



WET PET FOOD - VPP*

*VIANDE - POISSON - PETFOOD

The pet food industry is one of the fastest growing food markets in recent years.

This growth is favoured by the increase in the level of quality of supply and product specialization, not by the increase in the number of pets.

THE FOUR MAIN AREAS OF DEVELOPMENT ARE BASED ON FOLLOWING SEGMENTATION:

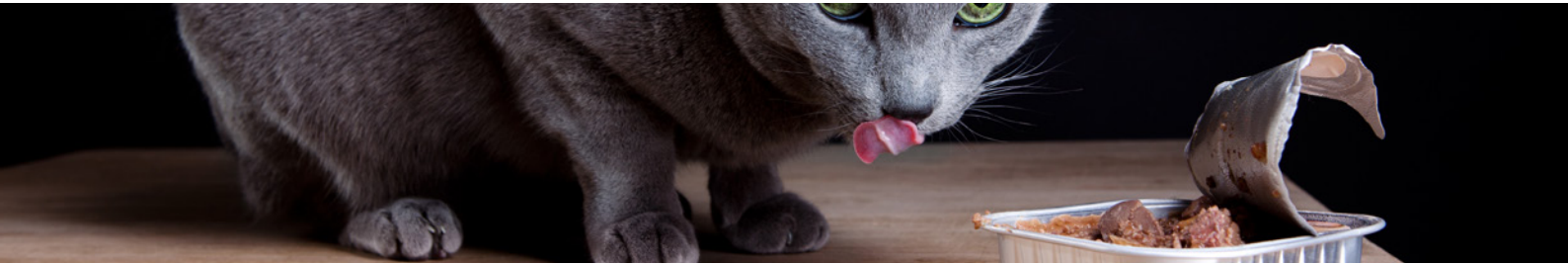
- Health products oriented
- Specialized products by breed,
- Products adapted to the age and physiological needs of the animal
- Treats (biscuits-rewards)

IN TERMS OF PRODUCTION, THERE ARE TWO MAIN TYPES OF PROCESSES:

- the Pet food called "wet"
- the Pet food called "dry"

» APPLICATIONS:

- Wet pet food



1 ACTIVITY & MANUFACTURING PROCESS

The production of "wet" products (75-78% moisture), requires different types of raw materials :

- Fresh meat or frozen meat,
- Vitamins, minerals supplements, phosphoric acid (adjuvant to aid digestion),
- and more rarely cereal grains (such as soybean meal, corn meal...).

There are two kinds of processes depending on the type of "wet" products manufactured.

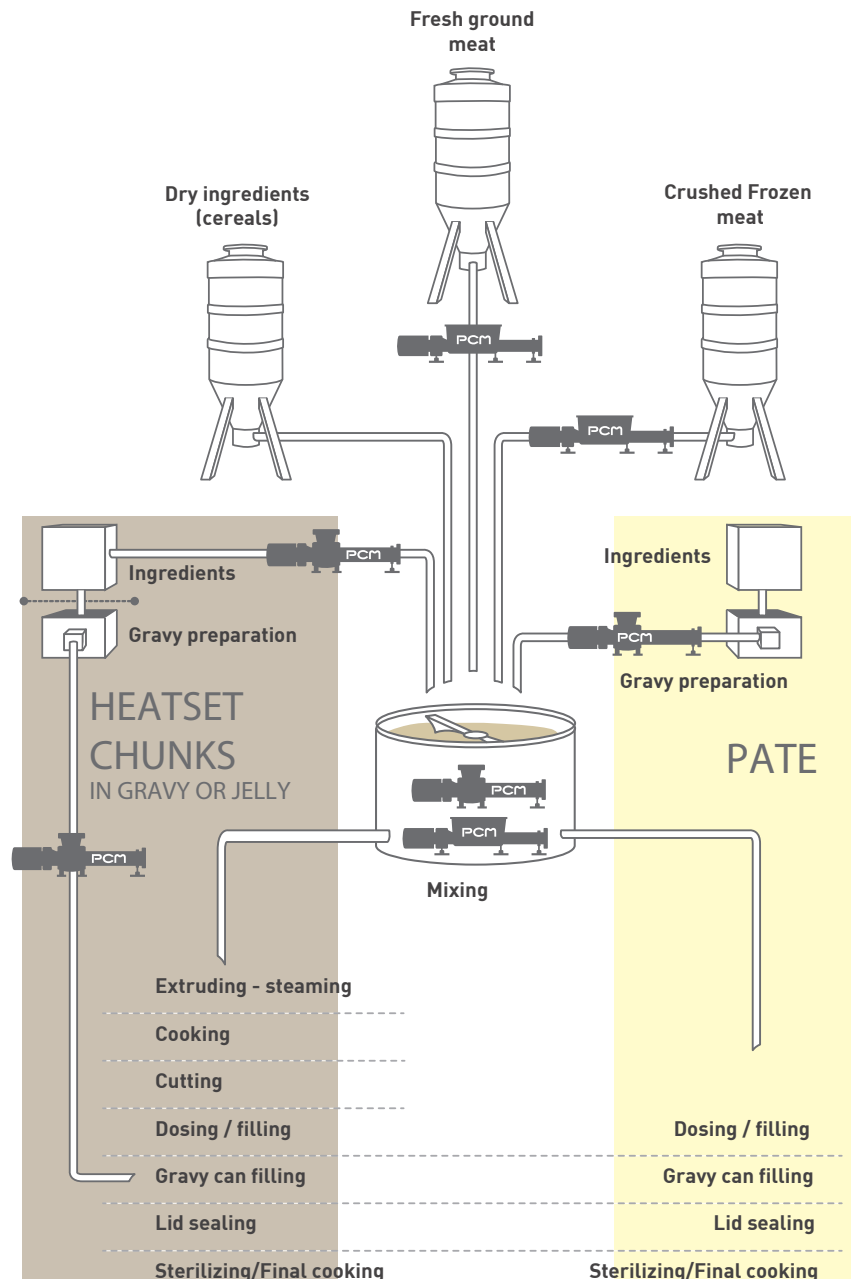
Heatset chunks (chunks-in-gravy CIG / chunks-in-jelly CIJ) :

