

Japanese Pharmaceutical Excipients 2018

Japanese Pharmaceutical Excipients 2018: An In-Depth Overview Introduction **Japanese pharmaceutical excipients 2018** represents a significant milestone in the pharmaceutical industry's ongoing efforts to improve drug formulation, safety, and efficacy. Japan, known for its advanced healthcare infrastructure and stringent regulatory standards, has long been a leader in pharmaceutical innovation and quality assurance. The year 2018 marked notable developments in the regulation, innovation, and application of pharmaceutical excipients within Japan, reflecting broader trends toward safer, more effective, and patient-friendly medications. Excipients are inert substances formulated alongside the active pharmaceutical ingredient (API) to facilitate drug manufacturing, stability, absorption, and patient compliance. In Japan, the use of excipients is tightly regulated, with a focus on ensuring safety, quality, and compatibility with the API. This article provides a comprehensive overview of Japanese pharmaceutical excipients as of 2018, exploring regulatory frameworks, key excipients used, technological advancements, and emerging trends shaping the industry.

Regulatory Landscape of Pharmaceutical Excipients in Japan (2018) Overview of Regulatory Agencies Japan's pharmaceutical excipient regulations are overseen primarily by the Ministry of Health, Labour and Welfare (MHLW) and the Pharmaceuticals and Medical Devices Agency (PMDA). These agencies set rigorous standards to ensure the safety, quality, and efficacy of pharmaceutical excipients.

Regulatory Standards and Guidelines In 2018, Japan adhered to several key regulatory standards regarding excipients: - Japanese Pharmacopoeia (JP): The primary reference for excipient specifications, including purity, quality, and testing methods. - Good Manufacturing Practice (GMP): Ensures excipients are produced under strict quality control. - Guidelines for Excipients: Issued by MHLW, emphasizing safety assessments, impurity profiling, and stability testing.

Key Regulatory Developments in 2018 - Enhanced Safety Evaluation: Introduction of more stringent testing requirements for novel excipients. - Increased Transparency: Mandatory reporting of excipient manufacturing processes and impurity profiles. - Recognition of International Standards: Alignment with the International Conference on Harmonisation (ICH) guidelines to facilitate global trade and compliance.

Major Types of Pharmaceutical Excipients Used in Japan (2018) Commonly Used Excipients in Japanese Pharmaceuticals In 2018, the Japanese pharmaceutical market utilized a diverse range of excipients categorized based on their function: 1. Fillers and Diluents - Microcrystalline cellulose - Lactose monohydrate - Calcium phosphate - Mannitol 2. Binders - Hydroxypropyl methylcellulose (HPMC) - Starch derivatives - Polyvinylpyrrolidone (PVP) 3. Disintegrants - Sodium starch glycolate - Croscarmellose sodium - Crospovidone 4. Lubricants and Glidants -

