Acetylated Distarch Adipate | ae5689f96469bbedc8a83e2db00f484b

Functional Properties of Food ComponentsSurvey of Compounds which Have Been Tested for Carcinogenic ActivityToxic Substances Control Act (TSCA) Chemical Substance Inventory: User guide and indices to the initial inventory : Substance name indexHandbook of Carcinogenic Potency and Genotoxicity DatabasesEncyclopedia of Food and Color Additives□□□□□StarchFederal RegisterSurface Modification of BiopolymersFood Polysaccharides and Their ApplicationsFood Chemicals CodexEvaluation of Certain Food AdditivesPreservatives and Preservation Approaches in BeveragesForeign Compound Metabolism in MammalsDHHS Publication No. (NIH).Food Additives Tables: Classes I-IVSurvey of Compounds which Have Been Tested for Carcinogenic ActivityEstrogens in the Environment, IIICodex AlimentariusCompendium of Food Additive Specifications. Joint FAO/WHO Expert Committee on Food Additives (JECFA), 86th Meeting June 2018. FAO JECFA Monographs 22CRC Handbook of Food, Drug, and Cosmetic ExcipientsSpecifications for Identity and Purity of Buffering Agents, Salts, Emulsifiers, Thickening Agents, Stabilizers, Flavouring Agents, Food Colours, Sweetening Agents, and Miscellaneous Food AdditivesFennema's Food ChemistryThe IBS Low-Starch DietToxic Substances Control Act (TSCA) Chemical Substance InventoryCompendium of Food Additive SpecificationsCarbohydrate Chemistry for Food ScientistsThe Prevention of Food Adulteration Act, 1954 (Act No. XXXVII of 1954)Essential Guide to Food AdditivesFood Additives, Second Edition Revised And ExpandedIngredients in Meat ProductsHandbook of HydrocolloidsEssential Guide to Food AdditivesPolysaccharidesEnvironmental Health PerspectivesUllmann's Food and Feed, 3 Volume SetStarchThe Ultimate Guide to Sugars and SweetenersUser guide and indices to the ini tial inventory, substance name indexStarch

*Food additives are the cause of a great deal of discussion and suspicion. Now in its third edition, Essential Guide to Food Additives aims to inform this debate and bring the literature right up to date especially focussing on the changes in legislation since the last edition. Key topics include: * A basic introduction to the technology of food additives * Technical information on all food additives currently permitted in the European Union * Discussion covering the general issues surrounding the use of food additives, including the need for them * Coverage of the legal approval process for additives and the labelling of the finished product * Identification of sources or methods of production for each additive * Properties of individual additives and typical products they are used in This book will be an invaluable reference for researchers in the food and drink industry, undergraduates and graduates of courses in food science and technology and indeed all those who are interested in what they eatThis report represents the conclusions of a Joint FAO/WHO Expert Committee (JECFA) convened to evaluate the safety of various food additives, including flavoring agents, with a view to concluding on safety concerns and to prepare specifications for the identity and purity of the food additives. The first part of the report includes updates on the work of the Codex Committee on Food Additives (CCFA) since the eighty-fourth meeting of JECFA and on activities relevant to JECFA with regard to the Environmental Health Criteria 240: Principles and methods for the risk assessment of chemicals in food (EHC 240). Following is a summary of the Committee's evaluations of technical, toxicological and dietary exposure data for eight food additives other than flavoring agents - anionic methacrylate copolymer; basic methacrylate copolymer; erythrosine; indigotine; lutein and lutein esters from Tagetes erecta and zeaxanthin (synthetic); neutral methacrylate copolymer; sorbitol syrup; and spirulina extract - and eight groups of flavoring agents - alicyclic primary alcohols, aldehydes, acids and related esters; carvone and structurally related substances; furan-substituted aliphatic hydrocarbons, alcohols, aldehydes, ketones, carboxylic acids and related esters, sulfides, disulfides and ethers; linear and branched-chain aliphatic, unsaturated, unconjugated alcohols, aldehydes, acids and related esters; maltol and related substances; menthol and structurally related substances; miscellaneous nitrogen-containing substances; and saturated aliphatic acyclic branched-chain primary alcohols, aldehydes and acids. Specifications and analytical methods were revised for the following food additives other than flavoring agents: cassia gum; citric and fatty acid esters of glycerol (CITREM); glycerol ester of wood rosin (GEWR); and modified starches. Annexed to the report are tables summarizing the Committee's recommendations for dietary exposures to all of the food additives as well as toxicological information, dietary exposures and information on specifications.A 3-volume reference set you'll use every day. â€¢ Suppose you are the regulatory affairs manager for a food company, and your boss calls about "beet red", a coloring agent touted by a salesman as "natural". Your boss needs to know if this claim is true. How do you find out? â€¢ Perhaps you are an attorney for a company manufacturing ethnic marinade mixes and a customer charges that the chemical cinnamaldehyde, which the mixes