

FLEX NORYLTM RESIN WCD883CU

REGION ASIA

DESCRIPTION

Flexible, UV resistant and non-halogenated flame retardant extrusion grade intended for evaluation in applications such as jacket of HD 21.14 flexible cables. Flame retardant performance capable of meeting EN 50265-2-1 requirement. 88 Shore A hardness. Processing typically conducted on standard extrusion equipment. Wire tests conducted on 2.0 mm wire with 0.12 mm x 20 stranded copper conductor.

TYPICAL PROPERTY VALUES

Revision 20181012

MECHANICA Tassils Strass, brit, Spe 1,50 mm/min 160 MPA ASTM D 638 Flexural Modulus, 12.5 mm/min 100 mm span 65 MPA ASTM D 638 Bracural Modulus, 12.5 mm/min 100 mm span 88	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS	
Tensile Strain, brk. Type I, 50 mm/min 160 8 ASTM D 698 Flexural Modulus, 12.5 mm/min, 100 mm span 55 MPa ASTM D 790 Hardness, Snore A, 30s reading 82.5 MPa ASTM D 240 Tensile Strain, break, 50 mm/min 12.5 MPa 50.527 Tensile Strain, break, 50 mm/min 135 8 10.527 Elevarl Modulus, 12.5 mm/min 135 8 10.527 Flexile Strain, break, 50 mm/min 135 8 10.527 History 4 2 50.527 10.52 Brevarl Modulus, 12.5 mm/min 4 2 50.52 \$5.50 10.52 <t< td=""><td>MECHANICAL</td><td></td><td></td><td></td></t<>	MECHANICAL				
Betward Modulus, 12.5 mm/min, 100 mm span 65 MR ASTM D 2940 Bardness, Shore A, 305 reading 88 4 60 ASTM D 2240 Tensile Stress, break, 50 mm/min 12.5 MP 50 527 Flexural Modulus, 12.5 mm/min 61 35 50 527 Flexural Modulus, 12.5 mm/min 61 35 50 527 Britteriess Temperature 40 70 50 57 Britteriess Temperature 40 20 20 \$5MD 798 PWSCA Freedrik Gravity 12 40 \$5MD 792 Met Flow Rate, 250°C/10.0 kgf 12 2 ASTM 0 792 Met Flow Rate, 250°C/10.0 kgf 10 30 ASTM 0 234 Bushal Flow Rate, 250°C/10.0 kgf 10 00 35MD 692 Bushal Flow Rate, 250°C/10.0 kgf 17±16 00m ASTM 0 257 Bushal Flow Rate, 250°C/10.0 kgf 17±16 0ms-cm ASTM 0 257 Valural Resistivity 17±16 0ms-cm ASTM 0 257 Valural Resistivity 17±16 0ms-cm	Tensile Stress, brk, Type I, 50 mm/min	14	MPa	ASTM D 638	
Hardness, Shore A, 30s reading 88 - ASM D 2240 Tenile Stress, break, 50 mm/min 12.5 MP8 10.52 7 Tenile Strein, break, 50 mm/min 12.5 MP8 10.52 7 Elevarla Modulus, 12.5 mm/min 13 40 15 15 HAPACT V V SMID 746 Brittleness Temperature 40 °C ASM D 746 PHYSICA V ASM D 796 Bry Cliff Gravity 12 20 ASM D 792 Bellet Flow Rate, 250°C/10.0 kgf 12 20 ASM D 792 Bellet Flow Rate, 250°C/10.0 kgf 12 20 ASM D 792 Bellet Flow Rate, 250°C/10.0 kgf 12 13 ASM D 792 Bellet Flow Rate, 250°C/10.0 kgf 12 13 ASM D 792 ASM D 792 Bellet Flow Rate, 250°C/10.0 kgf 3 14 ASM D 792	Tensile Strain, brk, Type I, 50 mm/min	160	%	ASTM D 638	
Tensile Stress, break, 50 mm/min 12.5 MPe 10.5 27 Tensile Strain, break, 50 mm/min 35 4 10.5 27 Flexural Modulus, 12.5 mm/min 61 4 Pa 10.5 27 IMPACT Brittleness Temperature 40 40 7 ATM D 746 PHYSICAL Ferrita Gravity 40 20 3 ATM D 792 Brittleness Temperature 40 20 3 ATM D 792 ATM D 792 Brittleness Temperature 40 20 9 ATM D 792 ATM D 792 Brittleness Temperature 40 20 ATM D 792 ATM D 792 ATM D 792 Brittleness Temperature 9 9 ATM D 792	Flexural Modulus, 12.5 mm/min, 100 mm span	65	MPa	ASTM D 790	
