



# KASHIMA PLANT





Advanced Technology for People and the Environment

## A Fluorochemical Plant that is Gentle to People and the Environment, the Kashima Plant Uses Advanced Technology to Forge its Own Path



### The Kashima Integrated Production Center Unites All People, Organizations, and Information

The Kashima Integrated Production Center (IPC), established in 2021, is based on a global operations management system. The Center allows us to integrate and share our knowhow related to the people, organizations, and information involved in operations, facilities, and production management.

We will create new value by connecting with suppliers, customers, and local communities while offering our global production bases the initiatives and technologies established at the Kashima Plant.

At the Kashima Plant, our goal is not only to create superior products.

Our ultimate goal is to be a plant with technology, equipment, and facilities that are gentle both to people and the environment.

With safety and quality assurance as our guiding principles, we pursue the limitless possibilities of fluorine chemistry.

With cutting-edge plant equipment and systems, we utilize our own unique innovations to produce high-quality products that meet today's needs.

### History of the Kashima Plant

#### 1983

Kashima Factory begins operations.

#### April 1983

HCFC-22 (refrigerant) plant completed.

#### September 1983

4F monomer plant completed.  
PTFE resin plant completed.

#### July 1985

FEP plant completed.

#### November 1986

PTFE resin plant expanded.  
4F monomer plant expanded.

#### March 1990

Fluorocarbon gas HCFC-142b (cleaning agent) plant completed.

#### January 1993

Fluorocarbon gas HCFC-141b (cleaning agent) plant completed.

#### May 1993

Special incinerator completed.

#### July 1994

ISO 9002 certification obtained.  
(Currently ISO 9001 certified.)

#### January 1997

ISO 14001 certification obtained.

#### January 1998

Recovered CFC destruction facility completed.

#### March 2001

Fluorocarbon gas HFC-125 (refrigerant) plant completed.

#### June 2002

SFA monomer (intermediate product) plant completed.

#### April 2004

Plant name changed to Kashima Plant.

#### March 2006

PFA resin plant completed.

#### September 2006

JISHA Occupational Safety and Health Management System (OSHMS) certification obtained.

#### April 2009

Production of HCFC-142b and HCFC-141b (cleaning agents) terminated due to fluorocarbon regulation.

#### July 2009

Organic fluorine compounds (emulsifying agents) plant completed.

#### February 2010

Production of fluorocarbon gas HFC-125 (refrigerant) terminated.

#### May 2012

Organic fluorine compounds (intermediate products) plant expanded.

#### December 2012

Anti-fouling coating plant completed.

#### April 2021

Kashima Integrated Production Center established.



# Continuously Evolving as a Production Base for Daikin's Chemical Operations



As Daikin's chemical production base for the Kanto region, the Kashima Plant produces fluoropolymers and chemical products. Under a comprehensive safety management system, the plant provides a consistent supply of high-quality products. In addition to making products that satisfy customers' needs, the Kashima Plant constantly strives to earn the trust of the surrounding community.

**Overview of Kashima Plant**  
 Establishment: 1983  
 Site area: 247,000 m<sup>2</sup>  
 Product lines: Fluoropolymers  
 Chemical products

- Plant layout**
- 1 Front gate
  - 2 Logistics gate
  - 3 Integrated Production Center (IPC)
  - 4 Fluoropolymers area
  - 5 Chemical products area
  - 6 Recovered CFC destruction facility
  - 7 Sports field

## Contributing to the community through a diverse range of activities

The Kashima Plant takes a proactive approach not only to environmental measures but also to safety-management-related activities in the municipality. Our community outreach extends beyond the Kashima Industrial Zone to include activities such as visits to local elementary schools to conduct science lessons and sponsorship of the local professional soccer team, the Kashima Antlers. These are just a few examples of our ongoing efforts to be a corporate citizen contributing to regional growth and development.



