Annual Environmental Report

2025 Edition

Tianma Japan, Ltd.

TIANMA

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Message from the President

One of our goals as a global corporation is to help achieve a sustainable society. We are actively engaged in global environmental preservation activities in the development of our display products and production technologies.

Tianma Japan, Ltd. (Tianma Japan), a wholly owned Japanese subsidiary of Tianma Microelectronics Co., Ltd., is a designer and manufacturer of a broad range of high-quality, leading edge, display products.

In January 2025, the World Meteorological Organization (WMO) announced that the global mean near-surface temperature in 2024 was the warmest on record, measuring 1.55° C above pre-industrial level. This marks the first year for which the annual average temperature exceeded the 1.5° C target set in the Paris Agreement.
This record-high temperature is assumed to be caused by climate change induced by greenhouse gas emissions, thus reducing emissions of such greenhouse gases for the sake of future generations is regarded to be a pressing issue.
We are currently making steady progress on reducing our environmental impact through efforts including reducing the greenhouse gases generated by our production activities, which we view as a top priority.
While numerous issues still remain, we too intend to focus our efforts on overcoming these challenges.
We plan to pursue environmental activities by combining the strengths of all Tianma Group employees as a central aspect of our business activities.
We welcome frank comments and opinions from our stakeholders to help guide our future actions in the area of environmental management.

U Tokuju, President
Tianma Japan, Ltd.

Company Overview

Company name: Tianma Japan, Ltd.

Head office: Shinkawasaki Twin Tower WEST 28F

1-1-2, Kashimada, Saiwai-Ku, Kawasaki, Kanagawa, Japan

Established: April 1, 2003

President: U Tokuju

Stated capital: One hundred million yen

Business area: Research, development, design, manufacture, sale, and maintenance of color / monochrome display modules and related electronic devices

Employees: Approximately 700

[History]

1989	Color LCD Development Promotion Headquarters established.
1992	Color LCD Division established.
1993	Acquired ISO 9002 certification.
1994	Acquired ISO 9001 certification.
1997	Acquired ISO 14001 certification.
2003	NEC LCD Technologies, Ltd. established as independent company.
2007	NEC Akita and NEC Kagoshima were merged into NEC LCD Technologies.
2009	Production consolidated at Akita Plant.
2011	Joined to Tianma Group and changed the company name to “NLT Technologies, Ltd.”
2014	Acquired ISO/TS 16949 certification.
2016	Became a wholly owned subsidiary of Tianma.
2017	Changed the company name to “Tianma Japan, Ltd. “

Tianma

Tianma Microelectronics Co., Ltd. (Tianma) specializes in providing display solutions and efficient support services worldwide. Tianma was established in 1983 and publicly listed in the Shenzhen Stock Exchange (SZ. 000050) in 1995.

Tianma focuses on the mobile intelligent terminal and professional display markets and are expanding our focus to emerging markets including home automation, smart wear, AR, VR, UAV and charging facilities etc. Through global production and sales networks, we provide custom-designed display solutions to thousands of medium-high end customers.

In 2016, A significant number of domestic and overseas customers chose Tianma as their display supplier for their new products. Our product quality is frequently ranked 1st by many of our customers, resulting in a number of quality awards from some of our key customers.

