

United States Solar Grade Wafer Market Report 2017

<https://marketpublishers.com/r/UAFE711EE77EN.html>

Date: December 2017

Pages: 111

Price: US\$ 3,800.00 (Single User License)

ID: UAFE711EE77EN

Abstracts

In this report, the United States Solar Grade Wafer market is valued at USD XX million in 2016 and is expected to reach USD XX million by the end of 2022, growing at a CAGR of XX% between 2016 and 2022.

Geographically, this report splits the United States market into seven regions:

The West

Southwest

The Middle Atlantic

New England

The South

The Midwest

with sales (volume), revenue (value), market share and growth rate of Solar Grade Wafer in these regions, from 2012 to 2022 (forecast).

United States Solar Grade Wafer market competition by top manufacturers/players, with Solar Grade Wafer sales volume, price, revenue (Million USD) and market share for each manufacturer/player; the top players including

GCL

LDK

Yingli Solar

ReneSola

Green Energy Technology

China Jinglong

Sornid Hi-Tech

Jinko Solar

Trinasolar

Comtec Solar Systems

Nexolon

LONGI

Targray

Topoint

JYT

Tianwei

On the basis of product, this report displays the production, revenue, price, market share and growth rate of each type, primarily split into

Monocrystal

Polycrystal

On the basis on the end users/applications, this report focuses on the status and outlook for major applications/end users, sales volume, market share and growth rate for each application, including

Single Crystalline Silicon Solar Cell

Polycrystalline Silicon Solar Cell

If you have any special requirements, please let us know and we will offer you the report as you want.

Contents

United States Solar Grade Wafer Market Report 2017

1 SOLAR GRADE WAFER OVERVIEW

- 1.1 Product Overview and Scope of Solar Grade Wafer
- 1.2 Classification of Solar Grade Wafer by Product Category
 - 1.2.1 United States Solar Grade Wafer Market Size (Sales Volume) Comparison by Type (2012-2022)
 - 1.2.2 United States Solar Grade Wafer Market Size (Sales Volume) Market Share by Type (Product Category) in 2016
 - 1.2.3 Monocrystal
 - 1.2.4 Polycrystal
- 1.3 United States Solar Grade Wafer Market by Application/End Users
 - 1.3.1 United States Solar Grade Wafer Market Size (Consumption) and Market Share Comparison by Application (2012-2022)
 - 1.3.2 Single Crystalline Silicon Solar Cell
 - 1.3.3 Polycrystalline Silicon Solar Cell
- 1.4 United States Solar Grade Wafer Market by Region
 - 1.4.1 United States Solar Grade Wafer Market Size (Value) Comparison by Region (2012-2022)
 - 1.4.2 The West Solar Grade Wafer Status and Prospect (2012-2022)
 - 1.4.3 Southwest Solar Grade Wafer Status and Prospect (2012-2022)
 - 1.4.4 The Middle Atlantic Solar Grade Wafer Status and Prospect (2012-2022)
 - 1.4.5 New England Solar Grade Wafer Status and Prospect (2012-2022)
 - 1.4.6 The South Solar Grade Wafer Status and Prospect (2012-2022)
 - 1.4.7 The Midwest Solar Grade Wafer Status and Prospect (2012-2022)
- 1.5 United States Market Size (Value and Volume) of Solar Grade Wafer (2012-2022)
 - 1.5.1 United States Solar Grade Wafer Sales and Growth Rate (2012-2022)
 - 1.5.2 United States Solar Grade Wafer Revenue and Growth Rate (2012-2022)

2 UNITED STATES SOLAR GRADE WAFER MARKET COMPETITION BY PLAYERS/SUPPLIERS

- 2.1 United States Solar Grade Wafer Sales and Market Share of Key Players/Suppliers (2012-2017)
- 2.2 United States Solar Grade Wafer Revenue and Share by Players/Suppliers (2012-2017)

- 2.3 United States Solar Grade Wafer Average Price by Players/Suppliers (2012-2017)
- 2.4 United States Solar Grade Wafer Market Competitive Situation and Trends
 - 2.4.1 United States Solar Grade Wafer Market Concentration Rate
 - 2.4.2 United States Solar Grade Wafer Market Share of Top 3 and Top 5 Players/Suppliers
 - 2.4.3 Mergers & Acquisitions, Expansion in United States Market
- 2.5 United States Players/Suppliers Solar Grade Wafer Manufacturing Base Distribution, Sales Area, Product Type

