NEW FRONTIER (photocurable resin)

### Back-end process

● Dicing  
● Wire bonding  
● Molding  
● Final inspection

## Sealants

We develop *polyimide materials*, which can be used as an encapsulant for power semiconductors that require high heat resistance.

- ▶ Epoxy resin curing agent
- ▶ Low thermal expansion resins
  - Polyimide materials

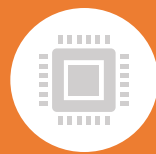
### Packaging

● **Packaging**

## Packaging materials

We develop various high functional materials such as flame retardants for low dielectric resins and heat dissipating gap fillers.

- ▶ PQ-60 (phosphorus flame retardant)
- ▶ Heat-dissipating gap fillers
- ▶ Two-component polyurethane resin (sealant)
- ▶ High-reactive and low-viscous polyfunctional monomers
- ▶ Thermal-crosslinking low-dielectric resin
- ▶ Metal antioxidant



# Environment & Energy ◎ Caring for our environment

We undertake initiatives to promote SDGs-related activities and carbon neutralization, focusing particularly on decarbonization and reduction of environmental impacts. We provide products that are environmentally friendly, and/or products suitable for the energy industry.



## Environmentally friendly products

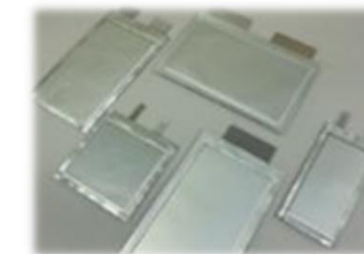
We have a lineup of products made from natural materials e.g. sugar and cellulose, which are used in various applications such as food, energy, and agrochemicals. We also have other products, e.g. photocurable materials that save energy consumption, PLA modifier, water-based materials, and petrochemical-free materials.



- ▶ Sugar-derived products
  - Sucrose esters of fatty acids • Sucrose octa-acetates • Sucrose benzoates
- ▶ Cellulose-derived products
  - Sodium carboxymethyl celluloses • Cellulose nanofibers
  - Thermoplastic celluloses • Flame retardant celluloses
- ▶ NEW FRONTIER (photocurable resin)
- ▶ TRIBIO (polylactic acid modifier)
- ▶ Waterborne polyurethanes
- ▶ Petrochemical-free surfactants

## Chain explosion prevention

- ▶ Anti-chain explosion agent (polyurethanes)

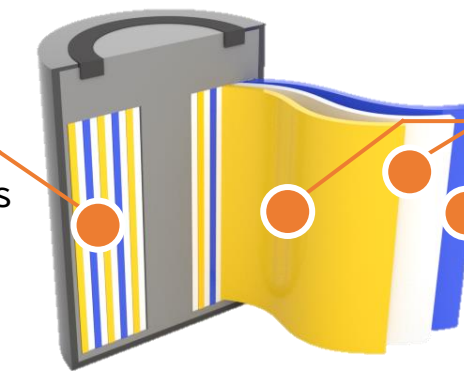


## Battery materials

We contribute to realization of more sustainable society by promoting battery materials.

## Electrolyte materials

- ▶ Flame-retardant electrolytes
  - Ionic liquids
- ▶ Gelling agent
  - (Gel)polymers



## Additives for positive/negative electrodes and separators

- ▶ Dispersants, thickeners
  - Sodium carboxymethyl celluloses
  - Cellulose nanofibers
- ▶ Adhesives
  - Water-based composite binders
  - Solvent-based polyimide resins

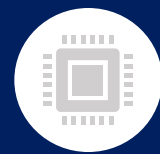
## Energy industry

We manufacture high-performance conductive pastes for solar cells, which have high conductivity and excellent printability to realize high output of solar panels. We also have potting agents for power conditioners and CFRTP matrix resins which contribute to lightweighting and strengthening of windmill turbines.

- ▶ DD-1760, DD-3800 (conductive pastes)
- ▶ EIMFLEX (potting agents for PCBs)
- ▶ PU-based CFRTP matrix resins







## Mobility

## Higher safety, more comfortability

A variety of functional materials that contribute to lightweighting, higher performance, and enhanced safety of automobiles

