

# **High Alloy Duplex Stainless Steel Market Assessment, By Composition [Chromium, Nickel, Copper, Tungsten, Molybdenum and Others], By End-use Industry [Offshore & Near-shore Application (Oil Drilling, Desalination, Water Treatment and Others), Equipment (Pollution Control Equipment, Engineering Equipment and Fermentation Equipment), Processing Industry (Food Processing, Chemical Processing, Hot Water & Brewing Tanks), Pulp and Paper Industry, Construction, Transportation and Others], By Region, Opportunities, and Forecast, 2016-2030F**

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## **Abstracts**

High-alloy Duplex Stainless Steel market size was valued at USD 501.5 million in 2022, which is expected to grow to USD 970.3 million in 2030 with a CAGR of 8.6% during the forecast period between 2023 and 2030. The high-alloy duplex stainless steel market is fueled by several important factors supporting its expansion and widespread use across numerous industries. The material's exceptional corrosion resistance is one of the main factors, making it ideal for applications in harsh environments like offshore oil and gas platforms, chemical processing facilities, and marine structures. High alloy duplex stainless steel is ideal for load-bearing and structural components in various industries.

High alloy duplex stainless steel is increasingly in demand for vital subsea applications because of the expansion of the oil and gas sector, with a focus on offshore exploration and production. Additionally, duplex stainless steel also finds use in developing sectors like desalination, renewable energy, and waste-to-energy facilities, driving the market

forward. High alloy duplex stainless steel is likely to create high demand due to its strong emphasis on meeting difficult environmental conditions and enhancing performance along with the ongoing technological developments and innovations; these factors are further expected to spur the high alloy duplex stainless steel market growth.

### Strong Demand from Oil and Gas Industry

Since high-alloy duplex stainless steel can withstand harsh and corrosive conditions in oil and gas transportation and production, the oil and gas industry is one of its significant consumers.

For instance, the construction of the USD 2 billion Vista Pacifico Liquefied Natural Gas Plant aims to develop an LNG export terminal in Mexico's Municipality of Ahome, Topolobampo and is expected to be functional by the end of 2025. Additionally, USD 436 million Alexandroupolis ILNG terminal, which entails building an offshore liquefied natural gas (LNG) terminal in Alexandroupolis, Greece, and is anticipated to be finished in Q1 2024. Therefore, the demand for high-alloy duplex stainless steel will likely increase due to the expansion of several oil and gas projects globally.

### Superior Physical Properties

High alloy duplex stainless steel has greater strength and toughness than conventional austenitic stainless steel. This benefit makes it perfect for use in structural parts and machinery with high mechanical stress.

Due to its excellent corrosion resistance, high-alloy duplex stainless steel is well suited for harsh environments like offshore oil and gas platforms, chemical processing facilities, and marine structures. The expanding demand for corrosion-resistant materials in various industries has significantly influenced this market. For instance, 304 (UNS S30400) Austenitic Stainless Steel has a tensile strength of ~515 MPa (75,000 psi) and yield strength of ~205 MPa (30,000 psi), whereas 2205 (UNS S31803) Duplex Stainless Steel has a tensile strength of ~620 MPa (90,000 psi) and yield strength of ~450 MPa (65,000 psi). This beneficial physical property strengthens the demand for high alloy duplex stainless steel.

### Impact of COVID-19

Global supply chains, including those for the production and distribution of high alloy duplex stainless steel and its raw materials, were disrupted by the COVID-19

pandemic—the supply chain for stainless steel experienced delays and shortages due to factory closures and transportation restrictions. Lockdowns and economic slowdowns decreased demand across various industries, including construction, automotive, and aerospace. The market for stainless steel, including high alloy duplex stainless steel, was weakened by this decline in demand for stainless steel products. The high alloy duplex stainless steel market experienced price volatility during the pandemic because of supply and demand dynamics disruptions.

### Impact of Russia-Ukraine War

Russia was a significant supplier of raw nickel to several countries, mainly Europe. Hence, the impact of the Russia-Ukraine conflict on the high alloy duplex stainless steel market was substantial. Since several European countries imposed a ban on Russian imports owing to the ongoing conflict, which has tightened the supply situation of stainless steel in those markets. As a result, duplex stainless steel production costs rose in those nations, reducing procurement activity. However, this ongoing conflict led to a global distribution shift of oil and gas, which involved new offshore construction and pipelines, raising the demand for high alloy duplex stainless steel.

### Key Players Landscape and Outlook

Major High alloy duplex stainless steel market players are strengthening their market positions through expansion strategies, which entail the creation of new sites to meet expanding demand and take advantage of openings in the market.