contain, is being tested for carcinogenicity by the National Toxicology Program. Is your company manufacturing food that is potentially toxic? With the Encyclopedia of Food and Color Additives, the answers are at your fingertips: You quickly look up "Beet Red" and find it is indeed natural, a product of edible beets. You are able to assure your boss that the claim is valid. After consulting the Encyclopedia, you calmly inform the customer that cinnamaldehyde is not only approved for use in food, but it is a primary constituent of cinnamon, a common household spice. The Encyclopedia provides you with a quick, understandable description of what each additive is and what it does, where it comes from, when its use might be limited, and how it is manufactured and used. What? FDA or PAFA name: Listed in bold is the name by which the FDA classifies the substance. List of Synonyms: From the Chemical Abstract, the IUPAC name, and the common or "folklore" name for natural products are listed. Standardized names are provided for each substances. The most commonly used names are in bold type. Current CAS Number: The current FDA number for the substance. Other CAS Numbers: Numbers used previously or that are used by TSCA or EINICS to identify the substance. Empirical Formula: Indicates the relative proportion of elements in a molecule. Specifications: Includes melting point, boiling point, optical rotation, specific gravity, and more. Where? Description: Where the substance is grown; how it is cultivated, gathered, and brought to market; how it gets into food; species and subspecies producing this commodity; differences in geographical origin and how it impacts the quality of the product. Natural Occurrence: Lists family, genus, and species. Explains variances between the same substance grown and cultivated in different geographies. Natural Sources: For synthetic or nature-identical substances the Encyclopedia provides a list of foods in which a substance is naturally found. When? GRAS status: "Generally Recognized as Safe" status as established by the Flavor and Extract Manufacturer's Association (FEMA) or other GRAS panels. Regulatory Notes: This citation gives information about restrictions of amount, use, or processing of substances. Table of Regulatory Citations: Lists CFR numbers and description of permitted use categories. How? Purity: For some substances there are no purity standards. Here, current good manufacturing practices are reported as gathered from various manufacturers. Allows you as the consumer to know what is available and standard in the industry. Functional Use in Food: The FDA has 32 functions for foods, such as, processing aids, antioxidants, stabilizers, texturizers, etc. Lists the use of the particular substance as it functions in food products. You get all this data, plus an index by CAS number and synonym to make your research even easier The Encyclopedia of Food and Color Additives sorts through the technical language used in the laboratory or factory, the arcane terms used by regulatory managers, and the legalese used by attorneys, providing all the essentials for everyone involved with food additives. Consultants, lawyers, food and tobacco scientists and technicians, toxicologists, and food regulators will all benefit from the detailed, well-organized descriptions found in this one-stop source.The Fifth Edition reflects many of the changes in science and manufacturing since the publication of the Fourth Edition. Also, where feasible, FCC specifications are now harmonized with those of other standard setters, in particular the FAO/WHO Compendium of Food Additive Specifications. The FCC receives international recognition by manufacturers, vendors, and users of food chemicals. The Fifth Edition will be a welcome update to food technologists, quality control specialists, research investigators, teachers, students, and others involved in the technical aspects of food safety.This latest edition of the most internationally respected reference in food chemistry for more than 30 years, Fennema's Food Chemistry, 5th Edition once again meets and surpasses the standards of quality and comprehensive information set by its predecessors. All chapters reflect recent scientific advances and, where appropriate, have expanded and evolved their focus to provide readers with the current state-of-the-science of chemistry for the food industry. This edition introduces new editors and contributors who are recognized experts in their fields. The fifth edition presents a completely rewritten chapter on Water and Ice, written in an easy-to-understand manner suitable for professionals as well as undergraduates. In addition, ten former chapters have been completely revised and updated, two of which receive extensive attention in the new edition including Carbohydrates (Chapter 3), which has been expanded to include a section on Maillard reaction; and Dispersed Systems: Basic considerations (Chapter 7), which includes thermodynamic incompatibility/phase separation concepts. Retaining the straightforward organization and accessibility of the original, this edition begins with an examination of major food components such as water, carbohydrates, lipids, proteins, and enzymes. The second section looks at minor food components including vitamins and minerals, colorants, flavors, and additives. The final section