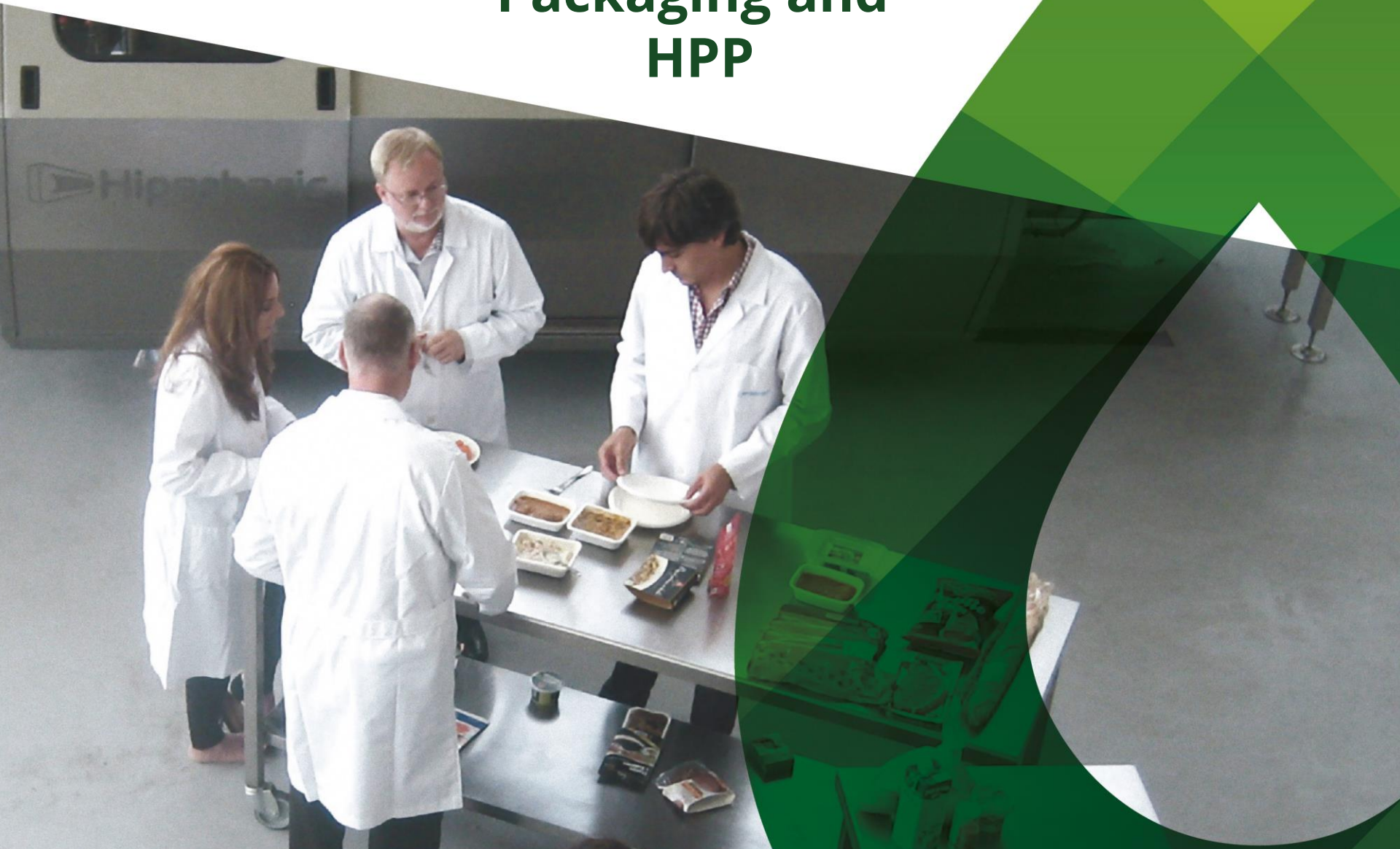




HPP SERVICES

VOEDSELBEWARING EN -VEILIGHEID. THE NEXT LEVEL

Packaging and HPP



HPP Services

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Packaging and HPP

High Pressure Processing (HPP) is suitable for different kind of packaging. HPP requires **flexible** and **semi-gastight** packages. During the HPP treatment the packaging will undergo a reversible deformation of about 15% – 20%.