For instance, the Materials de Mexico division will have a new location in San Luis Potos as ThyssenKrupp Materials Services continues to grow in North America. The business spending was around USD 37 million in central Mexico during September 2022. This expansion of ThyssenKrupp, one of the major suppliers of high alloy duplex stainless steel, is expected to impact the North American region significantly.

The high alloy duplex stainless steel market is expanding steadily and has a bright future. Due to the material's exceptional qualities, such as its strength, corrosion resistance, and cost-effectiveness, which make it highly suitable for various applications across multiple industries, this market is experiencing rising demand. The demand for corrosion-resistant and high-performance materials like duplex stainless steel is still being driven by sectors like oil and gas, chemical processing, desalination, and infrastructure development. Additional opportunities for market expansion are emerging because of ongoing improvements in manufacturing techniques and the creation of new

duplex stainless-steel grades with improved properties.

## Contents

### **1. RESEARCH METHODOLOGY**

### **2. PROJECT SCOPE & DEFINITIONS**

### **3. IMPACT OF COVID-19 ON HIGH ALLOY DUPLEX STAINLESS STEEL MARKET**

### **4. IMPACT OF RUSSIA-UKRAINE WAR**

### **5. EXECUTIVE SUMMARY**

### **6. VOICE OF CUSTOMER**

#### 6.1. Market Awareness and Product Information

#### 6.2. Brand Awareness and Loyalty

#### 6.3. Factors Considered in Purchase Decision

##### 6.3.1. Brand Name

##### 6.3.2. Quality

##### 6.3.3. Quantity

##### 6.3.4. Price

##### 6.3.5. Product Specification

##### 6.3.6. Application Specification

##### 6.3.7. Shelf-Life

##### 6.3.8. Availability of Product

#### 6.4. Frequency of Purchase

#### 6.5. Medium of Purchase

### **7. HIGH ALLOY DUPLEX STAINLESS STEEL MARKET OUTLOOK, 2016-2030F**

#### 7.1. Market Size & Forecast

##### 7.1.1. By Value

##### 7.1.2. By Volume

#### 7.2. By Composition

##### 7.2.1. Chromium

##### 7.2.2. Nickel

##### 7.2.3. Copper

##### 7.2.4. Tungsten

##### 7.2.5. Molybdenum

#### 7.2.6. Others

### 7.3. By End-use Industry

#### 7.3.1. Offshore & Near-shore Application

##### 7.3.1.1. Oil Drilling

##### 7.3.1.2. Desalination

##### 7.3.1.3. Water Treatment

##### 7.3.1.4. Others

#### 7.3.2. Equipment

##### 7.3.2.1. Pollution Control Equipment

##### 7.3.2.2. Engineering Equipment

##### 7.3.2.3. Fermentation Equipment

#### 7.3.3. Processing Industry

##### 7.3.3.1. Food Processing

##### 7.3.3.2. Chemical Processing

##### 7.3.3.3. Hot Water & Brewing Tanks

#### 7.3.4. Pulp and Paper Industry

#### 7.3.5. Construction

#### 7.3.6. Transportation

#### 7.3.7. Others

### 7.4. By Region

#### 7.4.1. North America

#### 7.4.2. Europe

#### 7.4.3. South America

#### 7.4.4. Asia-Pacific

#### 7.4.5. Middle East and Africa

## **8. HIGH ALLOY DUPLEX STAINLESS STEEL MARKET OUTLOOK, BY REGION, 2016-2030F**

### 8.1. North America\*

#### 8.1.1. By Composition

##### 8.1.1.1. Chromium

##### 8.1.1.2. Nickel

##### 8.1.1.3. Copper

##### 8.1.1.4. Tungsten

##### 8.1.1.5. Molybdenum

##### 8.1.1.6. Others

#### 8.1.2. By End-use Industry

##### 8.1.2.1. Offshore & Near-shore Application

- 8.1.2.1.1. Oil Drilling
- 8.1.2.1.2. Desalination
- 8.1.2.1.3. Water Treatment
- 8.1.2.1.4. Others
- 8.1.2.2. Equipment
  - 8.1.2.2.1. Pollution Control Equipment
  - 8.1.2.2.2. Engineering Equipment
  - 8.1.2.2.3. Fermentation Equipment
- 8.1.2.3. Processing Industry
  - 8.1.2.3.1. Food Processing
  - 8.1.2.3.2. Chemical Processing
  - 8.1.2.3.3. Hot Water & Brewing Tanks