3 UNITED STATES SOLAR GRADE WAFER SALES (VOLUME) AND REVENUE (VALUE) BY REGION (2012-2017)

- 3.1 United States Solar Grade Wafer Sales and Market Share by Region (2012-2017)
- 3.2 United States Solar Grade Wafer Revenue and Market Share by Region (2012-2017)
- 3.3 United States Solar Grade Wafer Price by Region (2012-2017)

4 UNITED STATES SOLAR GRADE WAFER SALES (VOLUME) AND REVENUE (VALUE) BY TYPE (PRODUCT CATEGORY) (2012-2017)

- 4.1 United States Solar Grade Wafer Sales and Market Share by Type (Product Category) (2012-2017)
- 4.2 United States Solar Grade Wafer Revenue and Market Share by Type (2012-2017)
- 4.3 United States Solar Grade Wafer Price by Type (2012-2017)
- 4.4 United States Solar Grade Wafer Sales Growth Rate by Type (2012-2017)

5 UNITED STATES SOLAR GRADE WAFER SALES (VOLUME) BY APPLICATION (2012-2017)

- 5.1 United States Solar Grade Wafer Sales and Market Share by Application (2012-2017)
- 5.2 United States Solar Grade Wafer Sales Growth Rate by Application (2012-2017)
- 5.3 Market Drivers and Opportunities

6 UNITED STATES SOLAR GRADE WAFER PLAYERS/SUPPLIERS PROFILES AND SALES DATA

- 6.1 GCL
 - 6.1.1 Company Basic Information, Manufacturing Base and Competitors

- 6.1.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.1.2.1 Product A
 - 6.1.2.2 Product B
- 6.1.3 GCL Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
- 6.1.4 Main Business/Business Overview
- 6.2 LDK
 - 6.2.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.2.2.1 Product A
 - 6.2.2.2 Product B
 - 6.2.3 LDK Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.2.4 Main Business/Business Overview
- 6.3 Yingli Solar
 - 6.3.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.3.2.1 Product A
 - 6.3.2.2 Product B
 - 6.3.3 Yingli Solar Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.3.4 Main Business/Business Overview
- 6.4 ReneSola
 - 6.4.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.4.2.1 Product A
 - 6.4.2.2 Product B
 - 6.4.3 ReneSola Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.4.4 Main Business/Business Overview
- 6.5 Green Energy Technology
 - 6.5.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.5.2.1 Product A
 - 6.5.2.2 Product B
 - 6.5.3 Green Energy Technology Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.5.4 Main Business/Business Overview
- 6.6 China Jinglong
 - 6.6.2 Solar Grade Wafer Product Category, Application and Specification
 - 6.6.2.1 Product A
 - 6.6.2.2 Product B
 - 6.6.3 China Jinglong Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.6.4 Main Business/Business Overview

6.7 Sornid Hi-Tech

6.7.2 Solar Grade Wafer Product Category, Application and Specification

6.7.2.1 Product A

6.7.2.2 Product B

6.7.3 Sornid Hi-Tech Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)

6.7.4 Main Business/Business Overview

6.8 Jinko Solar

6.8.2 Solar Grade Wafer Product Category, Application and Specification

6.8.2.1 Product A

6.8.2.2 Product B

6.8.3 Jinko Solar Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)

6.8.4 Main Business/Business Overview

6.9 Trinasolar

6.9.2 Solar Grade Wafer Product Category, Application and Specification

6.9.2.1 Product A

6.9.2.2 Product B

6.9.3 Trinasolar Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)

6.9.4 Main Business/Business Overview

6.10 Comtec Solar Systems

6.10.2 Solar Grade Wafer Product Category, Application and Specification

6.10.2.1 Product A

6.10.2.2 Product B

6.10.3 Comtec Solar Systems Solar Grade Wafer Sales, Revenue, Price and Gross Margin (2012-2017)

6.10.4 Main Business/Business Overview

6.11 Nexolon

6.12 LONGI

6.13 Targray

6.14 Topoint

6.15 JYT

6.16 Tianwei

7 SOLAR GRADE WAFER MANUFACTURING COST ANALYSIS

7.1 Solar Grade Wafer Key Raw Materials Analysis

7.1.1 Key Raw Materials

- 7.1.2 Price Trend of Key Raw Materials
- 7.1.3 Key Suppliers of Raw Materials
- 7.1.4 Market Concentration Rate of Raw Materials
- 7.2 Proportion of Manufacturing Cost Structure
 - 7.2.1 Raw Materials
 - 7.2.2 Labor Cost
 - 7.2.3 Manufacturing Expenses
- 7.3 Manufacturing Process Analysis of Solar Grade Wafer

