

## Compound RDX 2125-PV-SOLAR

Radiation crosslinkable high performance halogenfree VW-1 flame retardant compound for photovoltaic wire & cable applications for up to 125 C continuous operating temperature

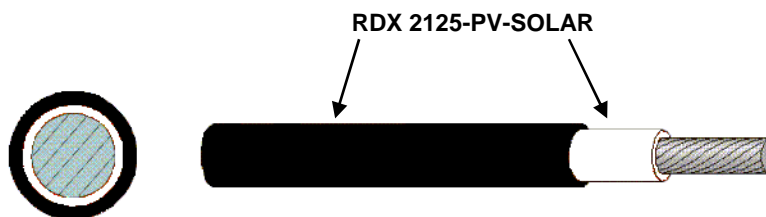
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### Compound properties

RDX 2125-PV-SOLAR is a radiation crosslinkable halogenfree, low smoke compound, offering excellent mechanical and electrical properties. This compound has been designed to meet the stringent requirements of photovoltaic wire & cable such as the German specification TUV 2PFG 1169/08.2007 for flexible single-core cables (cords) for use at the DC-side, with a maximum permissible voltage of 1.8 kV DC (conductor/conductor, non-earthed system).

### 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 and UL VW-1
- Soldering iron resistant
- Shows good flexibility and is resistant against UV (\*), ozone and hydrolysis
- Continuous operating temperature from – 40 C to + 125 C (20.000 hrs)



**Specifications :** TUV 2 PFG 1169/08.2007

**Applications :** Photovoltaic wire



## Compound RDX 2125-PV-SOLAR

Properties (:after crosslinking with a dosis of 150 kGy (**))	Test Method	Typical value
<b>Physical properties</b>		
Specific gravity	ISO 1183	1.51 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 (7 days at 158 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		> 30%
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>Fluid resistance</b>		
- N Oxalic-acid		
- N Sodium-hydroxide		
Elongation at break	EN 60811-2-1	> 100%
Variation in Tensile strength	EN 60811-2-1	< 30%

(\*) : 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 2125-PV-SOLAR

Properties (after crosslinking with 150 kGy (**))	Test Method	Typical value
<b>Electrical properties</b>		
Volume resistivity AC 1.5 kV; 1 minute	EN 50395 UL	> 10@14 ohm.cm Pass
<b>Burning properties</b>		
Burning test (vertical)	EN 60332-2-1	Pass
Halogen content	IEC 754-1	0
Limited oxygen index	ASTM D-2863	34
Temperature index	NES 715	250
Corrosivity test : pH	EN 50267-2-2	> 4,5
Conductivity	EN 50267-2-2	< 3 uS/mm

(\*\*): 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 - 180 - 180      Head : 180      Die : 180      (C)
Max. mass temp.	180 C
Conditioning	Pre-dry at 60 C during 4 hrs if original packing is open
Wire/conductor	Tin-plated

Notice : The information given in this datasheet is believed to be accurate and reliable. However, no warranty, express or implied, or guarantee is given as to the suitability, accuracy, reliability or completeness of the information. This information does not hold us liable for damages or penalties resulting from following our suggestions or recommendations. RDX2125PVSOLAR/RG090224

The logo consists of a hexagonal shape with a double-line border. Inside the hexagon, the letters "PTL" are written in a large, bold, serif font. Below "PTL", the word "brand" is written in a smaller, lowercase, sans-serif font. The logo is centered between two horizontal lines that extend across the width of the page.

**PTL**  
brand

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