ELECTRICALLY INSULATING FILMS

KARL SCHUPP AG

CONDUCT – PROTECT – INSULATE



A highly resilient (115°C) insulation film with UL94-V0 flammability and excellent dielectric strength. The film can be obtained as sheet material or (self-adhesive) die-cut parts. As die-cut parts in particular, the film is characterized by good foldability, dimensional stability and compliance with various standard requirements for thickness and tracking resistance. For example, IEC 950 / EN 60950 and UL 1959 require a minimum insulation thickness of 0.4 mm between active electrical parts and earth for insulation in information technology devices (e.g. switching power supplies, insulation 230V connection to chassis). All products in the 278xx series over 0.4 mm thick meet this requirement and are also non-flammable in accordance with UL 94 V0.

Polypropylene insulating films, flame-retardant

Specifications

Application examples:

- Computer technology, monitors, printers, peripherals, consumer electronics
- Insulation between motherboard and metal housing
- Isolation between expansion cards
- Laminated together with metal foil as EMC/EMI shielding
- in black version additionally as light-proof cover for housing slots

Lighting

Various applications as insulation stampings in emergency lighting, information signs and street lighting

Washing machines, refrigerators, dryers, etc.

- Reliable separation and the electronics can be completely "packed" into the folded punched parts.
- as contact protection for live parts
- Water vapor or water protection

Power distribution

Devices such as overcurrent switches, consumption meters, switch cabinets, measuring devices and switch housings. Used as insulation between earth and operating voltage.
The conditions for use are:

- Good tracking resistance (CTI; 600V), non-flammability (UL94 V0)
- No hygroscopic properties
- good dielectric strength (> 6000V) and good temperature resistance (115°C).

All points are fulfilled by products of group 278xx. Application as insulation between live parts, as a cover for unused connections and in "bus bar" applications. The films can be punched very easily. With appropriate perforations or bending edges, closed "housings" are also possible as flame-retardant insulation. Most products in the 278xx series can also be self-adhesive.

Technical data:

Properties	**Test method**	**Standard types *)**				**Special types**			
		PP27805	**PP27810**	**PP27817**	**PP27830**	**PP27840**	**PP27862**	**PP27894BK**	**PP27825BK**
Colors		---	white	white	---	white	white	---	---
		black	black	black	black	black	black	black	black
Thickness in mm		0,127	0,25	0,43	0,76	1,02	1,57	2,38	3,18
Strength tolerance +		0,025	0,08	0,1	0,05	0,05	0,1	0,1	0,18
Strength tolerance -		0,025	0,04	0,05	0,05	0,05	0,1	0,1	0,18

Properties	Test method	Standard types *)	Special types	Properties	Test method	Standard types *)	Special types	Properties	Test method
		PP27805	PP27810			PP27805	PP27810		
Mechanical properties									
Tensile strength PSI	ASTM D 882								
Longitudinal direction		4400	4400	4400	4400	4400	4400	4800	4800
Transverse direction		3200	3200	3200	3200	3200	3200	3600	3600
Physical properties									
Density	ASTM D 792	1,035	1,035	1,035	1,035	1,035	1,035	1,035	1,035
Flammability	UL 94	VTM-0	VTM -0	V 0	V 0	V 0	V 0	V 0	V 0
Oxygen content	ASTM D 2863	28	28	28	28	28	28	28	28
Water absorption									
% change in weight	ASTM D 570	0,06	0,06	0,06	0,06	0,06	0,06	0,06	0,06
Relative thermal index (RTI)	UL 746 B								
Electric		115 ° C	115° C	115° C	115° C	115° C	115° C	110° C	110° C
Mechanical without pressure		115° C	115° C	115° C	115° C	115° C	115° C	110° C	120° C
Electrical properties									
spec. surface resistance Ohm / square	ASTM D 257	109 to 1011	109 to 1011	109 to 1011	109 to 1011	109 to 1011	109 to 1011	109 to 1011	109 to 1011
Breakdown voltage	ASTM D 149	13 kV	22 kV	24.8 kV	32 kV	37.8 kV	45 kV	56.4 kV	62.5 kV

Properties	Test method	Standard types *)	Special types	Properties	Test method	Standard types *)	Special types	Properties	Test method
		PP27805	**PP27810**			**PP27805**	**PP27810**		
Dielectric strength - Volt / 25.4µm	ASTM D 149	2625	2200	1460	1080	945	730	600	500
Spec. contact resistance Ohm -cm	ASTM D 257	3,97x1015	3,97x1015	3,97x1015	3,97x1015	3,97x1015	3,97x1015	3,97x1015	3,97x1015
Dielectric constant	ASTM D 150	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3
Loss factor	ASTM D 150	0,0019	0,0019	0,0019	0,0019	0,0019	0,0019	0,0019	0,0019
High-current arc ignition; number; arcs until ignition	UL 746A	200	200	162	200	200	200	200	200
High voltage arc trace in / min	UL 746A	0	0	0	0	0	0	0	0
Glow wire ignition - sec.	UL 746A	9	7	9	12	12	12	30	36
Relative leakage current index - Volt (CTI) 600V = 0	ASTM D 3638	600	600	600	600	600	600	600	600

*) Standard types are also available in smaller quantities