8 INDUSTRIAL CHAIN, SOURCING STRATEGY AND DOWNSTREAM BUYERS

- 8.1 Solar Grade Wafer Industrial Chain Analysis
- 8.2 Upstream Raw Materials Sourcing
- 8.3 Raw Materials Sources of Solar Grade Wafer Major Manufacturers in 2016
- 8.4 Downstream Buyers

9 MARKETING STRATEGY ANALYSIS, DISTRIBUTORS/TRADERS

- 9.1 Marketing Channel
 - 9.1.1 Direct Marketing
 - 9.1.2 Indirect Marketing
 - 9.1.3 Marketing Channel Development Trend
- 9.2 Market Positioning
 - 9.2.1 Pricing Strategy
 - 9.2.2 Brand Strategy
 - 9.2.3 Target Client
- 9.3 Distributors/Traders List

10 MARKET EFFECT FACTORS ANALYSIS

- 10.1 Technology Progress/Risk
 - 10.1.1 Substitutes Threat
 - 10.1.2 Technology Progress in Related Industry
- 10.2 Consumer Needs/Customer Preference Change
- 10.3 Economic/Political Environmental Change

11 UNITED STATES SOLAR GRADE WAFER MARKET SIZE (VALUE AND VOLUME) FORECAST (2017-2022)

- 11.1 United States Solar Grade Wafer Sales Volume, Revenue Forecast (2017-2022)
- 11.2 United States Solar Grade Wafer Sales Volume Forecast by Type (2017-2022)
- 11.3 United States Solar Grade Wafer Sales Volume Forecast by Application (2017-2022)
- 11.4 United States Solar Grade Wafer Sales Volume Forecast by Region (2017-2022)

12 RESEARCH FINDINGS AND CONCLUSION

13 APPENDIX

- 13.1 Methodology/Research Approach
 - 13.1.1 Research Programs/Design
 - 13.1.2 Market Size Estimation
 - 13.1.3 Market Breakdown and Data Triangulation
- 13.2 Data Source
 - 13.2.1 Secondary Sources
 - 13.2.2 Primary Sources
- 13.3 Disclaimer

The report requires updating with new data and is sent in 2-3 business days after order is placed.

List Of Tables

LIST OF TABLES AND FIGURES

- Figure Product Picture of Solar Grade Wafer
- Figure United States Solar Grade Wafer Market Size (MSI) by Type (2012-2022)
- Figure United States Solar Grade Wafer Sales Volume Market Share by Type (Product Category) in 2016
- Figure Monocrystal Product Picture
- Figure Polycrystal Product Picture
- Figure United States Solar Grade Wafer Market Size (MSI) by Application (2012-2022)
- Figure United States Sales Market Share of Solar Grade Wafer by Application in 2016
- Figure Single Crystalline Silicon Solar Cell Examples
- Table Key Downstream Customer in Single Crystalline Silicon Solar Cell
- Figure Polycrystalline Silicon Solar Cell Examples
- Table Key Downstream Customer in Polycrystalline Silicon Solar Cell
- Figure United States Solar Grade Wafer Market Size (Million USD) by Region (2012-2022)
- Figure The West Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure Southwest Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure The Middle Atlantic Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure New England Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure The South of US Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure The Midwest Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure United States Solar Grade Wafer Sales (MSI) and Growth Rate (2012-2022)
- Figure United States Solar Grade Wafer Revenue (Million USD) and Growth Rate (2012-2022)
- Figure United States Solar Grade Wafer Market Major Players Product Sales Volume (MSI) (2012-2017)
- Table United States Solar Grade Wafer Sales (MSI) of Key Players/Suppliers (2012-2017)
- Table United States Solar Grade Wafer Sales Share by Players/Suppliers (2012-2017)
- Figure 2016 United States Solar Grade Wafer Sales Share by Players/Suppliers