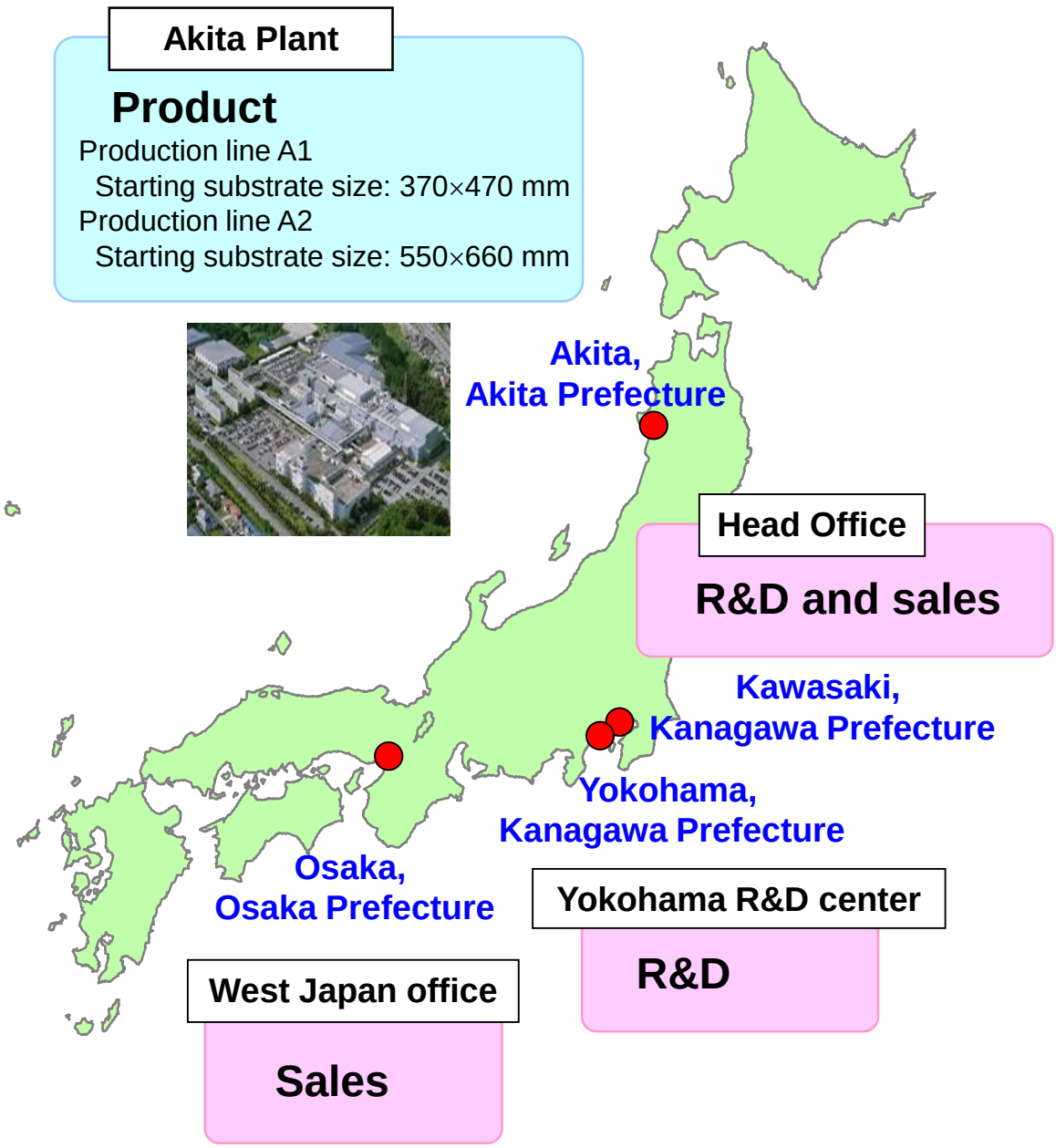
Tianma's shipments of small and medium size modules are keeping the leading position among global display manufacturers. Our market share for high-end medical devices, aviation entertainment, navigation and VOIP products ranked first worldwide. Tianma is committed to continuous innovation, excellent customer service and support.

With our on-going development of new display technologies, production line development and talent reserve of display professionals, Tianma will continue to focus on serving the technology needs of display markets worldwide. With our core values of "Passion, Effectiveness, Win-win" and our mission, "To Create Colorful Life", Tianma is dedicated to be the world's leading display company.

Map of Tianma Japan Business Sites

Our activities at our Kawasaki Head Office and Yokohama R&D center focus on research and development. We produce products for sale to our customers at our Akita Plant and at the production facilities of our parent company, Tianma Micro-Electronics Group, and other members of its group of companies.

We're deepening collaborative efforts with Tianma Micro-Electronics Group and other members of its group of companies across a broad range of spheres, including research, development, design, production, and sales.

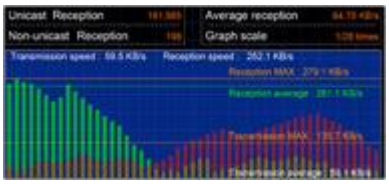


Products

Medical Display

Used in displays for applications in various high-end and professional settings, including high-definition medical monitors and high-resolution graphics monitors, these products contribute to our customer businesses.

Industrial Display



Used in a wide range of fields, including panel computers and measuring instruments for factory automation, public systems for handling high-volume data in limited spaces, and as broadcast monitors.

Automotive Display

Used in display devices for automotive, including cluster display, center information display, and mirror display. Designed to provide high reliability in automotive applications, these products can withstand temperature, vibration, and other conditions encountered in automotive environments.

Smart Mobile Display

Used for a wide range of mobile applications, including smart phone and smart wearable. These products feature characteristics that make them ideal for specific applications, including thin, light weight, and low power consumption.

