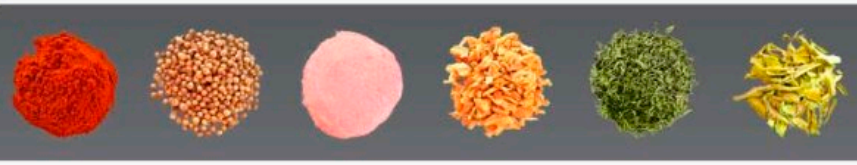
Safesteril® steam sterilization

Safe & Natural

THE NEED

Many dry products need to be pasteurized or sterilized. Several solutions exist like irradiation, Eto, ozone, and UV. However, steam sterilization is the only efficient and globally recognized solution.

Safesteril is a continuous dry steam sterilization process, which is completely safe and natural. It only uses heat to reduce the germ content of the product. Safesteril will make your product safer for the consumer, while maintaining its high quality.



THE PRODUCTS

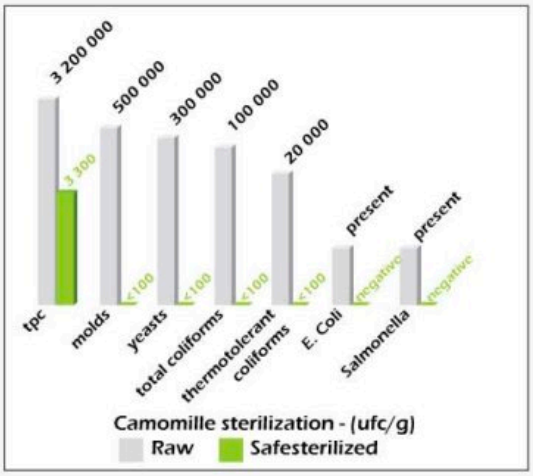
Safesteril can treat most dry and wet products. These include:

- Spices, seeds, herbs, botanicals, dehydrated fruits and vegetables
- The unique design allows Safesteril to process almost all shapes of products, from whole to the finest form of powder

THE PERFORMANCE

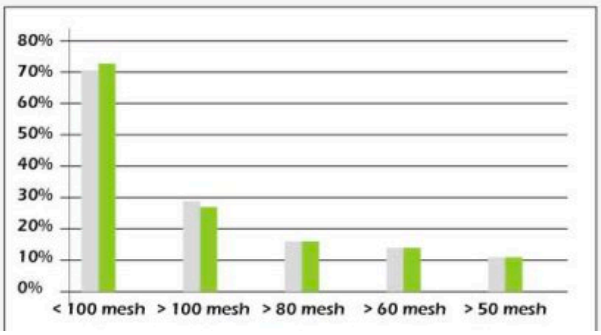
Safesteril is adaptable to your needs

- Pasteurization mode: will ensure the complete inactivation of pathogenic bacteria (E. Coli, Salmonella, and coliforms)
- Sterilization mode: TPC, yeast and mold reduction is from 1 to 5 logs, while other germs are completely inactivated: E. Coli, Coliforms, Salmonella



Product qualities are preserved due to the non static and homogeneous exposure to dry steam during treatment.
Impact of "Safesterilization" on volatile oil:
Safesteril achieves very good performance of microbe reduction while maintaining a high content of volatile oil in the product. Loss of oil content is less than 5-10% in Safesteril compared to 30-50% loss in other systems, which is due to Safesteril's special dry steam design. This design avoids an additional drying stage which decreases oil content of the product as required in other steam sterilization systems.

