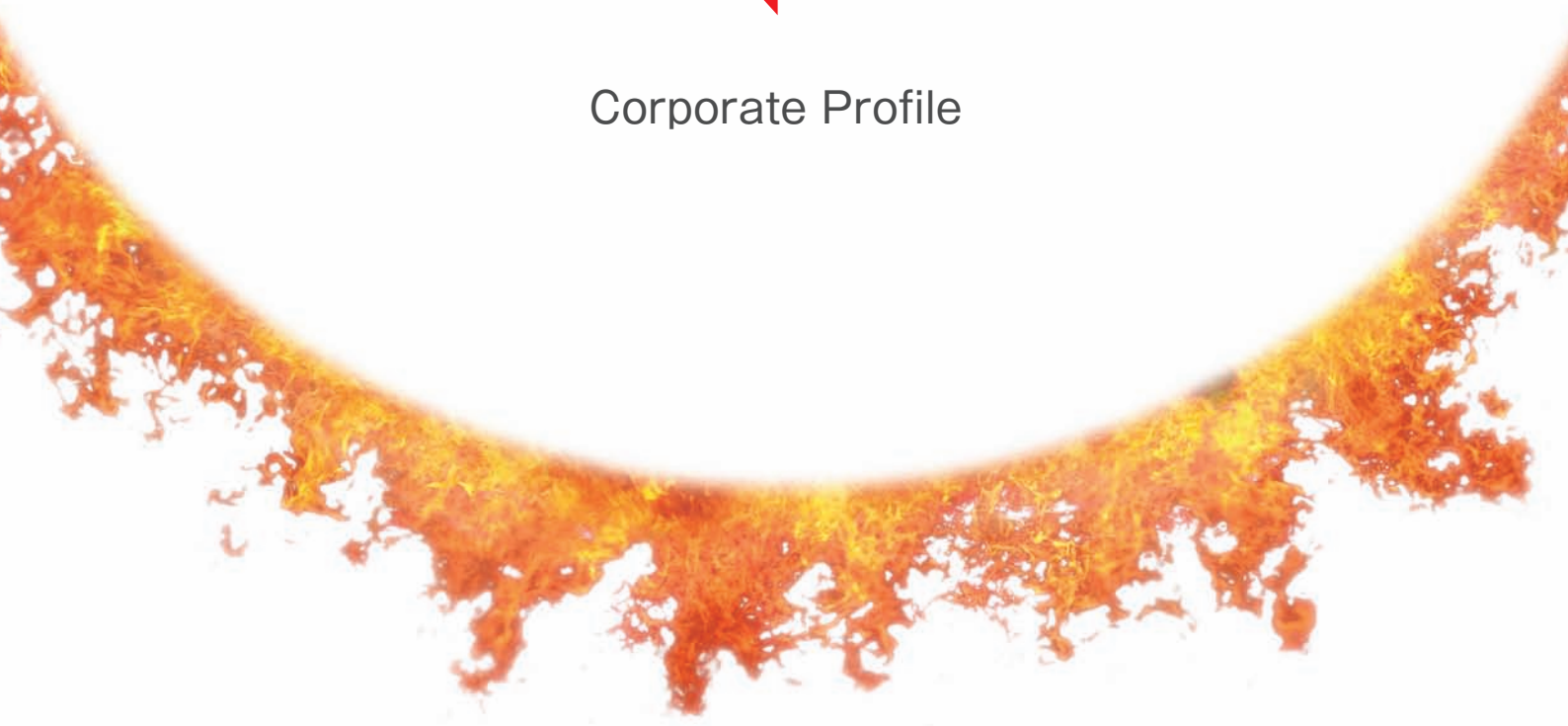
Corporate Profile



OSAKA Titanium technologies Co.,Ltd.

