

Where the sunshine is better



TVK-heliofol WIDE FILMS

PARTIUM '70 Zrt. – Tiszaújváros



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As a leading manufacturer in Hungary, PARTIUM '70 Zrt. has been supplying wide films to its customers. The product family **TVK-HELIOFOL** combines the results of long years of production experience and a consistent development motivated by customers requirements. The wide product range enables the customers to choose the grades best fitting their specific applications.

The top quality of **TVK-HELIOFOL** films are based upon a continuous quality control and secured by a certified ISO 9001 Quality Assurance System in place.

TVK-HELIOFOL films have the following properties:

- excellent UV stability
- good light transmission
- high tensile strength
- co-extruded three-layer structure
- eight folds, low core width
- no physiological effects
- fully reusable

TVK-HELIOFOL wide films family comprises the following product groups:

- greenhouse films
- mulch films
- silage films
- building film

PARTIUM '70 Zrt.



TVK HELIOFOL greenhouse films excel with their high flexibility, tensile strength and weather resistance. Multi-layer film grades containing specific additives to suit particular applications provide optimal conditions for the growing of various plant cultures.

TVK HELIOFOL mulch films provide the best possible conditions for cultivated plants by increasing soil temperature, retaining humidity and preventing weeds from growing. When applied as soil covers, they can reduce herbicide consumption in plant growing and offer special advantages for bio-gardening.

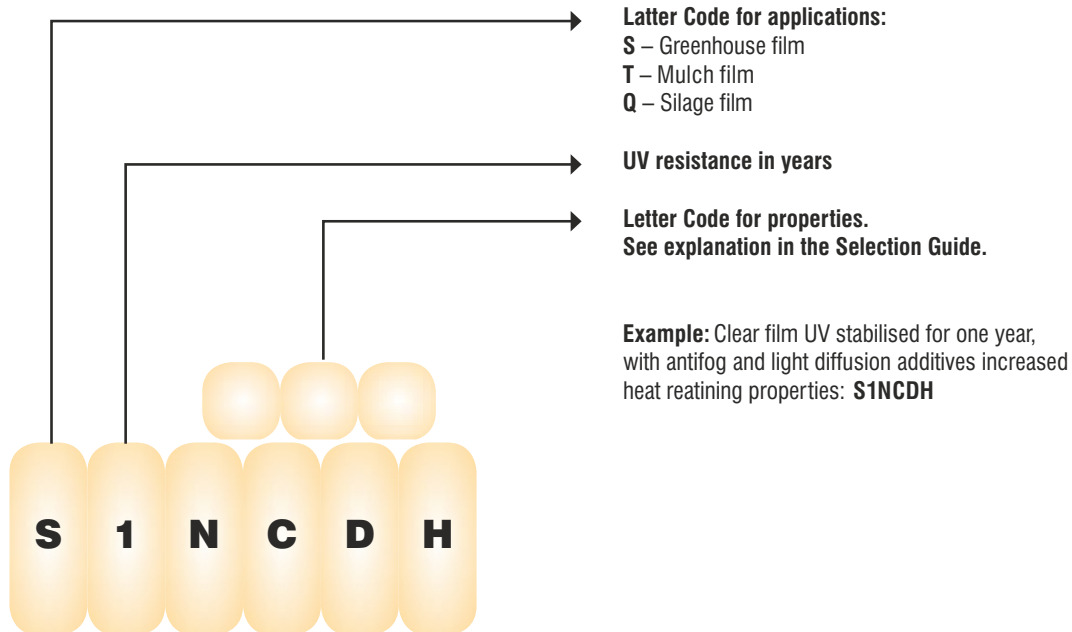
Owing to their multi-layer structure, **TVK HELIOFOL silage films** successfully combine the favourable properties of individual layers. By preventing the effects of sunshine and air, they provide optimal conditions for the lactic fermentation of silage and preserve vitamins and nutrients for prolonged period of time.



TVK HELIOFOL general covering films are recommended for general covering purposes, reducing mainly from recycled polyethylene, in black colour or Unqualified colour.

TVK HELIOFOL building film when used to cover construction materials, such as concrete, wood, bricks, etc., can significantly reduce losses due to elements. Temporary facilities and protected job sites can quickly and relatively cheaply be made from TVK-Heliofol building film. This way, almost any work can be done irrespective of weather. When large areas are concreted, the concrete is continuously kept wet in order to prevent it from getting desiccated and from cracking due to desiccation. It is more practical and less labor consuming to protect the wet concrete with a TVK-heliofol building film cover.