Prototype Business

Tianma Japan offers high reliability and quality products that utilizes own LCD manufacturing capability/know-hows, provides various types of film deposition, patterning, glass cutting and modularization, and can be a partner who can cooperate in the development of new technologies and new products in material, processing, machine manufacturers and research institutes.

Environmental Policy

Comply with legal and other requirements

Promote efforts to conserve energy

Prevent pollution and protect the environment

Provide green products

Continuously improve our environmental management system

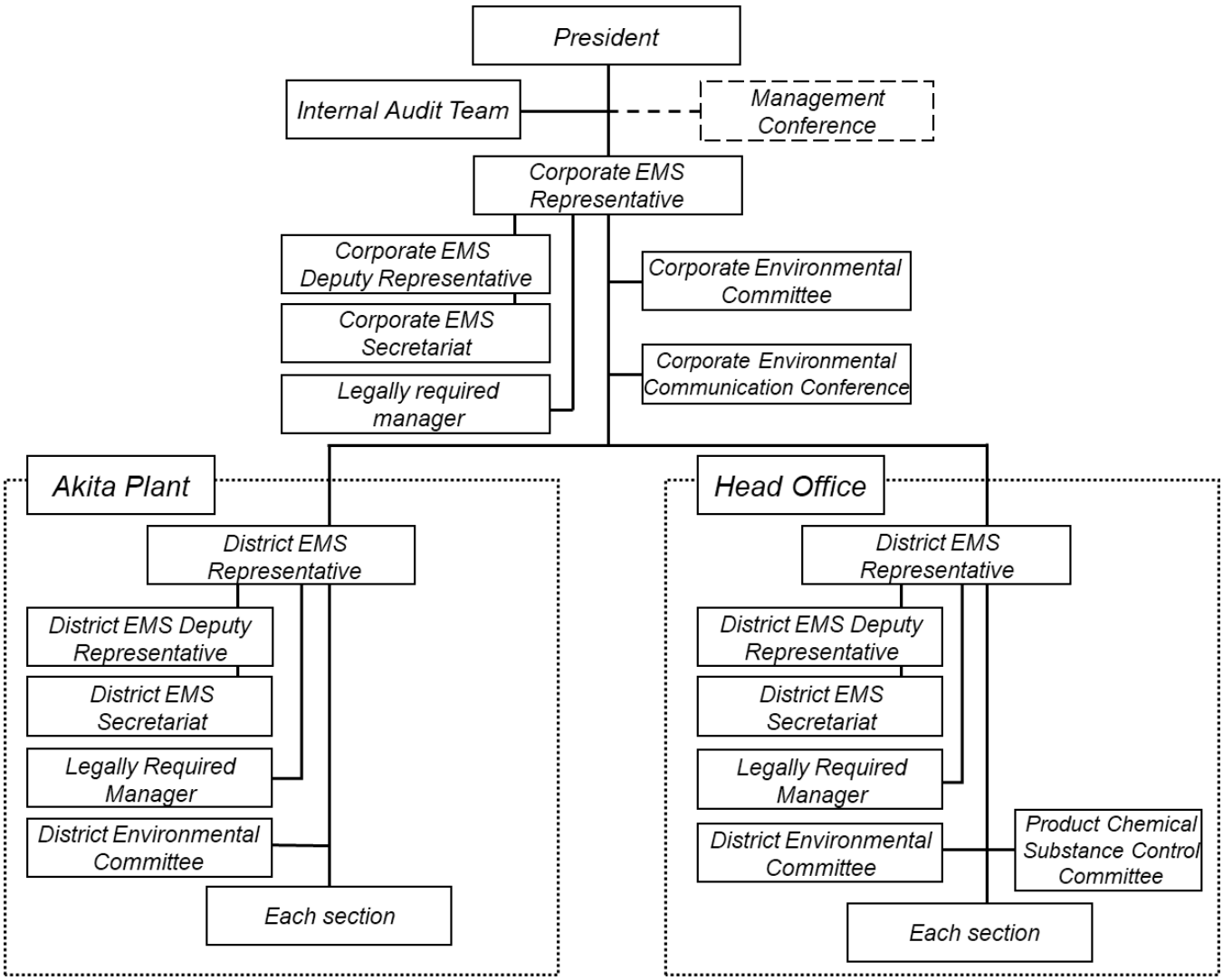
Established: January 1, 2019

U Tokuju, President

Tianma Japan, Ltd.