Magnesium stearate - Talc - Colloidal silicon dioxide 5. Coatings and Film Formers - Hydroxypropyl methylcellulose (HPMC) - Polyvinyl alcohol - Shellac 6. Preservatives and Stabilizers - Parabens - Benzalkonium chloride - Ascorbic acid Focus on Natural and Biocompatible Excipients In line with global trends, Japan increased utilization of natural and biocompatible excipients in 2018, such as: - Gellan gum - Xanthan gum - Agar These are favored for their safety profiles and suitability for specialized formulations like pediatric and geriatric medicines. Technological Innovations and Trends in 2018 Advances in Excipients Manufacturing - Nanotechnology: Development of nanostructured excipients to improve solubility and bioavailability. - Green Chemistry: Adoption of environmentally friendly manufacturing processes reducing the use of hazardous solvents. - Controlled Release Technologies: Use of biodegradable polymers and smart excipients to achieve targeted and sustained drug release. Novel Excipients Approved in 2018 Japanese regulators approved several novel excipients in 2018, including: - Hydroxypropyl starch: For improved disintegration and absorption. - Polymer-based excipients: Offering enhanced stability and controlled release properties. - Bio-based surfactants: Derived from natural sources, reducing toxicity concerns. Emphasis on Safety and Compatibility - Extensive testing for impurities and degradation products. - Compatibility studies to prevent interactions that could compromise drug stability or efficacy. - Development of excipient profiles to ensure batch-to-batch consistency. Emerging Trends in Japanese Pharmaceutical Excipients (2018) Focus on Patient-Centric Formulations - Taste-masking agents: To improve pediatric and geriatric compliance. - Orodispersible tablets: Using fast-dissolving excipients like superdisintegrants. - Transparent and natural excipients: Catering to consumer preferences for clean-label medications. Sustainability and Eco-Friendly Practices - Reduction of environmental impact through biodegradable excipients. - Use of renewable resources for excipient manufacturing. - Implementation of waste reduction and energy-efficient production techniques. Regulatory Harmonization and Global Collaboration - Alignment with international standards (e.g., ICH Q3A/B, USP, EP). - Participation in global forums to share best practices. - Facilitating export and import of pharmaceutical excipients through mutual recognition agreements. Challenges and Future Outlook Challenges Faced in 2018 - Navigating complex regulatory requirements for novel excipients. - Ensuring supply chain stability amid global fluctuations. - Addressing safety concerns related to impurities and residual solvents. Future Perspectives - Increased adoption of bio-based and biodegradable excipients. - Continued innovation in nano- and smart excipients. - Strengthening of regulatory frameworks to accommodate emerging technologies. - Greater emphasis on sustainability and eco-conscious manufacturing. Conclusion **Japanese pharmaceutical excipients 2018** encapsulate a period of significant advancement driven by stringent regulations, technological innovation, and evolving consumer preferences. Japan's commitment to safety, quality, and sustainability has cemented its position as a leader in pharmaceutical excipient development. As the industry continues to innovate, future

trends point toward more natural, biodegradable, and patient-friendly excipients, ensuring that Japanese pharmaceuticals remain at the forefront of global healthcare standards. By understanding the regulatory landscape, key excipients, technological advancements, and emerging trends, stakeholders can better navigate the complexities of pharmaceutical formulation in Japan, ultimately leading to safer and more effective medicines for patients worldwide.

Japanese Pharmaceutical Excipients 2018: An In-Depth Review of Trends, Quality, and Innovation The landscape of pharmaceutical excipients in Japan in 2018 reflects a robust combination of traditional materials and innovative formulations tailored to meet the high standards of Japanese pharmaceutical manufacturing. Excipient development and usage in Japan are characterized by rigorous quality control, regulatory vigilance, and a focus on safety and efficacy. As a significant player in the global pharmaceutical market, Japan's approach to excipient selection and regulation in 2018 exemplifies a meticulous balance between innovation and safety, setting benchmarks for the industry worldwide.

Overview of the Japanese Pharmaceutical Excipients Market in 2018

Japan's pharmaceutical excipients market in 2018 was marked by steady growth driven by an aging population, increasing demand for high-quality medicines, and regulatory reforms aimed at ensuring safety and efficacy. The market encompasses a broad range of excipients, including binders, fillers, disintegrants, lubricants, coatings, and stabilizers, each with specific roles in drug formulation. The Japanese pharmaceutical industry emphasizes the use of excipients that are either domestically produced or meet stringent international standards such as the Japanese Pharmacopoeia (JP), United States Pharmacopoeia (USP), and European Pharmacopoeia (EP). In 2018, there was a noticeable shift towards more sophisticated excipients that improve drug bioavailability, stability, and patient compliance.

Regulatory Environment and Standards in 2018

Japanese Pharmacopoeia (JP) and Regulatory Oversight

The JP continues to serve as the cornerstone for excipient quality standards in Japan. By 2018, revisions to the JP incorporated new monographs and updated existing standards to align with international practices, emphasizing safety and purity. Features of the regulatory environment in 2018 include: - Strict testing for contaminants such as heavy metals, residual solvents, and microbial contaminants. - Requirement for stability data demonstrating excipient compatibility with active pharmaceutical ingredients (APIs). - Emphasis on Good Manufacturing Practices (GMP) adherence for excipient production facilities.

Impact of Regulations on Excipient Development

Regulatory pressures fostered innovation, leading manufacturers to develop excipients with improved safety profiles and functional properties. For example, there was increased interest in excipients derived from natural sources and those with lower allergenic potential.

