

2007
WORLD BUTYLENES ANALYSIS
TABLE OF CONTENTS

INTRODUCTION

TERMS AND CONDITIONS OF USE

EXPLANATORY NOTES

EXECUTIVE SUMMARY

SOURCES OF BUTYLENES

DEFINITION AND DISCUSSION OF BUTYLENES

BUTYLENES PRICE FORECAST

U.S. Forecasts

West Europe and Asia Forecasts

BUTYLENES PRICE FORMULAS AND HISTORICAL VALUES

Octane Number – General Definitions

The Octane Spread Model

Simplified Octane Blending Formula

General Price Formulas for Butylene Streams and Derivatives

Historical Price Tables

ECONOMIC OUTLOOK

World

North America

South America

West Europe

Central Europe

C.I.S. and Baltic States

Africa

Middle East

Indian Subcontinent

Northeast Asia

Southeast Asia

BUTENE-1

WORLD

World Butene-1

World Butene-1 Supply/Demand Balance

World Butene-1 Capacity Integration for 2006 by Region

World Butene-1 Imports by Country

World Butene-1 Exports by Country
Butene-1 Trade Grids
Butene-1 Trade Flow Map

NORTH AMERICA

North America Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

SOUTH AMERICA

South America Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

WEST EUROPE

West Europe Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

CENTRAL EUROPE

Central Europe Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

C.I.S. & BALTIC STATES

C.I.S. & Baltic States Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

MIDDLE EAST

Middle East Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

AFRICA

Africa Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

INDIAN SUBCONTINENT

Indian Subcontinent Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

NORTHEAST ASIA

Northeast Asia Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

SOUTHEAST ASIA

Southeast Asia Butene-1
Butene-1 Data: Maps, Supply/Demand Balances

HIGH PURITY ISOBUTYLENE

WORLD

World High Purity Isobutylene
World High Purity Isobutylene Supply/Demand Balance
World High Purity Isobutylene Capacity Integration for 2006 by Region
Butyl Rubber Trade Grids

NORTH AMERICA

North America High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

SOUTH AMERICA

South America High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

WEST EUROPE

West Europe High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

CENTRAL EUROPE

Central Europe High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

C.I.S. & BALTIC STATES

C.I.S. & Baltic States High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

NORTHEAST ASIA

Northeast Asia High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

SOUTHEAST ASIA

Southeast Asia High Purity Isobutylene
High Purity Isobutylene Supply/Demand Balances

MTBE/ETBE

WORLD

World MTBE/ETBE
World MTBE Supply/Demand Balance
World MTBE Imports by Country
World MTBE Exports by Country
MTBE Trade Grids
MTBE Trade Flow Map

NORTH AMERICA

North America MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

SOUTH AMERICA

South America MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

WEST EUROPE

West Europe MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

CENTRAL EUROPE

Central Europe MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

C.I.S. & BALTIC STATES

C.I.S. & Baltic States MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

MIDDLE EAST

Middle East MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

AFRICA

Africa MTBE/ETBE

INDIAN SUBCONTINENT

Indian Subcontinent MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

NORTHEAST ASIA

Northeast Asia MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

SOUTHEAST ASIA

Southeast Asia MTBE/ETBE
MTBE Data: Maps, Supply/Demand Balances

CONTAINED ISOBUTYLENE

WORLD

World Contained Isobutylene
World Contained Isobutylene Supply/Demand Balance
World Contained Isobutylene Capacity Integration for 2006 by Region

NORTH AMERICA

North America Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

SOUTH AMERICA

South America Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

WEST EUROPE

West Europe Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

CENTRAL EUROPE

Central Europe Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

C.I.S. & BALTIC STATES

C.I.S. & Baltic States Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

MIDDLE EAST

Middle East Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

AFRICA

Africa Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

INDIAN SUBCONTINENT

Indian Subcontinent Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

NORTHEAST ASIA

Northeast Asia Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

SOUTHEAST ASIA

Southeast Asia Contained Isobutylene
Contained Isobutylene Supply/Demand Balances

CONTAINED NORMAL BUTYLENES

WORLD

World Contained Normal Butylenes
World Contained Normal Butylenes Supply/Demand Balance
World Contained Normal Butylenes Capacity Integration for 2006 by Region

NORTH AMERICA

North America Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

SOUTH AMERICA

South America Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

WEST EUROPE

West Europe Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

CENTRAL EUROPE

Central Europe Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

C.I.S. & BALTIC STATES

C.I.S. & Baltic States Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

MIDDLE EAST

Middle East Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

AFRICA

Africa Contained Normal Butylenes

INDIAN SUBCONTINENT

Indian Subcontinent Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

NORTHEAST ASIA

Northeast Asia Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

SOUTHEAST ASIA

Southeast Asia Contained Normal Butylenes
Contained Normal Butylenes Supply/Demand Balances

2007
WORLD BUTYLENES ANALYSIS
VOLUME II
TABLE OF CONTENTS

ONLINE RESOURCES

PHYSICAL PROPERTIES AND CONVERSION DATA

PRODUCTION AND CONSUMPTION FACTORS

TYPICAL ANALYSES OF C₄S STREAMS & CONVERSION DATA

BUTYLENE DERIVATIVES AND ECONOMICS

- N-Butane Isomerization
- Butene-1
- Butylene Motor Gasoline Alkylate
- Butyl Rubber (Isobutylene-Isoprene Rubber)
- High Purity Isobutylene
- Hydrogenation of Crude C₄s
- Isobutylene from Isobutane
- Isobutylene from N-Butylenes
- Isooctane/Isooctene
- Metathesis
- Methyl Ethyl Ketone/Secondary Butyl Alcohol
- Methyl Methacrylate
- Methyl Tertiary Butyl Ether
- Ethyl Tertiary Butyl Ether
- Octenes
- Oxo-Alcohols
- Polybutenes
- Polymer Gasoline

CAPACITY INTEGRATION TABLES BY COMPANY

- Butene-1
- High Purity Isobutylene
- Contained Isobutylene
- Contained Normal Butylene

CAPACITY EXPANSIONS/CLOSURES AND OWNERSHIP CHANGES

- Butene-1
- High Density Polyethylene
- Linear Low Density

High Purity Isobutylene
MTBE

CAPACITY TABLES

Alkylation
Butadiene
Butene-1
Butyl Rubber
C₄ Hydrogenation
C₄ Oligomers
Ethyl Tertiary Butyl Ether
FCC
High Density Polyethylene
High Purity Isobutylene
Isooctane
Linear Low Density Polyethylene
Methyl Ethyl Ketone
Methyl Methacrylate
Methyl Tertiary Butyl Ether
Other Butylenes
Polyisobutylene
Polygas/Dimersol
Propylene Oxide