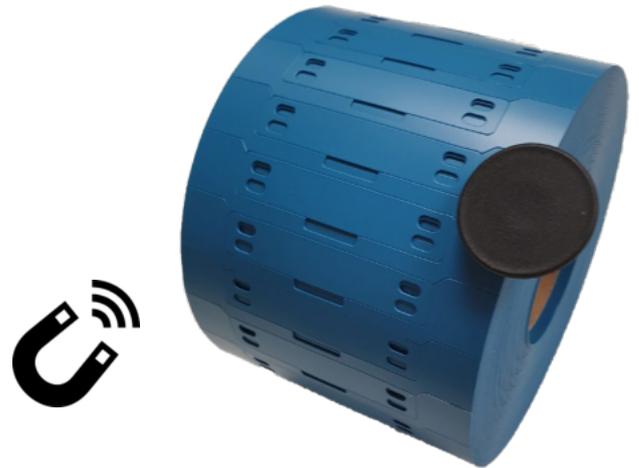


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Cable Markers extruded from Polyether based TPU compound. Optimised to the operation of the most common metal and x-ray detectors. The compound meets requirements for food contact compliant with FDA requirements. Compound is hydrolysis "No break down in water" and micro organism resistant.

In food production with open production processes it is advisable to use materials that are easily detectable. They make an important contribution to quality management for the food industry, particularly when following the HACCP approach.

The labels are fixed to the cable or wire using detectable cable ties. The product is supplied as an all-in-one construction, where the extruded material also functions as the carrier.



Technical data:

Material:	Polyether based TPU, halogen free.
Temperature range:	-40°C up to +105°C (-13°F to 176°F)
Colour:	Blue (RAL 5012)
Approvals:	Flammability standard Class HB - UL94
Standards:	FDA "Food & Drug" 21 CFR - GRAS "generally accepted as safe".
	Regulation (EU) No 10/2011 Plastics intended to come into contact with food. Migration Limit AP (89) 1 Pigments used for colouration.
Resistance to solvents:	Immersion test report available
Recommended ribbon:	FTI-HX
Recommended storage:	Cool and dry in original packing.

Mounting:

FLEXIMARK® Cablelabel detectable is mounted directly on the cable together with one or two detectable plastic cable ties.

Other product data:

ETIM Classification: EC001288

Advantages:

- Approved to be used in Food & Beverages solutions
- Print your own marking when you need it.
- Adapted for industrial environment.
- Halogen free and flame retardant durable material.
- Flexible material improves the mounting process of FLEXIMARK® Cablelabel detectable markers.
- Text with long term durability thanks to thermal transfer printing.
- Thermal transfer printing method increases smudge, scratch resistance and resistance to oils and chemicals.
- The label roll gives a better overview over the printout.

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Product data:

E-nr.	LAPP Part no.	Article designation	Type of roll	Size WxH (mm)	Colour	Mounting holes	Content (unit)	PU
	83280290	FLEXIMARK Cablelabel detectable 60x12 BU		60x12	Blue	2	1000	1
	83280291	FLEXIMARK Cablelabel detectable 75x15 BU		75x15	Blue	2	1000	1
	83280292	FLEXIMARK Cablelabel detectable 75x25 BU		75x25	Blue	2	500	1
	83280293	FLEXIMARK Cablelabel detectable 20x30 BU Diamond		20x30	Blue	1	1000	1



FLEXIMARK® Cablelabel detectable Diamond

PHYSICAL PROPERTIES	TEST METHOD	TYPICAL VALUE
Stress at 20 % strain	DIN 53504	12 MPa
Stress at 100 % elongation	DIN 53504	16 MPa
Stress at 300 % elongation	DIN 53504	34 MPa
Density	DIN 53479	1,33 g/cm3
Tensile Strength	DIN 53504	55 MPa
Elongation @ break	DIN 53504	450 %
Charpy notched impact strength, -30°C	DIN EN ISO 179	No break
Charpy notched impact strength, 23°C	DIN EN ISO 179	No break
Tensile Strength after storage in water at 80°C for 42 days	DIN 53504	32MPa
Compression set at room temperature, 24h	DIN EN ISO 815	30 %
Compression set at 70°C, 24h	DIN EN ISO 815	50 %
Tear Strength	DIN 53515	110 N/mm
Abrasion resistance	DIN 53516	30mm3

