

[Titanium Tetra Chloride (TiCl₄)]

INVESTMENT OPPORTUNITY

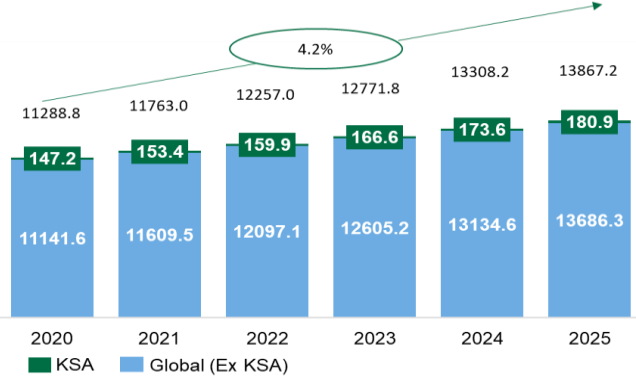
[Inorganic]



OPPORTUNITY DESCRIPTION: Opportunity to develop Titanium Tetra Chloride production facility in KSA to cater regional and global demand.

DEMAND

MARKET SIZE, KT



INVESTMENT HIGHLIGHTS

- Expected investment size of ~USD 60-70 MN
- Plant capacity: 100 KTA TiCl₄ plant (integrated Titanium dioxide processing plant)
- Expected IRR: 15%-20%

INVESTMENT OVERVIEW

VALUE PROPOSITION

- Favorable trade regimes with key demand region like Asia and North America which has significant demand growth prospects due to growing aerospace and dyes industry.
- Strong logistics infrastructure to enhance export capability for distributing the products within Middle East and to key export markets.
- KSA has strong logistics with Australia and South Africa which are key producers of Ilmenite (FeTiO₃). This gives benefit to KSA as it can import ilmenite from these countries.

KEY DEMAND DRIVERS

- The increasing use of TiCl₄ in Titanium Dioxides manufacturing, precursor of Titanium Metals and Powders, Catalysts and other industries is driving the growth of the Titanium Tetrachloride market across the globe.
- Also, the production of aerospace fleets has increased significantly around the world, resulting in increased demand for titanium metal, which is driving the titanium tetrachloride (TiCl₄) market future trends.
- The market for TiCl₄ will benefit from rising dyes industry demand.

KEY PLAYERS

- Huntsman International LLC
- DowDuPont Inc
- Tronox Limited
- ISK Industries
- CRISTAL
- Merck KgA

MARKET OVERVIEW

GLOBAL TRENDS

- Estimated at 11.2 MMT in 2020, the global consumption is expected to increase at an average rate of 4.2% from 2020-25.
- North America and Europe are expected to hold a significant share of the TiCl₄ market in terms of demand primarily due to the TiCl₄ market expansion of these countries' aerospace fleets and chemical industries.
- In Asia, TiCl₄ market is expected to grow strongly with rapidly growing sectors like aerospace and chemical industries specially in China and South Korea.
- Furthermore, due to the abundant availability of raw materials and low cost of production, China is expected to hold the majority share of TiCl₄ market share in terms of production.



[Inorganic]

Titanium Tetra Chloride (TiCl₄)

