Sterigenics®
A Sotera Health company

Technologies Considerations

	Ethylene Oxide	Gamma	E-Beam	X-ray
Material compatibility	Widest range of material compatibility except for moisture and temperature-sensitive materials (>30oC and/or <30% RH)	Wide range of polymer compatibility; some limitations due to oxidation effects—PTFE and PVC affected	Wide range of polymer compatibility; some limitations due to oxidation effects	Wide range of polymer compatibility; some limitations due to oxidation effects
Processing and efficacy	Product exposed to EO gas, at a defined moisture, pressure and temperature for a validated period of time to achieve the specified SAL	Product exposed to Gamma rays for a validated period of time to achieve a desired minimum dose	Product exposed to an E-Beam for a validated period of time to achieve a desired minimum dose	Product exposed to X-rays for a validated period of time to achieve a desired minimum dose
Penetrating capability	EO requires breathable packaging	Good penetration	Efficient penetration	Excellent penetration
Tolerance for density variation	Medium	High	Low	Very High
Largest processing unit	Pallets or boxes	Pallets or boxes	Boxes	Pallets or boxes

Source: *Whitepaper – A Comparison of Gamma, E-Beam, X-ray and Ethylene Oxide Technologies for the Industrial Sterilization of Medical Devices and Healthcare Products*, written by Gamma Industry Processing Alliance (GIPA) and published by International Irradiation Association (iia), 2017.