considers food systems by reviewing basic considerations as well as specific information on the characteristics of milk, the postmortem physiology of edible muscle, and postharvest physiology of plant tissues.Specialist Periodical Reports provide systematic and detailed review coverage of progress in the major areas of chemical research. Written by experts in their specialist fields the series creates a unique service for the active research chemist, supplying regular critical in-depth accounts of progress in particular areas of chemistry. For over 80 years the Royal Society of Chemistry and its predecessor, the Chemical Society, have been publishing reports charting developments in chemistry, which originally took the form of Annual Reports. However, by 1967 the whole spectrum of chemistry could no longer be contained within one volume and the series Specialist Periodical Reports was born. The Annual Reports themselves still existed but were divided into two, and subsequently three, volumes covering Inorganic, Organic and Physical Chemistry. For more general coverage of the highlights in chemistry they remain a 'must'. Since that time the SPR series has altered according to the fluctuating degree of activity in various fields of chemistry. Some titles have remained unchanged, while others have altered their emphasis along with their titles; some have been combined under a new name whereas others have had to be discontinued. The current list of Specialist Periodical Reports can be seen on the inside flap of this volume.Please note that the content of this book primarily consists of articles available from Wikipedia or other free sources online. Pages: 32. Chapters: Acetylated distarch adipate, Amylomaize, Amylopectin, Amylose, Arrowroot, Corn starch, Corn syrup, Cyclodextrin, Dextrose equivalent, Dialdehyde starch, Erythronium japonicum, Glucose, Glucose syrup, High-fructose corn syrup, Hydrogenated starch hydrosylate, Hydroxyethyl starch, Hydroxypropyl distarch phosphate, Kudzu, Maltitol, Maltodextrin, Maltose, Modified starch, Pentastarch, Phosphated distarch phosphate, Potato starch, Resistant starch, Retrogradation (starch), Starch gelatinization, Starch mill, Starch production, Warabimochi, Waxy corn, Waxy potato starch.“Whether you’re a healthcare provider, a chef, or simply a foodie, you’ll find The Ultimate Guide to Sugars and Sweeteners an accurate and complete resource.”—Hope Warshaw, MMSC, RD, CDE, BC-ADM, best-selling author of The Diabetes Food and Nutrition Bible and Diabetes Meal Planning Made Easy An all-in-one reference to sugars and sweeteners—for any sweet-toothed consumer who also craves the facts Today, supermarkets and natural food stores feature a bewildering variety of sugars and alternative sweeteners. The deluge of conflicting information doesn’t help. If choosing a sweetener leaves you scratching your head, this handy guide will answer all of your questions—even the ones you didn’t know to ask: Which sweeteners perform well in baking? Will the kids notice if I sub in stevia? What’s the best pick if I’m watching my waistline, blood sugar, or environmental impact? Are any of them really superfoods . . . or toxic? Perfect for foodies, bakers, carb counters, parents, chefs, and clinicians, this delightfully readable book features more than 180 alphabetical entries on natural and artificial sweeteners, including the usual suspects (table sugar, honey), the controversial (aspartame, high-fructose corn syrup), the hyped (coconut sugar, monk fruit sweetener), and the unfamiliar (Chinese rock sugar, isomaltulose). You’ll also find myth-busting Q&As, intriguing trivia, side-by-side comparisons of how sweeteners perform in classic baked goods, and info on food-additive regulations, dental health, the glycemic index, and more. Your sweet tooth is in for a real education!Preservatives for the Beverage Industry, Volume Fifteen, a new release in The Science of Beverages series, is a valuable resource that discusses preservatives and their impact in the beverage industry, including potential health impacts. The book takes a broad, multidisciplinary approach to explore both conventional and novel approaches of the types and uses of preservatives. The latest applications and techniques to reduce the use of non-natural or health-threatening preservation elements are also covered. This is a must-have reference for anyone who needs to increase their technical-scientific knowledge in this field. Includes information on the use of hurdle technology in the preservation of beverages Provides the latest research and impact of antimicrobial use in the beverages industry Presents the benefits and risks of preservatives to ensure safety in beverage productsCarbohydrate Chemistry for Food Scientists, Third Edition, is a complete update of the critically acclaimed authoritative carbohydrate reference for food scientists. The new edition is fully revised, expanded and redesigned as an easy-to-read resource for students and professionals who need to understand this specialized area. The new edition provides practical information on the specific uses of carbohydrates, the functionalities delivered by specific carbohydrates, and the process for choosing carbohydrate ingredients for specific product applications. Readers will learn basic and specific applications of food carbohydrate organic and physical