Pursuing Infinite Potential of
Titanium, Polycrystalline Silicon and High-performance Materials

Headquarters/Amagasaki Plant

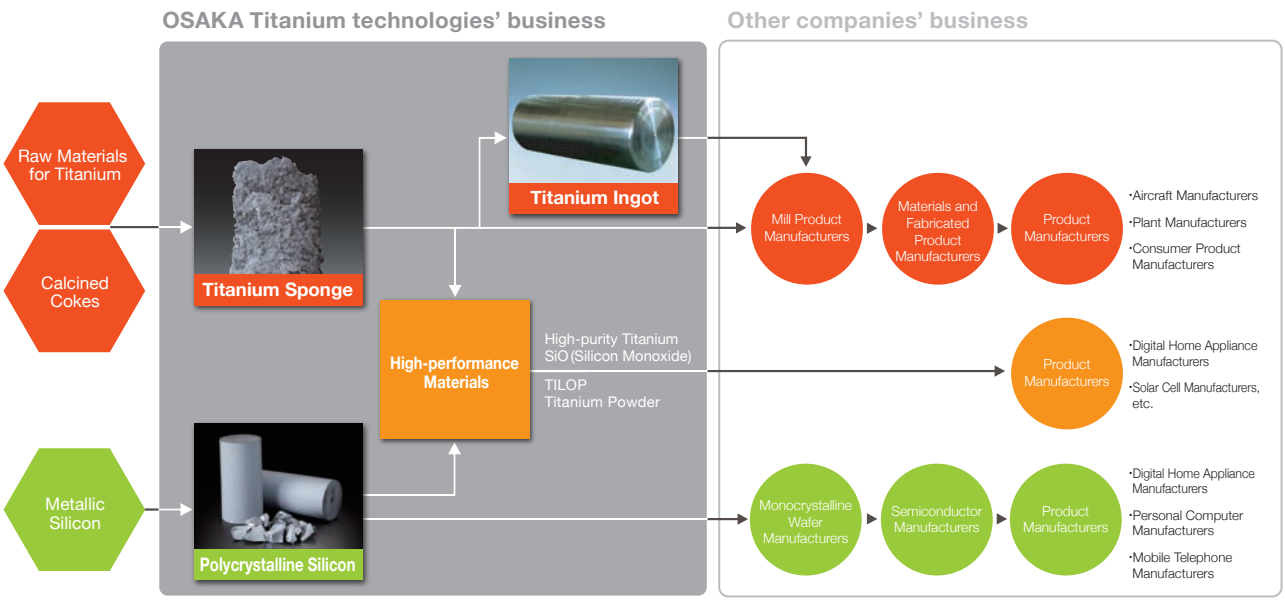
OSAKA Titanium technologies' predecessor, Osaka Titanium Co., Ltd., became Japan's first successful industrialized titanium company in 1952 and remains the country's pioneer in titanium sponge production. Since 1960, we have also been manufacturing polycrystalline silicon. The Company has continued to produce materials — titanium and polycrystalline silicon — that support modern society. We fulfill this role by supplying high-purity and high-quality products, primarily to the aerospace and electronics industries.

In recent years, the range of titanium and polycrystalline silicon applications has expanded significantly. OSAKA Titanium technologies aims to maximize the potential of these materials in applications from large-scale infrastructure to daily necessities: aircraft that feature an increasingly high degree of functionality and lightweight structures; the increasing number of LNG manufacturing plants as sources of low-carbon energy; large-scale power plants, seawater desalination plants whose needs are expanding globally to solve water resource issues; semiconductors which support the electronics industry; digital home appliances with a growing impact on all aspects of our lives; and advanced medical equipment.

In addition, we are focusing on the production and development of high-performance materials as new products based on titanium and polycrystalline silicon.

In order to realize the society's aspiration for a more abundant, faster and safer society, as their top manufacturer, we will continuously strive to bring out the inexhaustible potential of titanium and polycrystalline silicon.

