

# ALIEN PROPERTY CUSTODIAN

## PROCESSES FOR STERILIZING MILK AND MILK PRODUCTS

Jules Doms, Brussels, Belgium; vested in the

Allen Property Custodian

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Various processes are known for treating milk and its products, in order to obtain its sterilization; besides an eventual addition of certain pasteurization products all these processes include a heating of the milk at temperatures transforming its qualities and proprieties. Hitherto there are no means existing for complete sterilization of milk in order to give a pure milk, preserving all its proprieties and original composition of raw milk: there is always disappearance or injurious transformation of one or several constitutive elements of raw milk and generally taste and flavour of milk are altered either by disappearance or transformation of certain constituents or by additions added to milk for its sterilization.

With regard to all other known processes, the process according to the invention offers the advantage that milk is not submitting an essential modification in its composition and that all its main constitutive elements remain absolutely unaltered, taste and flavour not being modified; in other words, raw milk treated according to the process of the invention remains essentially raw milk, with only complete elimination of pathogenic germs.

According to the invention, the cold raw milk, that is to say the milk at surrounding air temperature is treated until to saturation by ozone, ozonised air or any other gas disengaging nascent oxygen, said treatment being carried out while cold. Ozone may be driven or drawn through mass of milk or through running milkstream or finally ozone may be blown into a tank where milk is arriving in spray form and in general way ozone-saturation of milk may be obtained by any known process for saturation of a liquid by a gas.

Use of ozone for water sterilization and other treatments is well known, but up to day never has been proposed to use ozone, while cold, for sterilization of cold milk or milk products, being gen-

erally admitted that milk sterilization would compel at least heating of milk. There might have been proposed use of oxygen for certain milk sterilization treatments, but said treatments were always accompanied by heating or addition of certain chemical agents; the present invention preconizes first the only saturation by ozone, while cold, without any addition or heating and various tests have revealed the astonishing and unforeseen result that milk and milk products remain completely unaltered with regard to composition and proprieties and that practically according to the present invention milk remains raw milk without any modification of taste and flavour.

15 The process is applicable to milk and milk products of all kinds, whatever their origin (animal milk, human milk or others), it allows with cow-milk for instance to produce milk approaching very closely human milk.

20 For carrying out the process it is sufficient to assume between milk and ozone or any other gaseous generator of nascent oxygen an intimate contact sufficiently extended, the duration of said contact being empirically determined by tests according to composition of milk; the milk saturated by ozone does not dissolve it, its only purpose being to exterminate microbes by contact. Ozone is quickly emitted from milk, which thus returns to its original state as raw milk, but sterilized.

30 Ozone or ozonized air is produced by any known process or device, working in continuous or intermittent way; it is sent directly into contact with the milk to being treated or it is stocked in a waiting tank.

35 Saturation devices may be of any known type according to the method considered for saturation result.

JULES DOMS.

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