

	Page
<b>1.0 Introduction</b>	<b>1</b>
<b>2.0 The global TiO<sub>2</sub> pigment industry</b>	<b>2</b>
2.1 Characteristics of TiO <sub>2</sub> pigment	2
2.2 Major markets for TiO <sub>2</sub> pigment	3
2.2.1 Paint and coatings	3
2.2.2 Plastics	4
2.2.3 Paper	4
2.2.4 Inks	5
2.2.5 Other applications	5
<b>3.0 Demand for TiO<sub>2</sub> pigment</b>	<b>6</b>
3.1 Introduction	6
3.2 Demand forecast to 2015	7
3.2.1 Demand drivers, key assumptions and forecast risks	9
3.2.2 Summary of demand forecast	12
<b>4.0 Supply of TiO<sub>2</sub> pigment</b>	<b>14</b>
4.1 Pigment industry participants	14
4.2 Supply forecast to 2015	14
4.2.1 North America	16
4.2.2 Europe	16
4.2.3 Asia-Pacific	17
4.2.4 Summary of supply forecast	17
4.3 Overview of the Chinese market	21
<b>5.0 TiO<sub>2</sub> pigment prices</b>	<b>23</b>
5.1 Major determinants of TiO <sub>2</sub> pigment prices	23
5.2 Review of price trends since 2001	24
5.2.1 Pigment prices between 2001-2003	24
5.2.2 Pigment prices between 2004-2006	24
5.2.3 Pigment prices between 2007-2008	25
5.3 Major recent industry events impacting prices	26
5.4 Changes in the global supply/demand balances	29
5.5 Impact of currency exchange rates	30
5.6 Price forecasts to 2015	31
5.7 Conclusions	36

## APPENDIX

<b>Trade statistics</b>	38-56
World .....	38
Asia-Pacific .....	39
North America .....	42
Western Europe .....	45
Central and Eastern Europe .....	48
Latin America and the Caribbean .....	51
Middle East and Africa .....	54

## TABLES

Table 2.1:	Key comparative properties of anatase and rutile TiO <sub>2</sub> pigment	2
Table 3.1:	Global pigment demand forecast: 2009-2015	7
Table 3.2:	Quarterly TiO <sub>2</sub> pigment demand forecast: 2010-2012	8
Table 4.1:	Global pigment supply forecast: 2009-2015	15
Table 4.2:	Quarterly global pigment supply forecast: 2010-2012 ('000 tonnes)	20
Table 4.3:	Production forecast by global producer: 2009 to 2015	21
Table 4.4:	Chinese supply/demand forecast: 2009-2015 ('000 tonnes)	22
Table 5.1:	Annual nominal price forecast by region: 2009-2015	34
Table 5.2:	Quarterly nominal price forecast by region: 2010-2012	34

## FIGURES

Figure 3.1:	Per capita consumption of TiO <sub>2</sub> pigment in 2009	6
Figure 3.2:	World TiO <sub>2</sub> pigment consumption by end-use sector: 2009	7
Figure 3.3:	US existing home sales, housing starts: 1987-2015	9
Figure 3.4:	Global average per capita consumption: 2007-2015	13
Figure 4.1:	TiO <sub>2</sub> pigment producers by process type: 2009	14
Figure 4.2:	Forecast year-end global inventory: 2008-2015	16
Figure 4.3:	Global pigment consumption and production forecast: 2008-2015	18
Figure 4.4:	Global TiO <sub>2</sub> production by producer: 2009 and 2015	18
Figure 4.5:	Global TiO <sub>2</sub> supply by region: 2009 and 2015	19
Figure 5.1:	Global weighted average pigment price in real 2009 US dollars: 1989-2009	26
Figure 5.2:	Chinese TiO <sub>2</sub> monthly exports: January 2007 to March 2010	27
Figure 5.3:	Global quarterly capacity utilisation forecast: 2007-2012	29
Figure 5.4:	Euro - US\$ quarterly average exchange rates: 2002-2010	31
Figure 5.5:	Quarterly global nominal and real price forecast: 2008-2012	32
Figure 5.6:	Annual global nominal price forecast and year-end inventory levels: 2008-2015	33
Figure 5.7:	Quarterly Chinese nominal and real price forecast: 2008-2012	35
Figure 5.8:	Quarterly Chinese high and low quality nominal price forecast: 2008-2012	35

## 1.0 Introduction

The major sources of information for this confidential report are TZMI Group's (TZMI) various publications; its comprehensive database; published company reports; latest international trade data plus its wide network of clients and sources.

The intent of the report is to provide an insight into the factors that affect the pricing of titanium dioxide pigment in world markets including assessment of supply, demand and capacity utilisation. This report is the first of four pricing reports for 2010 and is intended to be repeated every three months. The first TZMI report was published as a bi-annual in early Q1 2007 (PPF07-1H).

The first part of the report provides background information on pigment markets and presents a summary of the longer term pigment pricing trends. This is done to be consistent with the first report and also to ensure that this report can be used on a "stand alone" basis. A more detailed review of 2009 is provided before the forecast to 2015 is presented.

In this report the term "pigment" is used in reference to titanium dioxide (chemical formula  $\text{TiO}_2$ ) pigment and does not reference any other pigments or opacifiers.

All volumes represented in this report are in tonnes (metric tonnes), with 1 tonne equal to 2,204 pounds; however, it is recognised that in the US pigment industry prices are often expressed in terms of "cents per pound".

Every effort has been made to ensure that the information presented and the conclusions reached are both realistic and not misleading. However, TZMI makes no warranty as to the accuracy of the information contained in this report and will not accept responsibility or liability for any loss incurred by any person or organisation relying on the information in this report.