Product Flow



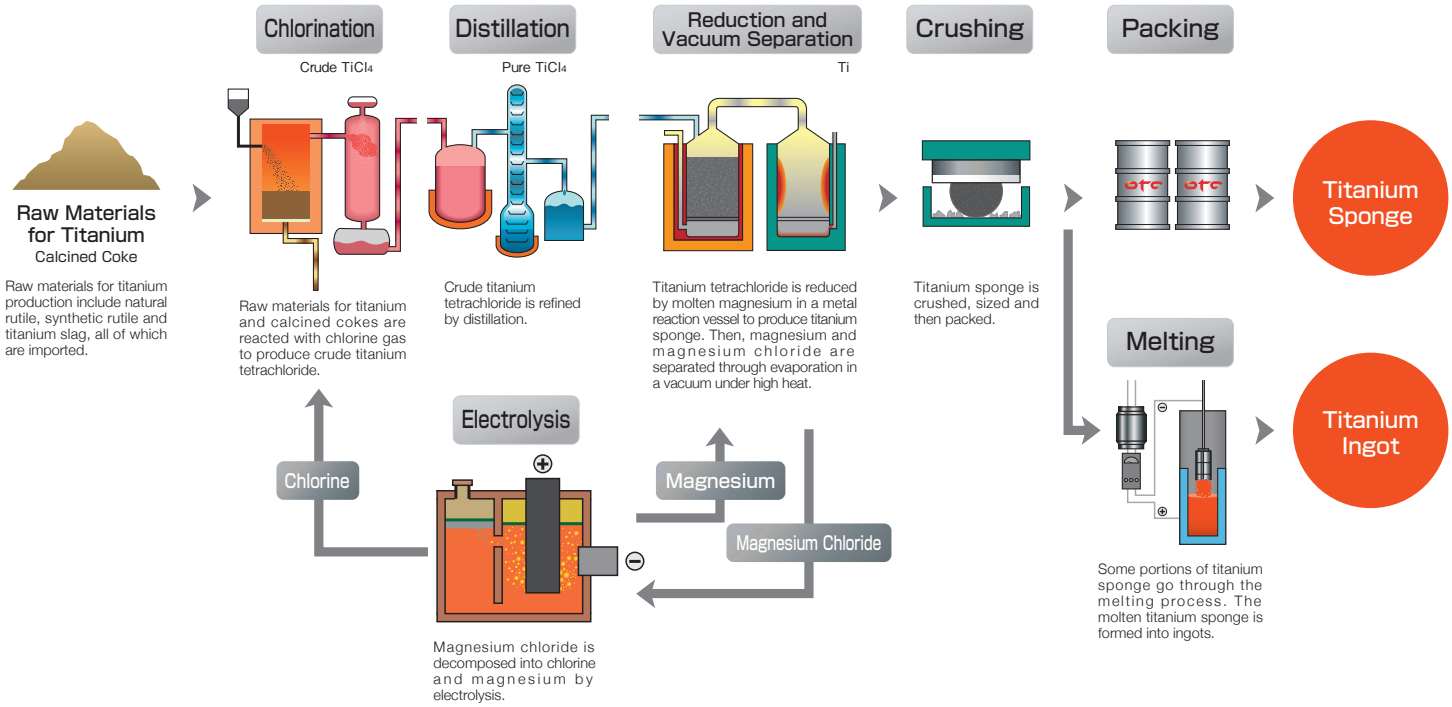
Titanium

Titanium Business

OTC's high-quality titanium sponge finds applications as a material used for important parts in aircraft and in power, chemical and other plants

Reaction Vessel for Post Vacuum Separation Process

Titanium Production Processes



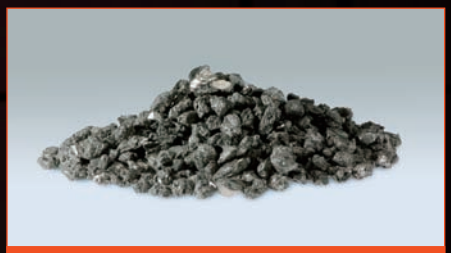
The current process for producing titanium was developed by Dr. Kroll in 1946. In 1952, our company became the first company in Japan to succeed in commercially manufacturing titanium and we are now among the world's largest makers of this product.

Titanium sponge is mainly manufactured in Japan, the United States, Russia, Kazakhstan, Ukraine and China. However, only a few manufacturers, including our company, have the technology for manufacturing high-quality titanium sponge (referred to as premium grade) for use in the manufacture of critical parts such as aircraft engine components.

Due to our capability to develop unique technologies and our accumulated expertise, we are recognized by our customers as a leading manufacturer of titanium sponge, in terms of both quality and quantity.