chemistry through clearly explained presentations of mono-, oligo-, and polysaccharides and their chemistry. This new edition includes expanded sections on Maillard browning reaction, dietary fiber, fat mimetics, and polyols, in addition to discussions of physical properties, imparted functionalities, and actual applications. It is an invaluable resource on the chemistry of food carbohydrates for advanced undergraduate and graduate students, and a concise, user-friendly, applied reference book for food science professionals. Identifies structures and chemistry of all food carbohydrates – monosaccharides, oligosaccharides and polysaccharides Covers the behavior and functionality of carbohydrates within foods Contains extensive coverage of the structures and properties of individual polysaccharides, including cellulose, inulin, gellans and pectins, amongst othersA compilation of 58 carefully selected, topical articles from the Ullmann's Encyclopedia of Industrial Chemistry, this three-volume handbook provides a wealth of information on economically important basic foodstuffs, raw materials, additives, and processed foods, including a section on animal feed. It brings together the chemical and physical characteristics, production processes and production figures, main uses, toxicology and safety information in one single resource. More than 40 % of the content has been added or updated since publication of the 7th edition of the Encyclopedia in 2011 and is available here in print for the first time. The result is a "best of Ullmann's", bringing the vast knowledge to the desks of professionals in the food and feed industries.The specification of identity and purity of food additives, established by the Joint FAO/WHO Expert Committee on Food Additives (JECFA), identify substances that have been subject to biological testing to ensure they are of adequate purity for the safe use in food. This volume contains specification prepared at the fifty-seventh meeting of JECFA and should be considered in conjunction with the Report of the meeting, which will be published in the WHO Technical Report Series.The third edition of this long-serving successful reference work is a 'must-have' reference for anyone needing or desiring an understanding of the structure, chemistry, properties, production and uses of starches and their derivatives. * Includes specific information on corn, wheat, potato, rice, and new chapters on rye, oat and barley (including waxy barley) starches * Covers the isolation processes, properties, functionalities, and uses of the most commonly used starches. * Explores the genetics, biochemistry, and physical structure of starches * Presents current and emerging application trends for starchThis comprehensive work lists over 20,000 terms commonly used in food science with their Chinese equivalents. A valuable reference for professionals in biotechnology, environmental protection, organic and natural food nutrition, and more.CRC Handbook of Food, Drug, and Cosmetic Excipients provides a comprehensive summary of toxicological issues regarding inactive ingredients in pharmaceutical products, cosmetic products, and food additives. Background information on regulations and labeling requirements for each type of product is provided, and 77 articles critically review human and animal data pertinent to a variety of agents and makes judgments regarding the clinical relevance. The book also identifies at-risk populations, such as neonates, patients with renal failure, and atopic patients. Inactive common pharmaceutical agents and/or foods containing certain ingredients are listed to help physicians counsel hypersensitive patients who must avoid products containing these excipients.This book covers the fundamentals in a most logical and clear manner for science and engineering students to follow as well as researchers from different disciplines. The main objective is to summarize in a fairly comprehensive manner most of the recent technical accomplishments in the area of surface modification of biopolymers for different applications. The book will be organized so that it provides most relevant and realistic information on surface modification of biopolymers for different applications ranging from automotive materials, toxic ion removal, biomedical material development, to defense applications, and more. Included in this book will be more than 20 chapters. This book is of interest to materials and biomaterials scientists and engineers, polymer chemists, biochemists, and biotechnologists. It introduces an overview of the developments made in the area of surface modification of biopolymers. Critical issues and suggestions for future research avenues are discussed, underscoring the roles of materials scientists and researchers for the future of these new “green” materials.Food additives have played and still play an essential role in the food industry. Additives span a great range from simple materials like sodium bicarbonate, essential in the kitchen for making cakes, to mono- and diglycerides of fatty acids, an essential emulsifier in low fat spreads and in bread. It has been popular to criticise food additives, and in so doing, to lump them all together, but this approach ignores their diversity of history, source and use. This book includes food additives and why they are used, safety of food additives in