WORLDWIDE ETHYLENE OXIDE & DERIVATIVES

MARKETS, TECHNOLOGIES & TRENDS 2002-2007

Prospectus For An In-Depth Strategic Analysis Completed April 2003

(PR211)

The current status of EO and its derivatives
EO & derivatives Industry Structure - How has it changed in Recent Years?
Consolidations/Closures in the Industry

* * * *

Overall Situation and Outlook
Market Impact and Analysis
Intermaterial Competition
Competitive Pressures
Environmental Pressures

* * * *

In-Depth Profiles & Analysis for

- **Ethylene Glycols (including higher glycols)**
- **Glycol Ethers**
- **Ethanolamines (including ethyleneamines)**

Raw Material Integration & Suppliers
Strategic Analysis & Options for Current Producers

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Markets, Technologies and Trends
2002-2007

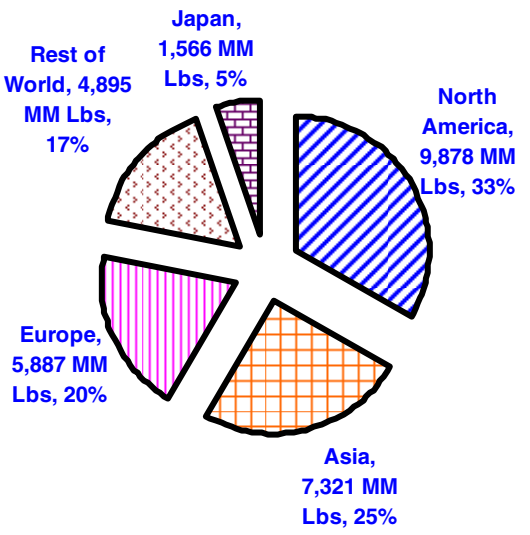
INTRODUCTION

Ethylene oxide (EO) is an important chemical intermediate for the production of ethylene glycols, ethanolamines, and glycol ethers. EO is also used extensively in the manufacture of a broad range of surface-active agents. The global demand of EO in 2002 was 29,547 million pounds. Exhibit 1 shows the global demand for ethylene oxide by region. EO demand in North America is the largest accounting for about 33% or 9,879 million pounds of the global demand.

EO derivatives are used in a wide variety of applications. The major applications of ethylene glycols include: (1) polyethylene terephthalate bottle grade resins, (2) polyester fibers & films, (3) antifreeze, deicing fluids, & industrial coolants, (4) natural gas dehydration, (5) surfactants, (6) unsaturated polyesters, and others.

Exhibit 1

Global Demand of Ethylene Oxide, 2002



The most widely used ethylene oxide based glycol ethers include: (1) ethylene glycol monomethyl ether, (2) ethylene glycol monoethyl ether, and (3) ethylene glycol monobutyl ether. Glycol ethers are widely used in several applications including: (1) paints and varnishes (coatings), (2) printing inks, (3) adhesives, (4) cleaning, (5) electronics. Non-solvent applications for glycol ethers include components in: (1) jet fuel (anti icing inhibitors), (2) hydraulic/brake systems, and (3) chemical intermediates for plasticizers, and other compounds.

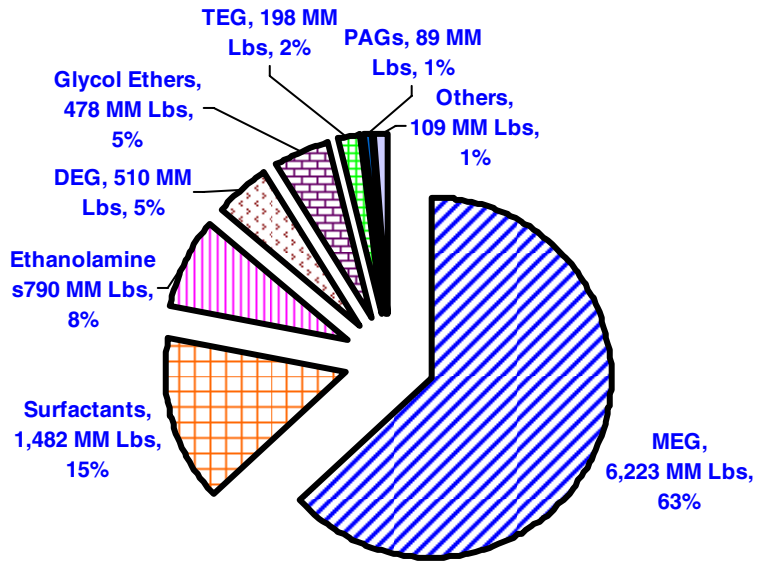
The major applications of ethanolamines include: (1) herbicides, (2) surfactants, (3) gas cleaning, and others. Ethanolamines based surfactants are mainly used in personal care household products. Diethanolamine (DEA) is used in the manufacture of glyphosate herbicide. It is the fastest growing application of DEA and driving the ethanolamines demand.

