

# RUPALIT® Safety

## RUPALIT® Safety Profile

Product datasheet

# PACK

## LitzWire

family owned  
since 1933

RUPALIT® Safety HF litz wires with reinforced insulation revolutionize the design of your transformer. Maximizing safety, minimizing costs.



RUPALIT® Safety meets the modern requirements for triple insulation / reinforced insulation with VDE approval.

The choice of foil is made according to customer requirements, depending on the required dielectric strength and temperature class.

### Advantages

- Reduction of transformer size by up to 50 %
- Reduction of transformer weight by up to 65 %
- No interlayer insulation
- Integrated air and creepage distances
- No potting
- Significantly reduced winding time

### Technical data

#### Construction

- Enamelled copper wires (0.02–0.80 mm, 20–52 AWG)
- Reinforced insulation with sealed foil (3 layers)
- Conductor cross-sections according to DIN or customer specification

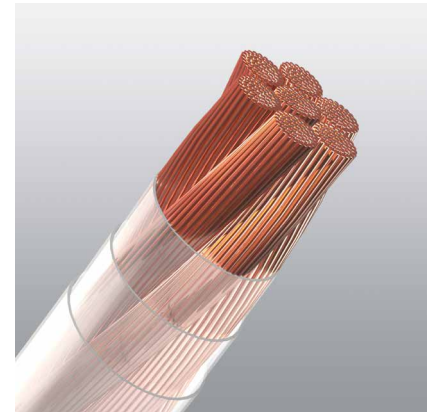
#### Insulation material

##### Foil

- PET (polyethylene terephthalate, polyester, Mylar®) – foil as a classic insulation material with excellent dielectric strength
- PEN (polyethylene naphthalate, Teonex®) – foil for high-temperature applications
- PI (polyimide, Kapton®) – foil for extreme thermal requirements
- Other materials on request

#### Applications

- High-frequency transformers
- High-frequency transformers / transducers
- High-frequency chokes
- Electronic ballasts
- On-board charger



RUPALIT® Safety



REG No.: 122034

DIN EN 62638 (DIN EN 60950-1)  
DIN EN 60065  
DIN EN 61558-1/A1  
DIN EN 60601-1

Operating voltage:  
max. 1000 Vrms  
max. 1410 Vpeak



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## RUPALIT® Planar

### Product datasheet

#### RUPALIT® as parallel-arranged high-frequency litz wire

This elegant geometry minimizes leakage inductances and enables field-compensated windings for high-power applications.



Ideal for transformers with high output current and induction heating applications up to the kW range.

#### Advantages

- Minimized leakage inductance
- Field-compensated winding
- High copper fill factor
- Drastic reduction of leakage inductance – the parallel arrangement enables field-compensated windings that minimize stray radiation and parasitic effects
- High current-carrying capacity with minimal outside diameter – ideal for high-current applications up to the kW range
- Reduced manufacturing complexity in multi-strand transformers – planar winding is simpler and more reproducible than multilayer windings

#### Technical data

##### Construction

- Several RUPALIT® wires arranged in parallel
- Total copper cross-section: up to 150 mm<sup>2</sup>
- With or without additional insulating jacket, depending on application

##### Isolationsmaterial

##### Yarn

- Natural silk (52) – natural yarn for applications requiring maximum flexibility and high quality
- Polyamide (63, PA6.6, Nylon®) – robust textile yarn with high mechanical resistance
- Other materials on request: glass silk, rayon, acetate silk

##### Foil

- PET (polyethylene terephthalate, polyester, Mylar®) – foil as a classic insulation material with excellent dielectric strength
- PEN (polyethylene naphthalate, Teonex®) – foil for high-temperature applications
- PI (polyimide, Kapton®) – foil for extreme thermal requirements



- Aramid (Nomex®) – foil for very high temperature resistance
- Other materials on request

#### Applications

- Aerospace – flat HF transformers

Construction	Dimensions (W x H)	Copper cross-section
35 // 10 x 0.04 mm, 1 x 63	5.70 x 0.50 mm +/- 0.20 mm	0.45 mm <sup>2</sup>
24 // 27 x 0.071 mm, 2 x 63	20.50 x 0.80 mm +/- 0.20 mm	2.50 mm <sup>2</sup>
4 // 120 x 0.10 mm, 2 x 63	8.20 x 1.50 mm +/- 0.20 mm	3.77 mm <sup>2</sup>
6 // 210 x 0.10 mm, 2 x 63	10.00 x 2.50 mm +/- 0.20 mm	9.90 mm <sup>2</sup>
6 // 70 x 0.20 mm, 2 x 63	14.70 x 2.50 mm +/- 0.20 mm	13.20 mm <sup>2</sup>
18 // 405 x 0.071 mm, o.U.	33.00 x 2.50 mm +/- 0.20 mm	28.86 mm <sup>2</sup>
8 // 350 x 0.20 mm, 2 x 63	41.00 x 5.00 mm +/- 0.20 mm	88.00 mm <sup>2</sup>

Nylon®, Mylar®, Teonex®, Kapton® and Nomex® are registered trademarks of DuPont, Mylar Specialty Films.

## RUPALIT® Braid

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#### RUPALIT® as braided high-frequency litz wire

The braided geometry ensures maximum mechanical robustness and a homogeneous current distribution under dynamic loads.



RUPALIT® Braid combines the loss-optimized properties of classic HF litz wires with a robust, braided structure.

#### Advantages

- Defined strand construction leads to a more uniform magnetic field distribution and can significantly reduce losses compared with a RUPALIT® with a classic construction
- Better width-to-height ratio (compared with RUPALIT® Profile) enables winding of extremely flat components
- More flexible litz wire compared with a RUPALIT® with a classic construction
- In-house production allows the construction and dimensions to be adapted exactly to your design
- Reduction of skin and proximity effect

#### Technical data

##### Construction

- Braided HF litz wire made of enamel-insulated copper wires (comparable conductor range to RUPALIT®), in a defined braid pattern for high flexibility and dimensional stability.
- Configurable braid pattern (e.g. tighter or more open braid) to match bending requirements, current-carrying capacity, and installation space.
- Conductor cross-section, profile dimensions, and number of individual wires according to customer specification for reproducible electrical properties.



##### Insulation material

Additional outer insulation on request

Article-no.	Article	Temp. class	Remove insulation	Copper cross-section
60-0001	RUPALIT® Flecht V155 540 x 0.15 mm 8.6 x 2.7 mm +/- 0.20 mm	155°C	Tinning possible at approx. 420°C	9.54 mm <sup>2</sup>
60-0003	RUPALIT® Flecht V180 240 x 0.20 mm 5.8 x 2.2 mm +/- 0.20 mm	180°C	Tinning possible at approx. 420°C	7.54 mm <sup>2</sup>
60-0013	RUPALIT® Flecht V210 160 x 0.20 mm 6.0 x 2.0 mm +/- 0.20 mm	210°C	Tinning not possible	5.03 mm <sup>2</sup>
60-0008	RUPALIT® Flecht V155 144 x 0.20 mm 6.1 x 1.3 mm +/- 0.20 mm	155°C	Tinning possible at approx. 420°C	4.52 mm <sup>2</sup>
60-0004	RUPALIT® Flecht V180 80 x 0.20 mm 5.1 x 1.2 mm +/- 0.20 mm	180°C	Tinning possible at approx. 420°C	2.51 mm <sup>2</sup>