Europe, additive legislation within the EU and outside Europe and the complete listing of all additives permitted in the EU. The law covering food additives in the EU which was first harmonised in 1989 has been amended frequently since then, but has now been consolidated with the publication of Regulations 1331/2008 and 1129/2011. This 4th edition of the Guide brings it up to date with the changes introduced by this legislation and by the ongoing review of additives by EFSA. Providing an invaluable resource for food and drink manufacturers, this book is the only work covering in detail every additive, its sources and uses. Those working in and around the food industry, students of food science and indeed anyone with an interest in what is added to their food will find this a practical book full of fascinating details.This unique new reference contains the Carcinogenic Potency Database (CPDB), which analyzes results of decades of animal cancer tests, including all Technical Reports of the National Toxicology Program (NTP) and the general published literature. A guide to the literature of animal cancer tests, the CPDB includes references to each published experiment and never-before published analyses. For each of 5,000 long-term experiments on 1,300 chemicals, the user-friendly format includes data on the species, strain, and sex of the test animal; features of experimental protocol such as the route of administration, duration of dosing, dose levels, and duration of the experiment; histopathology and tumor incidence; the shape of the dose-response curve; published author's opinion about the carcinogenicity at each site; and reference to the original publication of the test results. In addition, a measure of carcinogenic potency, the TD50, its statistical significance and confidence limits, are given for each tumor site. An overview is provided of earlier publication updates, such as positivity rates, reproducibility, interspecies extrapolation, and ranking possible carcinogenic hazards. The book also includes a summary of the NTP genetic toxicity test results on 1,500 chemicals, which are referenced to the original publications, including the Salmonella (Ames) test, L5178Y mouse lymphoma cell mutation test, chromosome aberration and sister chromatid exchange tests in cultured Chinese hamster ovary cells, and the sex-linked recessive lethal mutation test in Drosophila melanogaster. An index with chemicals listed by CAS number allows cross referencing between the carcinogenicity and genotoxicity databases, making data easy to find.This work discusses the sources, identification, analysis, biosynthesis and practical applications of all polysaccharides important to the food industry, focusing on the complex interrelationships between the chemical structure and physical behavior of food polysaccharides. It covers individual polysaccharides in order of increasing molecular complexity.The history of starches and investigations of starch containing raw materials goes back many centuries, (ii) steady progress in the understanding of processing and modification processes of starches awaits further elucidation. Fortunately, the cluster model of native starch granules is now generally accepted. The remaining problems concerning physics and chemistry, biochemistry and genetics, and processing and modification of starches are dealt with annually at different conferences and symposiums by experts in various fields. The numerous questions concerning structural organisation of starch granules, their behaviour in different thermodynamic conditions*

(temperature, water content, pressure) during biosynthesis and in different solvents at processing of both starch and starch containing raw material deserve further study because they are not yetentirely understood. With this purpose in mind, scientists from different countries continue to discuss the problems of starch science.This document contains food additive specification monographs, analytical methods, and other information prepared at the eighty-sixth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), which was held in Rome, 12–21 June 2018. The specification monographs provide information on the identity and purity of food additives used directly in foods or in food production. The main three objectives of these specifications are to identify the food additive that has been subjected to testing for safety, to ensure that the additives are of the quality required for use in food or in processing and to reflect and encourage good manufacturing practice. This publication and other documents produced by JECFA contain information that is useful to all those who work with or are interested in food additives and their safe use in food.Completely revised and expanded to reflect the latest advancements in the field, Polysaccharides: Structural Diversity and Functional Versatility, Second Edition outlines fundamental concepts in the structure, function, chemistry, and stability of polysaccharides and reveals new analytical techniques and applications currently impacting the cosmetic, medicinal, chemical, and biochemical industries. The authoritative book discusses polysaccharides utilized in medical applications such as polysaccharide-based hydrogels, polysialic acids, proteoglycans, glycolipids, and anticoagulant polysaccharides; renewable resources for the production