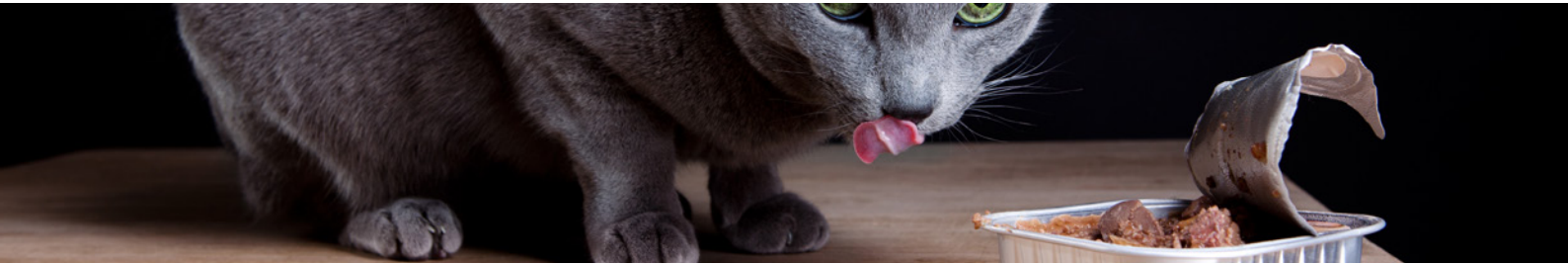
- After mixing all the ingredients, the meat emulsion paste is then shaped (as a continuous "layer") and extruded.

On leaving the extruder, the continuous "layer" is cut to the desired size to obtain chunks. These are conveyed into a can, trays or pouches, before adding gravy or jelly.

Paté (possibly supplemented with coarse part):

- The mixture is directly dosed in cans, trays or bags that are sealed on seamers / sealers and sent to sterilization. After cooling, the packages are labeled.





2 TECHNICAL DATA & PROCESSING RESTRICTIONS AND RECOMMENDATIONS

MEAT AND MEAT EMULSION :

Viscosity : from 40 000 to 80 000 cpo

Particules size: 4 to 10 mm (bone fragments, chilled products)

Abrasion : medium to high (when using byproducts)

Discharge pressure : from 7 to 10 bars

Suction pressure : flooded (below tank)

Flowrate : 18 m³/hour

Temperature : 4° C (European regulation)

Processing restrictions :

- Important product viscosity
- Average abrasion : possibility of very small pieces of bones
- Lean manufacturing process : use of machinery 5 to 6 days/ 7 and 24/24H.

Processing recommendations :

The high-viscosity and sticky texture of the emulsion require the installation of a pump with hopper and feed screw. The Lean process requires the installation of a continuous flow technology as the Moineau™ technology.

OILS (palm, soy, fish...) AND OTHER LIQUIDS

(food colourings, choline, phosphoric acid, tomato paste, caramel) :

Viscosity : < 3000 cpo (tomato paste)

Particules size : 0

Abrasion : 0

Discharge pressure : < 5 bars

Suction pressure : flooded (below tank)

Flowrate: small flowrates

Temperature : room temperature

Processing restrictions :

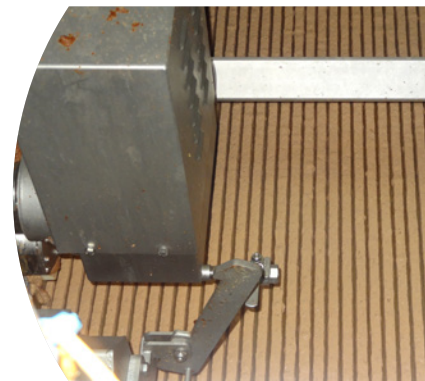
- Continuous flow is essential.