- ☑ - vacuum
- skin
- MAP (trays)
- sealed (trays, cups, bags)
- plastic bottles
- pouches and doypack
- ...

- ☒ - glas bottles
- glas jars
- metal containers
- rigid plastic containers

For MAP and sealed packages is the **headspace** very important.

Packaging material

Plastic materials suitable for HPP:

- For trays, cups or bottles:

- ✓ - PET
- PP
- HDPE
- ...

- ✗ - polystyrene
- cardboard and paper

- For top film, pouches, bags

- ✓ - PET
- PP
- PP, PE with EVOH
- multilayer structure

- ✗ - some multilayer structure
- some laminated Al-based films

- Labels: moisture-friendly - vinyl labels with a rubber-based adhesive, shrink sleeve label, screen printing directly onto packaging

Headspace

The effects of increased headspace in packaging



<5% HEADSPACE



50% HEADSPACE



100% HEADSPACE



Slight deformation
on flange



Large deformations in
sidewalls and flanges

Packaging should be filled to 92% or more.

Design considerations

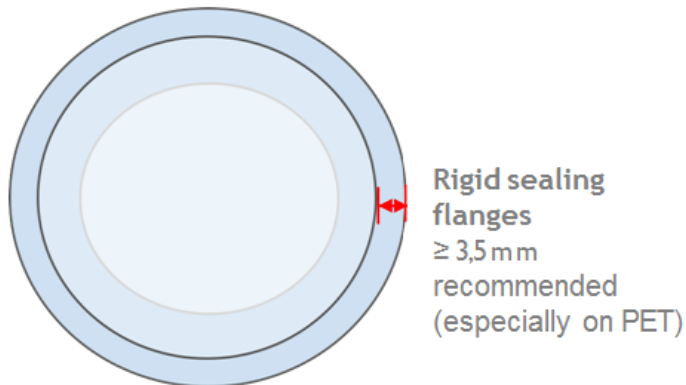
Tub and tray design considerations

TUBS

Normally injection molded to allow for greater height and in mold labelling



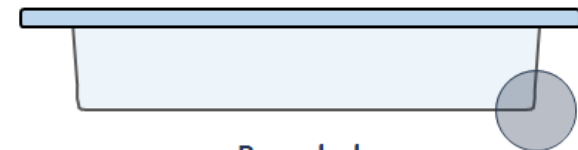
Snap lid
(fitted after process)



Rigid sealing flanges
 $\geq 3,5$ mm
recommended
(especially on PET)

