

## **KANEKA Biodegradable Polymer PHBH**



#### **Kaneka** Corporate Data

Name	KANEKA CORPORATION		
Date of Establishment	September 1, 1949		
Paid-in Capital	33,046 million yen (as of March 31, 2018)		
Net Sales	596,142 million yen (as of March 31, 2018)		
Number of Employees	10,234 (consolidated basis/as of March 31, 2018)		
Line of Business	Vinyls and Chlor-Alkali, Performance Polymers, Foam & Residential Techs, E & I Technology, PV & Energy management, Performance Fibers, Medical Devices, Pharma & Supplemental Nutrition, Foods & Agris		
Head Offices	Tokyo , Osaka (JAPAN)		
Domestic Facilities	Office: Nagoya Manufacturing Sites: Takasago (Hyogo), Osaka, Shiga, Kashima (Ibaraki)		
<b>Oversea Facilities</b>	U.S.A., Belgium, Singapore, Malaysia, Australia, China, India, Brazil etc.		

#### Kaneka's Corporate Philosophy

With people and technology growing together into creative fusion, we will break fresh ground for the future and tie in to explore New Values. We are also committed to challenging the environmental issues of our planet and contribute to upgrading the quality of life.



#### Kaneka's Corporate Ideals

#### Toward an Even More Impressive and Productive Future

Hold in your hands the future you have always dreamed of. We are a highly perceptive and collaborative value-creating group or, as we like to say, a "Dreamology Company."

\*"Dreamology" is an expression coined from 'dream' and 'ology' (science). Our "Dreamology Company" is a "highly perceptive and collaborative value-creating group."

#### Basic Corporate Social Responsibility Policy

The Kaneka Group will fulfill our corporate social responsibility through the materialization of our corporate philosophy with the earnest and forward-looking efforts of each employee.

## Kaneka Solutions Unit Vision

-Make your dreams come true-

#### Earthology Chemical Solution

Create a comfortable and sustainable living environment

#### **Active Human Life Solution**

Support an energetic and healthy life

#### Material SU

#### **Our Challenge**

To advance to the next stage in global scale material business

#### Material Value Creator

To support the advancement of life and the environment by drawing out the richness of the materials

Protection of the global environment IT innovation



Quality of Life SU

To produce the leading edge of the enhancement of the quality of life through the power of materials

Energy

saving

Achievement of comfortable life

Increasing population

Health promotion

tion

Medical sophistication

## Nutrition SU

#### Our Challenge

While challenging the issues that surround the production of food, re-innovate the concept of nutrition by merging "healthy" and "tasty" as one

**Nutrition Valu** 

Innovator

To re-innovate food and health

#### Health Care SU

#### Our Challenge

To become a global corporation that leads the implementation of advanced medical treatment

Medical Edge Explorer

To create a world in where advanced medical means are available to as many people as possible

Aging

societies

## **Kaneka** Material Solutions Unit

-Make your dreams come true-



## **Kaneka** Quality of Life Solutions Unit

-Make your dreams come true-



-Make your dreams come true-



## **Kaneka** Nutrition Solutions Unit

-Make your dreams come true-



-Make your dreams come true-

## **Kaneka** Organizational Structure



## We are engaged in R&D activities to develop materials that give us an edge in providing solutions to social problems.



#### Kaneka Global Network

#### The Dreamology Company

-Make your dreams come true-



#### Europe/Africa

- Kaneka Europe Holding Company N.V.
- Kaneka Belgium N.V.
- Kaneka Pharma Europe N.V.
- Kaneka Modifiers Deutschland GmbH
- Kaneka Eurogentec S.A.
- Eurogentec Ltd.
- Eurogentec Deutschland GmbH
- Eurogentec Proteomics GmbH
- Eurogentec France S.A.S.U.
- Eurogentec Nederland B.V.
- AB-Biotics, S.A.
- Kaneka Africa Liaison Office
- Kaneka's European Photovoltaics Research Laboratory

#### Asia/Oceania

- Kaneka Asia Co., Ltd.
- Kaneka Trading (Shanghai) Co., Ltd.
- Cemedine Shanghai.Co., Ltd.
- Kaneka Eperan (Suzhou) Co., Ltd.
- HiHua Fiber Co., Ltd.
- Kaneka (Foshan) High Performance Materials Co., Ltd.
- Dalian Showa Plastic Co., Ltd.
- Kaneka (Malaysia) Sdn. Bhd.
- Kaneka Eperan Sdn. Bhd.
- Kaneka Paste Polymers Sdn. Bhd.
- Kaneka Innovative Fibers Sdn. Bhd.
- Kaneka Apical Malaysia Sdn. Bhd.
- Kaneka MS Malaysia Sdn. Bhd.
- Kaneka Singapore Co.(Pte) Ltd.

- Kaneka Pharma Vietnam Co., Ltd.
- Vina Showa Co., Ltd.
- Kaneka (Thailand) Co., Ltd.
- Asia Cemedine Co., Ltd.
- Showa Global (Thailand) Co., Ltd.
- Cemedine (Thailand) Co., Ltd.
- Kaneka India Pvt. Ltd.
- PT.Kaneka Foods Indonesia
- Kaneka Taiwan Corporation
- Taiwan Cemedine Co., Ltd.
- Kaneka Korea Corporation
- TGA Pastry Company Pty. Ltd.
- Cemedine Phillippines Corporation
- Showa Global Ltd.

#### America

#### • Kaneka Americas Holding, Inc.

- Kaneka North America LLC
- Kaneka Pharma America LLC
- Kaneka Aerospace LLC
- Kaneka South America Representative Ltd.
- Anaspec Inc.
- Cemedine North America LLC
- Eurogentec North America Inc.
- Kaneka US Material Research Center
- Kaneka US Innovation Center
  - Overseas Subsidiaries
  - Overseas R&D Facilities

## Kaneka Biodegradable Polymer PHBH -TMe your dreams come true-

✓ PHBH is naturally occurring material that is produced from plant oil by microorganism PHBH.



## kaneka

#### KANEKA Biodegradable Polymer PHBH is biodegraded and able to be processed to various applications





## **Kguekg**

#### PHBH production equipment (Takasago)



## kaueka

## **Biodegradability**

Aerobic (Compost)



Anaerobic (Biogas)

#### Biodegradability is comparable to cellulose (paper)

#### **BOD TEST and Weight change TEST in seawater**

BOD TEST Sample : Freeze grinded powder Weight change TEST Sample: 20µm film



 $\checkmark$  PHBH was biodegraded to H<sub>2</sub>O and CO<sub>2</sub>



#### Certifications

		JPN	EU	USA
Bio based		A42001	OK biobased       TUV         S0318	
Bio degrad ability	Compost (Industry)	על שיש אליביעל A42001	OK compost   OK compost   INDUSTRIAL   S0318	BPI®
	Compost (Home)		Image: Construction of the state of the	
	MARINE		OK bio- degradable MARINE S0318	
	SOIL		OK bio- degradable SOIL	

## **K**aueka

KANEKA will contribute to the construction of a sustainable and low environmental impact society through break through technologies

- $\checkmark\,$  PHBH is 100% bio-based and produced by microorganism
- ✓ PHBH is processable like conventional plastics
- PHBH has excellent bio-degradability under various environment



# Kangka

#### The Dreamology Company

-Make your dreams come true-