Key Types of Pharmaceutical Excipients in Japan in 2018

The 2018 landscape of excipients in Japan was characterized by both traditional materials and newer, specialized compounds designed to meet modern pharmaceutical needs.

Binders and Fillers

Binders and fillers facilitate tablet formation and ensure uniformity and mechanical strength. - Common Binders: Microcrystalline cellulose (MCC), polyvinylpyrrolidone (PVP), and starch derivatives. - Features & Trends: - Shift towards plant-based, biodegradable binders. - Development of modified cellulose derivatives with enhanced binding properties. Pros: - Excellent binding capacity. - Generally biocompatible and safe. - Widely accepted and well-understood. Cons: - Variability in source material may affect consistency. - Some binders may cause gastrointestinal discomfort.

Disintegrants

Disintegrants promote tablet breakup upon ingestion, enhancing drug dissolution. - Common Disintegrants: Sodium starch glycolate, croscarmellose sodium, and crospovidone. - Trends: - Focus on disintegrants that work effectively at lower concentrations. - Development of disintegrants with additional functionalities, such as lubricity. Pros: - Quick onset of disintegration. - Compatibility with various formulations. Cons: - Potential for swelling-related stability issues. - Possible interactions with active ingredients.

Lubricants and Glidants

Lubricants such as magnesium stearate and talc ensure smooth tablet ejection. - Features: - In 2018, there was a push toward using non-synthetic, plant-derived lubricants to reduce allergic reactions. - Use of silica-based glidants to improve flowability. Pros: - Reduce manufacturing issues like sticking. - Enhance process consistency. Cons: - Can interfere with drug release if used excessively. - Potential for moisture absorption leading to stability issues.

Coatings and Film Formers

Coatings serve to protect, mask taste, or improve appearance. - Innovations in 2018: - Use of hydroxypropyl methylcellulose (HPMC) and other plant-based film formers. - Development of functionalities like moisture barrier properties. Pros: - Improved patient compliance. - Enhanced stability and controlled release profiles. Cons: - Additional manufacturing steps. - Potential for coating defects if not applied properly.

Stabilizers and Preservatives

Ensuring chemical and microbial stability is crucial. - Common Choices: Parabens, benzalkonium chloride, and natural preservatives. - 2018 Trends: - Preference for natural preservatives due to safety concerns. - Use of antioxidants like ascorbic acid for stability. Pros: - Extend shelf-life. - Minimize microbial contamination. Cons: - Allergic potential. - Regulatory restrictions on some preservatives.

Innovations in 2018: Natural and Biocompatible Excipients

A notable trend in 2018 was the shift towards natural, biodegradable, and biocompatible excipients. Driven by consumer preferences and regulatory encouragement, many Japanese companies invested in developing plant-derived excipients. Examples include: - Plant-based polysaccharides: Guar gum, pectin, and alginates for sustained-release formulations. - Natural binders and disintegrants: Derived from starches and cellulose. - Benefits: - Reduced allergenicity. - Improved environmental profile. - Compatibility with sensitive active ingredients. Challenges: - Variability in natural source material. - Ensuring consistent quality and performance.

Quality Assurance and Testing in 2018

Japanese pharmaceutical excipients adhere to rigorous quality assurance protocols. - Testing Parameters include: - Purity and identity verification. - Microbial limits. - Residual solvent analysis. - Stability testing under various conditions. - Innovations in QA: - Implementation of rapid testing methods. - Greater emphasis on batch-to-batch consistency.

Market Players and Product Offerings

By 2018, Japan's excipient market was characterized by both multinational corporations and local manufacturers. Major players included: - Fujifilm Wako Pure Chemical Corporation: Known for high-quality reagents and excipients. - Nacalai Tesque: Focused on innovative excipients with a natural base. - Kao Corporation: Developed plant-based excipients suitable for functional formulations. - Sumitomo Chemical: Provided a range

of fillers and binders. Product innovation was driven by the demand for safer, more effective excipients with extended functionalities, such as controlled-release coatings and taste-masking agents.