### Paints/Coatings

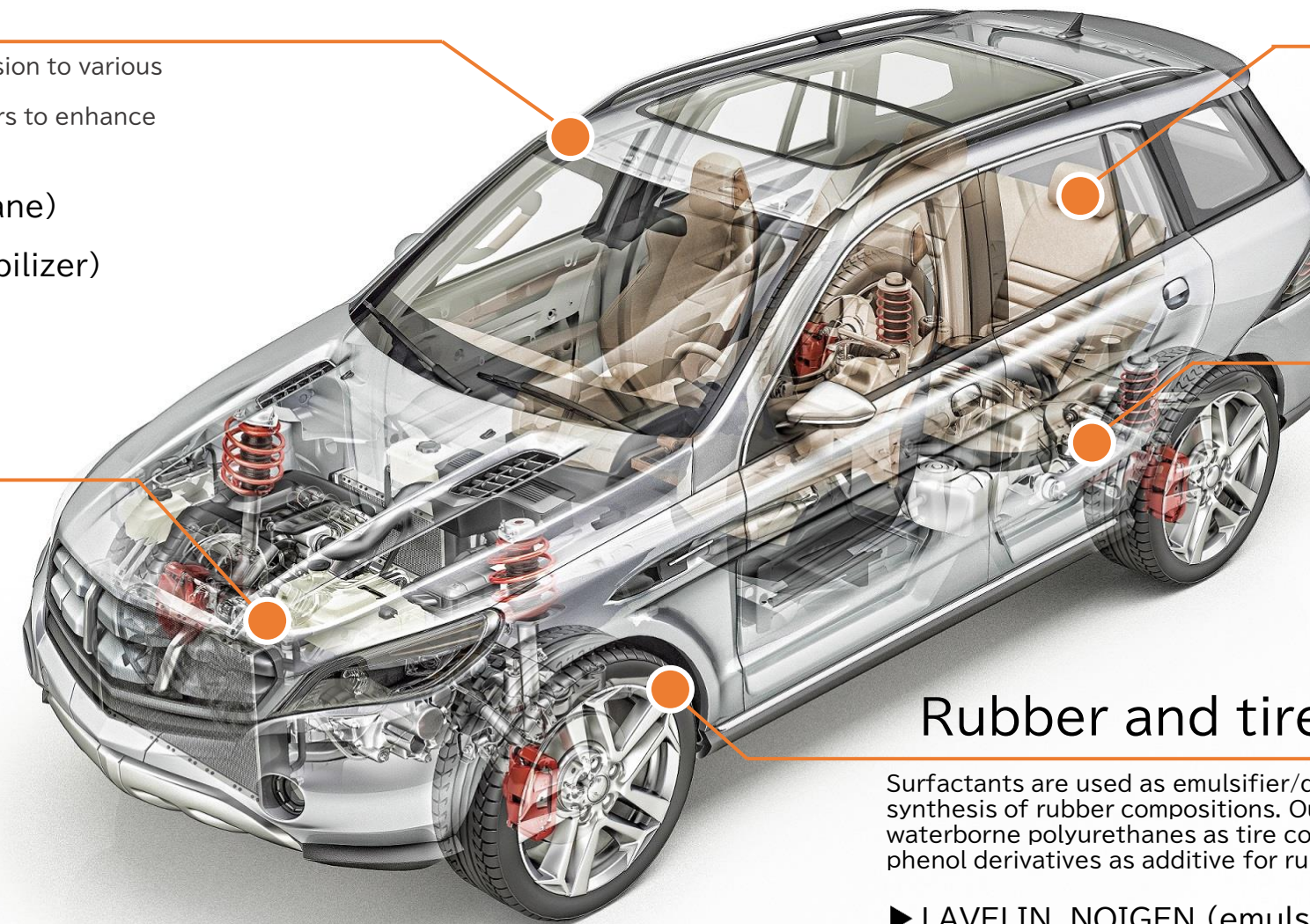
Waterborne polyurethanes, which have good adhesion to various materials, are used in exterior and interior paints. Surfactants are used as dispersants/compatibilizers to enhance stability of paints.

- ▶ SUPERFLEX (waterborne polyurethane)
- ▶ HITENOL, NOIGEN (dispersant/solubilizer)

### Electric/Lithium-ion battery (LiB) components

To contribute to sustainability improvement, we develop LiB and peripheral materials e.g. water-based adhesives for negative electrodes and dispersion stabilizers. Potting agents are widely used to enhance performance and reliability of PCBs. We have many other materials that can achieve higher functionality.

- ▶ ELEXCEL (material for LiB)
- ▶ CELLOGEN (dispersion stabilizer for LiB)
- ▶ EIMFLEX (potting agent for PCBs)
- ▶ NEW FRONTIER (photocurable coating agent)
- ▶ PYROGUARD (flame retardant)
- ▶ Various functional resins for heat dissipation, chain explosion prevention and insulation



### Interior and exterior

Waterborne polyurethanes provide durability, elasticity and abrasion resistance and are used in synthetic leathers for automobile seats, seatbelt resins and decorative films.