We also manufacture titanium ingots using titanium sponge as the primary raw material. Distinctive features of our large titanium ingots include their excellent surface condition and high internal quality. Lightweight, strong and rustproof, our titanium ingots are processed into pipes and sheets; pipes for such large-scale facilities as large-scale power plants, petrochemical and seawater desalination plants, and sheets for heat exchangers used in ships and LNG manufacturing plants. We intend to further expand our business based on the platform of titanium sponge manufacturing.

Products



Titanium Sponge

Titanium Ingot

Production Capacity

Titanium Sponge… **40,000 tons/year**
(Amagasaki Plant)

Titanium Ingots… **10,000 tons/year**
(Amagasaki Plant: 7,000 tons)
(Kishiwada Plant: 3,000 tons)

Reduction and
Vacuum Separation Furnace

Reaction Vessel for Post
Vacuum Separation Process

Crushing

VAR Furnace (Melting)

End Use Examples for Titanium

【Aerospace】
Airframes/Engine Parts/Rocket Parts

【Power and Other Plants】
Heat Transfer Pipes
(for Seawater Desalination Plants, Chemical Plants)
Plate Heat Exchangers/Condensers/
Power Generation Turbine Plates

【Construction】
Roofing/External Wall Materials

【Marine/Civil Engineering】
Marine Rigs/Deep Submergence Vehicles

【Automotive】
Motorbike Mufflers/Engine Parts/Exhaust Pipes

【Sporting Goods】
Golf Clubs/Racing Bikes

【Medical】
Artificial Bones/Artificial Joints/Cardiac Pacemakers

【Food】
Heat Exchangers for Brewing/
Alkaline-Ionized Water Filters

【General Articles】
Spectacle Frames/Watches/Cameras

©Boeing

©AIRBUS

Titanium Sponge(unit weight: 13 tons)

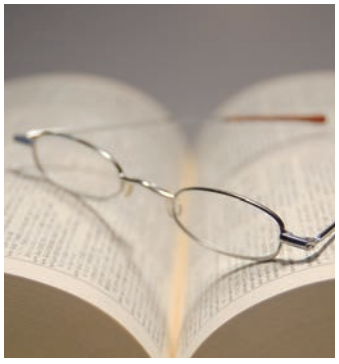
Plate Heat Exchangers
(photo courtesy Alfa Laval Japan)

Seawater Desalination Plants
(photo courtesy Sasakura Co., Ltd.)

Implants (Artificial Bones) (Harmless and Biocompatible)
(photo courtesy Nakashima Medical Co., Ltd.)