Environmental Management Organizational Structure

We established the environmental management organization outlined below to advance activities in accordance with our environmental management system (EMS). The President appoints the Corporate EMS Representative, Deputy Representative, District EMS Representatives, Corporate EMS Secretariat and others. The District EMS Representatives make decisions and appointments related to the organization of these structures within their districts, establishing clear roles and responsibilities of each position through in-house rules.



Environmental Management System

We acquired ISO 14001 certification for the 2015 version in December 2017.
We perform the following audits to accurately identify and confirm aspects of various issues, such as the state of compliance with ISO 14001 standards, environmental impact reductions, environmental conservation, and the control of chemical substances occurring in products: environmental internal audits performed by in-house audit teams; and environmental management system audits performed by third-party auditing agencies.
We share information on issues and improvements in each district to promote sustained improvements.

COPY

intertek
Total Quality. Assured.

CERTIFICATE
OF REGISTRATION

This is to certify that the management system of:

Tianma Japan, Ltd.

Main Site: Shinkawasaki Twin Tower WEST 28F, 1-1-2 Kashimada, Saiwai-Ku, Kawasaki-Shi, Kanagawa Pref., Japan

See appendix for additional sites and additional site scopes

has been registered by Intertek as conforming to the requirements of:

ISO 14001:2015

The management system is applicable to:

Research, development, design, manufacture, sale and maintenance of color / monochrome display modules and related electronic devices

Certificate Number:
09642

Initial Certification Date:
13 August 2013

Date of Certification Decision:
29 November 2023

Issuing Date:
29 November 2023

Valid Until:
21 December 2026

intertek

UKAS MANAGEMENT SYSTEMS

Calin Moldovean
President, Business Assurance

Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom

Intertek Certification Limited is a UKAS accredited body under schedule of accreditation no. 014.

In the issuance of this certificate, Intertek assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a smartphone. The certificate remains the property of Intertek, to whom it must be returned upon request.

Certificate Number : 09642
Initial Certification Date : 13 August 2013
Valid Until : 21 December 2026

2024 Results

Summarized below are the results of 2024 initiatives. 2025 initiatives will be based on these results.

◆Assessment◆ ○: Achieved △: Achieved at rate of 80% or higher ×: Achieved at rate of under 80%

Items	Targets	Results	Assessment
Reduction in carbon-dioxide emissions (from energy)	1% Reduction from 2023	Achieved at rate 103%	○
Reduction of chemical substances	1% Reduction from 2023	Achieved at rate 113%	○
Reduction in waste emissions	1% Reduction from 2023	Achieved at rate 112%	○

Chemical Substances Contained in Products System (1)

■ Green Procurement

We do our part to further green procurement, in this way helping to establish a recycling society. We do this by expanding markets for green products, promoting the development of environmentally sensitive products, and raising awareness among designers and developers. Green procurement prioritizes the purchase of materials with low environmental impact. We have established green-procurement requirements for parts and materials and a green certification program for suppliers who meet these requirements. Since 2005, we have maintained a green procurement rate of 100%. In 2018, we continue to make 100% of our purchases from green certified suppliers.

Essential Condition for Green Procurement of Parts and Materials

Category	Items to Be Checked
Approach Environmental management	Establishment of environmental management system
	Non-use of substances banned from manufacturing Process
	Establishment of system for examination of chemical Substance content
Products	Non-use of substances banned from products

■ Restrictions on the Purchase of Substances Prohibited from Use in Products

In addition to green procurement, we provided a list of environmental substances restricted by Tianma Japan. These restrictions also include chemical substances prohibited by specific customers and other individually designated chemical substances. Copies of these restrictions are distributed to suppliers of parts and materials under the title *Common Specification of Green Procurement*. We ask suppliers to assess the chemical substances found in parts and materials delivered to us, based on design diagrams and the *Common Specification of Green Procurement*.

The data collected in this way is registered into an internal database and shared for use in selecting parts and materials at the design stage, as well as for product assessment. Procurement restrictions also apply to chemical substances occurring in shipping and packaging materials, for which similar surveying, data registration, and materials selection are conducted.