The total North American demand for ethylene oxide in 2002 was 9,878 million pounds. Exhibit 2 shows the North American demand for ethylene oxide in North America in 2002. Monoethylene glycol was the largest application of EO accounting for about 63% or 6,223 million pounds of the total North American demand. Ethoxylates or surfactants were the second largest application of ethylene oxide accounting for about 15% or 1,482 million pounds of the North American EO demand. Ethanolamines accounted for about 8% or 790

million pounds of the EO demand. The other applications of EO include: (1) DEG (5% or 510 million pounds), (2) glycol ethers, (5% or 478 million pounds), (3) TEG, (2% or 198 million pounds), (4) PAGs (1% or 89 million pounds), and others. (109 million pounds)

Exhibit 2

North American Demand of Ethylene Oxide by Application, 2002



The major global producers of EO include: (1) Dow Chemical (2,140 thousand tons), (2) Shell Chemical (1,226 thousand tons), (3) SABIC (925 thousand tons), (4) BASF (865 thousand tons), (5) BP Chemicals (475 thousand tons), and others. The overall global demand for EO is expected to grow at 2.8% per annum for the next five years, with demand reaching 33,996 million pounds by 2007. Asia Pacific excluding Japan is the fastest growing region for EO. In North America, the demand for EO is expected to grow at about 2.7% per annum for the next five years with demand reaching 11,274 million pounds by 2007.

A NEW MULTICLIENT STUDY

The report will benefit: (1) present and future EO derivatives market participants, (2) the individual end users, (3) entrepreneurs, and (4) organizations attempting to understand these complex issues and capture future growth in the marketplace.

OBJECTIVES

Develop detailed attribute analysis and value based analysis of the major EO applications

Assist EO derivatives end users in assessing the market trends and intermaterial competition.

Assist EO producers in effectively positioning their market development programs.

Assist formulators, blenders and packaging companies and suppliers in assessing the impact of all of the above-mentioned issues in the near future.

KEY ISSUES TO BE ADDRESSED

The worldwide EO market/technology status and concerns of: (1) end users, (2) producers and (3) competing material suppliers in North America, Europe and Japan
Worldwide packaging PET resin, compound and additive suppliers' responses to key issues
Impact of key issues related to EO derivatives and their vulnerability in selected end use markets on suppliers.
Multi-attribute analysis of met/ unmet needs of all EO and its derivatives in over major end uses.
End Use profitability and manufacturing cost.
Global Market/Technology positioning of major EO & derivatives producers.

TIMING & SUBSCRIPTION INFORMATION

An order form is included as the last page of this prospectus. The report has been issued and is available for immediate delivery. The price per report will be $15,000. Additional copies will be available for $400 each.

APPROACH

The information, data and conclusions of this analysis were developed from sources in North America, Western Europe and China, Asia and Japan and are based upon, but not limited to, the following methods:

Search, review and interpretation of information from government sources, trade and industry groups, public interest groups, government agencies, published articles and product promotional information
Information from private experts and CMR proprietary projects (over 20 of them related to these topics in the last two years)
Interviews with leading EO and derivatives, PET packaging, antifreeze, coating, automotive suppliers, end users and distributors.

PROJECT MANAGEMENT

As usual, this report will be a result of diligent efforts of our lead team members and a shining example of our dedication to quality and thoroughness.