A Daikin employee leads a science class at an elementary school

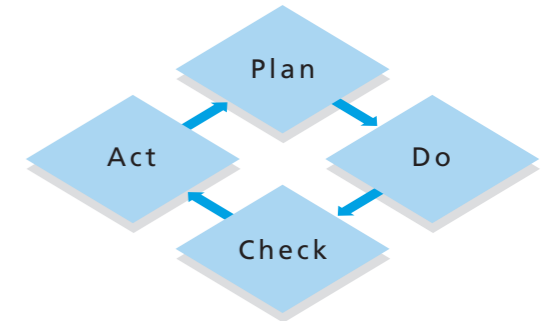


Annual Kashima Plant Summer Evening Party, a time to get to know the local community

## Safety and Disaster Prevention Initiatives

### Emphasis on Safety

Activities related to safety and disaster prevention are essential to ensuring a stable supply of products and gaining the trust of local communities. The Kashima Plant engages in a wide range of activities designed to prevent accidents and minimize damage. For instance, we have installed improved safety equipment to prevent accidents due to human error, and all employees receive hazard awareness training that teaches them to give top priority to safety. Various Daikin skills competitions promote the passing on of skills from one generation to the next. A range of hands-on training, meanwhile, helps keep employees sensitive to and aware of safety at all times. And our occupational safety and health management system provides the basis for efforts to identify and eliminate dangers.



Under our occupational safety and health management system, risk assessment follows the PDCA (plan, do, check, action) cycle.



Disaster drill



Global Skills Competition



Certificate showing registration of the Kashima Plant's JISHA Occupational Safety and Health Management System (OSHMS)

## Environmental Initiatives

### Environmental Preservation

In 1998, the Kashima Plant installed a facility for destroying recovered CFCs in order to protect the ozone layer and help prevent global warming. This made us one of the first companies with its own system for destroying recovered CFCs. Under this system, greenhouse gases generated during production, as well as substances covered under Japan's Pollutant Release and Transfer Register Act, are recovered and destroyed, thus protecting the natural environment.



Recovered CFC destruction facility

### Recovered CFC destruction facility

This facility destroys the CFCs that we collect from our customers. The gases are incinerated at a high temperature to completely break down the compounds and prevent the creation of any toxic substances.

### Achieving Zero Waste

Environmentally conscious production is an important goal of ours. Waste is an unavoidable by-product of production, but instead of burying or incinerating that waste, we do everything possible to recycle it. In August 2004, the Kashima Plant achieved its goal of zero emissions (a recycling rate of 100%). As the next step, we are currently striving to reduce the amount of waste itself.



