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Packaging Solutions

HEAT-SHRINK BAGS amivac

AMIVAC CH-BP

Process Operating Manual



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1. APPLICATION

The **AMIVAC CH-BP** heat shrink bags are used for packaging, ripening, storage and sale of cheeses with low and medium gas formation.

AMIVAC CH-BP bags are made from tubular multilayer film according to TU 2297-007-27147091-2000 and consist of polyethylene, polyethylene terephthalate and modified polyethylene duly certified for use.

AMIVAC CH-BP bags comply with the requirements of the Technical Regulations of the Customs Union TR TS 005/2011 (Packaging Safety) as confirmed by the duly approved declaration of conformity.

The production, use, storage and transportation of the bags are not harmful for the environment or human health.

1.1. Recommended shelf life of cheeses packaged in AMIVAC CH-BP bags

Table 1 – Shelf life of cheeses packaged in **AMIVAC CH-BP** bags

Cheese name	Specified shelf life	References
1	2	3
Gollandsky, bars Golladsky, round Kostromskoy Yaroslavsky Stepnoy Estonsky Uglichsky	120 days at the temperature of +2 to +6 °C from the end of the ripening process	Amendment No. 16 of 15.03.06 to the Collection of process instructions on production of hard rennet cheeses approved by the USSR State Agroindustrial Committee on 23.12.1987
Rossiysky	150 days at the temperature of +2 to +6 °C from the end of the ripening process	Amendment No. 5 of 15.03.06 to the Process Instruction on production of the Rossiysky and Rossiysky Young cheeses approved by the National Research Institute for the Butter and Cheese Industry on 11.03.2003
Cheddar	150 days at the temperature of +2 to +6 °C from the maturity point	Amendment No. 14 of 20.12.05 to the Collection of process instructions on production of hard rennet cheeses approved by the USSR State Agroindustrial Committee on 23.12.1987 Amendment No.2 of 20.12.05 to TU 9225-106-04610209-2002
Rossiysky Young	150 days at the temperature of +2 to +6 °C from the end of the ripening process	Amendment No. 4 of 20.12.05 to the Process Instruction on production of the Rossiysky and Rossiysky Young cheeses approved by the National Research Institute for the Butter and Cheese Industry on 11.03.2003 Amendment No.2 of 20.12.05 to TU 9225-134-04610209-2003

Cheese name	Specified shelf life	References
1	2	3
Susaninsky	45 days at the temperature of +2 to +6 °C from the maturity point	Amendment No. 4 of 20.12.05 to the Process Instructions on production of the Susaninsky cheese approved by the National Research Institute for the Butter and Cheese Industry on 19.08.2002 Amendment No.4 of 20.12.05 to TU 9225-109-04610209-2002
Poshekhonsky	120 days at the temperature of +2 to +6 °C from the maturity point	Amendment No. 1 of 20.12.05 to the Process Instructions on production of the Poshekhonsky cheese approved by the National Research Institute for the Butter and Cheese Industry on 29.12.2002 Amendment No.1 of 20.12.05 to TU 9225-125-04610209-2002
Poshekhonsky IT	120 days at the temperature of +2 to +6 °C from the maturity point	Amendment No. 1 of 01.06.04 to the Process Instructions on production of the Poshekhonsky cheese approved by the National Research Institute for the Butter and Cheese Industry on 26.04.2002 Amendment No.1 of 01.06.04 to TU 9225-067-04610209-2003
Kostromskoy IT	120 days at the temperature of +2 to +6 °C from the maturity point	Amendment No. 2 of 01.06.04 to the Process Instructions on production of the Poshekhonsky cheese approved by the National Research Institute for the Butter and Cheese Industry on 27.12.2002 Amendment No.2 of 01.06.04 to TU 9225-041-04610209-2002

2. CONSUMER PROPERTIES AND ADVANTAGES

2.1. The optimal gas transmission rates allow free release of the excess carbon dioxide and other gases generated during the ripening process, and, at the same time, protect the product from penetration of oxygen, thus providing for high quality maturation of cheeses.

2.2. The low water vapor transmission rate prevents drying out of the cheese, and facilitates a uniform distribution of moisture and salt, which ensures preservation of the product properties throughout its entire volume.

2.3. The appearance of the packaged product is attractive to the Buyer thanks to the optical properties of the bag (high transparency and gloss of colorless bags, and a wide color range with a glossy surface in the case of colored bags).

2.4. High strength characteristics provide for good preservation of the packaged products at the stages of transportation and storage.

2.5. Individual protective packaging of the AMIVAC bag packs ensures protection from adverse external factors throughout the guaranteed storage term, and provides for an excellent sanitary and hygienic condition of the bags.

2.6. Absence of chlorine-containing substances. An ever increasing number of countries turn their attention to protection of the environment and utilization of packaging materials. Utilization of packaging free of chlorine containing substances is less harmful to the environment.

2.7. The AMIVAC bags are made using only the materials and raw stuffs approved for direct contact with food products under the applicable laws of Russia, Ukraine, the Customs Union (Russia, Belarus, Kazakhstan), the European Union, and the USA. This means that in case of export deliveries and the requirement for local certification, it will not be a problem to obtain the permitting health documents for the AMIVAC bags.