Tensile Strain, break, 50 mm/min 35 6 cm 50 527 Exural Modulus, 12,5 mm/min 61 40 80 50 178 IMPACT Brittlenes Temperature 40 C X MD 746 Brittlenes Temperature 40 2 X MD 792 Brittlenes Temperature 2 6 ASTM D 792 Brittlenes Temperature 2 9 ASTM D 792 Brittlenes Temperature Brittlenes Temperature WT MD 792 Brittlenes Temperature Brittlenes Temperature Brittlenes Temperature MS ASTM D 792 Brittlenes Respondent Li Gregoria II, 1 Gregoria III, 1 Gregoria II, 1 Gregoria III, 1 Gregoria II, 1 Gregoria III, 1 Gregoria	Hardness, Shore A, 30S reading	88	-	ASTM D 2240	
Flexural Modulus, 1.5 mm/min 61 MPa 50 178 IMPACT 18 mm/mode 40 °C ASTM D 746 PHYSICA STEMPCIA 18 mm/mode 40 70 mm/mode ASTM D 79a Bedelif Gravity 1.2 6 ASTM D 179a ASTM D 179a Bullet Flow Rate, 250°C/10.0 kg1 1.0 9/10 mm ASTM D 128 mc 120 mc 18 mm 120 mc ELECTRICAT 1.0 3 ASIM D 279 mc 18 mm 120 mc 18 mm 1	Tensile Stress, break, 50 mm/min	12.5	MPa	ISO 527	
MPACT Britlenes Temperature <0 °C ASTM 0746 PHYSICAL Specific Gravity 12 3 mm 10 mm 2 mm 10 mm Bit Blow Rate, 250°C/10.0 kgf 10 3 mm 10 mm 2 mm 10 mm ELECTRICA T 3 mm 10 mm 3 mm 10 mm Surface Resistivity 0 mm 3 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm 2 mm 10 mm Surface Resistivity 1 mm 10 mm 2 mm 10 mm	Tensile Strain, break, 50 mm/min	135	%	ISO 527	
Britlenes Temperature 4-40 °C ASTM D 746 PHYSICA Specific Gravity 12 3-10 3-10 ASTM D 792 Met Dro Rate, 250°C/10.0 kgf 10 3-1	Flexural Modulus, 12.5 mm/min	61	MPa	ISO 178	
PHYSICAL Specific Gravity 1.2 4.0 ASTM D 792 Melt Flow Rate, 250°C/10.0 kgf 10 yl min ASTM D 123 ELECTRICAL Use placetric Constant, 1.1 GHz 3 ASTM D 250 ASIM D 267 Displacition Factor, 1.1 GHz 0.003 ASTM D 257 ASTM D 257 Surface Resistivity 1.2±15 Ohn ASTM D 257 Column Resistivity 2.2 ASTM D 257 Collectric strength in oil, 2.0mm 1.2±15 M/m IEC 6014-1 Coloparative Tracking Index 0 W/m IEC 6014-1 Comparative Tracking Index 0 W/m IEC 6014-1 Collectric Strength in oil, 2.0mm 2 IEC 6014-1 Collectric Strength in oil, 2.0mm IEC 6014-1 IEC 6014-1 Collectric Strength in oil, 2.0mm IEC 6014-1 IEC 6014-1 Collectric Strength in oil, 2.0mm IEC 6014-1 IEC 6014-1 Collectric Strength in oil, 2.0mm IEC 6015-2-1 IEC 6015-2-1 <	IMPACT				
Specific Gravity1.2ACM D 792Melt Flow Rate, 25°C/10.0 kgf1.23.7ACM D 1238ELECTRICALUUSAIL D 1238Dislectric Constant, 1.1 GHz333ACM D 1248Dislaption Factor, 1.1 GHz0.0034ACM D 257Volume Resistivity1.2€+15OhnASTM D 257Dislectric Strength in oil, 2.0mm2M/mmASTM D 257Comparative Tracking Index60W/mmEC 60243-1Comparative Tracking Index9W/mmEC 60243-1Comparative Tracking Index3maEC 60243-1Cow Wire Flammability Index 960°C, passes at3maEC 60293-13Oby Wire Ignitability Temperature, 3.0 mm75°CEC 6095-2-12Oxygen Index (LO)3MPaU. 1581Tensile strength @ break18MPaU. 1581Tensile strength @ break18MPaU. 1581Tensile strength @ break after 7days @80°C238MPaU. 1581Tensile clongation @ break after 7days @80°C238MPaU. 1581Tensile clongation @ break after 7days @80°C238WaU. 1581Tensile clongation @ break after 7days @80°C238WaU. 1581Will EATH Controlled Transition & D 125WaU. 1581Will EATH Con	Brittleness Temperature	<-40	°C	ASTM D 746	
Melt Flow Rate, 250°C/10.0 kgf 10 g/10 min ASTM D 1238 ELECTRICAL Flore Constant, 1.1 GHz 3	PHYSICAL				
Dielectric Constant, 1.1 GHz 3 3	Specific Gravity	1.2	-	ASTM D 792	