- 8.1.2.4. Pulp and Paper Industry
- 8.1.2.5. Construction
- 8.1.2.6. Transportation
- 8.1.2.7. Others
- 8.1.3. United States\*
  - 8.1.3.1. By Composition
    - 8.1.3.1.1. Chromium
    - 8.1.3.1.2. Nickel
    - 8.1.3.1.3. Copper
    - 8.1.3.1.4. Tungsten
    - 8.1.3.1.5. Molybdenum
    - 8.1.3.1.6. Others
  - 8.1.3.2. By End-use Industry
    - 8.1.3.2.1. Offshore & Near-shore Application
      - 8.1.3.2.1.1. Oil Drilling
      - 8.1.3.2.1.2. Desalination
      - 8.1.3.2.1.3. Water Treatment
      - 8.1.3.2.1.4. Others
    - 8.1.3.2.2. Equipment
      - 8.1.3.2.2.1. Pollution Control Equipment
      - 8.1.3.2.2.2. Engineering Equipment
      - 8.1.3.2.2.3. Fermentation Equipment
    - 8.1.3.2.3. Processing Industry
      - 8.1.3.2.3.1. Food Processing
      - 8.1.3.2.3.2. Chemical Processing
      - 8.1.3.2.3.3. Hot Water & Brewing Tanks
    - 8.1.3.2.4. Pulp and Paper Industry

8.1.3.2.5. Construction

8.1.3.2.6. Transportation

8.1.3.2.7. Others

8.1.4. Canada

8.1.5. Mexico

\*All segments will be provided for all regions and countries covered

8.2. Europe

8.2.1. Germany

8.2.2. France

8.2.3. Italy

8.2.4. United Kingdom

8.2.5. Russia

8.2.6. Netherlands

8.2.7. Spain

8.2.8. Turkey

8.2.9. Poland

8.3. South America

8.3.1. Brazil

8.3.2. Argentina

8.4. Asia-Pacific

8.4.1. India

8.4.2. China

8.4.3. Japan

8.4.4. Australia

8.4.5. Vietnam

8.4.6. South Korea

8.4.7. Indonesia

8.4.8. Philippines

8.5. Middle East & Africa

8.5.1. Saudi Arabia

8.5.2. UAE

8.5.3. South Africa

## **9. SUPPLY SIDE ANALYSIS**

9.1. Capacity, By Company

9.2. Production, By Company

9.3. Operating Efficiency, By Company

9.4. Key Plant Locations (Up to 25)



## **10. MARKET MAPPING, 2022**

- 10.1. By Composition
- 10.2. By End-use Industry
- 10.3. By Region

## **11. MACRO ENVIRONMENT AND INDUSTRY STRUCTURE**

- 11.1. Supply Demand Analysis
- 11.2. Import Export Analysis – Volume and Value
- 11.3. Supply/Value Chain Analysis
- 11.4. PESTEL Analysis
  - 11.4.1. Political Factors
  - 11.4.2. Economic System
  - 11.4.3. Social Implications
  - 11.4.4. Technological Advancements
  - 11.4.5. Environmental Impacts
  - 11.4.6. Legal Compliances and Regulatory Policies (Statutory Bodies Included)
- 11.5. Porter's Five Forces Analysis
  - 11.5.1. Supplier Power
  - 11.5.2. Buyer Power
  - 11.5.3. Substitution Threat
  - 11.5.4. Threat from New Entrant
  - 11.5.5. Competitive Rivalry

## **12. MARKET DYNAMICS**

- 12.1. Growth Drivers
- 12.2. Growth Inhibitors (Challenges, Restraints)

## **13. KEY PLAYERS LANDSCAPE**

- 13.1. Competition Matrix of Top Five Market Leaders
- 13.2. Market Revenue Analysis of Top Five Market Leaders (in %, 2022)
- 13.3. Mergers and Acquisitions/Joint Ventures (If Applicable)
- 13.4. SWOT Analysis (For Five Market Players)
- 13.5. Patent Analysis (If Applicable)

## **14. PRICING ANALYSIS**

## **15. CASE STUDIES**

## **16. KEY PLAYERS OUTLOOK**

### **16.1. ThyssenKrupp AG**

#### **16.1.1. Company Details**

#### **16.1.2. Key Management Personnel**

#### **16.1.3. Products & Services**

#### **16.1.4. Financials (As reported)**

#### **16.1.5. Key Market Focus & Geographical Presence**

#### **16.1.6. Recent Developments**

### **16.2. Voestalpine AG**

### **16.3. Outokumpu Oyj**

### **16.4. Acerinox S.A**

### **16.5. Tata Steel Ltd**

### **16.6. ArcelorMittal S.A**

### **16.7. POSCO Holdings Inc**

### **16.8. Daido Steel Co., Ltd**

### **16.9. Nippon Steel Corporation**

### **16.10. Tubacex S.A**

\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

## **17. STRATEGIC RECOMMENDATIONS**

## **18. ABOUT US & DISCLAIMER**

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