

1. Record Nr.	UNINA9910139495503321
Titolo	Surfactants from renewable resources / / edited by Mikael Kjellin, Ingegard Johansson
Pubbl/distr/stampa	Chichester, West Sussex, : Wiley, 2010
ISBN	9786612491504 9781282491502 1282491504 9781613441862 161344186X 9780470686607 047068660X 9780470686614 0470686618
Edizione	[1st ed.]
Descrizione fisica	1 online resource (342 p.)
Collana	Wiley Series in Renewable Resource
Altri autori (Persone)	KjellinMikael JohanssonIngegard
Disciplina	668.1 668.1
Soggetti	Surface active agents Green chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Surfactants from Renewable Resources; Contents; Series Preface; Preface; Acknowledgements; List of Contributors; Part 1 Renewable Hydrophobes; 1 Surfactants Based on Natural Fatty Acids; 1.1 Introduction and History; 1.2 Fats and Oils as Raw Materials; 1.3 Fatty Acid Soaps; 1.4 Polyethylene Glycol Fatty Acid Esters; 1.5 Polyglycerol Fatty Acid Esters; 1.6 Conclusions; References; 2 Nitrogen Derivatives of Natural Fats and Oils; 2.1 Introduction; 2.2 Manufacture of Fatty Nitrogen Derivatives; 2.3 Production Data; 2.4 Ecological Aspects; 2.5 Biodegradation 2.6 Properties of Nitrogen-Based Surfactants2.7 Applications; 2.8 Conclusions; References; 3 Surface-Active Compounds as Forest-

Industry By-Products; 3.1 Introduction; 3.2 Resin and Fatty Acids; 3.3 Sterols and Sterol Ethoxylates; 3.4 Hemicelluloses; Acknowledgements; References; Part 2 Renewable Hydrophiles; 4 Surfactants Based on Carbohydrates and Proteins for Consumer Products and Technical Applications; 4.1 Introduction; 4.2 Raw Materials; 4.3 Products and Applications; 4.4 Conclusion; Acknowledgements; References 5 Amino Acids, Lactic Acid and Ascorbic Acid as Raw Materials for Biocompatible Surfactants5.1 Introduction; 5.2 Production of Raw Materials; 5.3 Lysine-Based Surfactants; 5.4 Lactic Acid-Based Surfactants; 5.5 Ascorbic Acid-Based Surfactants; References; Part 3 New Ways of Making Renewable Building Blocks; 6 Ethylene from Renewable Resources; 6.1 Introduction; 6.2 Why Produce Ethylene from Renewable Resources?; 6.3 Production of Ethylene from Renewable Feedstock; 6.4 Commercialization of Bioethylene; 6.5 Environmental Impact of Bioethylene; 6.6 Certificate of Green Carbon Content 6.7 Concluding RemarksReferences; 7 Fermentation-Based Building Blocks for Renewable Resource-Based Surfactants; 7.1 Introduction; 7.2 Existing and Potential Classes of Surfactants from Biologically Derived Metabolites; 7.3 Fermentation-Based Building Blocks with Large Existing Markets; 7.4 New Fermentation-Based Building Blocks; 7.5 Conclusion; References; Part 4 Biosurfactants; 8 Synthesis of Surfactants Using Enzymes; 8.1 Introduction; 8.2 Enzymes as Catalysts for Synthesis of Surfactants; 8.3 Enzymatic Synthesis of Polar Lipids Useful as Surfactants; 8.4 Carbohydrate Esters 8.5 Fatty Amide Surfactants8.6 Amino Acid-Based Surfactants; 8.7 Alkyl Glycosides; 8.8 Future Prospects; Acknowledgements; References; 9 Surfactants from Waste Biomass; 9.1 Introduction; 9.2 Surfactants Obtained from Biological Transformation of Waste Biomass; 9.3 Surfactants Obtained from Chemical Transformation of Waste Biomass; 9.4 Summary and Outlook; References; 10 Lecithin and Other Phospholipids; 10.1 Introduction; 10.2 Sources and Production; 10.3 Composition; 10.4 Quality and Analysis of Lecithins; 10.5 Modification; 10.6 Emulsifying Properties; 10.7 Applications 10.8 Legislation and Reach

Sommario/riassunto

Most modern surfactants are readily biodegradable and exhibit low toxicity in the aquatic environment, the two criteria for green surfactants. However the majority are synthesised from petroleum, so over the past decade the detergent industry has turned its attention to developing greener routes to create these surfactants via renewable building blocks. Surfactants from Renewable Resources presents the latest research and commercial applications in the emerging field of sustainable surfactant chemistry, with emphasis on production technology, surface chemical properties, biodegradabil