Figure 2017 United States Solar Grade Wafer Sales Share by Players/Suppliers
Figure United States Solar Grade Wafer Market Major Players Product Revenue (Million USD) (2012-2017)
Table United States Solar Grade Wafer Revenue (Million USD) by Players/Suppliers (2012-2017)
Table United States Solar Grade Wafer Revenue Share by Players/Suppliers (2012-2017)
Figure 2016 United States Solar Grade Wafer Revenue Share by Players/Suppliers
Figure 2017 United States Solar Grade Wafer Revenue Share by Players/Suppliers
Table United States Market Solar Grade Wafer Average Price (USD/SI) of Key Players/Suppliers (2012-2017)
Figure United States Market Solar Grade Wafer Average Price (USD/SI) of Key Players/Suppliers in 2016
Figure United States Solar Grade Wafer Market Share of Top 3 Players/Suppliers
Figure United States Solar Grade Wafer Market Share of Top 5 Players/Suppliers
Table United States Players/Suppliers Solar Grade Wafer Manufacturing Base Distribution and Sales Area
Table United States Players/Suppliers Solar Grade Wafer Product Category
Table United States Solar Grade Wafer Sales (MSI) by Region (2012-2017)
Table United States Solar Grade Wafer Sales Share by Region (2012-2017)
Figure United States Solar Grade Wafer Sales Share by Region (2012-2017)
Figure United States Solar Grade Wafer Sales Market Share by Region in 2016
Table United States Solar Grade Wafer Revenue (Million USD) and Market Share by Region (2012-2017)
Table United States Solar Grade Wafer Revenue Share by Region (2012-2017)
Figure United States Solar Grade Wafer Revenue Market Share by Region (2012-2017)
Figure United States Solar Grade Wafer Revenue Market Share by Region in 2016
Table United States Solar Grade Wafer Price (USD/SI) by Region (2012-2017)
Table United States Solar Grade Wafer Sales (MSI) by Type (2012-2017)
Table United States Solar Grade Wafer Sales Share by Type (2012-2017)
Figure United States Solar Grade Wafer Sales Share by Type (2012-2017)
Figure United States Solar Grade Wafer Sales Market Share by Type in 2016
Table United States Solar Grade Wafer Revenue (Million USD) and Market Share by Type (2012-2017)
Table United States Solar Grade Wafer Revenue Share by Type (2012-2017)
Figure Revenue Market Share of Solar Grade Wafer by Type (2012-2017)
Figure Revenue Market Share of Solar Grade Wafer by Type in 2016
Table United States Solar Grade Wafer Price (USD/SI) by Types (2012-2017)
Figure United States Solar Grade Wafer Sales Growth Rate by Type (2012-2017)

Table United States Solar Grade Wafer Sales (MSI) by Application (2012-2017)
Table United States Solar Grade Wafer Sales Market Share by Application (2012-2017)
Figure United States Solar Grade Wafer Sales Market Share by Application (2012-2017)
Figure United States Solar Grade Wafer Sales Market Share by Application in 2016
Table United States Solar Grade Wafer Sales Growth Rate by Application (2012-2017)
Figure United States Solar Grade Wafer Sales Growth Rate by Application (2012-2017)
Table GCL Basic Information List
Table GCL Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)
Figure GCL Solar Grade Wafer Sales Growth Rate (2012-2017)
Figure GCL Solar Grade Wafer Sales Market Share in United States (2012-2017)
Figure GCL Solar Grade Wafer Revenue Market Share in United States (2012-2017)
Table LDK Basic Information List
Table LDK Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)
Figure LDK Solar Grade Wafer Sales Growth Rate (2012-2017)
Figure LDK Solar Grade Wafer Sales Market Share in United States (2012-2017)
Figure LDK Solar Grade Wafer Revenue Market Share in United States (2012-2017)
Table Yingli Solar Basic Information List
Table Yingli Solar Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)
Figure Yingli Solar Solar Grade Wafer Sales Growth Rate (2012-2017)
Figure Yingli Solar Solar Grade Wafer Sales Market Share in United States (2012-2017)
Figure Yingli Solar Solar Grade Wafer Revenue Market Share in United States (2012-2017)
Table ReneSola Basic Information List
Table ReneSola Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)
Figure ReneSola Solar Grade Wafer Sales Growth Rate (2012-2017)
Figure ReneSola Solar Grade Wafer Sales Market Share in United States (2012-2017)
Figure ReneSola Solar Grade Wafer Revenue Market Share in United States (2012-2017)
Table Green Energy Technology Basic Information List
Table Green Energy Technology Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)
Figure Green Energy Technology Solar Grade Wafer Sales Growth Rate (2012-2017)
Figure Green Energy Technology Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure Green Energy Technology Solar Grade Wafer Revenue Market Share in United States (2012-2017)

