

## Compound RDX 2264-1

Halogenfree, radiation crosslinkable flame retardant compound for the (primary) insulation of wire for railways, rapid transit and other rolling stock applications.

### Compound properties

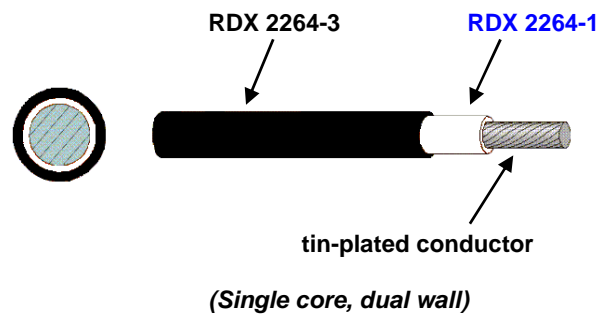
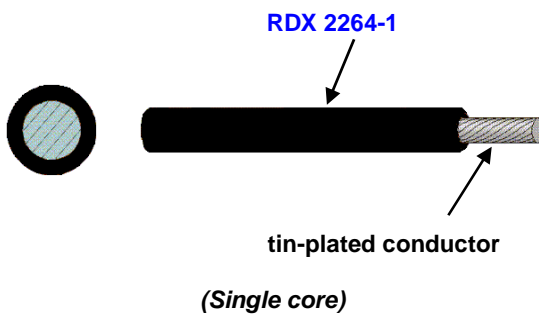
**RDX 2264-1** is a radiation crosslinkable halogenfree, low smoke compound, offering excellent mechanical and electrical properties. The compound meets EN 50264 EI 105 requirements.

This compound can be used as an inner layer of a multilayer insulation system or as an insulation material for sheathed cables in multicore constructions according to EN 50264.

The halogenfree, highly oil-resistant RDX 2264-3 can be used as outer layer of multilayer insulation systems or as sheathing material in multicore cable constructions where RDX 2264-1 can be the (primary) insulation.

#### Features

- Able to withstand temperatures of 280 C during a short-circuit overload period, without detrimental effect
- Flame-retarded acc. to EN 60332-2-1
- Soldering iron resistant
- Shows good flexibility
- Resistant against UV (\*), ozone and hydrolysis
- Continuous operating temperature from – 40 C to + 125 C (20.000 hrs)



Specifications : EN 50264 (EI 105)

Applications : Rolling stock like railways and rapid transit



## Compound RDX 2264-1

Properties (:after crosslinking with a dosis of 150 kGy (**))	Test Method	Typical value
<b>Physical properties</b>		
Specific gravity	ISO 1183	1.50 gr/cm <sup>3</sup>
Hardness	ASTM D-2240	49 Shore D
Tensile at break (*)	EN 60811-1-1	> 12 MPa
Elongation at break (*)	EN 60811-1-1	> 160 %
<b>Thermal properties</b>		
Heat shock (4 hr, 175 C)	EN 60811-3-1	Pass
- Variation in Tensile strength		< 25%
- Variation in elongation at break		< 25%
Heat ageing (10 days at 120 C)		
-Variation in tensile strength	EN 60811-1-1	< 25 %
-Variation in elongation at break	EN 60811-1-1	< 25 %
Cold impact at -40 C	EN 60811-1-4	Pass
Elongation at break @ - 40 Celsius		> 35%
Low temp flexibility (winding on mandrel) @ - 40 C	EN 60811-1-4	No cracking
Hot-set elongation (after radiation with 150 kGy)		
(200 C, 15 min, 20 N/cm <sup>2</sup> ) : - under load		< 60 %
- set (5 min @ 200 C)		< 10%
Hot pressure test ( 4hrs @ 140 C) : Penetration	EN 60811-3-1	< 50%
Shrinkage test 1hr @ 120 C		< 2%
<b>Ozone resistance</b>		
Method A (250 ppm, 25 C, 24 hrs)	EN 50305	No cracks
Method B (200 ppm, 40 C, 72 hrs)	EN 50305	No cracks

(\*) : UV-resistant if > 2% Carbon black is added by addition of approx. 3 – 4% of a standard carbon black color masterbatch  
 (\*\*): 150 – 200 kGy: This needs to be optimized by customer for maximum result

# Compound RDX 2264-1

Properties (after crosslinking with 150 kGy (**))	Test Method	Typical value
<b>Electrical properties</b> Voltage test	EN 50264	No breakdown
<b>Burning properties</b> Burning test (vertical)	EN 60332-2-1	Pass
Halogen content	IEC 754-1	0
Limited oxygen index	ASTM D-2863	32
Temperature index	NES 715	250
Corrosivity test : pH	EN 50267-2-2	> 4,5
Conductivity	EN 50267-2-2	< 4 uS/mm
Toxicity	EN 50305	2

(\*\*): 150 – 200 kGy: This needs to be optimized by customer for maximum result

Extrusion guide	
Screw	Good results have been achieved with 'halogenfree' screws, and barrier type screws (BM) having high flights and a L/D-ratio > 24. Screws having low shear are recommended.
Screw cooling	For increase of line speeds, cooling the screw to around 80 C could be effective, although this could lead to pulsation.
Screen pack	40- 60-40 mesh
Extrusion dies	For pressure extrusion, normal dies are recommended. Die opening should be 1 – 5% below the required OD of the wire.
Temp. profile	Zone 1 to 4 : 140 - 160 - 170 - 170      Head : 170      Die : 170      (C)
Max. mass temp.	170 C
Conditioning	Pre-dry at 60 C during 4 hrs if original packing is open
Wire/conductor	Tin-plated

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