

# CONTENTS

## **PENTAERYTHRITOL PROJECT**

	<b><u>Page</u></b>
<b>PREFACE</b>	<b>(i)</b>
<b>GLOSSARY</b>	<b>(ii)</b>
<b>1.0 SUMMARY</b>	<b>1</b>
<b>2.0 PRODUCT DESCRIPTION AND MAIN USES</b>	<b>3</b>
2.1 The Major Grades of Pentaerythritol	3
2.2 The Main Uses of Pentaerythritol	3
<b>3.0 THE WORLD MARKET</b>	<b>6</b>
3.1 Background	6
3.2 The World Supply for Pentaerythritol	7
3.3 Pentaerythritol Supply/Demand Situation	10
3.4 The Future Outlook for Pentaerythritol Supply/Demand Balance	12
3.5 Trade and Prices	15
<b>4.0 THE GCC MARKET FOR PENTAERYTHRITOL</b>	<b>17</b>
4.1 Background	17
4.2 The Supply/Demand for Pentaerythritol in the GCC Region	18
4.3 GCC Trade and Prices	20
4.4 The Proposed GCC Pentaerythritol Plant Capacity	21
<b>5.0 TECHNOLOGY ISSUES</b>	<b>22</b>
5.1 Pentaerythritol Process and Technology Licensors	22
5.1.1 Pentaerythritol Process Description	22
5.1.2 Formaldehyde and Acetaldehyde Process Description	25
5.2 Main Raw Materials and coproducts	25
5.3 Utilities Consumption	27
5.4 Operating Manpower	27
5.6 Environmental Issues	28
<b>6.0 FINANCIAL ANALYSIS</b>	<b>30</b>
6.1 Investment Costs	30
6.2 Total Investment Cost	31

# CONTENTS (Contd..)

## **PENTAERYTHRITOL PROJECT**

	<b><u>Page</u></b>
6.3 Production Costs (Basic Assumption)	31
6.3.1 Raw Material and Product Prices	32
6.3.2 Manpower Costs	33
6.3.3 Overheads	34
6.3.4 Utilities	35
6.3.5 Maintenance Costs	35
6.3.6 Insurance	35
<b>7.0 PROJECT PROFITABILITY</b>	<b>36</b>
7.1 Overview	36
7.2 Financial Results 100% Equity Case	36
7.3 Financial Results - Loan Case 50%	37
7.4 Break-Even Analysis	38
7.5 Sensitivity Analysis	38