ISO 14001 environmental certification, acquired in 1997

### In all of us, a green heart

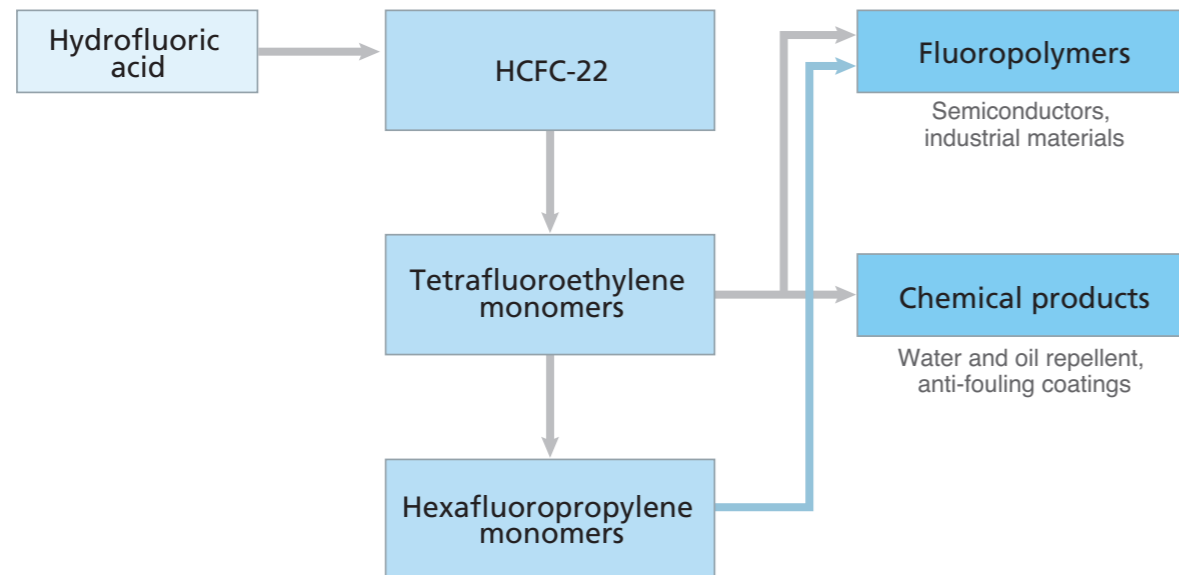


In February 2002, we created an environmental symbol for the Daikin Group. In environmental protection activities, the little efforts that individuals make add up to big things. The symbol, the Earth in the shape of a green heart, represents a determination on the part of each and every employee of Daikin to think green (think of the Earth and take care of the environment).



# Producing High-Quality Fluorochemical Products Through State-of-the-Art Facilities and Proprietary Technologies

## Main Product Types



### Pursuing new possibilities in fluorochemicals to produce fluoropolymers and chemical products

Daikin's pursuit of new possibilities with fluorine yields various chemical compounds. This specialty chemical has advantages that include stability and resistance to degradation in compound form, non-adhesiveness, lubrication properties, and chemical resistance. Fluorine is used in gases, resins, rubbers, and other products across a broad range of industries, from household goods to automobiles and semiconductors. Using its advanced fluorochemical technology, the Kashima Plant produces highly functional fluoropolymers and chemical products. The Kashima Plant makes maximum use of the comprehensive technological strength that Daikin has gained over the years, starting with the company's development of its first air conditioner refrigerant in 1942, and exemplified by plant construction technology, production technology, and quality control technology. The plant is continuously incorporating state-of-the-art equipment and building new manufacturing systems in its ongoing pursuit of new frontiers in fluorine chemistry. These technologies are not just indispensable to the development of the next generation of fluorine products; they also help drive Daikin's global expansion as they are put to use in new factories that Daikin establishes in countries around the world.



The fluorochemical products factory

### Integrated process control systems using automated, 24-hour centralized control

Since its founding in 1983, the Kashima Plant has always striven for complete safety. We have introduced a complete, integrated process control system that utilizes automated, 24-hour centralized control. Rigorous regular field and process inspections are combined with a thorough monitoring system using the latest computer technology.

### Comprehensive quality control through detailed inspections of each process

The Kashima Plant enforces a strict quality control system. From the receipt of raw materials to manufacture and shipping, every process is subjected to on-site analysis and inspection. Problems detected are immediately turned into feedback for improvement. These measures maintain high standards of quality control. Quality assurance is also maintained through strict inspections in a cleanroom and the automation of production lines using industrial robots.



Responding quickly to our customers' needs with products whose quality is assured by ISO 9000 series certification

## Fluoropolymers



Automated fluoropolymer pellet production in the cleanroom



Fluoropolymers (pellets)



Fluoropolymer coated wires

Fluoropolymers manufactured at the Kashima Plant include the NEOFLON FEP and PFA, which are widely used in molds because of their superior insulation properties, and the POLYFLON PTFE, which has excellent lubrication properties and the lowest coefficient of friction of any fixed substance. These fluoropolymer products are extensively used in various forms in both consumer and industrial products. We assure high quality through proprietary fluorochemical technologies combined with state-of-the-art facilities, which include a dustless cleanroom and automated manufacturing systems using robotics. We are constantly at the forefront of pursuing new possibilities in fluorine.

