

AUXILIARY DRIVES

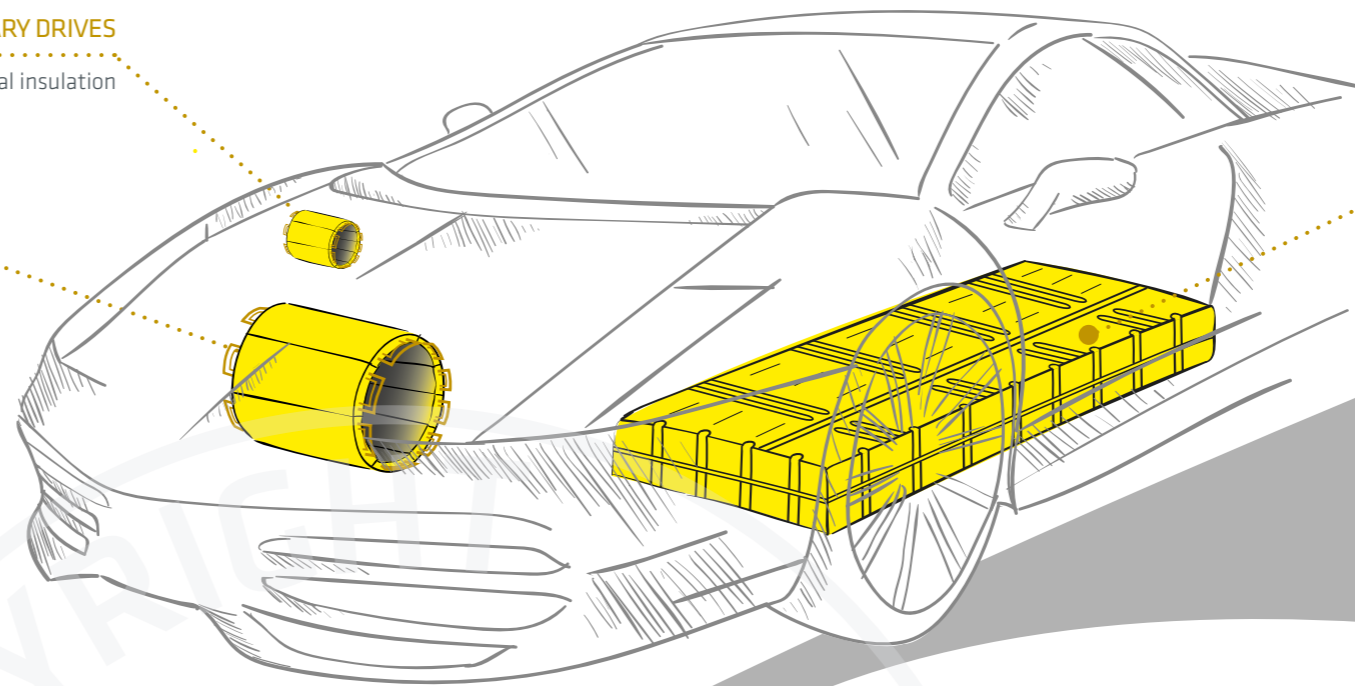
Electrical insulation

E-MOTOR

Electrical insulation

BATTERY

Electrical insulation
Thermal management



ABOUT ISOVOLTA

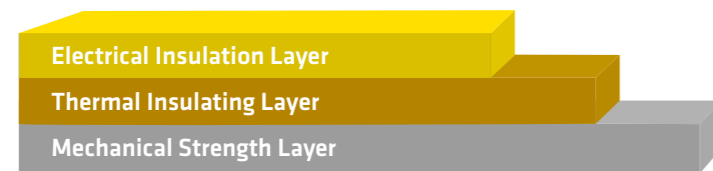
The ISOVOLTA GROUP stands for innovative products, visionary approaches and international production facilities.

