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Encyclopedia of Chemical Processing and Design John J. McKetta 1984

Hydrocarbon Processing & Petroleum Refiner 1963-07

AIChE Monograph Series 1972

Propylene Production via Metathesis - Cost Analysis - Propylene E11A Intratec 2016-03-01 This report presents a cost analysis of Polymer Grade (PG) Propylene production from ethylene and raffinate-2 using a metathesis process The process examined is similar to CB&I Lummus Technology's Olefins Conversion Technology (OCT). In this process, Polymer Grade Propylene is produced through a metathesis reaction of ethylene with 2-butene, present in raffinate-2 feedstock. This report was developed based essentially on the following reference(s): (1) US Patent 8440874, issued to Lummus Technology and BASF in 2013 (2) US Patent 20050124839, issued to Lummus Technology in 2005 Keywords: PG Propylene, Olefins Disproportionation, Lummus OCT, Olefins Metathesis, Phillips Triolefin, Propene, Ethene, Butylene, On-Purpose Propylene Production

Propylene Production from Ethylene - Cost Analysis - Propylene E21A Intratec 2019-09-17 This report presents a cost analysis of Polymer Grade (PG) Propylene production from ethylene using two integrated processes: dimerization and metathesis. The processes examined are similar to CB&I Lummus technologies: Ethylene Dimerization Technology and Olefins Conversion Technology (OCT). In these processes, ethylene is first dimerized into butenes, and then, Propylene is produced through a metathesis reaction of 2-butene and ethylene. This report was developed based essentially on the following reference(s): (1) US Patent 8440874, issued to Lummus Technology and BASF in 2013 (2) US Patent 4242531, issued to Phillips Petroleum Company in 1980 Keywords: PG Propylene, Olefins Dimerization, Olefins Disproportionation, Lummus OCT, Olefins Metathesis, Phillips Triolefin, Propene, Ethene, On-Purpose Propylene Production

Butenes Production from Ethylene - Cost Analysis - Butene E11A Intratec 2016-03-09 This report presents a cost analysis of Butenes production from ethylene using a dimerization process. The process examined is similar to CB&I

Lummus Ethylene Dimerization Technology. In this process, gasoline and fuel oil are generated as by-products. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) This report was developed based essentially on the following reference(s): US Patent 4242531, issued to Phillips Petroleum Company in 1980 Keywords: Olefins Dimerization, Ethene, Butylene, n-Butene, 2-Butene, Loop Reactor

Fossil Energy Update 1977

Ethylene Production from Vacuum Gas Oil - Cost Analysis - Ethylene E01C Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from vacuum gas oil (VGO) using a typical steam cracking process. In this process, VGO is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, pygas and a mixed C4s stream as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Handbook of Petrochemicals Production Processes Robert A. Meyers 2005 This unique reference is the only one-stop source for details on licensed petrochemical processes for the major organic chemicals, a $200 billion annual market. With chapters prepared by some of the largest petrochemical and petroleum companies in the world, Handbook of Petrochemicals Production Processes provides in-depth process detail for commercial evalutation and covers plastics and polymers such as ethylene and polyethylene; propylene; ehtylbenzene, styrene, and polystyrenes; vinyl chloride and polyvinyl chloride; and many others. This handbook answers questions on yields, unit operations, chemical and physical values, economics, and much more.

Ethylbenzene Production from Benzene and Ethylene - Cost Analysis - EB E12A Intratec 2019-09-17 This report presents a cost analysis of Ethylbenzene (EB) production from benzene and dilute ethylene. The process examined is a catalytic distillation (CD) process similar to CDTECH EB technology. In this process, benzene is alkylated with ethylene present in dilute ethylene

feedstock (about 20 mol %) to form Ethylbenzene. This report was developed based essentially on the following reference(s): Keywords: Ethylbenzene, Ethylene, Benzene, Alkylation, CB&I Lummus, CDTECH EB, Catalytic Distillation

Ethylene Production from Atmospheric Gas Oil - Cost Analysis - Ethylene E61C Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from atmospheric gas oil (AGO) using a typical steam cracking process. In this process, AGO is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, pygas and fuel oil as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Actes Et Documents 2002

Catalysis for Clean Energy and Environmental Sustainability K. K. Pant 2021-04-01 This book is part of a two-volume work that offers a unique blend of information on realistic evaluations of catalyst-based synthesis processes using green chemistry principles and the environmental sustainability applications of such processes for biomass conversion, refining, and petrochemical production. The volumes provide a comprehensive resource of state-of-the-art technologies and green chemistry methodologies from researchers, academics, and chemical and manufacturing industrial scientists. The work will be of interest to professors, researchers, and practitioners in clean energy catalysis, green chemistry, chemical engineering and manufacturing, and environmental sustainability. This volume focuses on catalyst synthesis and green chemistry applications for petrochemical and refining processes. While most books on the subject focus on catalyst use for conventional crude, fuel-oriented refineries, this book emphasizes recent transitions to petrochemical refineries with the goal of evaluating how green chemistry applications can produce clean energy through petrochemical industrial means. The majority of the chapters are contributed by industrial researchers and technicians and address various petrochemical processes, including hydrotreating, hydrocracking, flue gas treatment and isomerization catalysts.

