



Electronic Materials Information

Silicon Carbide

As Used in the Semiconductor Industry

A Critical Materials Report

Prepared by
J. Housley of
Techcet Group LLC*

March 2007

Los Gatos, CA

408-358-3469

* www.techcet.com

TABLE OF CONTENTS

	PAGE #
1. HIGHLIGHTS	4
2. DISCUSSION	6
2.1 SiC Advantages over Quartz	7
3. MANUFACTURING METHODS.....	8
3.1 Conversion Process from Graphite	9
4. DIFFERENT TYPES OF SILICON CARBIDE	10
4.1 The Quartz Advantage	10
5. MARKET SHARE.....	12
6. WORLDWIDE MARKET SIZE	14
6.1 SiC Rate of Growth vs. Quartz	15
7. SELECTED ASIAN GROWTH MARKETS.....	16
8. QUALITY AND DISTRIBUTION.....	17
9. SUPPLY CHAIN.....	18
10. PLAYERS	18
10.1 Saint Gobain / Crystar Components (sintered process SiC).....	18
10.2 Toshiba.....	19
10.3 AGEM (Asahi Glass Electronic Materials)	19
10.4 Poco	20
10.5 Luch	20
10.6 Bridgestone	20
10.7 Rohm and Haas	21
ADDENDUM TO SIC REPORT BY J HOUSLEY OF TECHCET GROUP, LLC.....	22

PAGE #

List of Figures

Figure 1. Typical Sintered Material Process.....	9
Figure 2. 2006 SiC Market by Manufacturing Method (chart does not include 1-2% for silicon parts/carriers).....	10
Figure 3. SiC Market Share, WW Estimate, 2006 in \$ Volume as a % of total.....	13
Figure 4. Estimated WW Market for Semiconductor SiC (M\$).....	14
Figure 5. Estimated 2006 Quartz vs. SiC Market Split	15
Figure 6. Future Projected Quartz vs. SiC Market Split, 2009 based on US \$	15
Figure 7. 2006 SiC Percent of OEM Sales by Application.....	17

List of Tables

Table 1. Projected Estimates for New OEM Tool Consumption (expressed as a % of WW consumption) for IC producers 16

Table 2. Market size (2006 estimates in Millions of US\$)..... 16

Readers note: this report represents the interpretation and analysis of information generally available to the public or released by responsible agencies or individuals. Data was obtained from sources considered reliable. However, accuracy or completeness is not guaranteed.