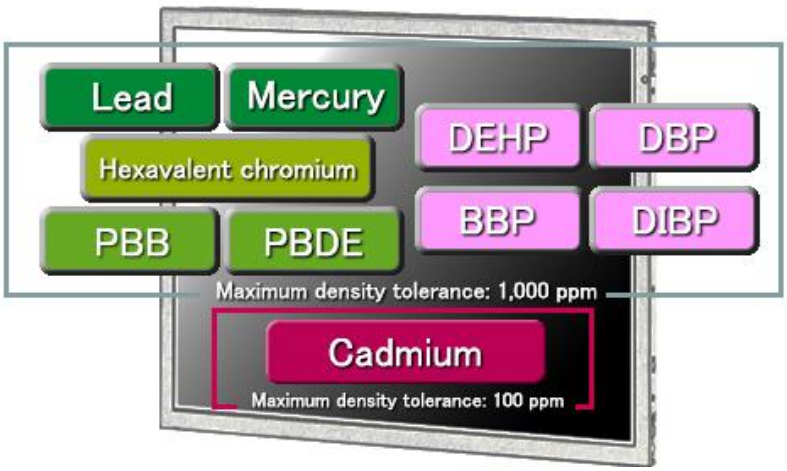
Chemical Substances Contained in Products System (2)

■ Our products are RoHS compliant

The European Union (EU) issued a RoHS Directive,*1 taking effect from July 1, 2006, that restricts the use of certain hazardous substances. As a result, electrical and electronic equipment containing any of the six target substances (lead, mercury, cadmium, hexavalent chromium, PBB*2 and PBDE*3) is restricted from the EU market.
Out of concern for the environment, Tianma Japan began reducing the use of hazardous substances in our LCD modules prior to the RoHS directive. We have eliminated the six substances targeted in the RoHS directives as well as other substances we have identified as potentially hazardous, so that our products are now RoHS compliant.

The RoHS Directive underwent major revisions in July 2011. The updated RoHS Directive (RoHS II) went into effect in January 2013.

The addition of restrictions on four phthalates*4 went into effect on July 22, 2019.*5 We have completed compliance with RoHSII including phthalate ester regulation.



*1 RoHS: The Restriction Of The Use Of Certain Hazardous Substances In Electrical And Electronic Equipment
*2 PBB: Poly brominated biphenyl
*3 PBDE: Poly brominated diphenyl ether
*4 Four phthalates
DEHP: Bis（2-ethylhexyl）phthalate
DBP: Dibutyl phthalate
BBP: Butyl benzyl phthalate
DIBP: Diisobutyl phthalate
*5 The restriction shall not apply to monitoring and control instruments placed on the market before 22 July 2021.

Chemical Substances Contained in Products System (3)

■ Compliance with chemical substances restriction (REACH regulations)

In place from June 1, 2007, the EU REACH*1 regulations require the registration, evaluation, and authorization of all chemical substances entering the EU, based on factors such as volumes imported or produced.
For molded products containing substances of very high concern (SVHC*2) and SVHC candidates in concentration of 0.1% by weight or more, a system must be in place throughout the supply chain to communicate information such as substance names, volumes included, and information enabling safe use.
To comply with REACH regulations, we are currently developing a management system that incorporates BOM*3 management of the parts and materials used in products, surveys of the chemical ingredients used therein, and processing of the data collected.

*1 REACH: Registration, Evaluation, Authorization and Restriction of Chemicals
*2 SVHC: Substances of Very High Concern
*3 BOM: Bill of Materials