Dielectric Constant, 1.1 GHz3-SABIC methodDissipation Factor, 1.1 GHz0.003-SABIC methodSurface Resistivity1.7E+16OhmASTM D 257Volume Resistivity1.2E+15Ohm-cmASTM D 257Dielectric strength in oil, 2.0mm25kV/mmIEC 60243-1Comparative Tracking Index0VIEC 60122CHAME CHARACTERISTICSGlow Wire Planmability Index 960°C, passes at3mIEC 60695-2-12Owygen Index (LO)362C156 6095-2-13WIE AND CABLE-UL 1581 TESTED ON 2.0MM WIRE WITH D.12MWET TANDED COPPERTV158 1Tensile elongation @ break8MPaU.1581Tensile elongation @ break19MPaU.1581Tensile elongation @ break after 7days @80°C23MPaU.1581Tensile elongation @ break after 7days @80°C23%U.1581Tensile elongation @ break after 7days @80°C23%U.1581Tensile elongation @ break after 7days @80°C23%U.1581Tensile elongation @ break after 7days @80°C28%U.1581Tensile elongation @ break after 7days @80°C28%U.1581	Melt Flow Rate, 250°C/10.0 kgf	10	g/10 min	ASTM D 1238	
Dissipation Factor, 1.1 GHz0.003-ASID (methodSurface Resistivity1.7E+160hmASTM D 257Volume Resistivity1.2E+150hm-cmASTM D 257Dielectric strength in oil, 2.0mm25W/mEC 60243-1Comparative Tracking Index000VEC 60112EAME CHARACTERISTICSGlow Wire Flammability Index 960°C, passes at3mmEC 60695-2·12Oby Wire Indimability Temperature, 3.0 mm775°CEC 60695-2·13Oxygen Index (IO)36%158 148Tensile strength @ break8MPaU.1 581Tensile elongation @ break8MPaU.1 581Tensile elongation @ break after 7days @80°C23MPaU.1 581Tensile elongation @ break after 7days @80°C23%U.1 581Tensile elongation @ break after 7days @80°C28%U.1 581Tensile	ELECTRICAL				
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Volume Resistivity1.2E+15Ohm-cmASTM D 257Dielectric strength in oil, 2.0mm25W/mmIEC 60243-1Comparative Tracking Index600VIEC 60112FLAME CHARACTERISTICSGlow Wire Flammability Index 960°C, passes at3mmIEC 60695-2-12Clow Wire Ignitability Temperature, 3.0 mm775°CIEC 60695-2-13Oxygen Index (LOI)36%150 4589WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MM/VET STRANDED COPPERTensile strength @ break18MPaUL 1581Tensile elongation @ break260%UL 1581Tensile elongation @ break after 7days @80°C19MPaUL 1581Tensile elongation @ break after 7days @80°C238%UL 1581Tensile elongation @ break after 7days @80°C238%UL 1581Vertical Flame TestPasses-No 265-2-1WIRE COATING EXTRUSION55 – 85°C	Dissipation Factor, 1.1 GHz	0.003	-	SABIC method	
Dielectric strength in oil, 2.0mm	Surface Resistivity	1.7E+16	Ohm	ASTM D 257	
Comparative Tracking Index FLAME CHARACTERISTICS Glow Wire Flammability Index 960°C, passes at 3 3 mm EC 60695-2-12 Glow Wire Ignitability Temperature, 3.0 mm 775 °C EC 60695-2-13 Oxygen Index (LOI) 36 °C EC 60695-2-13 Oxygen Index (LOI) WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MXVVSTRANDED COPPER Tensile strength @ break 18 MPa UL 1581 Tensile elongation @ break Tensile elongation @ break after 7days @80°C 19 MPa WIRE 1581 Tensile elongation @ break after 7days @80°C 238 Well break after 7days @80°C 238 Well UL 1581 Well Elongation @ break after 7days @80°C 38 Well UL 1581 Well Elongation @ break after 7days @80°C 28 Well Elongation @ break after 7days @80°C 38 Well UL 1581 Well Elongation @ break after 7days @80°C Well Elongation @ break after 7days @80°C 38 Well UL 1581 Well Elongation @ break after 7days @80°C Well Elongation @ break after 7days @80°C 38 Well UL 1581 Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C Section & Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL 1581 Well Elongation @ break after 7days @80°C UL	Volume Resistivity	1.2E+15	Ohm-cm	ASTM D 257	
