

The quest for sustainable leather alternatives

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Throughout history, leather has been a popular material for clothes and many other goods. However, the tanning process and use of livestock mean that it has a large environmental footprint, leading consumers and manufacturers alike to seek out alternatives. An article in *Chemical & Engineering News* (C&EN), the weekly newsmagazine of the American

Chemical Society, details how sustainable materials are giving traditional leather a run for its money.

Traditional [leather](#) goods are known for their durability, flexibility and attractive finish, with a global market worth billions, writes Associate Editor Craig Bettenhausen. Despite leather's popularity, the modern tanning process uses potentially harmful chemicals and creates a large amount of wastewater. In addition, most hides come from the meat and dairy industries, which have sustainability problems. Leather-like materials, often called vegan leather, are gaining traction among high-end manufacturers, defying the negative perceptions of synthetic "pleather." These leather alternatives are made from an array of base materials, including plants, mushrooms and even fish skin, each with a unique take on sustainable production.

Plant-based materials are currently the most advanced leather mimics because of their straightforward manufacturing process, which combines inexpensive natural fibers and polymers that are rolled into sheets. A company based in Mexico has created a leather made from [prickly pear cactus](#), which is ground into a powder and combined with a biobased polyurethane. Mushroom leather mimics the texture of cowhide leather very well, but production needs to scale up substantially to make an impact. Although not a vegan alternative, fish skin is poised to replace exotic leathers such as snake and alligator skin. Cell-culture leather is also in [early development](#), which could disrupt the traditional leather market even further. Experts are confident that these materials are viable alternatives, and manufacturers plan to scale up their efforts going forward.

More information: "Sustainable Materials Make a Play for the Vegan Leather Market," [cen.acs.org/materials/biomater ... ake-play-vegan/99/i8](https://cen.acs.org/materials/biomater...ake-play-vegan/99/i8)

Provided by American Chemical Society

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