### Product lines

- POLYFLON PTFE-M  
Main applications: Sealing materials, sheets for corrosion resistant linings, insulative sleeves, release sheets, and others
- NEOFLON PFA  
Main applications: Tubes and fittings for semiconductors, corrosion-resistant linings, and others
- NEOFLON FEP  
Main applications: Wire coatings, tubing, film, pipe linings, and others

## Chemical Products



Production process of OPTOOL, an anti-smudge coating agent

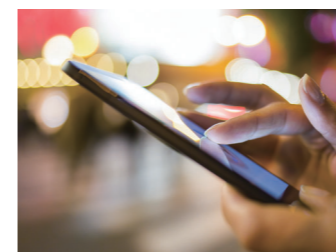
We manufacture OPTOOL, an anti-smudge coating that is widely used for the protection of displays, optical products, and glass surfaces.

OPTOOL is a product developed by applying fluorine synthesis technology cultivated over many years. OPTOOL, for example, reduces fingerprints on smartphones and gives a smooth front glass surface feel.

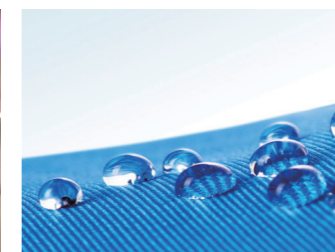
In addition, we supply plants around the world with intermediate raw materials for fluorinated water and oil repellents, which give excellent water and oil repellent functions while maintaining fundamental characteristics.

### Product lines

- OPTOOL, an anti-smudge coating for reducing fingerprints on touch displays and other glass surfaces
- Raw material for water- and oil-repellent treatment agents for textiles and paper



OPTOOL, an anti-smudge coating for smartphones and touch displays



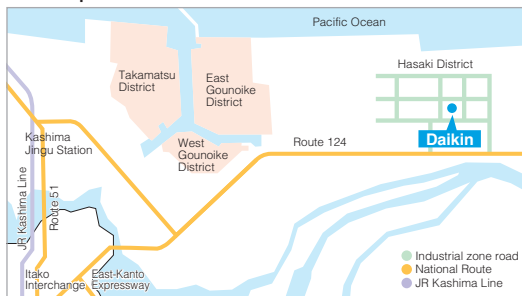
Water and oil repellents for textiles, paper, and carpets

## Access to the Kashima Plant

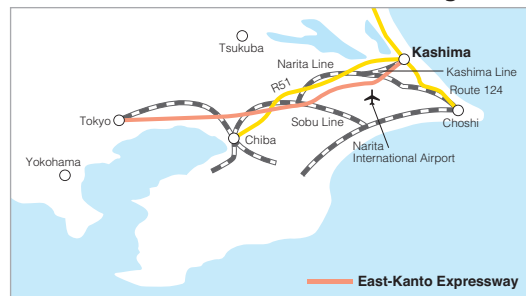


- From Tokyo Station (120 minutes):  
From Yaesu-Minamiguchi south entrance of Tokyo Station, take an expressway bus bound for Kashima-Jingu Station (90 minutes). Get off at Kashima Central Hotel and take a taxi from there (30 minutes).
- From Narita International Airport 60 minutes by taxi
- From Shimousa-Tachibana Station (local train stop) 15 minutes by taxi
- From Choshi Station (express train stop) 30 minutes by taxi

### Map of Kashima Coastal Industrial Zone



### Location of Kashima in the Kanto Region



## **DAIKIN INDUSTRIES, LTD.**

<https://www.daikin.com>

■ Kashima Plant:	21, Sunayama, Kamisu, Ibaraki 314-0255, Japan	Tel: 0479-46-2441 (direct line)
■ Head Office:	Umeda Center Bldg., 2-4-12 Nakazaki-Nishi, Kita-ku, Osaka 530-8323, Japan	Tel: 06-6373-4312 (direct line)
■ Tokyo Branch:	JR Shinagawa East Bldg. (main reception: 12th floor), 2-18-1 Konan, Minato-ku, Tokyo 108-0075, Japan	Tel: 03-6716-0111 (direct line)