Ethylene Production via Steam Cracking of n-Butane - Cost Analysis - Ethylene E41A Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from n-butane feedstock using a typical steam cracking process. In this process, n-butane is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, butadiene. Raffinate-1 and pygas as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Ethylene Production Cost Analysis - Overview - Ethylene AA01 Intratec 2016-03-01 This report presents alternatives for producing Ethylene from different feedstocks and a cost comparison of these alternatives, across different countries. More specifically, the report compares the costs of Ethylene production through the following pathways: * Pathway 1: Ethylene Production from Ethane * Pathway 2: Ethylene Production from Ethane and Propane * Pathway 3: Green Ethylene Production from Ethanol In Pathways 1 and 2, Ethylene is produced via steam cracking of different feedstocks: ethane and a mixture of ethane and propane. In Pathway 3, Ethylene is produced from ethanol, which is a renewable feedstock. The analysis presented in this report includes: * A comparison of the economic potential of the pathways listed above in several countries, comprising: - Comparative analysis of capital costs - Comparative analysis of production costs - Comparison between product price and raw materials costs of each pathway * An overview of each production pathway, including: - Raw material(s) consumption figures and product(s) generated - Related technology licensors and block flow diagram of representative industrial processes Keywords: Hydrocarbon Pyrolysis, Cracking Furnace, Ethene, Propene, Shale Gas, CB&I Lummus, Technip, Shaw Stone & Webster, Kellogg-Braun & Root, KBR, Linde, Green Ethylene, Braskem, Chematur Technologies, Petron Scientech, Scientific Design, Dow Chemical, BP, Ethanol Dehydration

Ethylene Production via Steam Cracking of Isobutane - Cost Analysis - Ethylene E51A Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from isobutane feedstock using a typical steam cracking process. In this process, isobutane is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, butadiene , raffinate-1 and pygas as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Assessment of Technology for the Liquefaction of Coal 1977

World Congress III of Chemical Engineering 1986

Ethylene Production via Steam Cracking of n-Butane - Cost Analysis - Ethylene E41A Intratec 2017-06-01 This report presents a cost analysis of polymer grade (PG) Ethylene production from n-butane feedstock using a typical steam cracking process In this process, n-butane is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, butadiene. Raffinate-1 and pygas as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Encyclopedia of Chemical Processing (Online) Sunggyu Lee 2005-11-01 This second

edition Encyclopedia supplies nearly 350 gold standard articles on the methods, practices, products, and standards influencing the chemical industries. It offers expertly written articles on technologies at the forefront of the field to maximize and enhance the research and production phases of current and emerging chemical manufacturing practices and techniques. This collecting of information is of vital interest to chemical, polymer, electrical, mechanical, and civil engineers, as well as chemists and chemical researchers. A complete reconceptualization of the classic reference series the Encyclopedia of Chemical Processing and Design, whose first volume published in 1976, this resource offers extensive A-Z treatment of the subject in five simultaneously published volumes, with comprehensive indexing of all five volumes in the back matter of each tome. It includes material on the design of key unit operations involved with chemical processes; the design, unit operation, and integration of reactors and separation systems; process system peripherals such as pumps, valves, and controllers; analytical techniques and equipment; and pilot plant design and scale-up criteria. This reference contains well-researched sections on automation, equipment, design and simulation, reliability and maintenance, separations technologies, and energy and environmental issues. Authoritative contributions cover chemical processing equipment, engineered systems, and laboratory apparatus currently utilized in the field. It also presents expert overviews on key engineering science topics in property predictions, measurements and analysis, novel materials and devices, and emerging chemical fields. ALSO AVAILABLE ONLINE This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for both researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