Electrolytic Cells for Sodium Hydroxide Production

Tokyo Big Sight



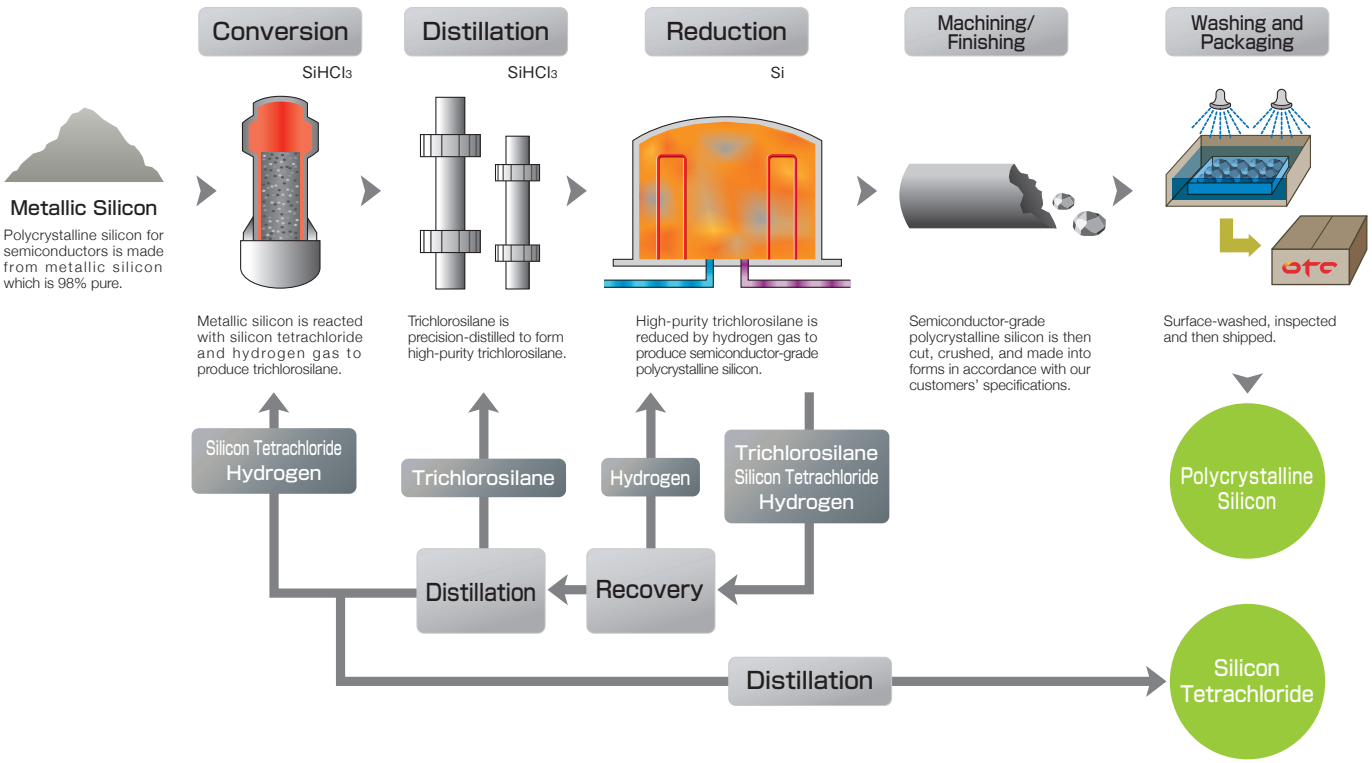
Spectacle Frames

Polycrystalline Silicon

Polycrystalline Silicon Business

OTC's high-purity polycrystalline silicon is employed as a monocrystalline silicon raw material for silicon wafers

Polycrystalline Silicon Production Processes



Silicon wafers are used as substrate materials for all semiconductors in products including personal computers, smartphones and digital cameras, and are indispensable materials in the electronics industry.

These silicon wafers are produced at monocrystalline wafer manufacturers, and we manufacture and sell the material used to make them: high-purity polycrystalline silicon.

Since OTC began making polycrystalline silicon in 1960, it has made successive improvements to its developmental technologies while maintaining the world's top quality standards (11N=99.999999999%) for semiconductor-grade products.

As an extremely high purity level is required for semiconductor-grade polycrystalline silicon, the number of manufacturers of this material worldwide is limited.

Product

Polycrystalline Silicon

Production Capacity

Polycrystalline Silicon··· 3,000 tons/year
(Kishiwada Plant)

Polycrystalline Silicon Rods

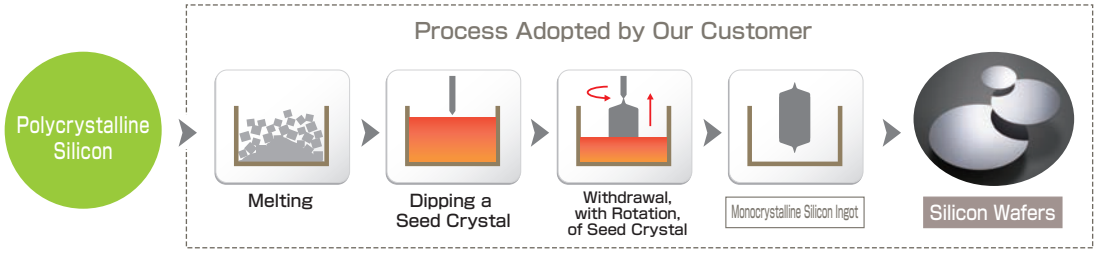
Conversion

Distillation

Reduction Furnace

Polycrystalline Silicon Rods

Process for Producing Silicon Wafers from High-purity Semiconductor-grade Polycrystalline Silicon



End Use Examples for Polycrystalline Silicon

Personal Computers

Smartphones

Digital Cameras

High-performance Materials

Semiconductor/ High-performance Materials Business

We will focus on fostering a third core business

Titanium and silicon, materials that are driving industrial development, have huge untapped potential. We believe that one of our key responsibilities is to exploit their full potential and develop new products which meet our customers' needs. Accordingly, we are planning to foster the high-performance materials business as our company's third core operation.

