

ALUMINUM FLUORIDE

INVESTMENT OPPORTUNITY SCORECARD

MINING & METALS

SEPTEMBER 2020



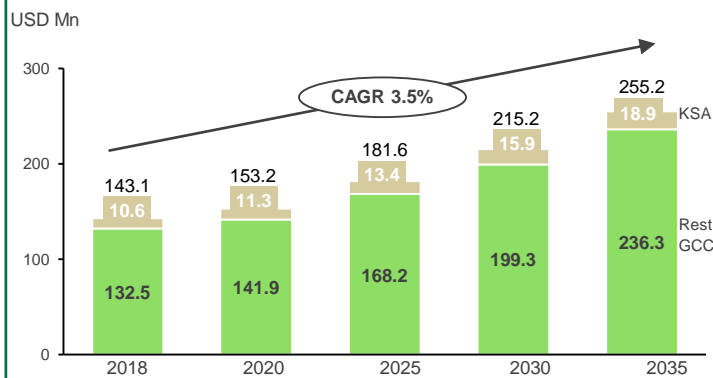
MINING & METALS

ALUMINUM FLUORIDE

OPPORTUNITY DESCRIPTION: Opportunity to setup manufacturing plant for aluminum fluoride, one of the main additives required for production of metallic aluminum

DEMAND

MARKET SIZE, USD



KEY DEMAND DRIVERS

- Demand for aluminum fluoride mainly dependent on production of aluminum metal and therefore driven by increase in downstream production of aluminum
- Current aluminum smelting capacity in KSA stands at ~1.2 MMT and rest of the GCC region ~6.0 MMT and is expected to further increase in short-medium term
- Smelter expansion to create an AIF3 demand of 24 KMT in the KSA and 114 KMT in the rest of the GCC region
- KSA government's ambitious development plan to diversify economy by prioritizing industrial and manufacturing sector growth

INVESTMENT OVERVIEW

INVESTMENT HIGHLIGHTS

- Expected Investment size of USD 105 Mn
- Plant capacity: 34 ktpa
- Expected IRR: 10.9%
- Payback period: 9.2 years

VALUE PROPOSITION

- Leverage expansion plans for Aluminum smelter in the Kingdom and the region, which will fuel demand for localization of aluminum fluoride production due to its ability to lower the melting point and increase the conductivity of the aluminum solution
- First mover advantage given non-existent local production of aluminum fluoride and lack of competition from any major global/local player
- KSA's geographical advantage and trade agreements with neighboring countries make exporting favorable

MARKET OVERVIEW

GLOBAL TRENDS

- The global demand for Aluminum Fluoride is expected to reach USD 1.7 Bn in 2024 from USD 1.5 Bn in 2019, growing at 1.8% p.a.
- Aluminum fluoride is one of the most common compounds used to produce aluminum during molten salt baths. This is due to its electrolytic properties which enable higher electrical efficiency through the production cell
- With increasing stringency of regulations pertaining to the environment, the use of fluosilicic acid as a raw material for the production of aluminum fluoride set to increase in the near future
- Apart from primary usage in production of aluminum metal, other uses for aluminum fluoride include:
 - As a catalyst in the synthesis of organic compounds
 - In the manufacture of ceramics and glass
 - As a flux in the preparation of glazes, enamels and in metallurgical processes



MINING & METALS ALUMINUM FLUORIDE

SUPPLY

SCALABILITY AND LOCALIZATION

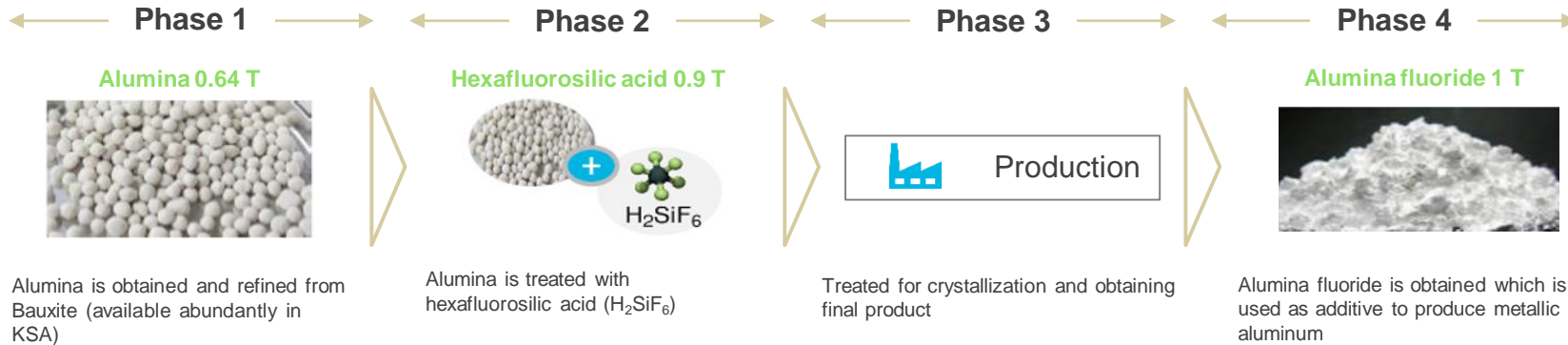
Grade: Low Medium High

- Abundant availability of raw material (alumina and hexafluorosilic acid) required for producing Aluminum fluoride in KSA
- Easy access to local customer base (Ma'aden has significant demand for aluminum fluoride and is currently fully dependent on imports)
- GCC aluminum production to continue growing at 4% p.a. creating strong demand for a regional manufacturer

IMPORT DEPENDENCY

- In 2018, KSA imported 9 KT aluminum fluoride representing 100% of its local demand

ALUMINUM FLUORIDE VALUE CHAIN



KEY STAKEHOLDERS



ENABLING FACTORS

ENABLERS

- Up to 75% of project financing by Saudi Industrial Development Fund (SIDF)
- 2-year grace period for the repayment of loans
- Human Resources Development Fund (HRDF) provides 30%, 20% and 10% of Saudi nationals' salaries for their 1st, 2nd & 3rd years of work, respectively

COST OF DOING BUSINESS IN KSA

Factor	Ranking amongst regional peers
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

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	Demand 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	Competitor analysis	List of the local & international players manufacturing the underlying product in Saudi Arabia and their market share
7	Global trends	Latest business developments within the sector/product category
8	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
9	Import dependency	An overview of the countries from which Saudi Arabia is importing the product and their value/volume and share in total imports
10	Value chain analysis	The process or activities that would potentially need to be carried out to deliver the underlying product or service
11	Key stakeholders	Government institutions, organizations, and/or authorities that participate or influence the market for the underlying product/service
12	Enablers	Factors that enable investment in the underlying opportunity
13	Cost of doing business in KSA	Key factors that position KSA as a competitive destination for investment in the region

CONNECT WITH US FOR MORE DETAILS:
metals@misa.gov.sa

investsaudi.sa



[@investsaudi](https://twitter.com/investsaudi)

