

[Dibutyl phthalate (DBP) /Di-isobutyl phthalate (DIBP)]

INVESTMENT OPPORTUNITY

[Conversion]



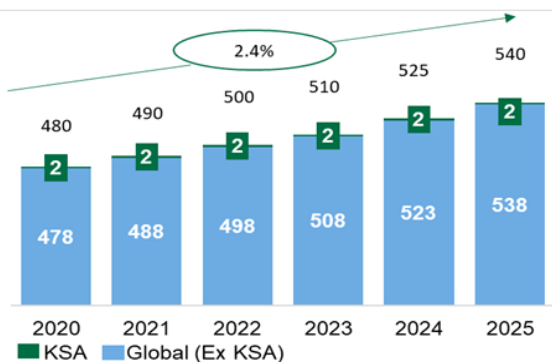
[Conversion]

Dibutyl phthalate (DBP) /Di-isobutyl phthalate (DIBP)

OPPORTUNITY DESCRIPTION: Opportunity to develop Dibutyl phthalate (DBP) production facility of ~20-30 KTA in KSA to cater regional and global demand

DEMAND

MARKET SIZE, KT



INVESTMENT HIGHLIGHTS

- Expected investment size of ~USD 15-25 MN
- Plant capacity: 20-30 KTA
- Expected IRR: 15-18%

INVESTMENT OVERVIEW

VALUE PROPOSITION

- Key raw material like phthalic anhydride is available in Middle East and can be imported in KSA for phthalate plasticizer production. N-butanol is easily available in the Kingdom making production of DBP/DIBP in KSA favorable.
- KSA can leverage trade agreements (e.g. : GAFTA, GSFTA) and strong logistics infrastructure to enhance export capability for distributing the products in Middle East and SEA.
- Growth of DBP/DIBP in international market gives KSA first mover advantage in the region to set-up these plant for export purposes.
- DEHP producers can generally produce DBP or DIBP, with existing DEHP plant in KSA, DBP/DIBP can be produced locally.

KEY DEMAND DRIVERS

- Dibutyl phthalate (DBP) is consumed primarily in PVAc emulsion adhesives, where it competed with BBP and dibenzoates, and in cellulose lacquers where it provided excellent flexibility at low temperatures. DBP and DIBP have similar chemical properties and can be thought as alternatives.
- DIBP and DBP have good compatibility with plastic molecules but do not have a tight chemical bond; when plastic products meet water or food grease, DIBP or DBP could dissolve into the food. At present, DBP/DIBP are applied in the footwear industry.

KEY PLAYERS

- Anhui Litian Environmental Protection Technology Co., Ltd.
- Kaifeng JiuHong Chemical Co., Ltd.
- Shandong Qilu Plasticizer Co., Ltd.
- Zhejiang Jianye Organic Chemical Co., Ltd.
- Taizhou Union Chemical Ind.

MARKET OVERVIEW

GLOBAL TRENDS

- World DBP/DIBP consumption is expected to grow at 2.4% till 2025. In 2020, global consumption of DBP/DIBP stood at around 480 thousand metric ton and will reach around 510 thousand metric ton in 2025.
- World consumption of plasticizers was over 9 million metric tons in 2020. Since 2011, mainland China has accounted for most of the growth in the capacity for and consumption of plasticizers.
- Phthalic acid esters, generally known as phthalate plasticizers, are the predominant type of plasticizers produced and consumed in the world



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SUPPLY

SCALABILITY AND LOCALIZATION

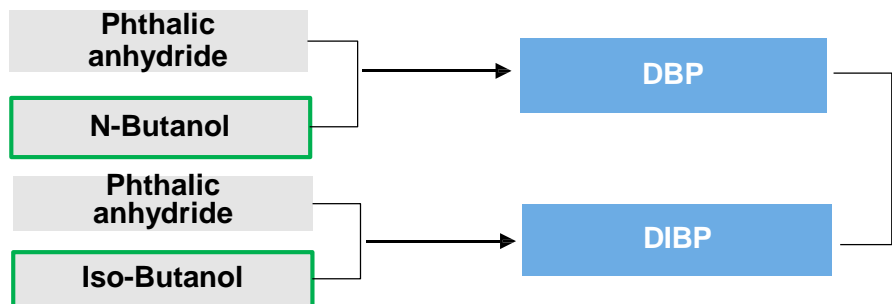
Grade: Low Medium High

- Dibutyl phthalate (DBP)/ Di-isobutyl phthalate (DIBP) is produced by reaction of phthalic anhydride and n-butanol/iso-butanol in the presence of an acid catalyst. With raw material availability in Middle east, DBP/DIBP can be an investment option.
- In 2020, the Middle East produced about 104 KTA of Phthalic anhydride. Saudi Arabia is one of the largest importer of Phthalic anhydride in the region followed by UAE. Saudi is also a leading producer and exporter of n-butanol in Middle East
- With existing technical know-how of DEHP production in the Kingdom, DBP and DIBP can be produced in a similar manufacturing facility.

IMPORT DEPENDENCY

- There are no known producers of DBP/DIBP in Saudi Arabia.
- Current imports for DBP/DIBP stand at around 2 KTA. Local production can displace current imports in the Kingdom.

VALUE CHAIN



Served Applications

- PVAc emulsion adhesives
- Footwear

Key raw materials
Investment scope
End use applications
Raw materials available in KSA

KEY STAKEHOLDERS



National Industrial Development and Logistics Program



Saudi Industrial Development Fund

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 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

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

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