3. HOW TO USE THE CASING

3.1. Storage and transportation of bags

3.1.1. The bags must be stored in dry and clean rooms, with the temperature not exceeding 35 °C, and the relative humidity not more than 80 %.

3.1.2. During the storage and transportation the cases with bags should not be exposed to high temperatures (more than 35 °C) or direct sunlight.

3.1.3. Never drop the boxes with casings or subject them to impacts.

3.1.4. If the bags have been stored at a temperature less than 0 °C, keep them at the room temperature for at least 24 hours before opening the manufacturer's packing.

3.1.5. Keep the leftover bags in the manufacture's packing.

3.2. Selection of the required bag size

To determine the required width (S) of the bag, measure the perimeter of the product to be packaged at its widest part. Calculate the bag width by the formula:

Width = perimeter of the product (at its widest part) x 0.55 (mm)

To determine the required length (L) of the bag, measure the perimeter of the product to be packaged at its longest part. Calculate the bag length by the formula:

Length = perimeter of the product (at its longest part) / 2 +80 (100) mm

If the bag will be closed by clipping, add 100 to the calculated bag length value 100 mm.

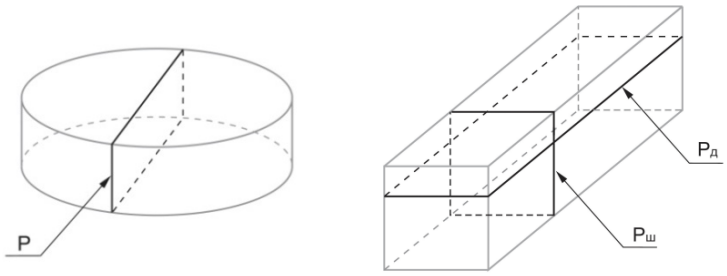


Fig. 1 – Determination of the product size

where $P_ш$ is the product perimeter at its widest part;
$P_д$ is the product perimeter at its longest part;
*- when the product shape is cylindrical, $P_ш=P_д$.

3.3. Preparation of the bags for processing

Packaging of food products must be performed in a production packaging room satisfying the regulations and standards applicable to quality and safety of food.

Such production rooms must be suitable for the performance of the process operations required for packaging of products in accordance with the requirements of this standard operating procedure.

It is recommended to open the packs containing the bags just before use. If any bags taken out of the transportation packing are left over, re-package them under vacuum.

No contact of the bags with water is allowable before completion of the product packaging.

3.4. Preparation of cheese for packaging

Cheese to be packaged must have a dry and clean surface without any mold, slime or damage. Packaging of cheese must be made in compliance with the requirements of the Collection of process instructions on production of hard rennet cheeses, and with regard to the specific aspects covered by the process instruction relating to production of the particular type of cheese.

3.5. Packaging

Packaging of food products must be performed in a production packaging room compliant with the requirements of the health regulations and standards applicable to the food industry.

Packaging of the product shall be performed by means of special equipment (vacuum packaging machines, clippers). Adhere to the operating modes recommended by the manufacturer of the packaging equipment to ensure stability of the packaging process.

If no operating manual is available for the equipment, it is recommended to use the following operating modes.

3.5.1. Packaging on chamber-type machines:

- Check the sealing zone. Keep the sealing zone clean. No foreign inclusions are allowable, and the protective coating of the heating element must be free of burnt-through areas.

- Bring the bag containing the product in the vacuum zone. The product inside the bag should be as close to the heat-sealing bar as possible (see Fig. 2 below), to improve the appearance and ensure the tight envelopment of the product.

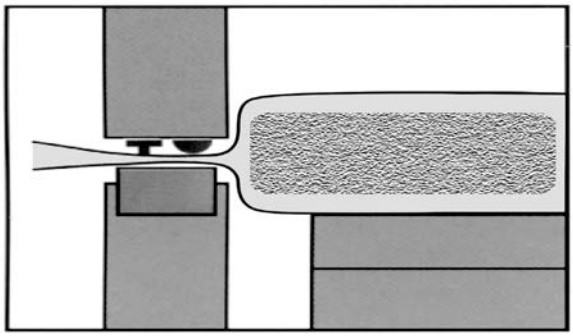


Fig. 2 – Bag sealing zone

- Take care to avoid any bag folds on the bar, otherwise subsequent loss of sealing is possible (see Fig. 3 below).

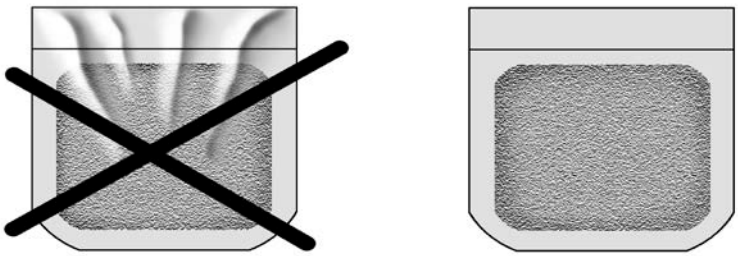


Fig. 3 – Correct position of the bag against the heat-sealing bar

- Select the vacuum depth. The vacuum depth is adjusted depending on product to be packaged. Vacuum depth should be 95 - 98% (residual pressure about 4.9 kPa). When packaging the products with a high moisture content, reduce the vacuum depth.

