

BATCH PASTEURIZERS & THEIR PUBLIC HEALTH CONTROLS

What are batch pasteurizers?

Batch, or vat pasteurizers are essentially very large pots in which dairy products are pasteurized. This is the oldest and simplest method of pasteurization and is most suited to processing relatively small volumes of product. Batch pasteurizers are also often used to process cultured products such as sour cream, yogurt, and buttermilk, and thick products such as ice cream.



What are the key components of a batch pasteurizer?

Batch pasteurizers are double jacketed covered vats that have a mechanical agitator, a top filling line, and a special valve for emptying at the bottom. In addition to these fixed components, the pasteurizers must have an indicating thermometer, air space thermometer, and recording thermometer.

What is the purpose of the key components?

The double jacket enables hot or cold water to be flushed next to the product, without mixing, to enable rapid heating to pasteurization temperature, or rapid cooling of the pasteurized product to 4°C.

The agitator stirs the product during heating and cooling to ensure that heavier particles such as sugar remains suspended and to cause a rapid transfer of heat from the jacket to product at the centre of the vat. The rate of agitation is set to minimize foam development and burning of product on the vat surface.

The inlet line is designed to run the product down the side of the vat to minimize foam development. This line is also designed to enable disconnection following filling to ensure that raw product cannot enter the vat during or after pasteurization.

The outlet valve (leak protect valve) is designed to ensure that a pocket of unpasteurized product cannot

become trapped within the valve cavity during pasteurization. Also, the outlet valve is designed to enable disconnection from the pasteurized product line prior to filling the vat to ensure that unpasteurized or partially pasteurized product cannot enter the pasteurized system.

The indicating and airspace thermometer provide an accurate reading of product and air space temperature. The recording thermometer provides a permanent record of the time and temperature at which a product is pasteurized.

What is the operator's responsibility?

The operator must:

1. Ensure that the outlet line beyond the outlet valve is disconnected from the pasteurized line prior to filling the vat and not reconnected until the product is fully pasteurized.
2. Ensure that the filling inlet line is disconnected before beginning the pasteurization process.
3. Ensure that the product and airspace are held above the required minimum temperature for at least 30 minutes.
4. Confirm the accuracy of the recording chart by marking the indicating thermometer reading on the chart at the corresponding time.
5. Record the air space temperature, date, product type, vat number and operator name on the chart as well as any unusual events that might have affected pasteurization.

Product	Minimum Pasteurization Temp °C (°F)	Minimum Airspace Temp °C (°F)
Milk	63 (145)	66 (150)
Cream	66 (150)	69 (155)
Ice Cream & Other High Fat/Solid Products	69 (155)	72 (160)

For further information please contact the Dairy Plant Specialist at 604.707.2440

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