of various industrial chemicals and engineering plastics polysaccharides; and more.Hydrocolloids are among the most widely used ingredients in the food industry. They function as thickening and gelling agents, texturizers, stabilisers and emulsifiers and in addition have application in areas such as edible coatings and flavour release. Products reformulated for fat reduction are particularly dependent on hydrocolloids for satisfactory sensory quality. They now also find increasing applications in the health area as dietary fibre of low calorific value. The first edition of Handbook of Hydrocolloids provided professionals in the food industry with relevant practical information about the range of hydrocolloid ingredients readily and at the same time authoritatively. It was exceptionally well received and has subsequently been used as the substantive reference on these food ingredients. Extensively revised and expanded and containing eight new chapters, this major new edition strengthens that reputation. Edited by two leading international authorities in the field, the second edition reviews over twenty-five hydrocolloids, covering structure and properties, processing, functionality, applications and regulatory status. Since there is now greater emphasis on the protein hydrocolloids, new chapters on vegetable proteins and egg protein have been added. Coverage of microbial polysaccharides has also been increased and the developing role of the exudate gums recognised, with a new chapter on Gum Ghatti. Protein-polysaccharide complexes are finding increased application in food products and a new chapter on this topic as been added. Two additional chapters reviewing the role of hydrocolloids in emulsification and their role as dietary fibre and subsequent health benefits are also included. The second edition of Handbook of hydrocolloids is an essential reference for post-graduate students, research scientists and food manufacturers. Extensively revised and expanded second edition edited by two leading international authorities Provides an introduction to food hydrocolliods considering regulatory aspects and thickening characteristics Comprehensively examines the manufacture, structure, function and applications of over twenty five hydrocolloidsTwenty per cent of the UK population - 12 million people - suffer IBS-related symptoms, but they may be unaware that the simple elimination of starch from their diet can bring dramatic relief from pain and discomfort. In this revised edition, Carol Sinclair, a sufferer who has successfully overcome IBS and arthritic pain, brings you a revolutionary programme for a pain-free future. This practical guide will help millions to reduce their arthritic symptoms, whose pain to date has been relieved only by regular medication, with sometimes dangerous side effects. The diet shows that a gradual reduction of starch in one's diet can dramatically reduce pain in days, to a point where drug usage is reduced and, in some cases, eliminated completely. Details of the discovery - along with case histories and a practical guide - make Carol Sinclair's book a first in the world. The IBS Low-Starch Diet also contains over 200 delicious starch- and gluten-free recipes, along with a comprehensive guide to eating out.An extensive revision of the 1985 first edition, this volume combines the biochemistry and functionality of all food components. It provides broad coverage and specific descriptions of selected, major foods, as well as such elements as biotechnology-engineered foods and food patents. While directed toward food technologists and nutritionists, the contents are also invaluable to biologists, engineers, and economists in agriculture, food production, and food processing. Updates the first edition by the addition of genetic engineering progress Contains previously unpublished information on food patents Includes oriental and other ethnic foods, dietetic foods, and biotechnology-generated foods Features additional material on poultry and fishThere is little doubt that today's food industry is faced with a rapidly changing market landscape. The obvious need to continue to provide consumers with nutritious, delectable, safe, and affordable food products which are also profitable for food manufacturers, as well as the ongoing challenge of ensuring the delivery of adequate nutrition to hundreds of millions of disadvantaged people around the world, appears – at least as much as, if not more than, ever – to be at odds with the challenges posed by soaring energy and food commodity prices; fast-paced changes in consumer demographics, habits, and preferences; and the continual need to stay ahead of current and emerging food safety issues. In addition to this, the present ubiquity in the industry of terms such as functional foods, nutraceuticals, low sodium, low fat, clean label, minimal processing, and natural – to name a few – underscores yet a different dimension of the challenges faced by food processors today. On the other hand, however, the solutions of many of these challenges may, concurrently, present the food industry with unique and exciting opportunities. The processed meat industry, despite its long history and tradition, is certainly not exempt from having to face these modern challenges, nor excluded from realizing the promises of the opportunities that may lie ahead.