- ▶ SUPERFLEX (synthetic leathers)
- ▶ SUPERFLEX, ELASTRON (decorative films)

### Structure

With our unique urethanization technology, we develop light-weight and high-strength resins to contribute to lightweighting of automobiles.

- ▶ PU-based CF RTP matrix resins

### Other materials

We have space deodorizers and fiber binders to improve the environment inside automobiles.

- ▶ DK BE-CLEAR, NOIGEN (cleaning agents)
- ▶ AIRKEM, NIOCAN (space deodorizers)
- ▶ SUPERFLEX, ELASTRON (fiber binders), CATIOGEN (antistatic agent)

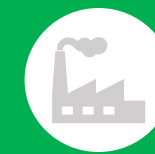
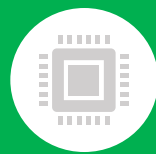
### Rubber and tire parts

Surfactants are used as emulsifier/dispersant for synthesis of rubber compositions. Our lineup includes waterborne polyurethanes as tire cord adhesive and phenol derivatives as additive for rubber.

- ▶ LAVELIN, NOIGEN (emulsifier/dispersant)
- ▶ ELASTRON (adhesive)
- ▶ Phenol derivatives (DSP)







# Life & Wellness ◎ For healthy and pleasant 100 years

We provide materials and related technologies that enhance comfort in living environments. They are used in a wide range of fields surrounding our daily lives.



## Personal care products & detergents

Since DKS products give good texture and emulsion/dispersion stability, they are used as thickeners and stabilizers for personal care products. Surfactants with antibacterial and cleaning effects are also widely used.

- ▶ RHEOCRISTA (cellulose nanofibers)
- ▶ COSMELIKE (sucrose esters of fatty acids)
- ▶ NOIGEN, CATIOGEN, NEO-HITENOL, AMOGEN (surfactants)
- ▶ CREEJUS (polyvinyl pyrrolidones)
- ▶ MONOGEN, Gembu Soaps (soaps, detergents)
- ▶ Phenoxyethanol (preservatives)

Biococoon Laboratories, Inc.  
Morioka City, Iwate Prefecture

A DKS Group company and an Iwate University venture with over 40 years of experience in silkworm cordyceps researches



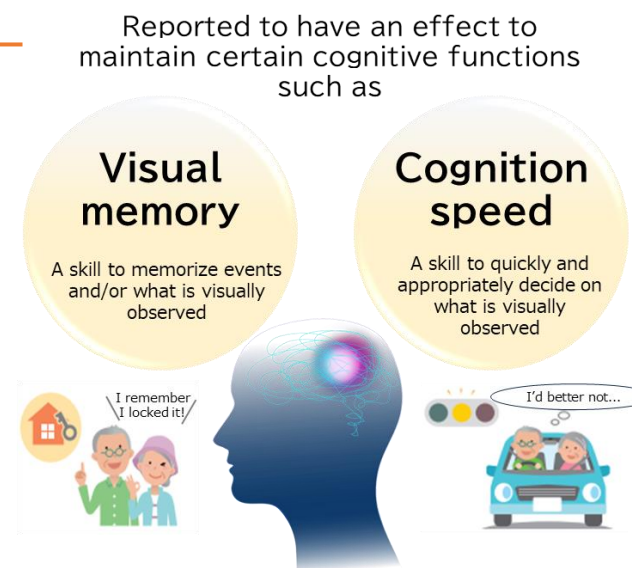
## Food & pharmaceutical additives

DKS emulsifiers are used for various food products for oil-water emulsion stabilization, aeration, and inhibition of starch aging. They are also used as thickeners and/or lubricants.

- ▶ DK ESTER (sucrose esters of fatty acids)
- ▶ MONO ACE, DK FOAMER (emulsifier blends)
- ▶ AIPHTACT (polyvinyl pyrrolidones)

## KAINOU TOUCHUKASOU

New functional food containing *Naturido*, a novel ingredient we discovered in *Isaria Japonica* that helps to maintain cognitive functions.



of middle-aged and older adults

## Deodorizing & fragrance

We have a lineup of low-cost, effective deodorants and deodorizers for odor control in workspace around factories and commercial and living spaces.