Inquiries **for this Study should be directed to: BSingh@CMRHouTex.com**

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TABLE OF CONTENTS

CHAPTER 1: EXECUTIVE SUMMARY

CHAPTER 2: INTRODUCTION

CHAPTER 3: ETHYLENE OXIDE

CHAPTER 3: ETHYLENE OXIDE (CONT'D)

CHAPTER 4: ETHYLENE GLYCOLS

CHAPTER 4: ETHYLENE GLYCOLS (CONT'D)

CHAPTER 4: ETHYLENE GLYCOLS (CONT'D)

CHAPTER 5: ETHANOLAMINES

CHAPTER 6: E-SERIES GLYCOL ETHERS

CHAPTER 6: E-SERIES GLYCOL ETHERS (CONT'D)

CHAPTER 6: E-SERIES GLYCOL ETHERS (CONT'D)

LIST OF EXHIBITS

CHAPTER 1 EXECUTIVE SUMMARY

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CHAPTER 1 EXECUTIVE SUMMARY (CONT'D)

CHAPTER 2: INTRODUCTION

CHAPTER 3: ETHYLENE OXIDE

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CHAPTER 3: ETHYLENE OXIDE (CONT'D)

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CHAPTER 3: ETHYLENE OXIDE (CONT'D)

CHAPTER 4: ETHYLENE GLYCOL

CHAPTER 4: ETHYLENE GLYCOL (CONT'D)

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CHAPTER 4: ETHYLENE GLYCOL (CONT'D)

CHAPTER 4: ETHYLENE GLYCOL (CONT'D)

CHAPTER 5: ETHANOLAMINES

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CHAPTER 5: ETHANOLAMINES (CONT'D)

CHAPTER 6: GLYCOL ETHERS

CHAPTER 6: GLYCOL ETHERS (CONT'D)

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CHAPTER 6: GLYCOL ETHERS (CONT'D)

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ADA No: 113023945
Acct: 78581

The report is issued and available for immediate delivery. The price of the complete study is $12,000. Additional copies will be available for $400 each. Individual chapters can also be purchased. Each individual chapter will include executive summary and strategic analysis. The price list for individual chapters is as follows:

CHAPTER 3: ETHYLENE OXIDE	US$ 5,000
CHAPTER 4: ETHYLENE GLYCOLS	US$ 5,000
CHAPTER 5: ETHANOLAMINES	US$ 4,000
CHAPTER 6: GLYCOL ETHERS	US$ 4,000

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ABOUT OUR COMPANY….

CHEMICAL MARKET RESOURCES, Inc., was founded in 1990 to focus on the areas of marketing research and strategic planning. Our global clientele is concentrated within the chemical, petrochemical, plastics and related industries.

Prior to joining CMR, Inc., our associates held responsible positions in the chemical and allied industries. Our team of professionals has strong technical backgrounds combined with hands-on business experience. Compilation of data, strategic analyses, writing and editing are entirely conducted in our state of the art facilities in-house, to assure quality control at each stage of development. Our strength is in providing our clients close interaction to maximize effectiveness. We provide in-depth analyses with actionable statements in a cost-effective and timely fashion.

Multiclient Studies

Plasticizers - North America, Europe and Asia 2000-2005 - Markets Technologies & Trends - Completed November 2001

North American Chemical Consumption Databases. Completed databases are: Caustic Soda and Potash Series, Isocyanates Series, Glycol Series and Phenol/Acetone Series

North American Unsaturated Polyesters 1994-2000 – Markets, Technologies and Intermaterial Competition – Completed January 1994

North American Antifreeze Recycling Markets 1994-2000 – Markets, Technologies and Trends – Completed January 1994

Other Chemical Trends Analysis Studies include: Hydrogen Peroxide, Alpha Olefins, Propylene Oxide, Biocides, Oxo Alcohols, Polyalphaolefins, Bio Solvents, Carbon Dioxide, Heat Stabilizers, Acrylamides, Anti-microbial Agents, Activated Carbons and Helium.

Proprietary Studies

We have positioned numerous polyolefin and chemical products in the markets in North and Latin America, Europe, and Asia Pacific. We have conducted studies for most of the major chemical suppliers and end users - Call us for a list of proprietary studies.

For fresh and innovative ideas on
Chemicals/Plastics Marketing Research

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