



ATLANTIS-PAK

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Packaging Solutions

Films **AMISTYLE**

AMISTYLE MB, HB, HP

Process Operating Manual



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1. APPLICATION

This process operating manual describes the procedure for manufacture of food products using the **AMISTYLE MB, MB-T, MB-E, HB** and **HP** multilayer heat-sealable films.

AMISTYLE MB, MB-T and **MB-E** films are heat-sealable multilayer films with medium barrier characteristics, made from polyamide, polyolefin and adhesive (modified polyethylene).

AMISTYLE MB-T film is suitable for products subjected to thermal processing within the temperature range from 70 to 100 °C.

AMISTYLE MB-E film is distinguished by enhanced strength, including puncture resistance.

AMISTYLE HB film offers a high oxygen barrier, and is made from polyamide, polyolefin, adhesive (modified polyethylene) and EVOH (ethylene-vinyl alcohol copolymer).

AMISTYLE HP film is a smoke-permeable polyamide-based multilayer film intended for the production, transportation, storage and sale of smoked products (such as smoked cheese chubs).

Materials used for the production of **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films are permitted by the Russian Ministry of Health for use in the food industry. The quality of raw materials is confirmed by Russian and international quality certificates.

AMISTYLE MB, MB-T, MB-E, HB and **HP** films are manufactured in accordance with TU 2245-052-27147091-2012 specifications and can be used for the production, transportation, storage and sale of pasty food products in the following industrial sectors:

- the dairy industry (cottage cheese, cottage cheese products, cream, yoghurt, smoked cheese chubs, condensed milk, ice cream, butter, spreads);
- the meat industry (minced meat, cooked sausages and liver sausages, pâtés)
- the fat and oil industry (mayonnaise, margarine, fats)
- the canning industry (sauces, tomato paste, jams, etc.).

The shelf life of food products packed in the **AMISTYLE MB, MB-T, MB-E, HB**, and **HP** films shall be specified by the manufacturers and approved in accordance with the procedure established by law.

2. PROPERTIES AND ADVANTAGES

AMISTYLE MB, MB-T, MB-E, HB and **HP** films are biaxially oriented polymer films and therefore have the properties of such materials; the most important of which are:

- **mechanical strength**, which allows the formation of sausages with the use of high-capacity automatic equipment, at the same time guaranteeing the stability of the shape and the fixed weight of the chubs at high forming rates;
- **heat shrinkage**, which guarantees the absence of wrinkles in the finished product;



- **physiological safety** due to the fact that the component materials are proof to the action of bacteria and mold fungi;

- **low OTR and WVTR of the AMISTYLE MB, MB-T, MB-E and HB films**, guaranteed by a thoroughly selected combination of polymers, which offers the following advantages:

- zero losses during the thermal processing and storage of food products;

- microbiological stability of products during storage;

- retardation of the oxidative processes that lead to rancidification of fats contained in food;

- excellent selling appearance of the finished product (no wrinkles) throughout the shelf life.

- **optimal gas and water vapor permeability** of the **AMISTYLE HP** film allows to obtain products with a smoked aroma and crust, and an extended shelf life;

- **low specific weight of films (kg/m²)** at high mechanical resistance;

- **excellent sealability**, which guarantees a solid and reliable seal;

- **absence of chlorinated substances in the composition**;

- **variety of film colors**.

See the technical characteristics of the **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films in the corresponding specifications.

3. ASSORTMENT

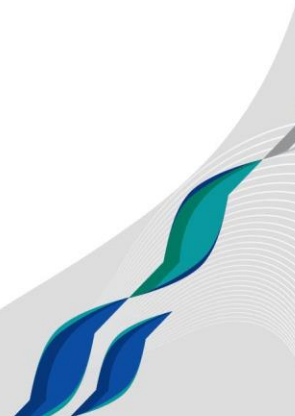
Table 1 – Assortment of the Amistyle MB, MB-T, MB-E, HB and HP

Film type	Width, mm	Thickness, µm
AMISTYLE MB	80 – 350	50 ± 6
AMISTYLE MB-T	80 – 400	50 ± 6
AMISTYLE MB-E	80 – 199	60 ± 10
	200 – 400	70 ± 10
AMISTYLE HB	80 – 350	45 ± 6
AMISTYLE HP	80 – 159	25 ± 3
	160 - 230	27 ± 4

AMISTYLE MB, MB-T, HB and **HP** films are suitable for single-side single-color, multicolor or CMYK printing with volatile solvent-based inks.

