



ATLANTIS-PAK

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Packaging Solutions

Films **AMISTYLE**

AMISTYLE FT

Process Operating Manual



1. APPLICATION

This Process Operating Manual describes the procedure for packaging of food products with the use of **AMISTYLE FT** film.

AMISTYLE FT is a multilayer heat-shrink vapor- and gas-tight heat-sealable film made of polyamide, polyolefin, polyethylene terephthalate, EVOH and adhesive (modified polyethylene) permitted by the Russian Ministry of Health for use in the food industry. The quality of the raw materials used for production of the film is confirmed by Russian and international quality certificates.

The **AMISTYLE FT** film is intended for vacuum secondary packaging of various food products (meat products, chilled and frozen meat, sausages and delicatessen, chilled and frozen fish, cheeses and cheese-based products) in order to prolong the shelf life.

The **AMISTYLE FT** film is designed for use on horizontal automatic packaging machines as an alternative to heat-shrink bags.

The shelf life of the food products packaged in the **AMISTYLE FT** film shall be set by the manufacturer and approved by the procedure stipulated by the laws.

2. PROPERTIES AND ADVANTAGES

The combination of different polymer materials in the structure of the AMISTYLE FT film provides for:

- excellent sealability within a wide range of temperatures;
- optimal heat shrinkage, allowing for creation of an attractive packaging;
- superb strength and puncture resistance to ensure good preservation of the packaged products at the stages of transportation and storage;
- attractive appearance of the packaging material (transparency and gloss), which makes the film virtually invisible on the product;
- high barrier to oxygen and water vapor;
- high heat resistance, which permits overlap sealing of the packaging on vacuum equipment.

Thus, combination of different polymer materials in the film structure provides for good preservation of the products and their prolonged shelf life, and makes it possible to package food products of various sizes and shapes on high- capacity automatic equipment.



Absence of chlorine-containing substances contributes to the environment safety of the AMISTYLE FT film, because disposal of the chlorine-free packaging is more environment-friendly.

See the technical characteristics of the AMISTYLE FT film in the Product Specification.

3. ASSORTMENT

Film	Width*, mm	Thickness, μm	Description
Amistyle FT-40	100 - 1050	40	Enhanced heat shrink ratio at 95 °C High barrier
Amistyle FT-45		45	Heat shrinkable High barrier
Amistyle FT-45-H		45	Enhanced heat shrink ratio at 85 °C High barrier Recommended for packaging of bone-free chilled meat
Amistyle FT-75		75	Heat shrinkable High barrier Improved puncture resistance Recommended for packaging of sharp-edged products

* with 5mm increments

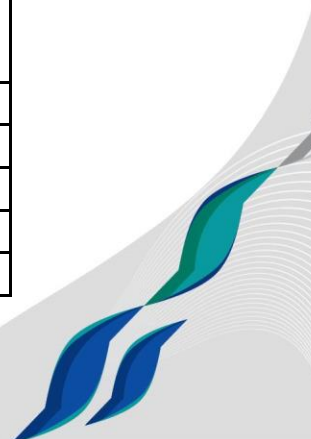
Color: clear

Marking: suitable for single-color, multi-color or CMYK printing with volatile solvent-based inks.

Form of supply: reels on 76mm diameter cardboard cores.

Standard reel film length

Finished film (w/o - R)	Width, mm	Wound length, m	Optional wound length, m
FT-45, FT-45-H	705 - 1050	500	
FT-45, FT-45-H	100 - 700	1000	500
FT-40	705 - 1050	500	1000
FT-40	100 - 700	1000	500
FT-75	100 - 1050	500	



4. FILM PROCESSING TECHNOLOGY

4.1. Film storage and transportation

Keep the film in enclosed dry rooms at a distance of not less than 800mm from heaters, in the absence of strong-smelling or corrosive substances, at a temperature from + 5 °C to + 35 °C and relative humidity not more than 80 %.

Transport the film at temperatures not exceeding 40 °C, and protect against direct sunlight.

When the film is stored at a temperature below 0 °C, keep it before processing at room temperature for at least 24 hours without opening the manufacturer's packing.

4.2. Calculation of the film width

The film width depends on the shape, width and height of the product, and can be approximately calculated by the following formula:

$$2 \times (\text{product width} + \text{product height}) + 40\text{mm}$$

4.3. Food product packaging

Packaging of food products in the AMISTYLE FT film shall be made in production rooms meeting the requirements of the applicable food safety regulations and standards.

Packaging consists in heat-sealing of the product inside a tight pouch formed from heat-shrink film in automatic mode.