■ Joint Efforts with Suppliers

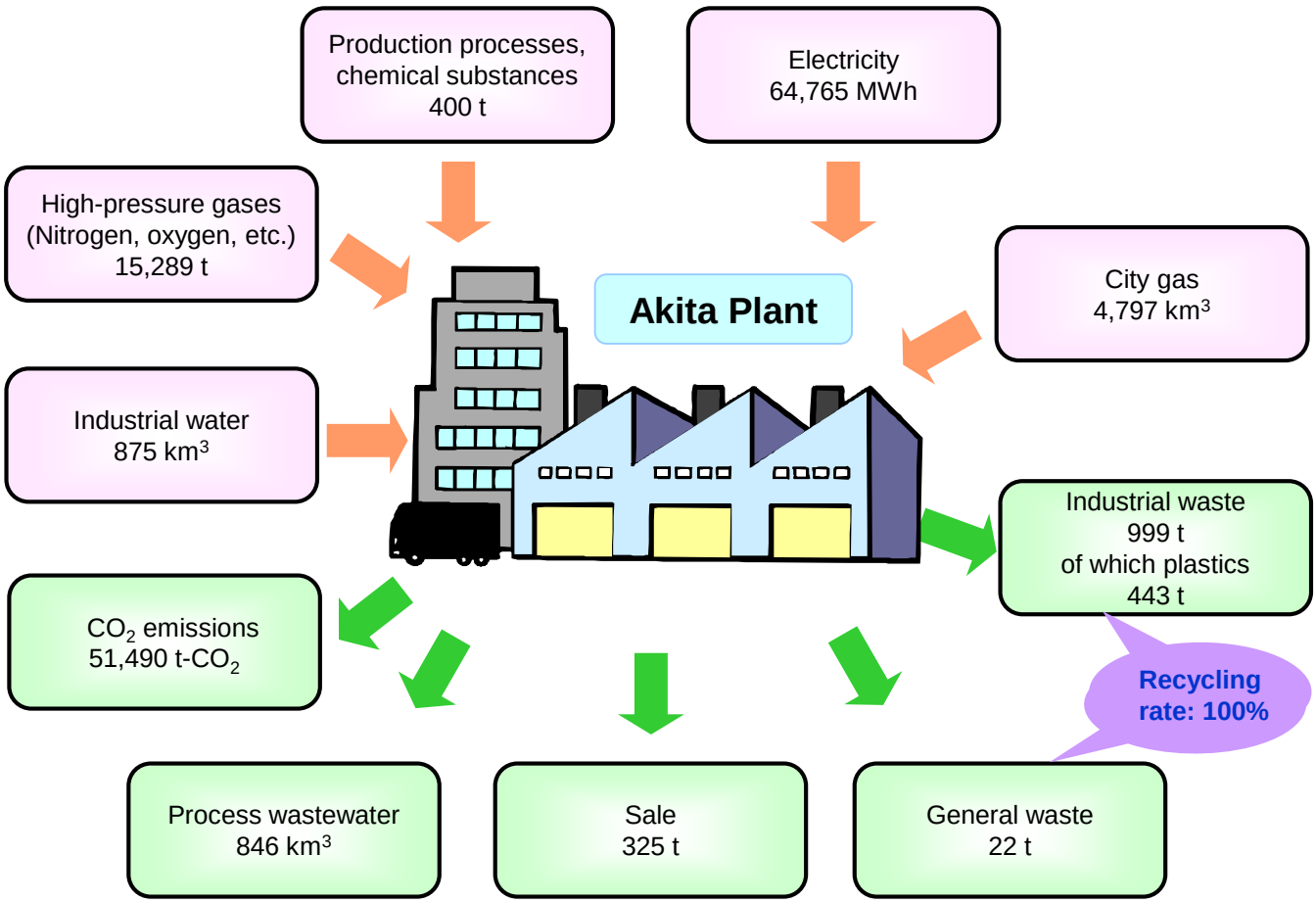
As required by various measures such as the European Union's RoHS directive, specifically designated harmful chemical substances occurring in products must be controlled. Each company in the supply chain must implement efforts to ensure proper control of the chemical substances found in various products.

As part of these efforts, we have developed an evaluation tool that promotes the proactive control of chemical substances occurring in products among the suppliers themselves. To ensure PMR*4 assessments, we distribute supplier assessment check forms to our suppliers. These forms are used to control various chemical substances occurring in products. Alongside spot inspections by Tianma Japan, such efforts improve supplier control systems by enabling supplier self-assessments.

*4 PMR: Process Management Review

Environmental Impact Mass Balance

The diagram below shows the resource volumes used in and the wastewater, carbon dioxide, and waste generated at the Akita Plant in 2024.
We will continue to strive to promote effective resource use; to promote energy conservation initiatives; and to reduce resource use and emissions still further.



Preventing Global Warming (Promoting Energy Conservation)

Recognizing global warming as an important environmental issue, we promote a wide range of efforts to reduce carbon-dioxide emissions, including reductions in energy used by plants, turning off lights when not needed, and using air-conditioning system in energy conservation mode at our offices.
In addition, we are developing energy-saving measures that utilize subsidies for promotion projects such as the introduction of energy-saving equipment for Akita city small-and-medium sized companies person.

■ Examples of utilizing the subsidy program for promoting the adoption of energy-conservation equipment at SMEs, etc.

1. Installing inverters on cooling water pumps for absorption refrigerators
Previously, these cooling water pumps had operated at fixed speeds regardless of the number of absorption refrigerators in operation. This project, however, reduced electricity use by using inverters to control the volume of cooling water in accordance with the number of units in operation.

2. Installing inverters on scrubber exhaust fans
These fans had been used to control suction pressure through the intake of outside air while operating at fixed speeds. This project reduced electricity use by discontinuing the intake of outside air and using inverters to control suction pressure instead.