Petrochemistry Martin Bajus 2020-01-03 A comprehensive textbook on petrochemical conversion processes for petroleum and natural gas fractions as produced by refinery operations This innovative textbook provides essential links between the chemical sciences and chemical technology, between petrochemistry and hydrocarbon technology. The book brings alive key concepts forming the basis of chemical technology and presents a solid background for innovative process development. In all chapters, the processes described are accompanied by simplified flow schemes, encouraging students to think in terms of conceptual process designs. Petrochemistry: Petrochemical Processing, Hydrocarbon Technology and Green Engineering introduces students to a variety of topics related to the petrochemical industry, hydrocarbon processing, fossil fuel resources, as well as fuels and chemicals conversion. The first chapter covers the fundamentals and principals for designing several of the processes in the book, including discussions on thermodynamics, chemical kinetics, reactor calculations, and industrial catalysts. The following chapters address recent advances in hydrocarbon technology, energy technology, and sources of hydrocarbons. The book then goes on to discuss the petrochemical industry based

on four basic pillars, all derived from petroleum and natural gas: Production of lower alkenes; other sources of lower alkenes; petrochemicals from C2-C3 alkenes Production of BTX aromatics; chemicals from BTX aromatics C1 technology Diversification of petrochemicals The growing importance of sustainable technology, process intensification and addressing greenhouse gas emissions is reflected throughout the book. Written for advanced students working in the areas of petrochemistry, hydrocarbon technology, natural gas, energy materials and technologies, alternative fuels, and recycling technologies the book is also a valuable reference for industrial practitioners in the oil and gas industry.

Chemical Technologies and Processes Katarzyna Staszak 2020-07-20 This book is essential reading for scientists and students interested in both organic and inorganic chemical technology. The authors cover the production of chemical reagents as well as trends from adjacent fields including biotechnology and process simulation. Chemical Technologies and Processes is of interest to chemical engineers, materials scientists, as well as chemists in both academia and industry.

Sustainable Inorganic Chemistry David A. Atwood 2016-10-17 The Earth's natural resources are finite and easily compromised by contamination from industrial chemicals and byproducts from the degradation of consumer products. The growing field of green and sustainable chemistry seeks to address this through the development of products and processes that are environmentally benign while remaining economically viable. Inorganic chemistry plays a critical role in this endeavor in areas such as resource extraction and isolation, renewable energy, catalytic processes, waste minimization and avoidance, and renewable industrial feedstocks. Sustainable Inorganic Chemistry presents a comprehensive overview of the many new developments taking place in this rapidly expanding field, in articles that discuss fundamental concepts alongside cutting-edge developments and applications. The volume includes educational reviews from leading scientists on a broad range of topics including: inorganic resources, sustainable synthetic methods, alternative reaction conditions, heterogeneous catalysis, photocatalysis, sustainable nanomaterials, renewable and clean fuels, water treatment and remediation, waste valorization and life cycle sustainability assessment. The content from this book will be added online to the Encyclopedia of Inorganic and Bioinorganic Chemistry.

Ethylene Production via Steam Cracking of Naphtha - Cost Analysis - Ethylene E72B Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from light naphtha feedstock using a typical steam cracking process. In this process, naphtha is thermally cracked at low severity conditions, maximizing propylene to Ethylene ratio. In addition to PG Ethylene and PG propylene, the process also generates pygas and a mixed C4s stream as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Applied Science & Technology Index 1983

Petro/chem Engineer 1971

Ethylene Production via Steam Cracking of Propane - Cost Analysis - Ethylene E31A Intratec 2019-09-17 This report presents a cost analysis of polymer grade (PG) Ethylene production from propane feedstock using a typical steam cracking process. In this process, propane is thermally cracked in pyrolysis furnaces through the use of steam. In addition to Ethylene, the process also generates polymer grade propylene, pygas and a crude C4s stream as by-products. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Propylene Production via Metathesis - Cost Analysis - Propylene E11A Intratec 2019-09-17 This report presents a cost analysis of Polymer Grade (PG) Propylene production from ethylene and raffinate-2 using a metathesis process. The process examined is similar to CB&I Lummus Technology's Olefins Conversion Technology (OCT). In this process, Polymer Grade Propylene is produced through a metathesis reaction of ethylene with 2-butene, present in raffinate-2 feedstock. This report examines one-time costs associated with the construction of a plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in process unit (ISBL); infrastructure (OSBL), contingency and owner's cost - Total fixed capital required, divided in process unit (ISBL); infrastructure (OSBL), contingency and owner's cost - Working capital and costs incurred during industrial plant commissioning and start-up * Operating cost, broken down by: - Variable operating costs (raw materials, utilities) - Fixed operating costs (maintenance, operating charges, plant overhead, local taxes and insurance) - Depreciation This report was developed based essentially on the following reference(s): (1) US Patent 8440874, issued to Lummus Technology and BASF in 2013 (2) US Patent 20050124839, issued to Lummus Technology in 2005 Keywords: PG Propylene, Olefins Disproportionation, Lummus OCT, Olefins Metathesis, Phillips Triolefin, Propene, Ethene, Butylene, On-Purpose Propylene Production