The process of food packaging in the AMISTYLE FT film includes the following stages:

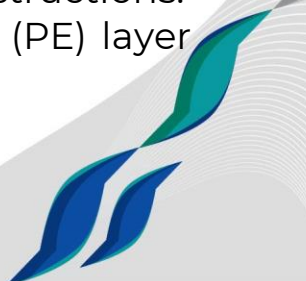
- formation of a heat-shrink pouch around the product,
- evacuation and sealing of the packaging unit,
- heat-shrinking.

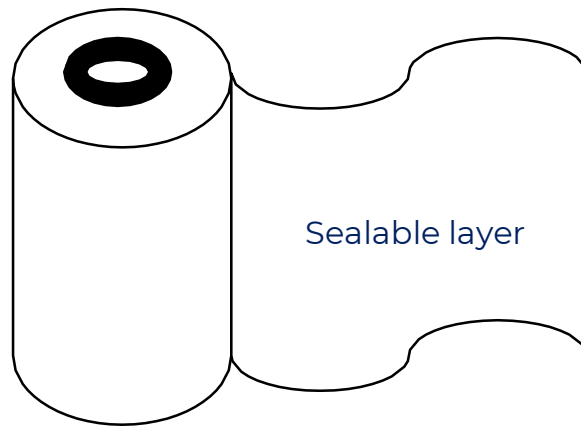
To ensure stability of the packaging process, observe the packaging equipment operating modes recommended by the manufacturer.

4.3.1. Formation of a heat-shrink pouch

Install the film on automatic sealing equipment in compliance with the manufacturer's requirements and following the loading instructions.

The **AMISTYLE FT** film has a heat-sealable polyethylene (PE) layer on the inward side of the film web.





Food can be laid on the **AMISTYLE FT** film manually or automatically, taking care to match the product size with the film width. The product must not get inside the film sealing zone, as this may lead to loss of vacuum in the packaging

During the operation, the film must be maintained well-stretched.

The equipment settings (sealing temperature, packages per minute rate, etc.) shall be selected as necessary.

The seal must be uniform and continuous, bearing a clear imprint of the sealing bar, without any signs of film burn-through.

If the sealing quality is unsatisfactory, check the temperature settings.

The sealing temperature for the **AMISTYLE FT** film varies as a function of the size and shape of the product, and the equipment operating rate, lying with the range of 110 – 190 °C.

The recommended temperature for sealing of the longitudinal seal is 130 – 190°C.

The recommended temperature for sealing of the lateral seal is 110 – 150 °C.

4.3.2. Evacuation and sealing

Evacuation of pouches formed from the AMISTYLE FT film is made on chamber-type machines.

Throughout the operation, keep the sealing zone clean and free of any foreign inclusions, and do not use heating elements with burnt-through protective coatings.

To improve the package appearance, bring the food-containing pouch in the evacuation zone as close as possible to the heat-sealing bar, and avoid pouch folds on the bar to prevent eventual loss of vacuum.



The recommended vacuum depth is 95 – 98 % (residual pressure ~ 4.9 kPa). The vacuum depth value is set depending on the moisture content of the product. When packaging food with a high moisture content, reduce the vacuum depth value.

Special tools should be used to check tightness of the seals.

4.3.3. Heat shrinkage

Heat shrinking is done in heat shrinking tanks or tunnels by immersion of the packaged products in hot water or by treatment with hot water (steam).

The recommended temperature to achieve the best heat shrink ratio for food packaging is from 92 °C to 95 °C during 2 – 3 seconds.

Heat shrinking tunnels are preferable for packaging of chilled meat, because heat shrinking tanks may overheat and damage the product.

The recommended temperature to achieve the best heat shrink ratio for bone-free meat packaging is from 82 °C to 85 °C during 2 – 3 seconds, and the **Amistyle FT-45-H** film is the best choice.

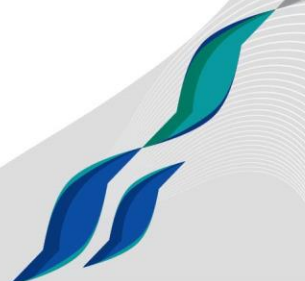
The packaged product can be then be weighed, labeled and put to storage.

4.4. Transportation and storage of products

The products packaged in the **AMISTYLE FT** film shall be transported and stored in accordance with the standard documentation applicable to the product in question (GOST, TU).

5. MANUFACTURER'S GUARANTEE

The **AMISTYLE FT** film is usable within 1 year from the date of manufacture to the date of processing, subject to compliance with the transportation and storage requirements for the user's warehouse, and provided that the manufacturer's packing remains intact.



6. APPENDICES

Appendix 6.1.

