Exceeding expectations:
Polyvinyl alcohol for transdermal drug delivery

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Choosing the right PVA grade

At Merck Millipore, we understand it can be challenging to find the right polyvinyl alcohol (PVA) grade. No matter your application, our portfolio makes it easy to find the right fit. We offer a large set of pharmaceutical-grade PVAs that surpass the requirements of all three major pharmacopeias (USP, Ph Eur, and JPE).

The importance of choosing the right PVA grade becomes clear once you realize the far-reaching effects of the material properties on the final drug product performance. This is why we offer a range of PVAs with different viscosities and hydrolysis grades. For example, a higher hydrolysis grade helps to improve the mechanical strength and adhesiveness of the hydrogel, while a lower hydrolysis grade may facilitate the incorporation of higher amounts of your poorly water-soluble API. The viscosity of PVA correlates with its average molecular weight – depending on the type you choose, you may optimize the thickening effect or tailor the drug release profile of your hydrogel formulation to your individual needs.

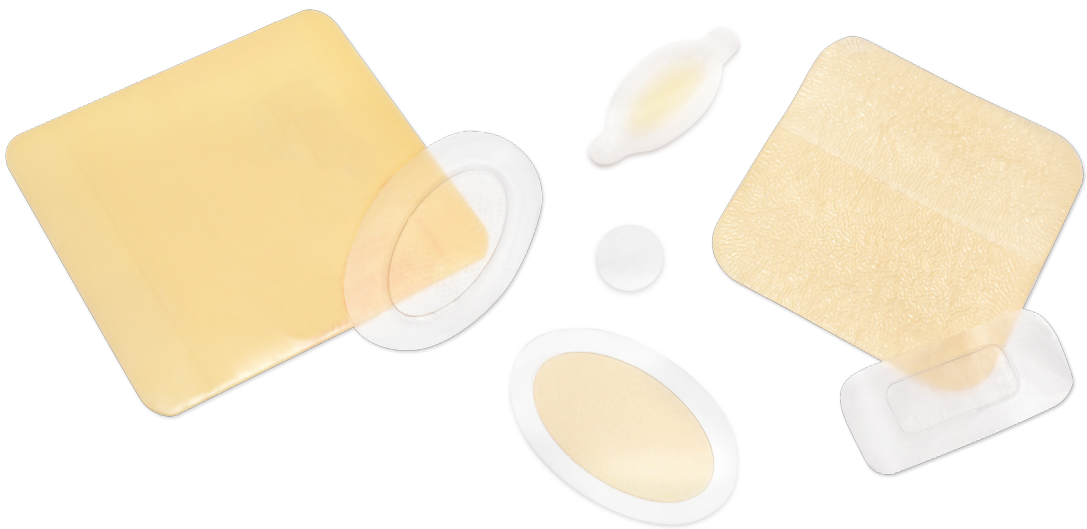
Given that high quality and patient welfare is a key focus at Merck Millipore, we have established even stricter limits including unique lot release criteria for all of our products. What's more, our EMPROVE® PVA is in compliance with regulations, enabling you to satisfy today's increasing regulatory requirements. With Merck Millipore, you can benefit from the inherent advantages of PVA combined with trusted and documented pharmaceutical quality.

Benefits

- Extensively tested and documented product quality, surpassing compendial requirements, of our EMPROVE® PVA grades
- Widest range of pharmaceutical PVA types to meet every application need
- Batch-to-batch consistency, ensuring reliable reproducibility of quality and performance of your final drug product

Transdermal drug delivery on the rise

Transdermal drug delivery is quickly on the rise, drawing attention as alternatives for oral or injectable formulations become more imperative. Hydrogel patches, for example, are an excellent opportunity in systemic therapy to achieve consistent plasma levels of the API, enhance bioavailability, and improve patient compliance. One material well suited for the use in transdermal hydrogel applications is PVA. While other polymers are known for incompatibilities with multiple APIs or other formulation ingredients, PVA shows high inertness and may be broadly applied.



PVA for every application need

Polyvinyl alcohol (PVA) is a synthetic, biocompatible, and toxicologically safe polymer that can be used as a matrix former for sustained release hydrogel drug delivery systems and is well suited for a variety of pharmaceutical applications, including solid, liquid, and semi-solid formulations.

To address your PVA needs, Merck Millipore offers a comprehensive portfolio of pharmaceutical-grade PVAs available in a variety of viscosities and grades of hydrolysis. These parameters determine crucial characteristics of the polymer such as water solubility, oxygen permeability, film forming, emulsifying and remoistable properties.

One-stop shop for hydrogel formulation

While it is the basis of your hydrogel formulation, PVA alone is not enough to make a final drug product. We provide everything you need for hydrogel formulation: cross-linking agents, permeation enhancers, preservatives and antioxidants, moisture binders, surfactants and stabilizers, as well as thickening agents or drug load capacity enhancers.

And for characterization, we offer the Strat-M® membrane – a synthetic, non-animal based model for transdermal diffusion testing that is predictive of diffusion in human skin without lot-to-lot variability and storage limitations.

For more information about PVA, please visit www.merckmillipore.com/pva

Ordering information

Merck Millipore's PVA is available in grades 4-88, 5-88, 8-88, 18-88, 26-88, 28-99, and 40-88 as granules (with the first digit characterizing the average viscosity in mPas and the second digit characterizing the average hydrolysis grade in %). All x-88 grades are also available as powder upon request.

Ord. No.	Product
1.41350	Polyvinyl alcohol 4-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
1.41354	Polyvinyl alcohol 5-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
1.41351	Polyvinyl alcohol 8-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
1.41355	Polyvinyl alcohol 18-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
1.41352	Polyvinyl alcohol 26-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
1.41356	Polyvinyl alcohol 28-99, suitable for use as excipient EMPROVE® exp JPE
1.41353	Polyvinyl alcohol 40-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE

Quantity	Package size	Format
1.4135x.1000	1 kg	PE bottle
1.4135x.9029	25 kg	Double PE bag (DPES)

Other packages available upon request.

The typical technical data above serve to generally characterize the excipient. These values are not meant as specifications and they do not have binding character. The product specification is available separately, from the website: www.merckmillipore.com

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

For more information and documentation please contact:

Phone: + 49 6151-72 0

Email: pcs.salessupportEU@merckgroup.com

Merck Millipore
Merck KGaA
Frankfurter Str. 250
64293 Darmstadt, Germany

www.merckmillipore.com

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