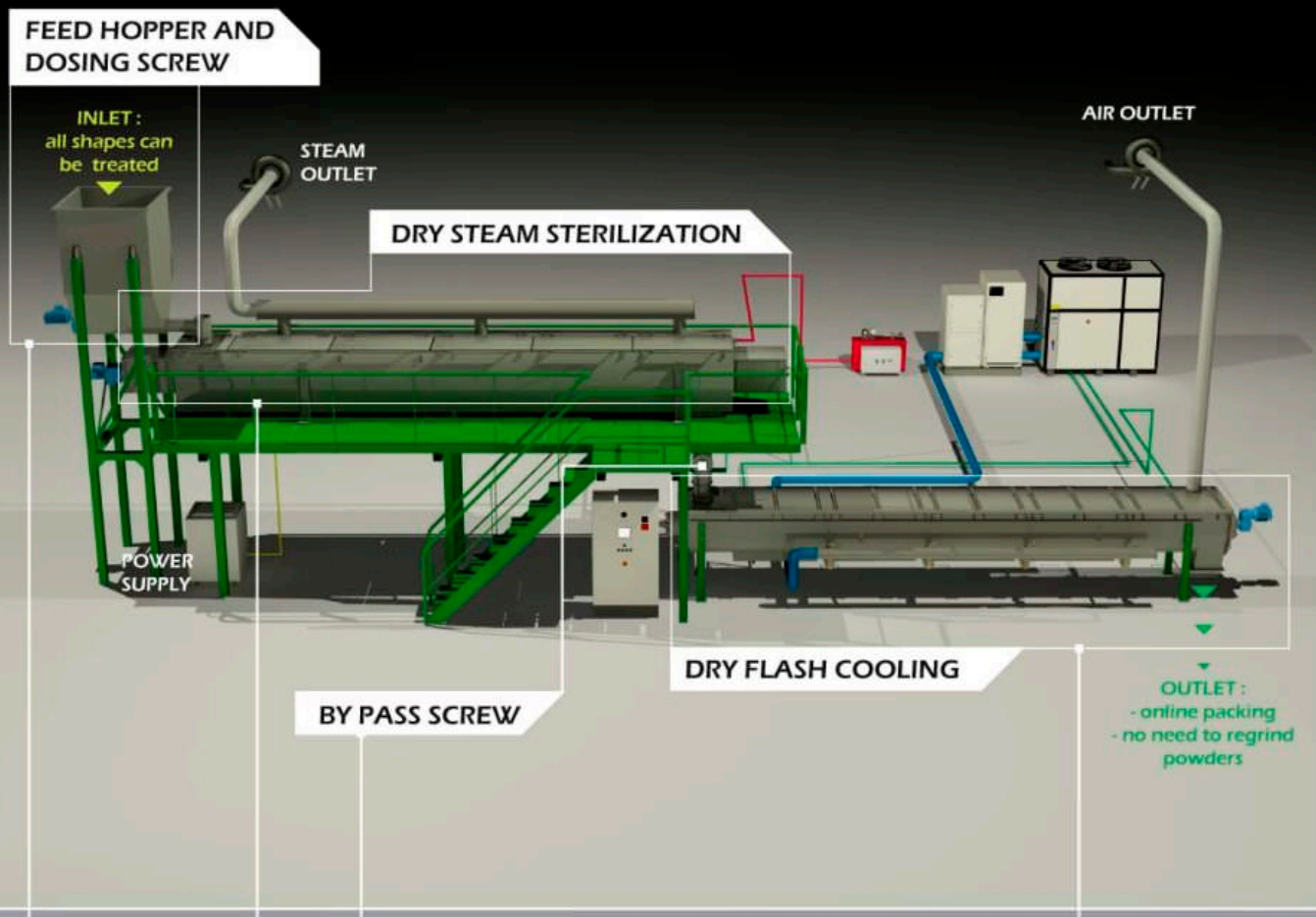
	Volatile oil	Moisture
Raw	0.37%	10.8%
Safesterilized	0.35%	10.3%



	Turmeric powder	Chili powder	Paprika powder
Key component	Curcumin	Heat value SHU	Colour value ASTA
Raw	2.40%	27881	120
Safesterilized	2.39%	27495	117

Impact of Safesterilisation on color and other heat sensitive properties

THE PROCESS



- 30 to 60 min capacity
- Slow rotating dosing screw (whole products do not break)

With SPIRAJOULE®, product is gently conveyed with an eletrically heated worm screw.
Very small flow of steam is injected and superheated in the Spirajoule.

PRODUCT REMAINS DRY



Automatic switch of the product which didn't reach the target temperature. Only the treated product goes into the cooler.

With UPX®, product is cooled down in a cold and dry atmosphere. Organoleptical properties are kept, product is stabilized.

PRODUCT IS STILL DRY !

