

# Titanium Metal: Market Outlook to 2015

## ARE YOU FACING BIG DECISIONS INVOLVING TITANIUM METAL?

The market for titanium metal is global, and local events can make waves across the world. If you're involved with titanium metal in any way, you know that everything's important – both the small details and the big picture. A complete perspective is essential, whether you're preparing a company strategy, planning exploration, bringing new products to market, buying, selling or investing.

## MAKE THE RIGHT CHOICE

Whatever your challenge, this report gives you deep insights to help you make really well-informed recommendations or decisions. It's a detailed account of:

- World production and consumption
- The operations of the major producers
- End-use market applications
- Price trends
- International trade patterns
- Forecasts for supply, demand and prices

## IS THIS REPORT FOR YOU?

Our clients include anyone with an interest in the evolving titanium metal market, anywhere in the world. Readers of past reports have come from a wide range of relevant industries – from extraction to end-use, from mines to factories to banks, from existing players to new entrants. And they range from analysts and researchers to operational managers and chief executives.

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## WHAT READERS SAY

*“When we review project or company opportunities, the most important area of review is the marketplace. We have always deferred to Roskill reports and their services for the prime benchmark reference point.”*

Michael Kiernan,  
Consolidated Minerals Limited,  
Australia

*“Roskill has been a key reference to our industry for a long time...the best reference about the market and industries.”*

Bayram AnKarali  
Etimine SA, Turkey

*“One of the few sources available for critical, detailed and reliable information on the industrial minerals markets.”*

Emilio Lobato,  
Technical Marketing Manager,  
Magnesita Refrataros SA, Brazil

## GET ACCURATE ANSWERS FROM INDEPENDENT EXPERTS

- What caused demand for titanium to jump by 40% in 2007?
- When will demand get back to 2007 levels after falling in 2009?
- To what extent will the new generation of Boeing and Airbus aircraft stimulate the market?
- Is there any real prospect of large scale use of titanium in automobiles?
- Who are the main players in production, fabrication and use?
- What is the current status of the Chinese market after the massive growth of recent years?

## WHY READERS CHOOSE ROSKILL

**We're approachable.** Our sources include a large network of industry contacts: the key players talk to us because we're approachable and because they know us well.

**We're independent.** The information and insights in Titanium Metal: Market outlook to 2015 are completely independent. We're privately-owned and not beholden to anyone. Our expert researchers make a thorough and objective analysis of all available data, from sources across the globe.

**We're expert.** You want facts from people who know what they're talking about. Roskill's experts have been analysing the titanium metal industry for over 30 years and this is our 5th report on this sector.

### **Approachable. Independent. Expert.**

That's why no other report can match the accuracy, depth and expertise of Titanium Metal: Market outlook to 2015.

## WHAT ELSE CAN WE DO FOR YOU?

We also offer expert bespoke consultancy to help you tackle specific complex challenges, such as feasibility studies, market assessments or due diligence reports.

If you'd like to discuss a project, please email [judith@roskill.co.uk](mailto:judith@roskill.co.uk) or call +44 20 8944 0066.

# Titanium Metal: Market outlook to 2015

## What's included?

Contents: 339 pages, 134 tables, 84 figures plus appendices

## Overview

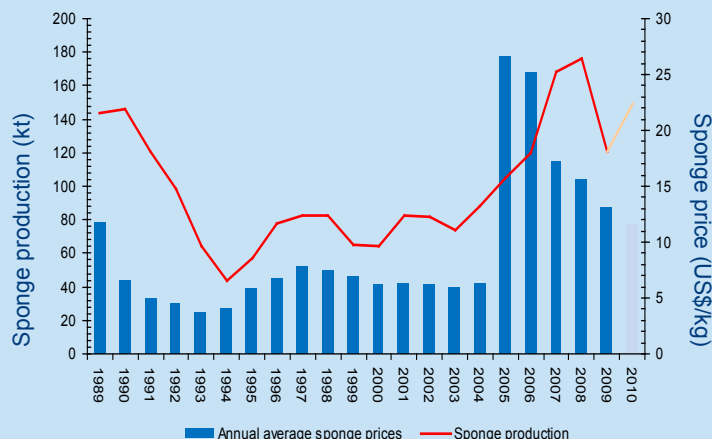
The titanium industry responded to rapidly increasing demand from aircraft makers and industrial plant manufacturers in 2005 and 2006, by creating new sponge capacity, particularly in China, but also in all the main producing countries. Production of sponge increased from 74kt in 2003 to 176kt in 2008. In late 2008, the global economic slowdown and delays in production of the A380 and B787 jet airliners caused a sharp fall in titanium demand just as the new titanium sponge projects were nearing completion. Consequently, in 2009 and 2010, titanium

sponge capacity was surplus to demand, and producers idled or (in China) closed sponge plants, and global output fell to 120kt. By mid 2010, it was clear that demand for titanium sponge in China was growing strongly and annual global output was forecast to recover to 150kt. Nevertheless surplus sponge capacity is likely to overhang the market until 2012 and prices will remain relatively subdued through the next two years.

Titanium mill products and components are made principally in the USA, Russia,

Japan and China and global demand in 2009 was estimated to be 100kt. Aerospace applications account for over 50% of demand for mill products in the USA and Europe but in China, Japan and other Asian markets industrial applications, particularly in chemical plant, are far more important. Demand is forecast to grow by 6%py to 2015 resulting in a market for mill products of 140kt, requiring up to 200kt of titanium sponge.

This report gives you a full analysis of the key trends, issues and developments in the market, a clear insight into all areas of the industry and an authoritative analysis of its prospects.



### 1. SUMMARY

### 2. HISTORY, OCCURRENCE, AND RESOURCES OF TITANIUM

### 3. MINING, PROCESSING AND REFINING OF TITANIUM METAL

### 4. WORLD SUPPLY OF TITANIUM MINERALS AND METAL

- History of the discovery of titanium metal; Properties of titanium metal; Mineralogy and occurrence of titanium; Occurrence

### 5. FUTURE SUPPLY OF TITANIUM PRODUCTS

### 6. NOTES ON THE PRODUCTION AND USE OF TITANIUM BY COUNTRY

- Detailed analysis of 27 countries

### 7. CONSUMPTION OF TITANIUM METAL

### 8. FORMS AND FABRICATION OF TITANIUM METAL

- Commercially pure (CP) titanium; Titanium alloys; Fabrication of titanium metal and alloy products

### 9. USES OF TITANIUM METAL

- Use of titanium metal in aerospace; industrial applications; non-aerospace military applications; consumer applications; medicine; high technology applications; Other end uses for titanium-based alloys and compounds; Use of titanium in steels, superalloys and other minor alloys

### 10. ANALYSIS OF INTERNATIONAL TRADE DATA FOR TITANIUM METAL

- Trade in unwrought titanium; mill products and articles; waste and scrap; Trade in ferrotitanium

### 11. TITANIUM MARKETING AND PRICES

- Titanium sponge prices; Titanium scrap prices; Titanium melted and mill products prices; Ferrotitanium prices; Outlook for titanium prices to 2015

### 12. OUTLOOK FOR TITANIUM METAL DEMAND BY APPLICATION TO 2015

- Outlook for titanium demand in aerospace; industrial applications; non-aerospace military applications; consumer applications; medical applications; steels and superalloys

### 13. SUPPLY AND DEMAND OF TITANIUM SPONGE TO 2015

# How to order your report

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## Question?

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