THERMAL PROPERTIES	TEST METHOD	TYPICAL VALUE
Glass transition temperature, 10°C/min	ISO 11357-1/-2	-20°C
Burning behaviour at 0.75 mm nom thickness	UL94	Class HB
Melting temperature 10°C/min	ISO 11357-1/-3	137°C
Short Max working temperature		105°C

ENVIRONMENTAL PROPERTIES	TEST METHOD	TYPICAL VALUE
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UV-A 340 nm 1000 hours Light 60 ° irradiation 0.76 W/m ² power duration 8 hours - Spray duration 15 min. - Condensation 50 ° duration 3,45 hour.	Visual Inspection Mark Adherence	No creasing or cracking Good contrast and visibility NOT TESTED
SVHC	TEST METHOD	TYPICAL VALUE
Substances Of Very High Concern. DEHP (Bis(2-ethyl(hexyl)phtalat).	Article 57(f) of Regulation (EC) No 1907/2006	No content.

Chemical resistance

No degradation of the marking products occurs, however, according to the solvent class a variable degree of swelling and consequent reduction in tensile strength (after evaporation of the solvents, the tensile strength recovers approx. its original value).

Methanol should be considered more as a chemical reagent than as a solvent. TPU is soluble in some solvents.

As test procedure, 5A test rods (DIN EN ISO 527-2) were immersed in the solvent for three weeks at 23° C, and tested for tensile strength are rounded values.

CODE	TEST FLUID	SWELLING	REDUCTION OF TENSILE STRENGTH %
Aliphatic Hydrocarbons	Pentan	10	20
	Cyclohexan	22	10
	Isooctan	7.5	none
FLEXIMARK® Cablelabel detectable behave similarly in other aliphatic and cyclo-aliphatic hydrocarbons such as methane, ethane, propane, butane, hexane, octane, petroleum ether, paraffin oil, diesel oil and kerosine (although additives can present problems).			
Aromatic Hydrocarbons	Toulene	65	50
Other aromatic hydrocarbons such as benzene and xylene have a similar affect.			
Aliphatic Esters	Ethyl Acetate	70	75
Other short-chained esters such as butyl acetate and amy acetate have a similar affect			
Aliphatic Ketones	Methyl Ethyl Ketone	130	90
Other short-chained aliphatic ketones such as acetone and methyl isobutyl ketone = MIBK have a similar affect.			
Aliphatic Halogenated Hydrocarbons, 1 C-atom 1 C-atom and higher	MethylEthyle Chloride	190	95
	Chloroform	75	Practically dissolved
	Tetrachloroethylene		54
	Trichloroethane*		
Other aliphatic halogenated hydrocarbons with 2 C-atoms and higher have a similar affect.			
Aromatic Halogenated Hydrocarbons	Chlorobenzene	110	60
Other aromatic halogenated hydrocarbons have a similar affect.			
ASTM-Oils acc. to ASTM D 471-06**	IRM 901 at 100 °C 500 h	1	6
	IRM 901 at 100 °C 1000 h	1	14
	IRM 902 at 100 °C 500 h	9	4
	IRM 902 at 100 °C 1000 h	10	5
	IRM 903 at 100 °C 500 h	18	8
	IRM 903 at 100 °C 1000 h	20	30
Agents Dissolving TPU	Tetrahydrofurane	dissolved	dissolved
	Dimethyl Formamide (DMF)	dissolved	dissolved
	Dimethyl Acetamide	dissolved	dissolved
	N-Methyl Pyrrolidone (NMP)	dissolved	dissolved
	Dimethyl Sulphoxide (DMSO)	dissolved	dissolved
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	Pyridine	dissolved	dissolved
Alcohols and Fuels	Methanol	28	6
	Ethanol	33	14
	Iso-Propanol	30	4
	Benzyl Alcohol	not measureable	partly dissolved
	Ethylen Glycol	4	15
	Glycerine	none	none

CODE	TEST FLUID	SWELLING	REDUCTION OF TENSILE STRENGTH %
FAM Test Fluids acc. to DIN 51 604*	Test Fluid A	67	60
	Test Fluid B	68	74
	Test Fluid C	43	70
Diesel Fuel Biodiesel Fuel RME @ 60°C	Diesel Fuel	11	none
	Biodiesel Fuel	27	
Fuel Types ASTM D 471	Fuel A = Iso-Octane	7.5	none
	Fuel B = Iso-Octane	25	36
	Touene 70% / 30%	38	44
	Fuel C=Iso-Octane	31	44
	Toluene 50% / 50%		
	Fuel D=Iso-Octane Toluene 60% / 40%		

* DIN 51 604, 03.1984, is the standard, established by FAM to assess the resistance of plastic materials to automotive fuels.

