

# Pulses Electric Fields (PEF)

## Principles

Pulsed Electric Field (PEF) is a unique nonthermal method of inactivating microorganisms, including many of the common food pathogens, without heating the product to the usual pasteurization temperatures. The destruction or inactivation of the microorganism is achieved by the breakdown of the microorganism's cell membranes during exposure to electric fields.

## Benefits



Electroporation of the cell membrane



Gentle inactivation of microorganisms at low temperature (140-160 kJ/kg)



Continuous process



Extended shelf-life



Preservation of natural character of the product



Green Extraction method (3-10 kJ/kg) to increase the yield of valuable compounds from e.g., by products



## Challenges

- Aseptic packaging needed
- Preheating necessary
- Inactivation success is depending on the conductivity of the medium
- Case by case approach needed (for inactivation and extraction)