- ▶ AIRKEM (natural-based odor counteractant/deodorizer)
- ▶ AMENICLEAN (chemical reaction deodorizer)
- ▶ DEOPELLET (humus soil-based deodorizer)
- ▶ NIOCAN (deodorizer, disinfectant)



Ikeda Yakusou Co., Ltd.  
Miyoshi City, Tokushima Prefecture

Manufacturing sudachi products with its extraction and pulverization technologies

## Contract manufacturing

Ikeda Yakusou offers contract-based manufacturing services such as pulverization for health foods and chemical products at a GMP-certified plant. It has established a strict quality control system.

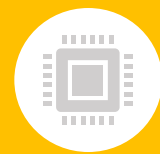
- ✓ High precision extraction technology
- ✓ High quality spray dryer (SD)
- ✓ Strict quality control systems: GMP, QQP, ISO9001 and HACCP



(from left)  
Extraction tank,  
spray dryer







# Core Materials

# ◎ Making our life better

DKS products are widely used in a variety of parts and materials in our daily life.



## Agriculture

DKS products are used as a binder to prevent powdering of agrochemicals, and as a stabilizer for agrochemical water dispersions.

- ▶ NOIGEN (surfactants)
- ▶ DIKSSOL (surfactants blends)
- ▶ RHEOCRISTA (cellulose nanofibers)
- ▶ CELLOGEN (sodium carboxymethyl celluloses)

## Printing & inks

Waterborne polyurethanes are used as an ink binder and/or coating agent for the receptor layer, and surfactants with good pigment and dye dispersing effect are used to make inks with good tones.

- ▶ SUPERFLEX (waterborne polyurethanes)
- ▶ PLYSURF (ionic surfactants)
- ▶ RHEOCRISTA (cellulose nanofibers)
- ▶ PITZCOL, SHALLOL (water-soluble polymers)
- ▶ LAVELIN (dye dispersant)

## Paints & insulating materials

Surfactants are used to make water-based paints highly water-resistant and give good adhesiveness. PU foams are used for insulation in buildings.

- ▶ HITENOL (polymerizable surfactant)
- ▶ NOIGEN, HITENOL (surfactants)
- ▶ DK POLYOL (rigid urethane foams)

## Civil engineering & construction

DKS products are used in mountain tunnels as an anti-collapse agent for fragile rock formations and as a water-reducing admixture for concrete.

- ▶ SUPER SRF (rock caking agent)
- ▶ KOD-M (PU-based water reducing admixture, water-stopping agent)
- ▶ SELFLOW (water reducing admixture)

## Representative Products

### ▶ Surfactants

- HITENOL, PLYSURF, CATIOGEN (ionic surfactants)
- HITENOL (polymerizable surfactant)
- PITZCOL, SHALLOL (water-soluble polymers)

### ▶ Alkylene oxide derivatives

NOIGEN, EPAN, DK POLYOL

### ▶ Electronic materials

- NEW FRONTIER (photocurable resin)
- ELEXCEL AS (ionic liquids)

### ▶ Flame retardants and resin additives

- PYROGUARD (flame retardant)
- TRIBIO (polylactic acid modifier)

### ▶ Sustainable materials

- CELLOGEN (sodium carboxymethyl celluloses)
- RHEOCRISTA (cellulose nanofibers)
- DK ESTER (sucrose esters of fatty acids)
- AIRKEM, DEOPELLET (industrial deodorizers)

### ▶ Battery materials

- ELEXCEL ACG (ion-conductive polymer)

### ▶ Resin materials

- EIMFLEX (polyurethanes)
- SUPERFLEX, ELASTRON (waterborne polyurethanes)