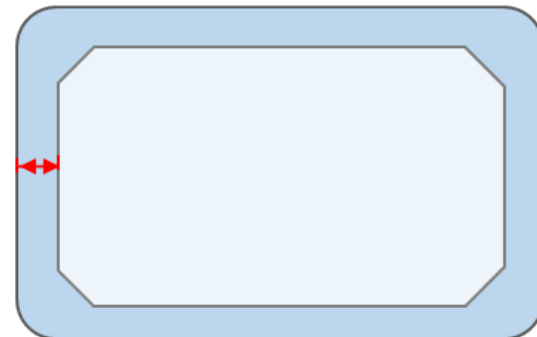
TRAYS

Normally thermoformed
Flat film or skin pack



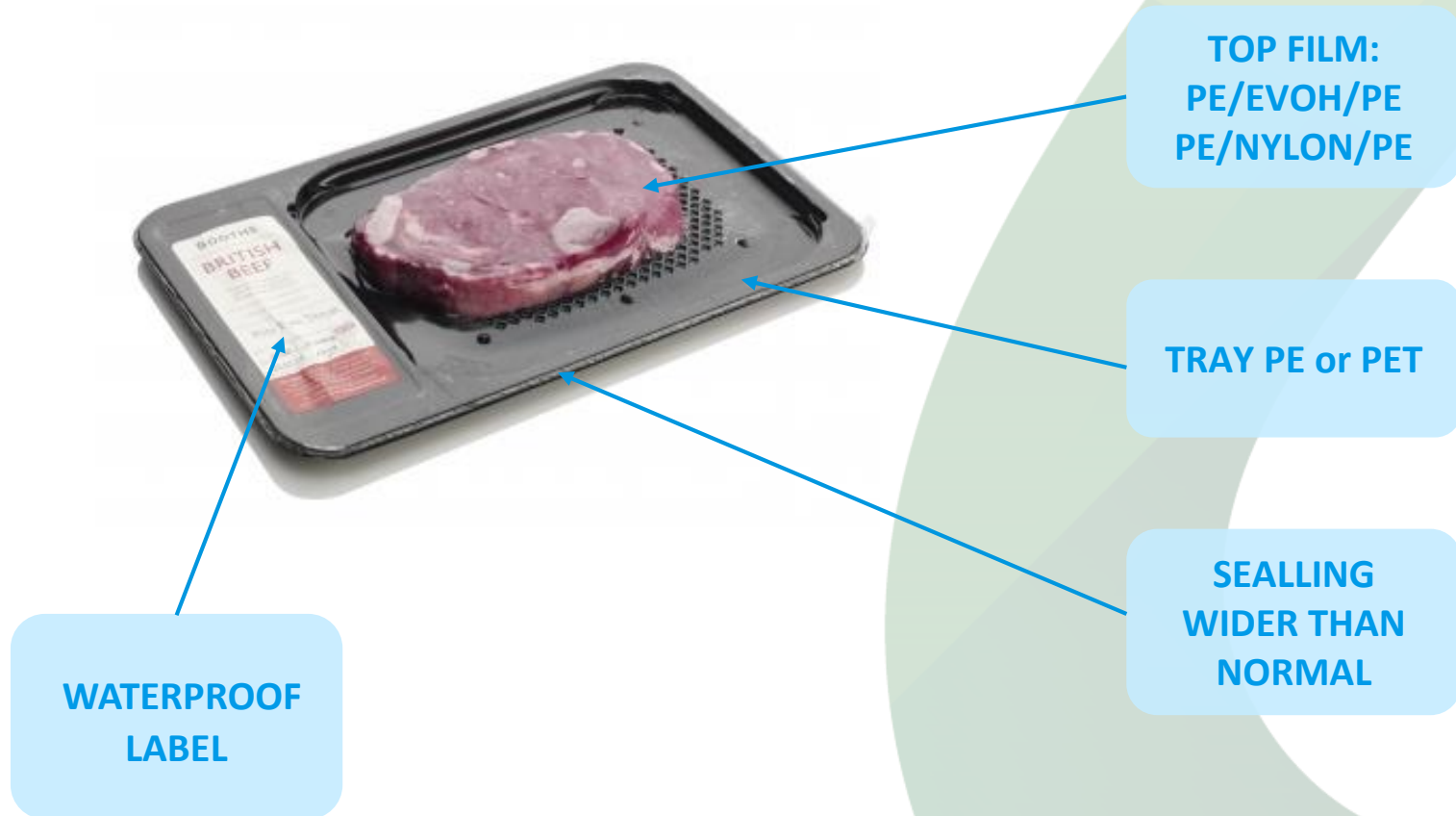
Rounded corners
(larger radius for MAP packs)

Wide seal flanges
(to take up film strain)



Multiple compartments possible but must be tested on the actual product

Tray



Bottles



**CAP
Embossment
2-3 rings**

**PET
or
HDPE**

**WATERPROOF
LABEL**

Pouches and doypack



Strong seal

PE/EVOH/PE
Or
PET

Dark label