Coding System of TVK-heliofol films



Grade Code	Properties	Recommended Application
S0N	Clear film with excellent light transmission, without UV stabiliser.	Short term greenhouse film. It can be used for 6 months when put up in October.
S1N S2N S3N	Clear film UV stabilised for 1, 2 or 3 years, with excellent light transmission. Films stabilised for 2 or 3 years have increased resistance against herbicides.	General purpose greenhouse film. Due to a gradual deposit of dirt on their surfaces, films stabilised for 2 or 3 years will lose 15-20% of light transmission from the second year of use on. The loss of light transmission may cause light demanding plants to reduce yield to the same extent in winter.
S1NC S2NC	Three-layer clear film stabilised for 1 or 2 years, with excellent light transmission, containing antifog additive.	Greenhouse film recommended for light demanding plants sensitive to dripping water and fungi.
S1ND S2ND S3ND	Clear film stabilised for 1, 2 or 3 years with a special light diffuser. The additive diffuses light so that a shadow free and even light distribution is achieved in any part of the greenhouse without reducing the amount of penetrating light.	General purpose greenhouse film for higher yields. Due to its good heat retention, it saves energy in heated greenhouses. It reduces the risks of burning by diffusing the strong sunshine in summer and increases the amount of useful light in winter. Due to a gradual deposit of dirt on their surfaces, films stabilised for 2 or 3 years will lose 15-20% of light transmission may cause light demanding plants to reduce yield to the same extent in winter.
S1NCD S2NCD	Clear film stabilised for 1 or 2 years, combining light diffusion and antifog properties.	It is recommended for growing plants sensitive to dripping water and fungi and for achieving higher yields. It combines the favourable properties of films containing light diffusing or antifog additives.

Grade Code	Properties	Recommended Application
S1NH S2NH S3NH	Three-layer clear film stabilised for 1,2 or 3 years with increased heat retention. Its special raw material and structure produce higher than usual temperature inside the greenhouse.	It is particularly applicable for winter use. The higher greenhouse temperature reduces the risks of frost damage and saves energy. Due to a gradual deposit of dirt on their surfaces, films stabilised for 2 or 3 years will lose 15-20% of light transmission from the second year of use on. The loss of light transmission may cause light demanding plants to reduce yield to the same extent in winter.
S1NCH S2NCH	Three-layer clear film stabilised for 1 or 2 years, containing antifog additive, with increased heat retention.	It is recommended for winter growing of plants sensitive to dripping water and fungi. It combines the properties of antifog and higher greenhouse temperature.
S1NDH S2NDH S3NDH	Three-layer clear film stabilised for 1, 2 or 3 years, containing a light diffusion additive, with increased heat retention.	It combines the advantages of light diffusion and heat retention. It secures higher average yield and saves energy in winter. It reduces the risks of frost damage. Due to a gradual deposit of dirt on their surfaces, films stabilised for 2 or 3 years will lose 15-20% of light transmission from the second year of use on. The loss of light transmission may cause light demanding plants to reduce yield to the same extent in winter.
S1NCDH S2NCDH	Three-layer clear film stabilised for 1 or 2 years, with light diffusion and antifog additives and increased heat retention.	It is recommended for growing plants sensitive to dripping water, strong sunshine and fungi. It reduces the risks of frost and saves energy increasing yield. It combines antifog and light diffusing properties and the advantages of higher heat retention.
S0B	Clear film with excellent light transmission and without UV stabiliser.	Inner film of greenhouses for short term applications. It improves heat insulation, reduces the risks of frost and saves energy in greenhouses.
S1B	Clear film UV stabilised for one year, with excellent light transmission.	It can be used as an inner film of greenhouses for one year's use. It improves heat insulation, reduces the risks of frost and saves energy in greenhouses.
S1BC	Clear film UV stabilised for one year, containing antifog additive.	It is recommended as an inner film of greenhouses for plants sensitive to dripping water and fungi. It improves heat insulation, reduces the risks of frost and saves energy in greenhouses.
S1BD	Clear film UV stabilised for one year, containing light diffusion additive.	As an inner film of greenhouses, it is recommended for plants sensitive to strong sunshine. It improves heat insulation, reduces the risks of frost and saves energy in greenhouses.