Printing is applied by the flexographic method; the inks are resistant to boiling, fats and mechanical impacts.

AMISTYLE MB, MB-T, MB-E, HB and **HP** films are supplied in reels wound on 76 mm diameter cardboard cores; the standard length of the film in a reel is 500m ±2% or 1000m ±2%.



4. HOW TO USE THE CASING

4.1. Storage and transportation

4.1.1 The film must be stored in the manufacturer's packing in dry, clean and cool rooms (at a temperature of 5 to 35 °C, with the relative humidity of air not exceeding 80%) in accordance with the sanitary regulations and hygienic standards applicable to the food industry.

4.1.2. It is recommended to open the manufacturer's packing just before using the film.

4.1.3. During storage and transportation, the film should not be exposed to high temperatures or direct sunlight.

4.1.4. If the casing was stored at a subzero temperature, then prior to use hold it in its original packing at room temperature during no less than 24 hours.

4.1.5. Never drop boxes with film or subject them to impacts.

4.2. Preparation for processing

AMISTYLE MB, MB-T, MB-E, HB and HP films do not require any preliminary preparation.

4.3. Forming of products

The composition and sequence of preparation of food products with the use of the **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films depend on the process technology and the current regulatory documentation applicable to each product.

The **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films are intended for different types of continuously operating automatic equipment:

- vertical-type formation and clipping systems;
- automatic horizontal-type heat-sealing machines provided with clippers.

Film tubes can be made by contact heat sealing or hot air sealing.

The working temperature of the sealing bars depends on the melting temperature of the materials in the heat sealable layers, the thickness of the material, the capacity of the equipment (the higher the production rate, the higher the temperature of the sealing bars), the sealing bar area of contact with the packaging material, the pressure exerted by the sealing bar on the film, etc.

When polymer films are heat sealed, the temperature of the sealing tool should be 50-100 °C higher than the melting temperature of the polymer, but not higher than the temperature of its intensive degradation.

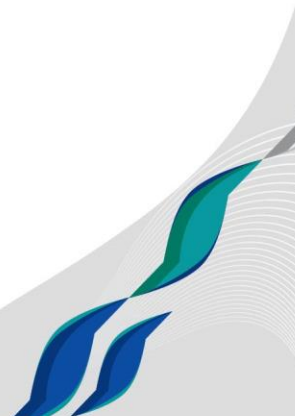


Table 2 – Approximate range of sealing temperatures

Film type	Materials of the sealable layers	Approximate range of sealing temperatures, °C
MB, MB-T, MB-E, HB	PE	130 - 200
HP	PA	180 - 250

The heat sealing process modes for the particular equipment used should be determined for each particular application on the basis of experience gained during trial sealing.

The heat sealing area must be free of print, varnish or any other surface treatment.

The clip used must securely hold the ends of the chub, without damaging the film. Follow the clipper manufacturers' recommendations to ensure a reliable closure.

The diameter of the finished product will depend on the diameter of the forming tube. Tubes made from the film must not be overstuffed above the nominal diameter.

4.4. Thermal processing of products

Thermal processing of products made with the use of the **AMISTYLE MB-T** and **HP** films must be carried out in accordance with the regulatory technical documentation applicable to these products, taking into account the production technology, the equipment capacity, the product diameter and the properties of selected films.

In the case of products that expand considerably during thermal processing, such processing should be carried out in counterpressure autoclaves.

4.5. Transportation and storage of products

Products packaged in the **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films must be transported and stored in accordance with the standard documentation applicable to the product (GOST, TU).

5. MANUFACTURER'S GUARANTEES

5.1. The manufacturer guarantees conformity of the quality and safety of the **AMISTYLE MB, MB-T, MB-E, HB** and **HP** films with the requirements of the Specifications, subject to compliance with the conditions of transportation and storage at the user's warehouse.

5.2. The shelf life of the films is 2 years from the date of manufacture to the time of use, subject to compliance with transportation and storage requirements at the user's warehouse, and provided that the manufacturer's packing remains intact.



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