



» APPLICATION BULLETIN

Mevopur™ Healthcare Functional Additives Laser Welding Additives for Medical Devices

Laser welding is a technology of choice to join plastic parts on complex medical devices. Also known as transmission welding, laser welding is the process of using focused laser radiation to bond two plastic parts, one that is transparent to the laser energy and one that absorbs the energy. It is a precise and clean process that produces high-quality seams and adhesive-free assembly. Polymers interact differently with laser energy, making them more or less suitable for laser welding. Special polymer solutions can be used to enhance a polymer's ability to interact with the laser energy and achieve a good weld.

Avient uses a “systems approach” to develop the laser welding solution most adapted to your project, taking into consideration the following aspects:

- Transmitting and absorbing parts
- Polymer type and grade
- Dispersion of the additive in the final part
- Sufficient and consistent loading of the additive
- Part design—attention to flow separation at the welding interface
- Color and opacity
- Quality control—establish suitable control parameters (e.g., UV Visible Spectra)
- Laser wavelength and processing parameters

Mevopur™ Healthcare Functional Additives are additive concentrates (masterbatches) specially formulated for laser welding in healthcare applications. Examples include wearable patch sensors, cartridges, housings, and surgical instruments. Ready-to-use compounds can help to solve dispersion issues.

KEY CHARACTERISTICS

- Manufactured at several ISO 13485 certified sites across the globe, providing consistency and increased security of supply
- Documented change control beyond CAS number, reducing risk of change
- Available as additive concentrates, ready-to-use compounds or ready-to-use additive/colorant formulations for different polymers

REGULATORY SUPPORT

- Raw materials tested to:
 - ISO 10993-1 and USP <87> <88> biological evaluation
 - European Pharmacopeia 3.1.3/3.1.5 (polyolefin) or 3.1.15 (polyester)
 - USP <661.1> (polyethylene, polyester)
 - ICH Q3D elemental impurities
- Registered Drug Master File (Type III) and/or Device Master File
- Food contact declaration according to USD FDA/EU*

* US FDA/EU compliance information available upon request; exceptions may occur



Healthcare use limitations apply—see below.

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Avient is committed to the needs of our healthcare customers. As part of our commitment, we publish Avient’s Mevopur™ product policy and use limitations to assist customers in their product selection.

It is the responsibility of the medical device manufacturer and the person placing the medical device on the market to ensure compliance of the medical device with all applicable laws and regulations, including the suitability of all raw materials and components used for its manufacture.

Please be aware that there are certain applications Avient’s Mevopur products have not been designed for, nor are they promoted or intended for use in: including, but not limited to long-term or permanent implants, birth control devices, or plastic surgery.

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