Since 1949 our partners from more than 20 industries rely on ISOVOLTA's broad product portfolio with customized product developments. The passion for the combination of various materials with unique

properties to superior technical laminates and composites let the ISOVOLTA GROUP become to a leading international player of the industry.

Combination of properties

ISOVOLTA's laminates allow to unite required properties of various materials in one product. e.g. electrical insulation + thermal insulating + mechanical strength



ONE STOP SHOP

1 Raw material production

- ⚡ Mica Paper
- ⚡ Polymer extrusion
- ⚡ Special adhesives
- ⚡ ultra low thermal conductivity materials

2 Semi-finished material production

- ⚡ Lamination
- ⚡ Impregnation
- ⚡ Coating
- ⚡ Composites

3 Converting

- ⚡ Punching
- ⚡ Slitting
- ⚡ Folding
- ⚡ Machining
- ⚡ Kit of parts

4 Testing

- ⚡ Electrical
- ⚡ Mechanical
- ⚡ Thermal
- ⚡ Chemical



TAILOR-MADE SOLUTIONS FOR ELECTRICAL VEHICLES

The variety of ISOVOLTA's laminates ...

- ⚡ Mica
- ⚡ Adhesives
- ⚡ Various polymer films
- ⚡ Nomex aramid paper
- ⚡ Glass fabrics, felts and mats
- ⚡ Silica fabrics, felts and mats
- ⚡ Ceramic fabric, felts and mats

ISOVOLTA's laminates could be delivered as ...

- ⚡ Fully cured materials
- ⚡ Prepregs
- ⚡ Including adhesive layers

Having superb properties as ...

- ⚡ Electrical insulation up to 20kV
- ⚡ Thermal insulation 0.03 up to 1W/m*K
- ⚡ high CTI
- ⚡ high Temperature resistance > 1000°C lightweight
- ⚡ Mechanical strength



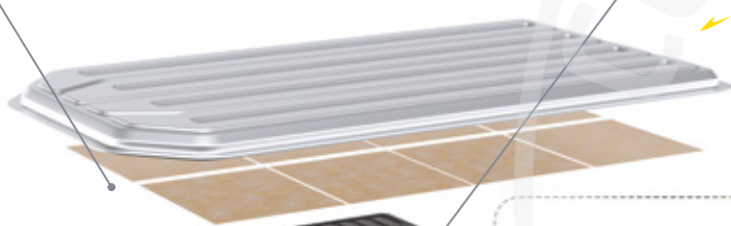
All information given here is based on currently available facts and on the results of experiments performed with all due care in our laboratories. It does not in any way reduce the responsibility of the user for carrying out further tests in order to ensure successful processing and use in specific applications.



THERMAL PROPAGATION MATERIALS

THERMIGA® HEATSHIELDS

- ⚡ Withstands temperatures over 1000°C at least 15 minutes
- ⚡ Proven thermal propagation protection



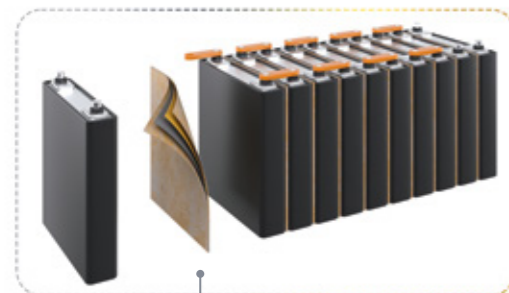
THERMIGA® BUSBAR MEMBRANES

- ⚡ Predetermined breaking points
- ⚡ Protection of neighbouring cells
- ⚡ High thermal resistance
- ⚡ Lightweight



