

PRODUCTS EFFECTIVELY STERILIZED BY GAMMA

GIPA FACT SHEET

PRODUCTS BEST SUITED FOR GAMMA STERILIZATION

Certain products due to their design, construction, method of production and packaging are compatible only with gamma sterilization. The vast majority of products either made of plastics or with plastic components cannot withstand either steam or dry heat sterilization processes and will melt. If a chemical sterilization process is used, the plastics or other materials may absorb the sterilant thereby leaving a harmful chemical residue.

Below is a list of many products that can only be sterilized using gamma radiation.

- Labware Products – made of styrene and other plastics are temperature sensitive and any chemical residues will affect cell growth in tissue culture studies, microbiological studies and other serum and biological high-tech research or clinical testing.
- Human and animal sourced implants, which includes bone allograft or soft tissues.
- Saline, water, bicarbonate and other liquids that are uniquely packaged (e.g. aerosol) or which have a high viscosity.
- Laparotomy sponges, operating room towels, gauze, surgical drapes and other cotton products contaminated with *Pyronema* sp. (fungus).
- Laboratory culture plates pre-filled with media used in medical and microbiological applications
- Medical and non-medical products that have high moisture content and are temperature sensitive (e.g. wound closure glue, orthopaedic cement etc.) may form unwanted chemical residuals if processed with EtO (Chlorohydrins if chloride is present, ethylene glycol and ethylene oxide).
- Wet Dressings that are temperature sensitive and/or hermetically packaged
- Preparation Pads, such as alcohol or provodine iodine (PVP) based
- Serums (bovine & others).
- Stopcocks and other devices or device components that are temperature sensitive and are designed with occluded areas.
- Filled syringes. Bags, liners and bottles used in pharmaceutical manufacture
- Blood sample collection tubes

FACTORS AFFECTING THE STERILIZATION METHOD SELECTED

Closed Packaged Products – Many products are designed using high strength, non-breathable materials that cannot be processed with technologies that require permeation of steam or gas & changes in atmospheric pressure. These products range from medical devices to raw materials and consumer products such as peat moss, poly-lined drums, teething rings and hermetically sealed products.

Dense Materials – many raw materials are packed in boxes and drums and are very dense, thus limiting permeation of steam, electrons, or gases into the container. Further, steam and gas may cause clumping or cause other physical effects that render the product useless. Spice, talc, raw materials, water soluble materials, powders and the like are processed only with gamma radiation for this reason.

Lumens or Mated Surfaces – Products with sealed cavities, long hollow tube or mated surfaces need a sterilizing agent that can penetrate into these difficult to reach areas (e.g. stop cocks and catheters).

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or visit www.gipaalliance.net for other GIPA fact sheets

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