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Glow Wire Ignitability Temperature, 3.0 mm 775 °C IEC 60695-2-13 Oxygen Index (LOI) 36 % 150 4589 WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMXVSTRANDED COPPER Tensile strength @ break 1 8 MPa UL 1581 Tensile elongation @ break 3fter 7days @80°C 19 MPa UL 1581 Tensile elongation @ break after 7days @80°C 19 MPa UL 1581 Tensile elongation @ break after 7days @80°C 238 % UL 1581 Vertical Flame Test 9 Passes 22 % UL 1581 WIRE COATING EXTRUSION 55 85 °C Tensile elongation @ Creak 3fter 7days @80°C 25 85 °C	FLAME CHARACTERISTICS				
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WIRE AND CABLE - UL 1581 TESTED ON 2.0MM WIRE WITH 0.12MMZS STRANDED COPPER Tensile strength @ break 18 MPa UL 1581 Tensile elongation @ break Tensile elongation @ break after 7days @80°C 19 MPa UL 1581 Tensile elongation @ break after 7days @80°C 238	Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13	
Tensile strength@break 18 MPa UL 1581 Tensile elongation@break 260 % UL 1581 Tensile strength@break after 7days@80°C 19 MPa UL 1581 Tensile elongation@break after 7days@80°C 238 % UL 1581 Heat Deformation at 100°C/250g 22 % UL 1581 Vertical Flame Test Passes - EN 50265-2-1 WIRE COATING EXTRUSION 75 – 85 °C	Oxygen Index (LOI)	36	%	ISO 4589	
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Tensile elongation @ break after 7days @80°C 238 % UL 1581 Heat Deformation at 100°C/250g 22 % UL 1581 Vertical Flame Test Passes - EN 50265-2-1 WIRE COATING EXTRUSION Typing Temperature 75 – 85 °C	Tensile elongation @ break	260	%	UL 1581	
Heat Deformation at 100°C/250g 22 % UL 1581 Vertical Flame Test Passes - EN 50265-2-1 WIRE COATING EXTRUSION Drying Temperature 75 – 85 °C	Tensile strength @ break after 7days @80°C	19	MPa	UL 1581	
Vertical Flame Test Passes - EN 50265-2-1 WIRE COATING EXTRUSION Drying Temperature 75 – 85 °C	Tensile elongation @ break after 7days @80°C	238	%	UL 1581	
WIRE COATING EXTRUSION Drying Temperature 75 – 85 °C	Heat Deformation at 100°C/250g	22	%	UL 1581	
Drying Temperature 75 – 85 °C	Vertical Flame Test	Passes	-	EN 50265-2-1	
	WIRE COATING EXTRUSION				
Drying Time 5 – 7 hrs	Drying Temperature	75 – 85	°C		
	Drying Time	5 - 7	hrs		



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Drying Time (Cumulative)	12	hrs	
Maximum Moisture Content	0.02	%	
Extruder Length/Diameter Ratio (L/D)	22:1 to 26:1	-	
Screw Speed	15 – 85	rpm	
Feed Zone Temperature	180 – 220	°C	
Middle Zone Temperatures	220 – 250	°C	
Head Zone Temperature	220 – 250	°C	
Neck Temperature	220 – 250	°C	
Cross-head Temperature	220 – 250	°C	
Die Temperature	220 – 250	°C	
Melt Temperature	220 – 250	°C	
Conductor Pre-heat Temperature	25 – 120	°C	
Screen Pack	100 – 150	-	
Cooling Water Air Gap	100 – 200	mm	
Water Bath Temperature	15 – 60	°C	

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