Calculation table for Amistyle FT films

Film width, mm	Qty in 1 km, sq. m.	F-40	FT-45 FT-45-H	FT-75	F-40	FT-45 FT-45-H	FT-75	F-40	FT-45 FT-45-H	FT-75
		weight of 1 km, kg			length in 1 kg, m			qty in 1 kg, sq. m.		
80	80	3,22	3,62	6,04	310,4	275,9	165,6	24,8	22,1	13,2
90	90	3,62	4,08	6,80	275,9	245,3	147,2	24,8	22,1	13,2
100	100	4,03	4,53	7,55	248,3	220,8	132,5	24,8	22,1	13,2
110	110	4,43	4,98	8,31	225,8	200,7	120,4	24,8	22,1	13,2
120	120	4,83	5,44	9,06	207,0	184,0	110,4	24,8	22,1	13,2
130	130	5,23	5,89	9,82	191,0	169,8	101,9	24,8	22,1	13,2
140	140	5,64	6,34	10,57	177,4	157,7	94,6	24,8	22,1	13,2
150	150	6,04	6,80	11,33	165,6	147,2	88,3	24,8	22,1	13,2
160	160	6,44	7,25	12,08	155,2	138,0	82,8	24,8	22,1	13,2
170	170	6,85	7,70	12,84	146,1	129,9	77,9	24,8	22,1	13,2
180	180	7,25	8,15	13,59	138,0	122,6	73,6	24,8	22,1	13,2
190	190	7,65	8,61	14,35	130,7	116,2	69,7	24,8	22,1	13,2
200	200	8,05	9,06	15,10	124,2	110,4	66,2	24,8	22,1	13,2
210	210	8,46	9,51	15,86	118,3	105,1	63,1	24,8	22,1	13,2
220	220	8,86	9,97	16,61	112,9	100,3	60,2	24,8	22,1	13,2
230	230	9,26	10,42	17,37	108,0	96,0	57,6	24,8	22,1	13,2
240	240	9,66	10,87	18,12	103,5	92,0	55,2	24,8	22,1	13,2
250	250	10,07	11,33	18,88	99,3	88,3	53,0	24,8	22,1	13,2
260	260	10,47	11,78	19,63	95,5	84,9	50,9	24,8	22,1	13,2
270	270	10,87	12,23	20,39	92,0	81,8	49,1	24,8	22,1	13,2
280	280	11,27	12,68	21,14	88,7	78,8	47,3	24,8	22,1	13,2
290	290	11,68	13,14	21,90	85,6	76,1	45,7	24,8	22,1	13,2
300	300	12,08	13,59	22,65	82,8	73,6	44,2	24,8	22,1	13,2
310	310	12,48	14,04	23,41	80,1	71,2	42,7	24,8	22,1	13,2
320	320	12,89	14,50	24,16	77,6	69,0	41,4	24,8	22,1	13,2
330	330	13,29	14,95	24,92	75,3	66,9	40,1	24,8	22,1	13,2
340	340	13,69	15,40	25,67	73,0	64,9	39,0	24,8	22,1	13,2
350	350	14,09	15,86	26,43	71,0	63,1	37,8	24,8	22,1	13,2
360	360	14,50	16,31	27,18	69,0	61,3	36,8	24,8	22,1	13,2
370	370	14,90	16,76	27,94	67,1	59,7	35,8	24,8	22,1	13,2
380	380	15,30	17,21	28,69	65,4	58,1	34,9	24,8	22,1	13,2
390	390	15,70	17,67	29,45	63,7	56,6	34,0	24,8	22,1	13,2
400	400	16,11	18,12	30,20	62,1	55,2	33,1	24,8	22,1	13,2
450	450	18,12	20,39	33,98	55,2	49,1	29,4	24,8	22,1	13,2
500	500	20,13	22,65	37,75	49,7	44,2	26,5	24,8	22,1	13,2
550	550	22,15	24,92	41,53	45,2	40,1	24,1	24,8	22,1	13,2
600	600	24,16	27,18	45,30	41,4	36,8	22,1	24,8	22,1	13,2
700	700	28,19	31,71	52,85	35,5	31,5	18,9	24,8	22,1	13,2
800	800	32,21	36,24	60,40	31,0	27,6	16,6	24,8	22,1	13,2
900	900	36,24	40,77	67,95	27,6	24,5	14,7	24,8	22,1	13,2
1000	1000	40,27	45,30	75,50	24,8	22,1	13,2	24,8	22,1	13,2
1050	1050	42,28	47,57	79,28	23,7	21,0	12,6	24,8	22,1	13,2



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