3. Installing inverters on cooling water pumps for air conditioning in the main building
Previously, these cooling water pumps had operated at fixed speeds regardless of the operational status of the air conditioners inside the main building. This project reduced electricity use by using inverters to control the volume of cooling water in accordance with the status of air-conditioner operation.

cooling water pumps
for absorption refrigerators

scrubber exhaust fans

cooling water pumps for air conditioning
in the main building

Controlling Chemical Substances

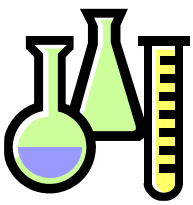
Various chemical substances are used in processes related to manufacturing and processing wastewater and exhaust gas emitted from manufacturing processes. For purposes of monitoring environmental impact and control over handling safety, we maintain a control structure of chemical substances, reduce the volumes of materials used, and promote the transition to substances with lower levels of toxicity and environmental impact.

PRTR: Abbreviation for Pollutant Release and Transfer Register; used to control environmental pollutant input and output.

Chemical substances (chemicals, gases)

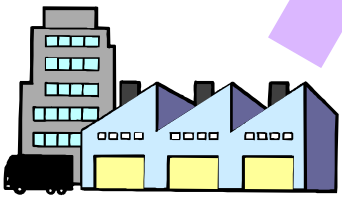
PRTR (input/output) control

Assessment of the feasibility of adopting new chemical substances
(advance meeting to review environmental/ safety repercussions)
- Advance confirmation of issues such as conditions and behavior, volumes used, methods deployed, and applicable laws and regulations

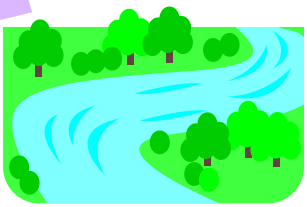


Exhaust gas, wastewater

Reducing environmental impact
- Reducing volumes of chemical substances used
- Transitioning to other chemicals
- Halting use of chemical substances
- Recycling, reuse



Periodic analysis and measurement
(compliance with exhaust restrictions)



Controlling daily handling
- Locking storerooms
- Managing trends in volumes of chemical substances used

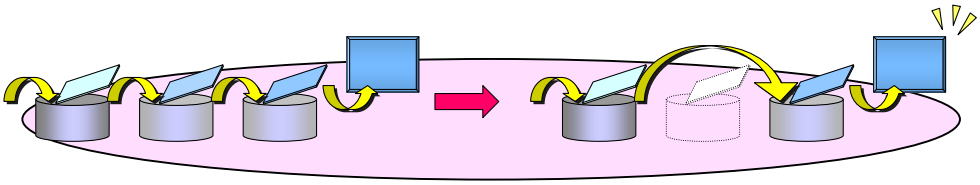
Occupational health and safety controls
- Work environment measurements
- SDS education, review

SDS: Abbreviation for Safety Data Sheet. These documents provide information, including the characteristics and toxicity of various chemical substances.

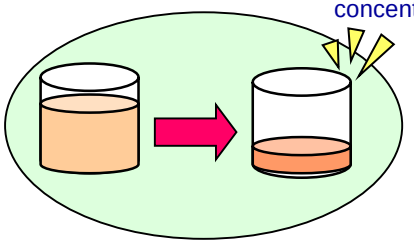
Waste Control

The Akita Plant continues to recycle all generated waste through waste segregation and the “three Rs” (reduce, reuse, recycle).
To ensure all waste is disposed of properly, waste processing is contracted out to licensed, specialized waste processing firms. Final processing is confirmed using manifests. In addition, waste-processing facilities are periodically subjected to on-site inspections.
In 2017, allowed us to sell waste plastics and waste acids. Since then, these waste materials have found effective use as raw materials.

Reduce: Streamlining processes, reducing volumes, reducing capacity, segregating waste

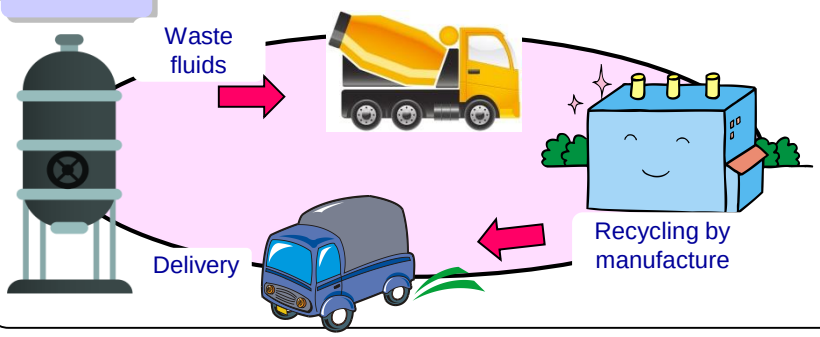


Increasing fluid concentrations



Segregating waste by type

Reuse

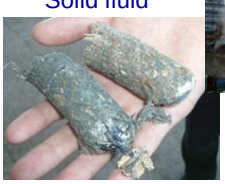


Waste plastics
Waste metals
Waste acids

Reused as raw materials

Recycle

Solid fluid



Materials at processing facilities

Use of as pavement materials

Adding one more "R" to the "3 R's"