Our high-purity titanium, with its high purity levels from 4N5 (99.995%) to 5N (99.999%), is mainly used for producing high-purity titanium sputtering targets used in the semiconductor industry.

We have developed our own technology for manufacturing gas-atomized spherical titanium powder. This product, which is marketed under the trade name TILOP, offers excellent fluidity because of its spherical shape, and is used as a material for metal injection molding (MIM).

Our SiO (Silicon Monoxide) has a proven track record as a barrier material for food packaging and commands the largest share of the industrial market. The range of uses of SiO is expanding, including in solar cell back sheets and industrial packaging. Also, there are great expectations for its application as a material for the negative electrodes in lithium ion rechargeable batteries.

High-purity Titanium Sputtering Targets

Products

End Use Examples for High-performance Materials

Personal Computers

Liquid Crystal Televisions

Solar Panels

Smartphones

OSAKA Titanium technologies Co.,Ltd.

Established: November 26, 1952

Paid-up Capital: 8,739,620,000 yen

Representative: Shozo Nishizawa
President & Representative Director

Market Listings: Tokyo Stock Exchange, 1st Section

Business Overview: ●Titanium Business

Titanium Sponge/Titanium Ingot/Titanium Tetrachloride
Titanium Tetrachloride Aqueous Solution

●Polycrystalline Silicon Business

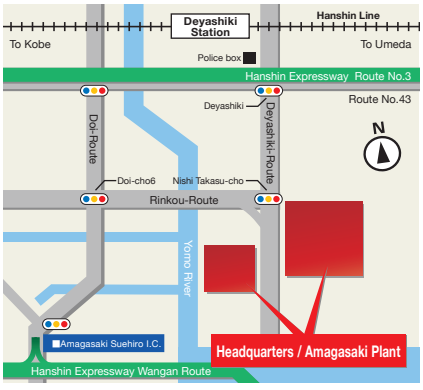
Polycrystalline Silicon

●High-performance Materials Business

High-purity Titanium/SiO(Silicon Monoxide)/TILOP/Titanium Powder

【Headquarters/Amagasaki Plant】

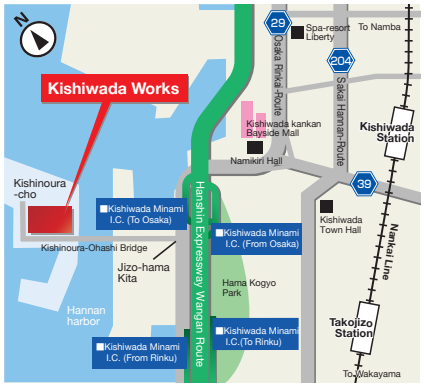
1 Higashihama-cho, Amagasaki, Hyogo,
660-8533, Japan
Tel. +81-6-6413-9911 Fax. +81-6-6413-4343



15 minutes walk from Deyashiki Station on Hanshin Line.

【Kishiwada Works】

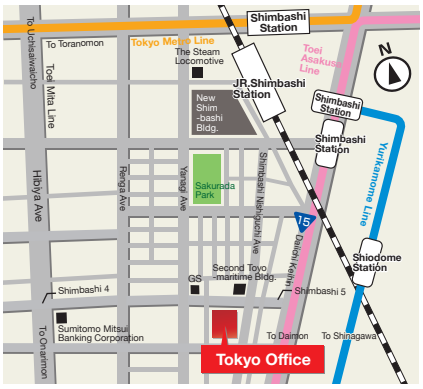
3-2 Kishinoura-cho, Kishiwada, Osaka,
596-0016, Japan
Tel. +81-72-479-3010 Fax. +81-72-479-3050



10 minutes by car from Kishiwada Station on Nankai Line.

【Tokyo Office】

Shimbashi Sumitomo Building 6F
5-11-3 Shimbashi, Minato-ku, Tokyo,
105-0004, Japan
Tel. +81-3-5776-3102 Fax. +81-3-5776-3111



5 minutes walk from Shimbashi Station (Karasumori-guchi) on JR and Tokyo Metro Line.

http://www.osaka-ti.co.jp/