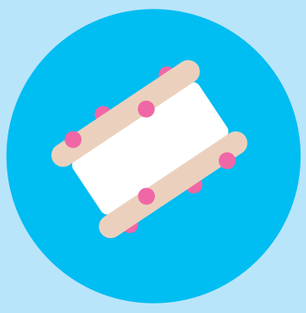
ICE CREAM TYPES

...and how to make them

Ice cream comes in a dizzying range of shapes, sizes, flavours and varieties. Depending on the format, ice cream is also produced in different ways. Here is your roadmap to the main ice cream types and how they are made, courtesy of the experts at Tetra Pak.



CATEGORY

Ice cream sandwich

PRODUCT CHARACTERISTICS
Regional differences apply. West European consumers prefer a texture difference between the soft ice cream and crunchier biscuit. In the US, Eastern Europe and Russia a softer biscuit gives a more homogeneous eating experience. In some countries, like Thailand, the biscuit is replaced by cake. In all markets, the ice cream is creamy and smooth.

BASIC PROCESS
Ice cream is extruded through a nozzle and sliced by a heated wire. The extruded slice drops onto a biscuit, after which a second piece of biscuit is placed on top. The sandwich is hardened, dipped in chocolate and wrapped.

EQUIPMENT AND TECHNOLOGY USED
Extrusion line featuring an extruder nozzle, heated cutting wire, dual biscuit dispensers, hardening tunnel, dip and transfer unit, wrapper.

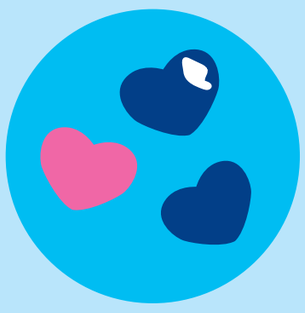
CATEGORY

Stick products

PRODUCT CHARACTERISTICS
Very smooth texture and creamy, luxurious mouthfeel.

BASIC PROCESS
Ice cream is extruded through a nozzle onto a stainless steel worktable where a heated wire slices it into units. Sticks are inserted and the ice cream is hardened using cold air before being dipped in chocolate prior to wrapping.

EQUIPMENT AND TECHNOLOGY USED
Extrusion process featuring an extruder nozzle, stick inserter, heated cutting wire, hardening tunnel, dip and transfer unit, wrapper.



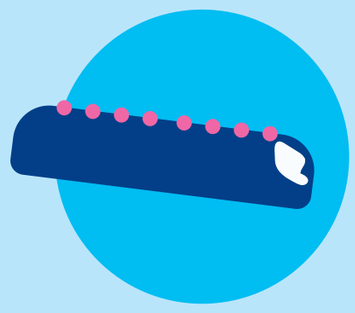
CATEGORY

Bite-sized ice cream

PRODUCT CHARACTERISTICS
Recalls a confectionary product, with a small portion of ice cream typically covered in a layer of thick chocolate.

BASIC PROCESS
Ice cream is extruded through multiple extruder nozzles and cut before entering a hardening tunnel. A chocolate enrober coats the ice cream in chocolate in a waterfall-like process. The product returns briefly to the hardening tunnel prior to manual packing in boxes.

EQUIPMENT AND TECHNOLOGY USED
Extrusion line with extruder nozzles, heated cutting wire, hardening tunnel, chocolate enrober.



CATEGORY

Bar products

PRODUCT CHARACTERISTICS
Resemble a chocolate bar, but with ice cream inside. Key hallmarks are a solid, consistent chocolate layer, especially on the base, and with no ice cream visible.

BASIC PROCESS
Ice cream is extruded horizontally through an extruder nozzle, often with a caramel layer on top. A heated wire slices the product into units and a nut feeder or dispenser applies the toppings. After around 20 minutes in a hardening tunnel, the bars are coated in chocolate by an enrober before being briefly hardened and wrapped.

EQUIPMENT AND TECHNOLOGY USED
Extrusion line with extruder nozzles, heated cutting wire, nut feeder/dispenser, hardening tunnel, chocolate enrober, wrapper.

CATEGORY

Traditional round-type ice cream cake

PRODUCT CHARACTERISTICS
Popular especially in the US and Middle East for family gatherings and celebrations. Ice cream cakes are festive and decorative, with smooth, creamy ice cream.

BASIC PROCESS
Ice cream is vertically extruded through a nozzle onto a stainless steel worktable where a heated wire slices it into units. The ice cream base enters a hardening tunnel after which a top layer of cream or sauce is applied manually or by machine. Boxing is manual or by boxing machine.

EQUIPMENT AND TECHNOLOGY USED
Extrusion process using an extruder nozzle, heated cutting wire, hardening tunnel, dip and transfer unit, boxing machine (optional).

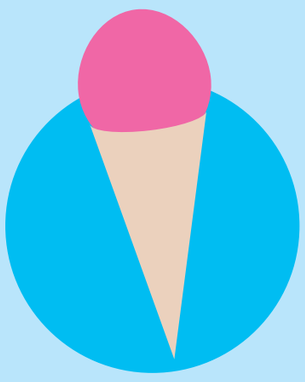
CATEGORY

Moulded ice cream

PRODUCT CHARACTERISTICS
Usually ice lollies or popsicles but may also be ice cream. Refreshing and icy, with rather large ice crystals. Typically breaks off in chunks if you bite it.