Challenges and Future Outlook

Challenges faced in 2018 include: - Ensuring natural excipients meet strict quality standards. - Addressing variability inherent in natural sources. - Balancing cost with advanced functionalities. - Navigating regulatory changes and international harmonization. Future outlook: - Continued innovation in natural and biodegradable excipients. - Expansion of multifunctional excipients to simplify formulations. - Integration of nanotechnology for targeted delivery and stability. - Increased collaboration between academia and industry for novel excipient development.

Conclusion

The state of Japanese pharmaceutical excipients in 2018 exemplifies a mature, quality-driven industry that values safety, innovation, and environmental considerations. The trend toward natural, biocompatible excipients aligns with global movements towards sustainable pharmaceuticals. Regulatory rigor ensures high standards, fostering trust in Japanese medicines worldwide. As new materials and technologies emerge, Japan continues to influence global excipient standards, setting a benchmark for quality and innovation in pharmaceutical formulation. Overall, 2018 was a pivotal year for Japanese excipients, emphasizing safety, natural ingredients, and functional diversity, paving the way for future advancements in pharmaceutical sciences.

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For professionals, downloadable ***Japanese Pharmaceutical Excipients 2018*** serves as a valuable reference tool. Whether used for career development, industry research, or skill enhancement, digital books provide quick access to reliable information. Professionals can store entire libraries on their devices, organize materials efficiently, and update their knowledge without carrying physical books. This convenience supports continuous learning in competitive and knowledge-driven industries.

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The environmental impact of digital books is another factor worth considering. By choosing to download ***Japanese Pharmaceutical Excipients 2018*** instead of purchasing printed copies, readers contribute to reduced paper consumption, lower carbon emissions, and more sustainable resource use. While digital technology also has environmental considerations, the reduced demand for physical printing and transportation represents a positive step toward eco-friendly learning practices.

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Questions & Answers About japanese pharmaceutical excipients 2018

No	Question	Answer
1	What were the key trends in Japanese pharmaceutical excipients in 2018?	In 2018, Japanese pharmaceutical excipients saw increased emphasis on safety, regulatory compliance, and the development of excipients derived from natural sources to meet both domestic and international standards.
2	Which new excipients gained popularity in Japan in 2018?	Natural and multifunctional excipients, such as plant-based fillers and disintegrants, gained popularity in Japan during 2018 due to their safety profiles and consumer preferences.
3	How did regulatory changes in Japan affect pharmaceutical excipients in 2018?	Regulatory updates in Japan emphasized stricter safety assessments and quality standards for excipients, prompting manufacturers to adopt higher quality control measures and transparent documentation in 2018.

4	What role did natural excipients play in Japanese pharmaceuticals in 2018?	Natural excipients played an increasingly important role due to consumer demand for 'clean-label' products, leading to increased research and incorporation of plant-based and biodegradable excipients in 2018.
5	Were there any significant technological advancements in excipient manufacturing in Japan in 2018?	Yes, 2018 saw advancements such as improved granulation techniques and the adoption of environmentally friendly manufacturing processes for excipients in Japan.
6	How did international standards influence Japanese pharmaceutical excipients in 2018?	International standards, such as those from the ICH and USP, influenced Japanese excipient formulations and quality controls, encouraging harmonization and global acceptance of Japanese excipients in 2018.
7	What challenges did Japanese pharmaceutical excipient manufacturers face in 2018?	Manufacturers faced challenges related to sourcing high-quality natural raw materials, ensuring compliance with evolving regulations, and maintaining cost-effective production processes.
8	How did consumer preferences impact the development of pharmaceutical excipients in Japan in 2018?	Consumer preferences for natural, non-GMO, and eco-friendly products drove pharmaceutical companies to develop and adopt excipients that align with these values in 2018.
9	What is the outlook for Japanese pharmaceutical excipients following the trends in 2018?	Following 2018 trends, the outlook includes continued innovation in natural and multifunctional excipients, greater regulatory harmonization, and a focus on sustainability and safety in excipient development.

Japanese pharmaceutical excipients, 2018, pharmaceutical additives Japan, Japanese excipient regulations, pharmaceutical excipient market Japan, Japan drug formulation ingredients, Japanese excipient suppliers, pharmaceutical excipients industry Japan, Japan pharmaceutical excipient standards, excipients market trends Japan, Japanese pharmaceutical excipient manufacturing

Japanese Pharmaceutical Excipients

2018 eBook Resource

Japanese Pharmaceutical Excipients 2018 eBooks provide structured digital knowledge.