SUPPLY

SCALABILITY AND LOCALIZATION

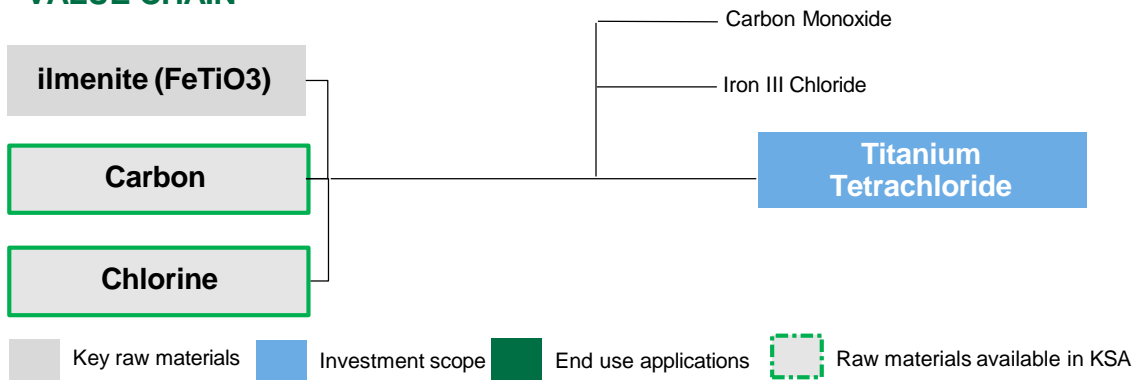
Grade: Low Medium High

- Key raw material for production of TiCl₄ i.e., Ilmenite and Rutile is not available in KSA. The kingdom imports ilmenite and other titanium ores majorly from South Africa, and Australia. Other raw material like Chlorine and Carbon are available in KSA.
- TiCl₄ is highly used as feedstock for manufacturing Titanium Dioxides, Titanium Metal/Powders and catalysts, which serves several end markets in KSA.
- Titanium is manufactured from TiCl₄, which is expected to see strong growth rate in Middle East, North America and Asian countries owing to the increasing of aerospace fleets which presents good opportunity for scalability of TiCl₄.

IMPORT DEPENDENCY

- No production of Titanium Tetra Chloride (TiCl₄) in KSA.

VALUE CHAIN



Served Applications

- Catalysts
- Aerospace
- Defense
- Dyes

ENABLING FACTORS

ENABLERS & INCENTIVES

- Up to 75% of project financing by Saudi Industrial Development Fund (SIDF).
- 2-year grace period for the repayment of loans
- Expat worker levy waived-off for industrial manufacturers until October 2024.
- HRDF covers 30-50% of Saudi employee's monthly salaries (additional 10% for females) for 2 years, provide that it does not exceed USD 4,000

COST OF DOING BUSINESS IN KSA

Factor	Ranking amongst regionalpeers
Electricity tariffs for industrial players	\$48 /MWh
Productivity adjusted wages	\$3.3 /hour
Logistics Performance Index (1-5)	3.2
Construction Costs (Indexed to US, % 0 is cheapest)	74
Ease of getting credit (0-100)	50

KEY STAKEHOLDERS



National Industrial Development and Logistics Program



Saudi Industrial Development Fund

Bottom 25% | Top 75% | Top 50% | Top 25%

DEFINITIONS

#	SCORECARD SECTION	DEFINITIONS
1	Market size	Size of market in value/volume in KSA and/or Region (MENA/GCC) covering future projections based on available estimates from published /government sources
2	Business drivers	A select number of factors that will influence future demand for the related product/service
3	Investment highlights	An overview of key financial metrics summarizing the investment opportunity along with the expected return based on the suggested investment size
4	Value proposition	Summary of key differentiators that position KSA as a strategic choice over other regional/global peers
5	Market readiness	An overview of KSA market structure, market maturity and level of participation by local and global players
6	Global trends	Latest business developments within the sector/product category
7	Scalability and localization	Ease of scaling the business across the value chain or into new adjacent products or geographies that would maximize the opportunity's investment returns and the ability and potential to locally manufacture the product and its components
8	Import dependency	An overview of the countries from which Saudi Arabia is importing the product and their value/volume and share in total imports
9	Value chain analysis	The process or activities that would potentially need to be carried out to deliver the underlying product or service
10	Key stakeholders	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
11	Enablers	Factors that enable investment in the underlying opportunity
12	Cost of doing business in KSA	Key factors that position KSA as a competitive destination for investment in the region. Productivity adjusted wages do not include cost of \$1.23/hour towards annual recurring charges including work permit, resident identity (iqama) and health insurance

DISCLAIMER

- This material must be used only to access information, and the information must not be construed, under any circumstances, explicitly or implicitly, as an offer to sell or a solicitation to buy or sell or trade in any opportunity herein mentioned.
- Ministry of Investment (MISA) has no undertaking to update these materials after the date, with the understanding that such information may become outdated or inaccurate.
- Mentioned information in this material is obtained from reliable sources but its accuracy and reliability are in no way guaranteed. No guarantee of any kind is tacit or explicit when projections of future conditions are attempted. MISA has used public/or confidential data and assumptions and has not independently verified the data and assumptions used in the analyses. Changes in underlying data or operating assumptions will clearly impact the analyses and conclusions.
- The financial evaluations, projected market and financial information, and conclusions contained in these materials are based upon standard methodologies, are not definitive projections, and are not guaranteed by MISA
- The content of this material must not be construed as an implied promise or guarantee for profit or limited loss express or implied by or from MISA or any of its officers, directors, employees and affiliates. All mentioned investments in this material are subject to risk, which should be considered prior to making any investment decisions
- MISA shall have no liability whatsoever to any third party, and hereby any third party waives any rights and claims it may have at any time against MISA with regard to this material, any services or other materials, including the accuracy or completeness thereof.

CONNECT WITH US FOR MORE DETAILS:

Petrochemicals@misa.gov.sa

investsaudi.sa



@investsaudi

INVEST
SAUDI 