



One Source for Precision Fibrous Parts

Animal Derived Ingredient-Free (ADI-free) Alternatives to Wool for Polishing (Rev Jan 2022)

Spartan Felt produces polishing pads, wheels, and rotary tools, many of which are made from wool.

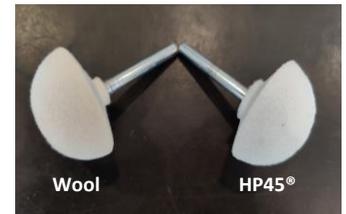
Wool is most commonly sheep's hair, but is also harvested from goats, llamas, and even camels. The scaly nature of wool fiber makes it very effective for polishing. Wool is usually in the form of felt, and found in polishing pads, wheels, belts, and bobs (mandrel-mounted rotary tools). Spartan Felt uses the finest wool available, which is cleaned and treated to remove any contaminants within the fiber, and we feel certain it is a safe material to use. However, naturally animal derived materials such as wool have come under scrutiny by FDA in their effort to reduce any risk associated with products intended for contact with human body fluids, such as implants, or medical devices.

FDA's Recommendation for Medical Device Manufacturing- Use only Animal Derived Ingredient-free (ADI-free) Materials.

Animal Derived Ingredient-free materials 'should' be considered by manufacturers of medical devices, per the FDA, to 'reduce transmissible diseases such as caused by viral pathogens and all transmissible spongiform encephalopathies (TSEs)'. The document from FDA on ADI guidance can be found here: *Medical Devices Containing Materials Derived from Animal Sources (Except for In Vitro Diagnostic Devices) 1 Guidance for Industry and Food and Drug Administration Staff* (<https://www.fda.gov/media/87251/download>). Further complicating the FDA's concern, wool polishing tools sourced from some distributors and virtually all wool polishing products available through on-line stores are manufactured in China and India. **Spartan Felt manufactures all products in the USA. We are ISO certified and can provide material composition disclosures for the products we supply. A statement letter is available on our wool products with processes used to mitigate risks, please inquire.**

ADI-free alternatives to wool, developed by Spartan Felt Co, are proven successful for polishing Medical Devices.

Spartan's patented HP (High Performance) media are based on synthetic fiber and are ADI-free. HP45® looks like dense wool but is formulated to provide performance that exceeds the capabilities of wool. HP45® tools can be used exactly like wool tools yet will provide **faster, more accurate finishes**. The reason is that **more force** can be applied to HP45® tools because the resistance to friction heat is higher, and the porosity of HP media will channel heat away from the surface. Cooling air is more effective, resulting in a tool that stays cooler under higher force and friction. **The application of higher force to drive the abrasive to the surface being polished results in faster material removal.** [Click here for more information on HP45® tools.](#)



Impregnation of HP Media with abrasive and ADI-free lubricant can eliminate polishing compounds.

Abrasives that can be embedded into the tool include Aluminum Oxide, Silicon Carbide, and Diamond. The impregnation includes lubricant that is ADI-free. This can eliminate the need for polishing compounds which can contain animal derived stearates.

Property	Wool	HP45® Media
Fiber Matrix:	Natural Animal Hair	Synthetic Polyester, ADI-free.
Heat Resistance (Melting Point):	An insulator, wool holds heat internally, burns/melts ~250°F	Porous, allows heat to dissipate, melt point ~ 275°F.
Water Resistance:	Short term only, begins to rot.	Not affected by water.
Abrasive Impregnation Effectiveness:	Wool felt/ fiber destruction causes loss of abrasive with shedding.	Degrades much slower, tends to hold abrasive more firmly to the surface
Tool Shape Retention:	Shape degrades with fiber destruction and approaching melting point.	Better shape retention due to reduced surface destruction and higher heat resistance.



Wool Products

Automated polishing is made cleaner and easier with abrasive impregnated tools.

Polishing compounds create a mess as it slings off the work piece; with abrasive impregnation, finishing is a cleaner operation. HP45® is not affected by CNC cooling water, and tools can be made to most any size and shape to simplify robotic motion. **Spartan Felt manufactures to customer specifications and delivers consistent quality.**

Spartan Felt has in-house labs to match or customize tools to meet customer specifications. We also can recommend other ADI-free products, such as composites and rubberized abrasives, based on the application. Contact us for more information or samples.



ADI-free composites