- Select the mean sealing time. Increase or decrease the sealing time to achieve the best sealing mode, as the bags are consumed (required adjustment depends on the condition of the equipment; eventual adjustment will take 5-10 minutes and 1-3 bags).

- If the bags are sealed with separate control of the strings, select such a time for string contact as to provide for free separation of the cutoff part of the bag.

Evacuate the air and seal by closing the lid of the vacuum packaging equipment.

- After heat-sealing, the seal must be continuous and bearing the imprint of the sealing bar of the packaging machine.

If the vacuum is lost, the product must be returned for re-packaging. Bags may not be re-used.

3.5.2. Packaging on chamberless machines (by clipping):

- Place the bag containing the product on the special tray of the machine, and put the open part of the bag on the nozzle (see Fig. 4 below). Proceed as shown in Figs 5 and 6 below.

Packaging of products by clipping

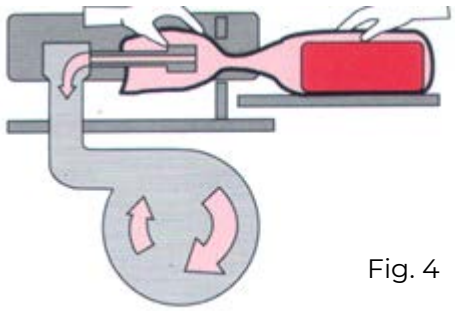


Fig. 4

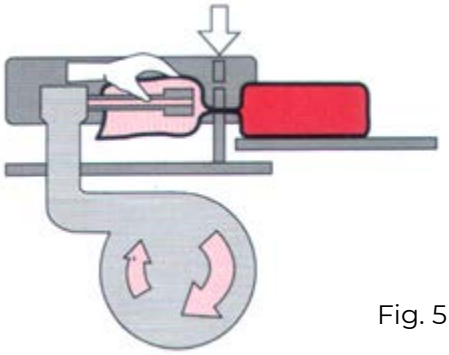


Fig. 5

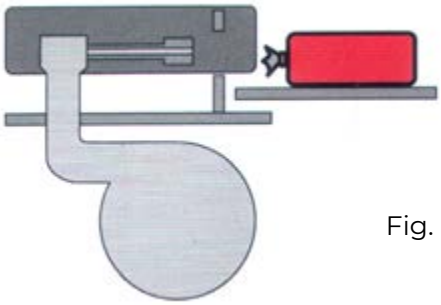


Fig. 6

- Evacuation time is from 10 to 30 seconds, depending on the required vacuum depth. The maximum value is 0.05 bar.

- Pressure on the clip must be not less than 5 bar, but not more than 7.5 bar. Increase or reduce the pressure by means of the reduction valve (located at the pump) to achieve the optimal pressure. The clip must not puncture or cut the bag.

- When the pressure is adjustable on the clipper, select the pressure best suited for reliable securing of the clip on the bag.

If advice is needed regarding adjustment of the equipment or use of consumables, consult the manufacturers of the equipment or any of their representatives.

See Table 2 below for recommended clip selection when using vacuum clippers on the **AMIVAC CH-BP** vacuum bags.

Table 2 – Recommended clip types

Bag width	Cryovac	Technoclip
100 – 200mm	FL	H 548 T (DST)
205 – 300mm	FH	H 550 T (DST)
305mm and more	FC	H 550 T (DST)

3.6. Heat shrinking

Heat shrinking of the bag containing the product is performed in a heat shrinking tank or tunnel. The equipment must provide for adjustment and control of the conditions and parameters of the technological process of heat shrinking.

Heat shrinkage will be performed by immersion of the bag with the product in hot water) or by sprinkling with hot water (exposure to steam) at a temperature from 90 °C to 95 °C during 2-3 seconds.

It is recommended to carry out the scheduled maintenance works for washing and cleansing of the equipment.

3.7. Ripening of cheeses

Ripening of cheeses packaged in the **AMIVAC CH-BP** bags shall be carried out in accordance with the Process Instruction for the particular type of cheese.

During the ripening of the packaged cheeses, it is important to timely detect any loss of sealing of the bags, otherwise microflora may appear on the cheese surface. Such cheeses must be immediately subjected to washing, drying and repackaging in bags.

The use of the **AMIVAC CH-BP** bags reduces the loss of cheese during the stage of maturation, and prevents the development of a number of grave

visual defects (mold under the rind, colored spots on the surface, and rind rot).

3.8. Storage and transportation of products packaged in AMIVAC CH-BP bags

Products packaged in the **AMIVAC CH-BP** bags must be stored at the temperature of 4±2°C and relative humidity of 80-85%. The shelf life shall be specified based on and according with the applicable regulatory documents.

4. APPENDICES

There are no appendices to the present document.

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