Core Discussion

Digital books help readers maintain productivity.

Practical Use

Japanese Pharmaceutical Excipients 2018 eBooks support consistent study routines.

Conclusion

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Professionals in fast-changing industries use Japanese Pharmaceutical Excipients 2018 eBooks to stay updated without committing to rigid learning schedules.

Professionals in fast-changing industries use Japanese Pharmaceutical Excipients 2018 eBooks to stay updated without committing to rigid learning schedules.

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Structure enhances clarity.

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Japanese Pharmaceutical Excipients 2018 eBooks are commonly used to reinforce foundational knowledge.

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This flexibility allows knowledge acquisition to occur naturally throughout the day.

The portability of Japanese Pharmaceutical Excipients 2018 eBooks ensures access across devices such as smartphones, tablets, and laptops.

Japanese Pharmaceutical Excipients 2018 eBooks offer a practical solution for learners seeking depth without overwhelming complexity.

Methodical study improves mastery.

Device flexibility allows seamless transitions between work, travel, and study contexts.

Japanese Pharmaceutical Excipients 2018 eBooks are often used in environments that value accuracy.

Japanese Pharmaceutical Excipients 2018 eBooks support offline access, enabling uninterrupted learning without constant internet connectivity.

Quick access to organized material improves decision-making efficiency.

Learners often revisit Japanese Pharmaceutical Excipients 2018 eBooks as reference materials.

This reduction helps learners maintain control over information intake.

The portability of Japanese Pharmaceutical Excipients 2018 eBooks ensures that learning materials are always available regardless of location or time constraints.

Printing Japanese Pharmaceutical Excipients 2018

Printing Japanese Pharmaceutical Excipients 2018 in PDF format is one of the most reliable ways to produce physical copies that accurately reflect the original digital layout. One of the main advantages of PDFs is their ability to preserve formatting, including fonts, margins, images, charts, and page structure. This makes PDFs ideal for

printing books, study materials, manuals, and professional documents without unexpected layout changes.

Before printing Japanese Pharmaceutical Excipients 2018, it is important to review the page setup. Check page size (such as A4 or Letter), orientation (portrait or landscape), and margins to ensure that no text or images are cut off. Many printing issues occur because the document's page size does not match the printer's default settings. Adjusting the scaling option to "Fit to Page" or "Actual Size" can help prevent unwanted cropping or distortion.

For long documents, duplex (double-sided) printing is highly recommended. Duplex printing reduces paper usage, lowers printing costs, and creates more compact physical copies. If your printer supports automatic duplex printing, enabling this option can save time and effort. For printers without duplex capability, manual double-sided printing is still possible by printing odd and even pages separately.

Print preview should always be checked before printing the entire Japanese Pharmaceutical Excipients 2018 document. Previewing allows you to identify layout issues, blank pages, or formatting errors in advance. Printing a few test pages first is a good practice, especially for large or important documents.

Optimizing Japanese Pharmaceutical Excipients 2018 for print quality

For the best results, ensure that images within Japanese Pharmaceutical Excipients 2018 are of sufficient resolution. Low-resolution images may appear blurry or pixelated when printed. Choosing high-quality print settings in your PDF reader can improve output clarity, though it may increase ink usage. Selecting grayscale printing is an option if color is not essential, helping reduce ink costs.

Converting Formats

Converting Japanese Pharmaceutical Excipients 2018 PDFs into other formats can be useful when editing, repurposing, or extracting content. While PDFs are excellent for viewing and printing, they are not always ideal for direct editing. Converting to formats such as Word, Excel, PowerPoint, or image files can make content modification easier.

Many tools support PDF conversion. Desktop software like Adobe Acrobat, Nitro PDF, and Foxit PDF Editor provide reliable conversion with high accuracy. Online tools such as Smallpdf, iLovePDF, PDF24, and Zamzar offer convenient browser-based conversion without installing software. When converting sensitive documents, offline software is generally safer than online services.