** The IRM reference oils are mineral oils with different paraffin and aromatics contents. The formerly used ASTM oils 1, 2 and 3 were replaced by the IRM oils 1, 2 and 3 owing to health risks, and are no longer available. The IRM oils 1, 2 and 3 are very similar in terms of their characteristics, but not identical. (FAM = Fachausschuß Mineral- und Brennstoffnormung-Professional committee for standardization of fuel stuffs) (ASTM = American Society for Testing and Materials)

Test fluid A consists of:

50.0 % by volume toluene
30.0 % by volume iso-octane
15.0 % by volume di-isobutylene
5.0 % by volume ethanol

Test fluid B consists of:

42.0 % by volume toluene
25.5 % by volume iso-octane
13.0 % by volume di-isobutylene
15.0 % by volume methanol
4.0 % by volume ethanol
0.5 % by volume water

Test fluid C consists of:

20.0 % by volume toluene
12.0 % by volume iso-octane
6.0 % by volume di-isobutylene
58.0 % by volume methanol
2.0 % by volume ethanol
2.0 % by volume water

Information on EU No. 10/2011

PLASTICS MATERIALS AND ARTICLES INTENDED TO COME IN CONTACT WITH FOOD

Based on our investigations, experiences and the information provided to us by our raw material suppliers, the polymer compound of FLEXIMARK® Cablelabel detectable complies with EU regulations related to plastic materials intended to come into contact with food EU Regulations:

Regulation 1935/2004 of 27th of October, Commission Directive 2002/72/EC of 6th of August, corrected on 13th February and further amendments: 2004/1/EC of 6th January, 2004/19/EC of 1st March, 2005/79/EC of 18th November, 2007/19/EC of 30th March, 2008/39/EC of 6th March, 975/2009/EC of 19th October and 10/2011/EC of 1st of May. All raw materials and additives used to produce the grade are included in the positive lists (Annex II and III). Concerning SML (specific migration limit) and dual-use additives, referred to Annex VI, point (5), migration tests have to be made at the end parts by the distributor of the parts, in order to guarantee the specific and total migration limit values. The global migration limit is established in 10 mg/dm².

This information does not cover the ulterior changes in the composition of the material by adding other substances. This information does not exime the end user of the material to make sure that the final product obtained is in accordance to the

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legal migration levels and the regulation EU No.10/2011. The information given above has been compiled carefully and represents the state of our knowledge at issue date.

Related products

FLEXIMARK® Cablelabel detectable is printed with CAB thermal transfer printers (available in our assortment).

To make the printing process more efficient, the usage of FLEXIMARK® Software, label software for printing marking systems, is recommended. The FLEXIMARK® Software is also included in the package when you purchase a printer from Fleximark AB. It is important to choose the right ribbon for the right marking. We recommend FTI-HX ribbon for durable thermal transfer printing with Cablelabel detectable.



FLEXIMARK® Cablelabel detectable is used together with detectable cable ties



E-nr.	LAPP Part no.	Article designation	Size WxH (mm)	Colour	Content (unit)	PU
	83259532	Thermoprint EOS5/300	N/A		1	1
1648045	83259602	Thermoprint SQUIX 4/300M	N/A		1	1
1648063	83260203	Ribbon FTI-HX105-300 BK	105mmx300m	Black	1	1
1648064	83260204	Ribbon FTI-HX 53-300 BK	53mmx300m	Black	1	1
	83260264	Ribbon FTI-X-CO-110x300 WH	110mmx300m	White	1	1
	61723360	Cable Tie Detect 98x2.5 BU	2,5x98	Blue	100	1
	61723364	Cable Tie Detect 140x3.5 BU	3,5x140	Blue	100	1
	61723365	Cable Tie Detect 200x3.5 BU	3,5x200	Blue	100	1
	61723361	Cable Tie Detect 200x4.5 BU	4,5x200	Blue	100	1
	61723366	Cable Tie Detect 290x4.5 BU	4,5x290	Blue	100	1
	61723362	Cable Tie Detect 360x4.5 BU	4,5x360	Blue	100	1
	61723363	Cable Tie Detect 365x7.5 BU	7,5x365	Blue	100	1

Note:

Pictures are not to scale and do not represent detailed images of each product.

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