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## Confirmation \*UL 746C - f1\*

Date:

20.11.2013

Description:	HSK-K black
Material:	Polyamid PA6
Operating temperature:	-40℃ - +100℃

Dear Sir or Madam,

we confirm that the black polyamide material which is used in the HSK-K series reach the stated international classification UL "f1" according UL 746C. The blacken manufactor UL file is attached on page 2.

## f1 Qualified for outdoor use in connection with UV radiation, water, exposure to light, submerge (according UL 746C)

The description "f1" declares that the material complied the following examinations - UV irradiation

- impact of water / submerge

The exact wording of the UL classification can be found on the UL Homepage. See the link below.

http://www.ul.com/global/eng/pages/offerings/industries/chemicals/plastics/testing/outdoor/

We provide this information to the best of our knowledge and belief and in accordance with the current state of the art. However, it does not represent any warranty in the legal sense.



V0 (f1)						
olyamide 6 (PA6), furnished as gra	nular material					
	Min Thk	Flame			RTI RTI	RTI
Color	(mm)	Class	HWI	HAI	Elec Imp	Str
BK	0.38	V-0	_	-	125 90	115
	0.75	V-0	4	0	125 90	115
	1.5	V-0	3	0	125 90	115
	3.0	V-0	2	0	125 90	115
	Comparative Tracking Index				Inclined Plane Tracking	
	Dielectric Strength (kV				Volume Resistivity (10 <sup>×</sup> ohm	
	High-Voltage Arc Tracking Rate (H				High Volt, Low Current Arc Resis (	
	Dimensional Stability				nigh voit, Low Current Arc Resis (L	1453)
(14) Suitable for outdoor yoo y	vith respect to exposure to Ultraviolet Ligh		ordanao with UL 746C			
	rtain to building materials, furnishings and related conter			bility of plantic materials used in the	components and parts of end-product devices and	unlighted where the accental
		the combination	is determined by UL.			
Report Date: 1992-10-23						
ast Revised: 2011-07-22		© 2	13 UL LLC			Ra
ast Revised: 2011-07-22		© 2	M3 UL LLC			c <b>A</b>
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	thods	© 21	M3 UL LLC		Thirkness	R
EC and ISO Test Met	thods		M3 UL LLC	Units	Thickness Tested (mm)	
EC and ISO Test Met	ihods	Test Method	M3 UL LLC	Units Class (color)	Tested (mm)	Value
EC and ISO Test Met	thods		M3 UL LLC	Units Class (color)		
EC and ISO Test Met	thods	Test Method	M3 UL LLC		Tested (mm) 0.38	Value V-0 (BK)
EC and ISO Test Met	thods	Test Method	M3 UL LLC		Tested (mm) 0.38 0.75	Value V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name Jammability	thods	Test Method	H3 UL LLC		Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name Iammability	thods	Test Method IEC 60695-11-10	M3 UL LLC	Class (color)	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name lammability slow-Wire Flammability (GWFI) slow-Wire Ignition (GWIT)	thods	Test Method IEC 60695-11-10 IEC 60695-2-12	M3 UL LLC	Class (color) C	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name lammability ilow-Wire Flammability (GWFI) ilow-Wire Ignition (GWIT) ic Comparative Tracking Index	thods	Test Method IEC 60695-11-10 IEC 60695-2-12 IEC 60695-2-13	M3 UL LLC	Class (color) C C	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name lammability ilow-Wire Flammability (GWFI) ilow-Wire Ignition (GWTI) 52 Comparative Tracking Index 52 Comparative Tracking Index 52 Ball Pressure	thods	Test Method IEC 60695-11-10 IEC 60695-2-12 IEC 60695-2-13 IEC 60112	M3 UL LLC	Class (color) C C Volts (Max)	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met iest Name lammability ilow-Wire Flammability (GWFI) ilow-Wire Ignition (GWIT) CC Comparative Tracking Index EC Ball Pressure SO Heat Deflection (1.80 MPa) SO Tensile Strength	thods	Test Method IEC 60695-11-10 IEC 60695-2-12 IEC 60695-2-13 IEC 6012 IEC 6012 IEC 6055-10-2 ISO 75-2 ISO 527-2	M3 UL LLC	Class (color) C Volts (Max) C C MPa	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
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EC and ISO Test Met est Name lammability slow-Wire Flammability (GWFI) slow-Wire Ignition (GWTI) 50 Comparative Tracking Index 50 Heat Deflection (1.80 MPa) 50 Tensile Strength 50 Flexural Strength	thods	Test Method IEC 60695-11-10 IEC 60695-2-12 IEC 60695-2-13 IEC 6012 IEC 6012 IEC 6055-10-2 ISO 75-2 ISO 527-2	M3 UL LLC	Class (color) C Volts (Max) C C MPa	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name lammability iow-Wire flammability (GWFI) iow-Wire ignition (GWT) 50 Comparative Tracking Index 50 Ideat Deflection (1.80 MPa) 50 Tensile Strength 50 Flexural Strength 50 Flexural Strength 50 Tensile Impact	ihods	Test Method IEC 60695-2-12 IEC 60695-2-13 IEC 6012 IEC 6012 IEC 6012 IEC 6095-10-2 ISO 75-2 ISO 527-2 ISO 178	M3 UL LLC	Class (color) C Volts (Max) C C MPa MPa	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
EC and ISO Test Met est Name lammability Now-Wire Flammability (GWFI) Now-Wire Ignition (GWT) EC Comparative Tracking Index EC Ball Pressure SO Heat Deflection (1.80 MPa) SO Tensile Strength SO Tensile Strength SO Tensile Magact	thods	Test Method IEC 60695-2-12 IEC 60695-2-13 IEC 60695-2-13 IEC 60692-10-2 ISO 75-2 ISO 75-2 ISO 75-2 ISO 75-2 ISO 75-2 ISO 75-2 ISO 75-2 ISO 75-2	M3UL LLC	Class (color) C Voits (Max) C C MPa MPa kJm <sup>2</sup>	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK)
ast Revised: 2011-07-22 IEC and ISO Test Med Test Name Fammability Slow-Wire Flammability (GWFI) Slow-Wire Ignition (GWIT) EC Comparative Tracking Index EC Ball Pressure SO Heat Deflection (1.80 MPa) SO Tensile Strength SO Tensile Impact SO Flexural Strength SO Tensile Impact SO Ized Impact	thods	Test Method IEC 60695-212 IEC 60695-213 IEC 60695-213 IEC 60112 IEC 60695-10-2 ISO 75-2 ISO 57-2 ISO 57-2 ISO 178 ISO 178 ISO 180 ISO 180 ISO 179-2	изиц LLC	Class (color) C Votts (Max) C C MPa MPa kJm <sup>2</sup> kJm <sup>2</sup>	Tested (mm) 0.38 0.75 1.5	Value V-0 (BK) V-0 (BK) V-0 (BK) - - - - - - - - - - - - - - - - - - -

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