Replace

Reducing negative impact

- **Shifting to lead-free solder**
- **Shifting to less toxic chemical substances**

Legal Compliance

We confirm legal compliance in various ways, including internal environmental audits, and environmental compliance audits. No notable problems emerged in 2024.

Results of analysis and measurement at the Akita Plant (2024)

<Wastewater measurements in mg/l (excluding pH)>

Subject	Item	Value established jointly by the company and Akita city	Self-imposed standard value	Measured value (average)
Industrial wastewater	Hydrogen ion density (pH)	6.0 to 8.5	6.2 to 8.3	7.7
	Biochemical oxygen demand (BOD)	25	20	1.1
	Chemical oxygen demand (COD)	25	20	3.5
	Suspended substances (SS)	30	15	1.4
	Nonvolatile oil (normal hexane) content	10	1	< 1
	Chrome content	1	0.05	< 0.05
	Hexavalent chromium compounds	0.1	0.05	< 0.02
	Fluorine content	8	6	2.5
	Phosphor content	To be measured	4	0.05
	Nitrogen content	To be measured	60	3.3

<Soot and smoke measurements>

Subject	Item	Value established jointly by the company and Akita city	Self-imposed standard value	Measured value (average)
Cogeneration	Sulfur oxide (SOx)	K = 5	K = 0.5	K = 0.11
	Nitrogen oxide (NOx)	130 ppm	120 ppm	63 ppm
	Soot particles	0.1 g/m^3	0.015 g/m^3	< 0.02 g/m^3
Once-through boiler	Sulfur oxide (SOx)	K = 5	K = 0.5	K = 0.01
	Nitrogen oxide (NOx)	150 ppm	120 ppm	31 ppm
	Soot particles	0.15 g/m^3	0.12 g/m^3	< 0.01 g/m^3
Smoke-tube boiler	Sulfur oxide (SOx)	K = 5	K = 0.5	K = 0.03
	Nitrogen oxide (NOx)	150 ppm	120 ppm	103 ppm
	Soot particles	0.15 g/m^3	0.12 g/m^3	< 0.01 g/m^3

<Exhaust gas measurements>

Subject	Item	Value established jointly by the company and Akita city	Self-imposed standard value	Measured value (average)
Acid/organic exhaust gas cleaning tower	Hydrogen chloride	To be measured	10 mg/m^3	0.46 mg/m^3
	Hydrogen fluoride	To be measured	10 mg/m^3	< 0.23 mg/m^3
	Ammonia	To be measured	3 mg/m^3	< 0.023 mg/m^3
Acid exhaust gas cleaning tower	Hydrogen chloride	To be measured	10 mg/m^3	0.25 mg/m^3
	Hydrogen fluoride	To be measured	10 mg/m^3	< 0.23 mg/m^3
	Ammonia	To be measured	3 mg/m^3	< 0.02 mg/m^3

Risk Management

In-house facilities are inspected and swift countermeasures taken to prevent accidents. These activities incorporate information shared on cases arising common plant accidents across Japan.

We patrol facilities involved in environment activities and undertake periodic drills to ensure appropriate response to chemical leaks and other incidents. A certification system for operators based on certain standards has been established for firms involved in supplying or transporting chemicals or collecting or transporting waste fluids. Overall schedules are meticulously confirmed and comprehensive safety warnings issued.

Before using any new equipment or chemical substances, we undertake advance assessments and development procedures to closely examine aspects such as the potential impact of chemical substances on the environment, safety, and products.

Drills in responding to environmental incidents such as chemical or gas leaks (2024)

2025 Targets

Based on inputs and the results of activities in the previous year, our 2025 activities will have the following targets:

Items	Targets
Reduction in carbon-dioxide emissions (from energy)	1% Reduction
Waste recycling rate	100% Recycling rate

Tianma Japan, Ltd.

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Information on our environmental initiatives is also available on the Internet:
https://www.tianma.co.jp/en/

Published: April 2025 (subject: environmental activities in 2024)

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