The quality of conversion depends on how the original Japanese Pharmaceutical

Excipients 2018 PDF was created. Text-based PDFs usually convert accurately, preserving paragraphs, headings, and tables. Scanned PDFs, however, require Optical Character Recognition (OCR) to convert images of text into editable content. OCR accuracy may vary, so proofreading after conversion is essential.

Choosing the right output format

Each output format serves a different purpose. Converting Japanese Pharmaceutical Excipients 2018 to Word format is ideal for text editing and rewriting. Excel format works best for tables, data, and numerical content. Image formats such as JPG or PNG are useful for presentations, previews, or sharing visual snapshots. Selecting the appropriate format ensures efficiency and minimizes the need for additional adjustments.

Editing after conversion

After conversion, formatting inconsistencies may appear, such as misaligned text, altered fonts, or broken tables. Reviewing and correcting these issues is an important step. Keeping a copy of the original Japanese Pharmaceutical Excipients 2018 PDF ensures you can always reference the original layout if needed.

Adding Passwords

Security is a critical aspect of managing Japanese Pharmaceutical Excipients 2018 PDFs, especially when dealing with sensitive, confidential, or proprietary information. Adding passwords and setting permissions helps control who can open, edit, print, or copy content from the document.

Many PDF tools allow users to add password protection easily. Adobe Acrobat, for example, offers options to set an open password (required to view the document) and a permissions password (required to edit or print). Other tools such as Foxit, PDF24, and Smallpdf also provide similar security features. Strong passwords combining letters, numbers, and symbols are recommended to enhance protection.

Permission settings allow you to restrict specific actions without blocking access entirely. For instance, you may allow readers to view Japanese Pharmaceutical Excipients 2018 but prevent printing or text copying. This is useful for distributing previews, internal documents, or study materials while protecting intellectual property.

Best practices for PDF security

When securing Japanese Pharmaceutical Excipients 2018, store passwords safely and share them only with authorized users. Avoid using easily guessable passwords. For highly sensitive documents, consider additional security measures such as encryption and digital signatures. Regularly updating PDF software ensures access to the latest

security features and vulnerability patches.

Compressing PDFs

Large PDF files can be inconvenient to store, upload, or share, especially via email or messaging platforms with size limits. Compressing Japanese Pharmaceutical Excipients 2018 reduces file size while maintaining acceptable quality, making distribution faster and more efficient.

Compression tools work by optimizing images, removing redundant data, and restructuring file elements. Many PDF editors and online services provide compression options with different quality levels, allowing users to balance file size and visual clarity. For documents primarily containing text, compression often results in significant size reduction with minimal quality loss.

Online tools such as Smallpdf, iLovePDF, and PDF24 offer quick compression solutions. Desktop applications provide greater control and are preferable for sensitive documents. Always review the compressed file to ensure that text remains readable and images retain sufficient clarity, especially for printed or professional use of Japanese Pharmaceutical Excipients 2018.

When to compress Japanese Pharmaceutical Excipients 2018

Compression is particularly useful when sharing documents via email, uploading to websites, or storing large libraries of PDFs. It is also helpful for mobile access, where smaller file sizes reduce storage usage and improve loading times. However, for archival or print-quality purposes, keeping an uncompressed original version is recommended.

Balancing quality and size

Choosing the right compression level is important. Excessive compression can lead to blurred images and reduced readability, while minimal compression may not significantly reduce file size. Testing different compression settings helps find the optimal balance for your specific use case of Japanese Pharmaceutical Excipients 2018.

Combining print, conversion, and security workflows

In many cases, users may need to print, convert, secure, and compress Japanese Pharmaceutical Excipients 2018 as part of a single workflow. For example, a document may be edited after conversion, secured with a password, compressed for sharing, and finally printed. Using reliable tools and following best practices ensures smooth handling at every stage.

Final thoughts on managing Japanese Pharmaceutical Excipients 2018 PDFs

Printing, converting, securing, and compressing Japanese Pharmaceutical Excipients

2018 are essential skills for effective document management. By understanding how to optimize print settings, choose the right conversion formats, apply appropriate security measures, and reduce file size responsibly, users can handle PDFs with confidence and efficiency. These practices enhance usability, protect sensitive content, and ensure that Japanese Pharmaceutical Excipients 2018 remains accessible and professional across different platforms and use cases.