Table China Jinglong Basic Information List

Table China Jinglong Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)

Figure China Jinglong Solar Grade Wafer Sales Growth Rate (2012-2017)

Figure China Jinglong Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure China Jinglong Solar Grade Wafer Revenue Market Share in United States (2012-2017)

Table Sornid Hi-Tech Basic Information List

Table Sornid Hi-Tech Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)

Figure Sornid Hi-Tech Solar Grade Wafer Sales Growth Rate (2012-2017)

Figure Sornid Hi-Tech Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure Sornid Hi-Tech Solar Grade Wafer Revenue Market Share in United States (2012-2017)

Table Jinko Solar Basic Information List

Table Jinko Solar Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)

Figure Jinko Solar Solar Grade Wafer Sales Growth Rate (2012-2017)

Figure Jinko Solar Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure Jinko Solar Solar Grade Wafer Revenue Market Share in United States (2012-2017)

Table Trinasolar Basic Information List

Table Trinasolar Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)

Figure Trinasolar Solar Grade Wafer Sales Growth Rate (2012-2017)

Figure Trinasolar Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure Trinasolar Solar Grade Wafer Revenue Market Share in United States (2012-2017)

Table Comtec Solar Systems Basic Information List

Table Comtec Solar Systems Solar Grade Wafer Sales (MSI), Revenue (Million USD), Price (USD/SI) and Gross Margin (2012-2017)

Figure Comtec Solar Systems Solar Grade Wafer Sales Growth Rate (2012-2017)

Figure Comtec Solar Systems Solar Grade Wafer Sales Market Share in United States (2012-2017)

Figure Comtec Solar Systems Solar Grade Wafer Revenue Market Share in United States (2012-2017)

States (2012-2017)

Table Nexolon Basic Information List

Table LONGI Basic Information List

Table Targray Basic Information List

Table Topoint Basic Information List

Table JYT Basic Information List

Table Tianwei Basic Information List

Table Production Base and Market Concentration Rate of Raw Material

Figure Price Trend of Key Raw Materials

Table Key Suppliers of Raw Materials

Figure Manufacturing Cost Structure of Solar Grade Wafer

Figure Manufacturing Process Analysis of Solar Grade Wafer

Figure Solar Grade Wafer Industrial Chain Analysis

Table Raw Materials Sources of Solar Grade Wafer Major Players/Suppliers in 2016

Table Major Buyers of Solar Grade Wafer

Table Distributors/Traders List

Figure United States Solar Grade Wafer Sales Volume (MSI) and Growth Rate Forecast (2017-2022)

Figure United States Solar Grade Wafer Revenue (Million USD) and Growth Rate Forecast (2017-2022)

Figure United States Solar Grade Wafer Price (USD/SI) Trend Forecast (2017-2022)

Table United States Solar Grade Wafer Sales Volume (MSI) Forecast by Type (2017-2022)

Figure United States Solar Grade Wafer Sales Volume (MSI) Forecast by Type (2017-2022)

Figure United States Solar Grade Wafer Sales Volume (MSI) Forecast by Type in 2022

Table United States Solar Grade Wafer Sales Volume (MSI) Forecast by Application (2017-2022)

Figure United States Solar Grade Wafer Sales Volume (MSI) Forecast by Application (2017-2022)

Figure United States Solar Grade Wafer Sales Volume (MSI) Forecast by Application in 2022

Table United States Solar Grade Wafer Sales Volume (MSI) Forecast by Region (2017-2022)

Table United States Solar Grade Wafer Sales Volume Share Forecast by Region (2017-2022)

Figure United States Solar Grade Wafer Sales Volume Share Forecast by Region (2017-2022)

Figure United States Solar Grade Wafer Sales Volume Share Forecast by Region in

2022

Table Research Programs/Design for This Report

Figure Bottom-up and Top-down Approaches for This Report

Figure Data Triangulation

Table Key Data Information from Secondary Sources

Table Key Data Information from Primary Sources

I would like to order

Product name: United States Solar Grade Wafer Market Report 2017

Product link: <https://marketpublishers.com/r/UAFE711EE77EN.html>

Price: US\$ 3,800.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/UAFE711EE77EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970