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Grade Code	Properties	Recommended Application
S1BCD	Clear film UV stabilised for one year, containing light diffusion and antifog additives.	As an inner film of greenhouses, it is recommended for plants sensitive to strong sunshine and fungi. It improves heat insulation, reduces the risks of frost and saves energy in greenhouses.
S1F S2F	Black, non transparent film, UV stabilised for 1 or 2 years.	It is recommended for special mushroom growing greenhouses and for poultry raising tents (turkey, geese, pheasants).
S1WF S2WF	Non transparent film UV stabilised for 1 or 2 years, with a white outer and a black inner side.	It is recommended for special mushroom growing greenhouses and for poultry raising tents (turkey, grrse, pheasants). The white outer layer reflects a part of the sunshine, therefore the greenhouse or tent has a lower temperature inside than those made of all black films do.
TOMN	Clear mulch film without UV stabiliser.	Due to its greenhouse effect, this film secures a higher soil temperature and prevents evaporation when used as a soil cover.
TOMF	Black, non transparent film whithout UV stabiliser.	When used on the soil, it warms up and keeps the soil underneath warm. It prevents the soil from drying up. By preventing light transmission, it prevents weeks from growwing. Its application also reduces herbicide consumption.
TOMZ	Translucent, greenish mulch film with a special light selective additive and without UV stabiliser.	It provides ideal conditions for the development of useful plants and considerably prevents weeds from growing. Its application greatly reduces herbicide needs.
T1MF T2MF	black colour mulch film, UV stabilized for 1 or 2 years	When used on the soil, it warms up and keeps the soil underneath warm. It prevents the soil from drying up. By preventing light transmission, it prevents weeks from growing. Its application also reduces herbicide consumption. Recomendned for strawberry, melon ect.
TOAF	Black soil film for general purposes without UV stabiliser.	For general applications, such as covers for the temporary protection of fodder, building materials, etc.
TOAFR	Black colour film from regranulate, without UV stabilization for general covering	For general applications, such as covers for the temporary protection of fodder, building materials, etc.
TOASZNR	Changing colour film from regranulate, without UV stabilization for general covering	For general applications, such as covers for the temporary protection of fodder, building materials, etc.
EFR	Building film produced from PE regranulate, without UV stabilization	Temporary protection for building materials.

Grade Code Properties

Recommended Application

Q1F	Three-layer black, non transparent silage film UV stabilised for one year.	It is recommended to cover and protect fodder silos. It secures optimal conditions for the longterm preservation of vitamins and nutrients.
Q1W	Three-layer white silage film UV stabilised for one year.	It is recommended to cover and protect fodder silos. The white film reflects the most part of the light, securing a lower temperature underneath.
Q1WF	Three-layer non transparent silage film with black and white sides, UV stabilised for one year.	It is recommended to cover and protect fodder silos. The black layer greatly reduces transparency.

Dimensional Range

Film dimensions, such as, thickness and width, and roll length could be specified upon order.

Example: Dimensions specification of a film, 0,15 mm thick and 12 m wide, in a 60 m roll is: **0.15x12x60**

The Table below indicates the highest roll lengths with thicknesses and widths of **TVK-HELIOFOL** films:

Thickness (mm)	Width (m)							
	4,2	5	6	8,5	10	12	14	16
	Length (m)							
0,060	1000	820	680	480	410	340	-	-
0,090	400	360	300	220	180	150	130	120
0,120	300	280	230	160	140	115	100	90
0,150	240	220	180	130	110	90	80	70
0,180	200	190	150	105	95	75	65	60

Recommended length and width values in the Table can be deviated from on specific request.

Films are folded in two, four or eight before winding. Depending on the folding design, the following core widths are available:

Core Length (mm)	Width (m)							
	4,2	5	6	8,5	10	12	14	16
Folded in two	2200	2600	-	-	-	-	-	-
Folded in four	1150	1350	1600	2200	2600	3100	2350	2600
Folded in eight	-	-	-	1150	1300	1600	-	-

The requested fold design should be specified in the order.



TVK-heliofol MULCH FILM



TVK- heliofol SILAGE FILM



TVK-heliofol BUILDING FILM



Certificate

Standard **ISO 9001:2008 and ISO 14001:2004**

Certificate Registr. No. **75 150 11134**

TÜV Rheinland InterCert Kft. certifies:

Certificate Holder: **PARTIUM '70 Műanyagipari Zrt.**
Blaháné u. 2./III.em. 203-204
H - 4024 Debrecen
Hungary

Sites:
H - 3850 Tiszaújváros, TVK Ipartelep, Gyári út
H - 4100 Berettyóújfalú, Keresztesi u 3.

Scope: processing and sale of thermoplastics

An audit was performed. Proof has been furnished that the requirements according to MSZ EN ISO 9001:2009 (ISO 9001:2008) and MSZ EN ISO 14001:2005 (ISO 14001:2004) are fulfilled.

Validity: The certificate is valid from **2015.03.13** until **2018.03.12**.
First certification: 2002.

Budapest, 2015.03.13.

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