PG Ethylene Production from Ethylene-Rich Gas - Cost Analysis - Ethylene EC1A Intratec 2019-09-17 This report presents a cost analysis of Polymer Grade (PG) Ethylene production from an ethylene-rich stream obtained from a typical steam cracking plant, which uses ethane as feedstock. The process examined comprises the separation of ethylene from dried cracked gas, including the following steps: C3+ hydrocarbons separation; acetylene hydrogenation; light ends separation; and ethylene fractionation. In addition to polymer grade Ethylene, the process also generates a hydrogen-rich gas, sold as by-product. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Deethanizer, Ethane-Ethylene Splitter, C2 Splitter, Lummus, KBR, Technip,

Linde, S&W

Understanding and Conceiving Chemical Processes Cary Judson King 1974

Ethylene Production via Cracking of Ethane/Propane - Cost Analysis - Ethylene E21A Intratec 2017-06-01 This report presents a cost analysis of polymer grade (PG) Ethylene production starting from an ethane/propane mixture at a volume ratio of 4:1 A typical steam cracking process with front-end demethanization is employed. In this process, a mix of 80 vol% ethane and 20 vol% propane is thermally cracked in pyrolysis furnaces. In addition to polymer grade Ethylene, the process also generates polymer grade propylene and hydrogen-rich gas. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

Chemistry of Petrochemical Processes Sami Matar, Ph.D. 2001-07-26 In Chemistry of Petrochemical Processes, readers find a handy and valuable source of information containing insights into petrochemical reactions and products, process technology, and polymer synthesis. The book reviews and describes the reactions and processes involved in transforming petroleum-based hydrocarbons into the chemicals that form the basis of the multi-billion dollar petrochemical industry. In addition, the book includes information on new process developments for the production of raw materials and intermediates for petrochemicals that have surfaced since the book's first edition. Provides a quick understanding of the chemical reactions associated with oil and gas processing Contains insights into petrochemical reactions and products, process technology, and polymer synthesis

Encyclopedia of Chemical Processing Sunggyu Lee 2006 Supplying nearly 350 expertly-written articles on technologies that can maximize and enhance the research and production phases of current and emerging chemical manufacturing practices and techniques, this second edition provides gold standard articles on the methods, practices, products, and standards recently influencing the chemical industries. New material includes: design of key unit operations involved with chemical processes; design, unit operation, and integration of reactors and separation systems; process system peripherals such as pumps, valves, and controllers; analytical techniques and equipment; current industry practices; and pilot plant design and scale-up criteria.

Handbook of Petrochemicals Production, Second Edition Robert A. Meyers 2018-10-06 A complete guide to petrochemicals production processes—fully revised to cover the latest advances Get all the information you need on petrochemical processes for major organic chemicals inside this industry-standard one-stop reference. Prepared by leading petrochemical licensing firms, Handbook of Petrochemicals Production Processes, Second Edition clearly explains the powerful techniques used to create the most economically important chemicals in the world. The book offers cutting-edge production methods along

with detailed product properties. You will discover how to effectively evaluate licensable processes for new production through the comparison of technologies, environmental factors, and economics. Coverage includes: •General process descriptions, feed definitions, product yields, and simplified flow diagrams •Process chemistries and thermodynamics •Commercial process perspectives, including plant locations and long-term plans •Process details, with flow diagrams and mass and energy balances for major process variations •Feeds and details on unique and key equipment •Brand-new details on gas to petrochemical conversion, biomass to petrochemical conversion, and bisphonal A (BPA)

Hydrocarbon Processing 2009 September 1, 2021-: "Since 1922, management and technical professionals from petroleum refining, gas processing, petrochemical/chemical and engineer/constructor companies throughout the world have turned to Hydrocarbon Processing for high quality technical and operating information. Through its monthly magazine, website and e-newsletters, Hydrocarbon Processing covers technological advances, processes and optimization developments from throughout the global Hydrocarbon Processing Industry (HPI). Hydrocarbon Processing editors and writers provide real-world case studies and practical information that readers can use to improve their companies' operations and their own professional job skills."--taken from publisher web site.