### ▶ Functional materials

- KAINOU TOUCHUKASOU

# Network

## Japan

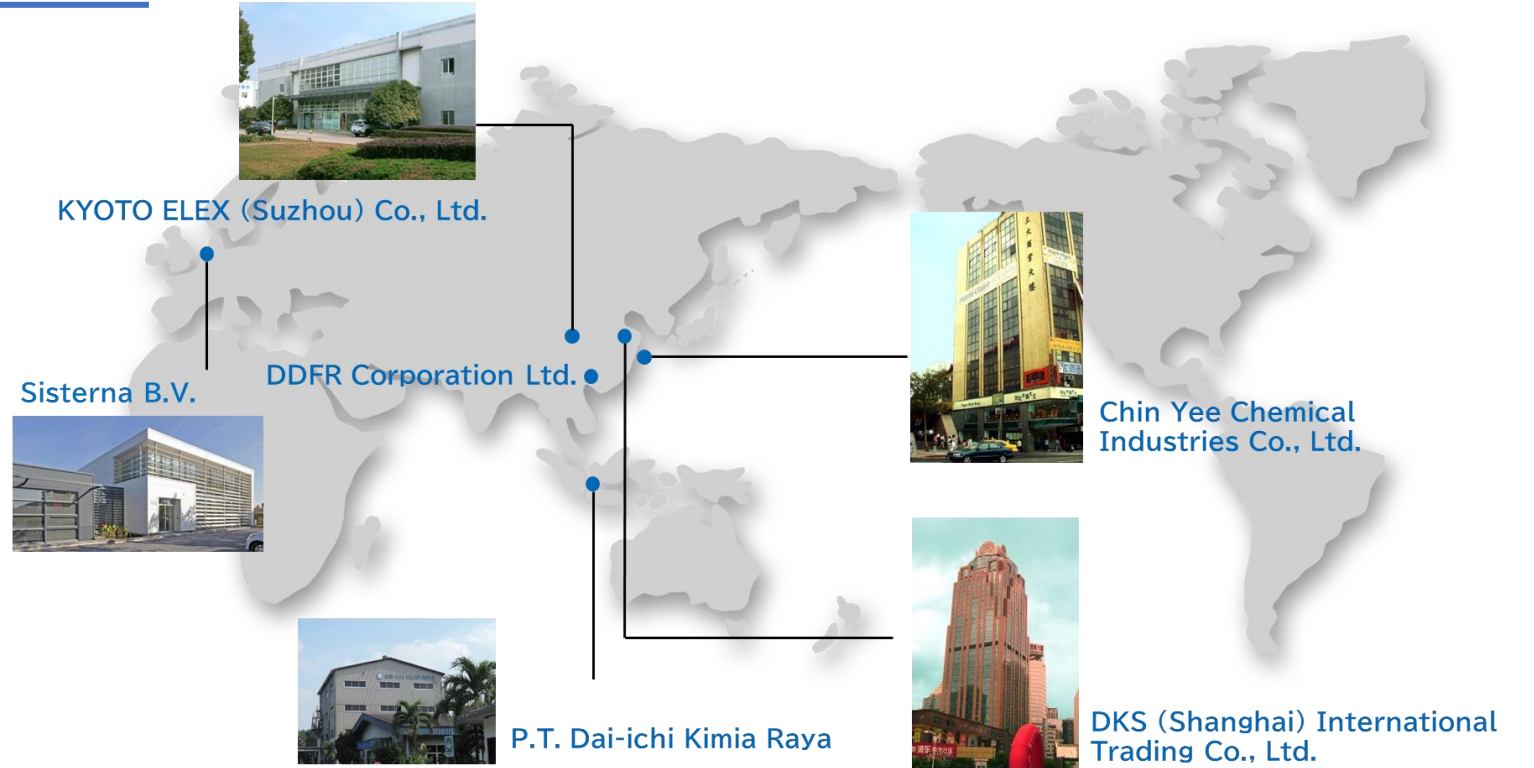
Production site	Main products
Yokkaichi Plant	Functional chemical products Urethane-related chemicals Plastic additives
Ohgata Plant	Sodium carboxymethyl celluloses Waterborne polyurethanes Professional detergents Polyvinyl pyrrolidones
Shiga Plant	Surfactants Sucrose fatty acid esters Food additive formulations Professional detergents
Tanakura Plant	Health food (Tochukasou)

Subsidiary	Business activities
Yokkaichi Chemical Co., Ltd.	Production and sales of surfactants
Gembu Co., Ltd.	Sales of detergents, finishing agents and equipment for professional laundry
Kyoto Elex Co., Ltd.	Production and sales of electronic materials
Dai-ichi Ceramo Co., Ltd.	Production and sales of feedstock for powder injection molding



Subsidiary	Business activities
Dai-ichi Kenkou Co., Ltd.	Production and sales of agents for civil engineering and construction
Biococoon Laboratories, Inc.	R&D regarding drugs and health care ingredients Production of foods and health care products
Ikeda Yakusou Co., Ltd.	Production of drug substances and ingredients for health food Production and sales of life sciences products, e.g. drugs and quasi-drugs
K&D Fine Chemical Corporation	Production and sales of surfactants

## Overseas



Subsidiary	Business activities
Chin Yee Chemical Industries Co., Ltd	Production and sales of surfactants and plastic/electronic materials
Sisterna B.V.	Application development and sales of sucrose esters of fatty acids
PT Dai-ichi Kimia Raya	Production and sales of textile agents, paper processing agents, plastic additives and food additives
DKS (Shanghai) International Trading Co., Ltd.	Trading
KYOTO ELEX (Suzhou) Co., Ltd.	Production and sales of electronic materials
DDFR Corporation Ltd.	Sales of plastic additives, e.g. flame retardants