Processing recommendations:

Associate a flowmeter to control the dosing.



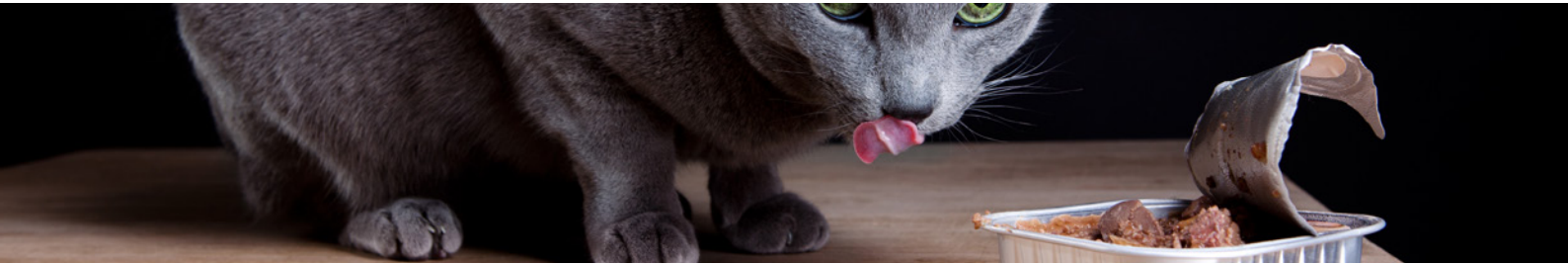
Frozen MSM



"Continuous layer" of meat emulsion

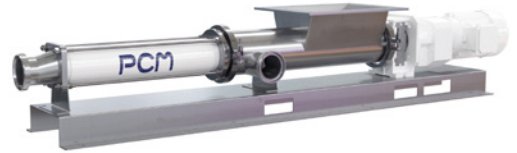


Heatset chunks after extruding and steaming



3 EQUIPMENT RECOMMENDATIONS

MSM TRANSFER:



PCM Easyfeed pumps

The PCM EasyFeed progressive cavity pump (food grade version) with Moineau™ technology is ideal for transferring highly viscous, heterogeneous with or without particles, pasty or even sticky fluids. It has been designed in compliance with food recommendations and requirements to avoid any retention areas and to facilitate cleaning.

Recommended speed:

- Between 100 & 150 rpm for effective feeding (avoids the phenomenon of arching or bridging on the screw).

TRANSFER OF FOOD COLOURING & OTHER LIQUIDS:

PCM EcoMoineau™ C and PCM HyCare™ pumps



Both models have equivalent hydraulic characteristics and guarantee the suitability of materials **food CONTACT** against the **regulatory requirements in Europe and the United States**.



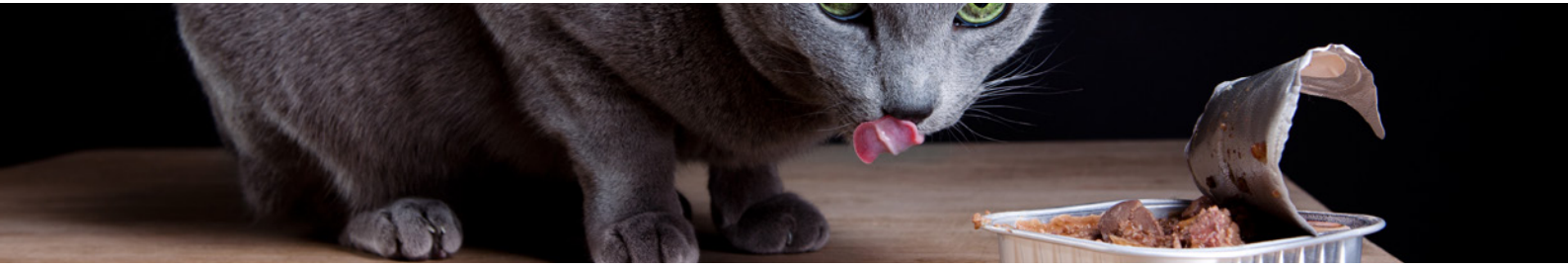
For the most demanding applications in terms of cleanability (when risk of bacterial growth exists), the PCM HYCARE™ range offers a **security certified hygienic design**.

by organizations

This perfect cleanability is possible thanks to the pump conception designed to remove all retention areas likely to promote bacterial growth. This design conception focuses on:

- geometry of equipment
 - surface roughness
 - manufacturing methods such as welding ...
- a flexible rod designed in one piece (without knuckle or screws to guarantee the absence of retention area).





TRANSFER OF COLOURINGS AND OTHER LIQUIDS:

PCM Delasco™ DX Serie

For transfer of food colouring or phosphoric acid, DX Serie can also be used with the following advantages:

- self-priming
- low life cycle costs (only one wearing part: the hose)

A food hose has been designed which complies with CE 1935/2004 and FDA 21 CFR 177.2600.



Please refer to the MSM application sheet for further information.