BASIC PROCESS
Stainless steel moulds are suspended in frozen brine and filled with ice cream through a nozzle. Prior to freezing, a back-suction unit allows different layers to be filled and interlaced. Chocolate sauce can be added after the first filling. A stick is inserted in the half-frozen product and brine is sprayed round the mould to enable extraction. Chocolate dipping and coating with dry toppings such as sprinkles occurs prior to wrapping.

EQUIPMENT AND TECHNOLOGY USED
Rotary or linear moulding line with filling stations, pencil filler (optional), mould table, back-suction unit, stick inserter, extractor with dipping station, wrapper.



CATEGORY

Ball-top cone

PRODUCT CHARACTERISTICS
Wafer cone filled with creamy ice cream. Typically includes chocolate and other sauces and may also feature inclusions and dry toppings such as nuts and candy.

BASIC PROCESS
Ball-top cones can be produced either by a filling machine or made directly on an extrusion line worktable.

Filling: a filling machine dispenser places the cones on a lamella (a conveyer belt with cavities). Chocolate is sprayed into the cone to create a narrow barrier between the ice cream and wafer. After ice cream filling through nozzles, the cones are transferred to a cooling tunnel before entering a dip and transfer unit for dipping in chocolate. Automated wrapping is followed by manual or automated packing in boxes.

Extrusion: the cones are manually or automatically dispensed into an extrusion tray and then filled with ice cream on an extrusion worktable before entering a cooling tunnel from which they enter a dip and transfer unit for dipping in chocolate. Automated wrapping is followed by manual or automated packing in boxes.

EQUIPMENT AND TECHNOLOGY USED
Filling machine and/or extrusion line with extruder nozzles, nut feeder/dispenser, hardening tunnel, wrapper, dip and transfer unit.

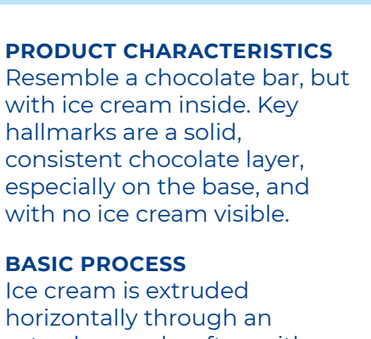
CATEGORY

Flat-top cone

PRODUCT CHARACTERISTICS
Wafer cone with a thin inner layer of chocolate and filled with creamy ice cream that may include inclusions, chocolate sauce and dry toppings such as nuts.

BASIC PROCESS
Pre-sleeved cones are dispensed onto a lamella (a conveyer belt with cavities) where they are sprayed inside with a thin layer of chocolate to create a barrier between ice cream and cone. Moving nozzles fill the cone with ice cream prior to decoration with chocolate or multiple toppings such as nuts or other dry particles. A cardboard lid is added and crimped to seal the cone. The cone is extracted and passed into a cooling tunnel prior to manual or automated packing in boxes.

EQUIPMENT AND TECHNOLOGY USED
Ice cream filler with dispensing station, chocolate spray station, filling station, dry ingredient or chocolate doser, lid dispenser, lid crimping station, pick-and-place robot, cooling tunnel.



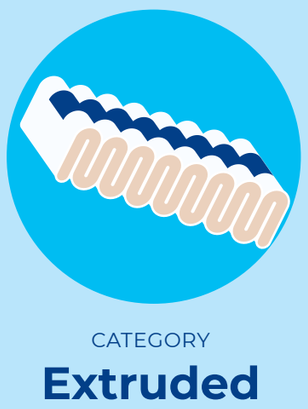
CATEGORY

Cup-filled ice cream

PRODUCT CHARACTERISTICS
Ice cream filled in portion-sized cups, tubs or containers. Two main varieties: soft-scoop ice cream that dissolves quickly in the mouth due to high air content and low fat content; and premium ice-cream with lower air content and higher fat content giving a denser, lusher, mouthfeel.

BASIC PROCESS
Containers are dispensed onto a lamella (a conveyer belt with cavities) and filled with ice cream by filling nozzles. Often the mix contains inclusions or added chocolate or caramel sauce. A secondary lid is applied and sealed, followed by a primary lid.

EQUIPMENT AND TECHNOLOGY USED
Ice cream filler featuring a dispensing station, filling station, heat sealing station, lid closing station, lid unscrambler (optional).



CATEGORY

Extruded cake

PRODUCT CHARACTERISTICS
The blend of an upper ice cream layer with multiple interior chocolate layers distributed between colder ice cream delivers an eating experience that is both crisp, crunchy and smooth.

BASIC PROCESS
The ice cream is horizontally extruded onto a plastic tray carried by a conveyor belt whose slow speed causing the ice cream to fold in waves. Chocolate is sprayed in layers and the product is cut into portions by a heated wire before entering a hardening tunnel prior to wrapping.

EQUIPMENT AND TECHNOLOGY USED
Extrusion line with extruder nozzle, plastic extrusion tray, chocolate applicator, heated cutting wire, hardening tunnel, wrapper.

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