Ethylbenzene Production from Benzene and Ethylene - Cost Analysis - EB E11A Intratec 2019-09-17 This report presents a cost analysis of Ethylbenzene (EB) production from benzene and polymer grade (PG) ethylene. The process examined is a typical liquid-phase alkylation process using zeolite catalyst. This report was developed based essentially on the following reference(s): Keywords: Ethylbenzene, Ethylene, Benzene, Alkylation, CB&I Lummus/UOP EB One, ExxonMobil/Badger EB Max, Polimeri Europa, Zeolite

Chemicals and Fuels from Bio-Based Building Blocks Fabrizio Cavani 2016-02-16 An up-to-date and two volume overview of recent developments in the field of chemocatalytic and enzymatic processes for the transformation of renewable material into essential chemicals and fuels. Experts from both academia and industry discuss catalytic processes currently under development as well as those already in commercial use for the production of bio-fuels and bio-based commodity chemicals. As such, they cover drop-in commodity chemicals and fuels, as well as bio-based monomers and polymers, such as acrylic acid, glycols, polyesters and polyolefins. In addition, they also describe reactions applied to waste and biomass valorization and integrated biorefining strategies. With its comprehensive coverage of the topic, this is an indispensable reference for chemists working in the field of catalysis, industrial chemistry, sustainable chemistry, and polymer synthesis.

Ethylene Production via Steam Cracking of Ethane - Cost Analysis - Ethylene E11A Intratec 2016-05-01 This report presents a cost analysis of polymer grade (PG) Ethylene production from ethane feedstock using a typical steam cracking process. In this process, ethane is thermally cracked in pyrolysis furnaces

through the use of steam. Besides Ethylene, the process also generates a hydrogen-rich gas to be used as fuel. This report examines one-time costs associated with the construction of a United States-based plant and the continuing costs associated with the daily operation of such a plant. More specifically, it discusses: * Capital Investment, broken down by: - Total fixed capital required, divided in production unit (ISBL); infrastructure (OSBL) and contingency - Alternative perspective on the total fixed capital, divided in direct costs, indirect costs and contingency - Working capital and costs incurred during industrial plant commissioning and start-up * Production cost, broken down by: - Manufacturing variable costs (raw materials, utilities) - Manufacturing fixed costs (maintenance costs, operating charges, plant overhead, local taxes and insurance) - Depreciation and corporate overhead costs * Raw materials consumption, products generation and labor requirements * Process block flow diagram and description of industrial site installations (production unit and infrastructure) This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W

The Changing Landscape of Hydrocarbon Feedstocks for Chemical Production National Academies of Sciences, Engineering, and Medicine 2016-11-10 A decade ago, the U.S. chemical industry was in decline. Of the more than 40 chemical manufacturing plants being built worldwide in the mid-2000s with more than $1 billion in capitalization, none were under construction in the United States. Today, as a result of abundant domestic supplies of affordable natural gas and natural gas liquids resulting from the dramatic rise in shale gas production, the U.S. chemical industry has gone from the world's highest-cost producer in 2005 to among the lowest-cost producers today. The low cost and increased supply of natural gas and natural gas liquids provides an opportunity to discover and develop new catalysts and processes to enable the direct conversion of natural gas and natural gas liquids into value-added chemicals with a lower carbon footprint. The economic implications of developing advanced technologies to utilize and process natural gas and natural gas liquids for chemical production could be significant, as commodity, intermediate, and fine chemicals represent a higher-economic-value use of shale gas compared with its use as a fuel. To better understand the opportunities for catalysis research in an era of shifting feedstocks for chemical production and to identify the gaps in the current research portfolio, the National Academies of Sciences, Engineering, and Medicine conducted an interactive, multidisciplinary workshop in March 2016. The goal of this workshop was to identify advances in catalysis that can enable the United States to fully realize the potential of the shale gas revolution for the U.S. chemical industry and, as a result, to help target the efforts of U.S. researchers and funding agencies on those areas of science and technology development that are most critical to achieving these advances. This publication summarizes the presentations and discussions from the workshop.

Ethylene Production via Steam Cracking of Naphtha - Cost Analysis - Ethylene

E71B Intratec 2017-06-01 This report presents a cost analysis of polymer grade (PG) Ethylene production from light naphtha feedstock using a typical steam cracking process In this process, naphtha is thermally cracked in pyrolysis furnaces at high severity conditions to maximize Ethylene yield. In addition to Ethylene, the process also generates polymer grade propylene, pygas and a mixed C4s stream as by-products. Products separation follows a front-end demethanization sequence. This report was developed based essentially on the following reference(s): "Ethylene", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethene, Propene, Pyrolysis Gasoline, Hydrocarbon Pyrolysis, Cracking Furnace, Lummus, KBR, Technip, Linde, S&W