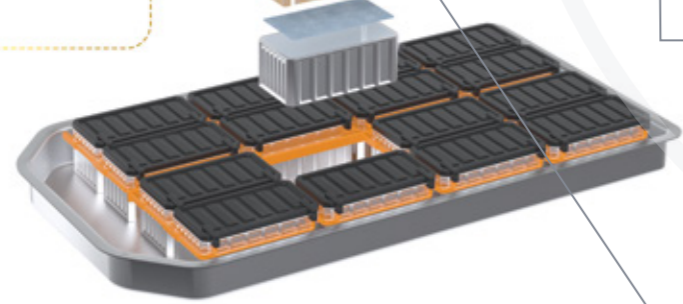
THERMIGA® BUSBAR INSULATIONS

- ⚡ High-voltage insulations
- ⚡ Electrical insulation during and after thermal runaway



THERMIGA® CELL SPACER

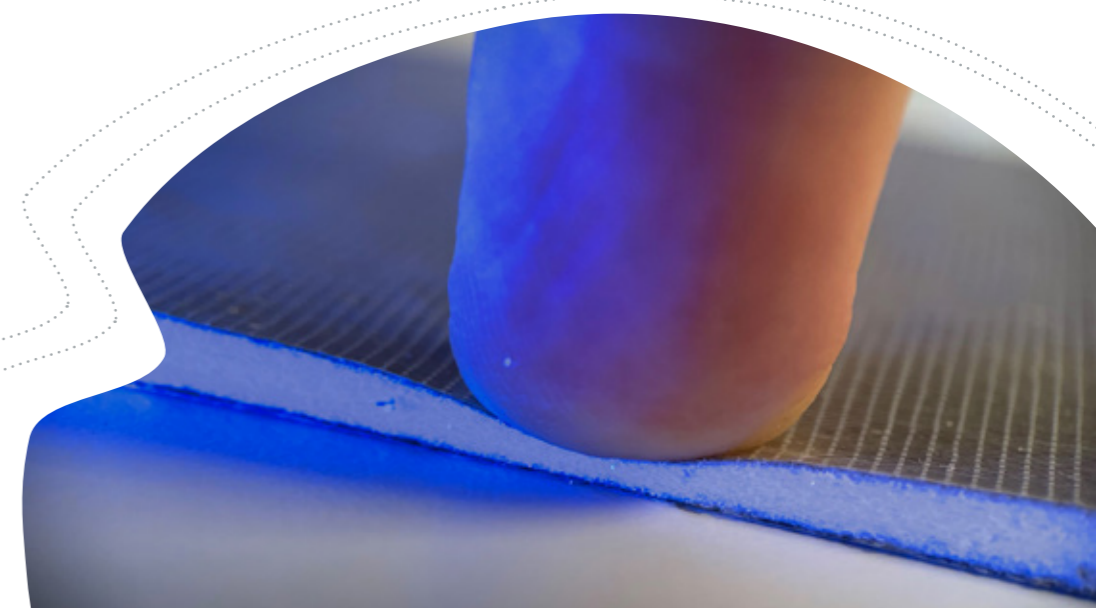
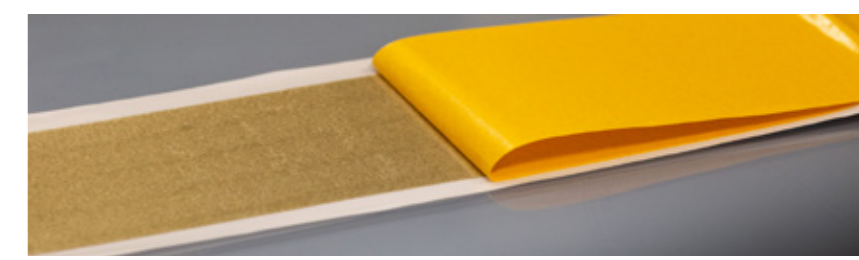
- ⚡ High thermal resistance
- ⚡ Ultra-low thermal conductivity
- ⚡ Adjustable compressive behaviour for maximal cell-capacity over lifetime
- ⚡ Delay or prevention of thermal propagation in between cells



THERMIGA® MODULE COVERS

- ⚡ Stress-tested module protection
- ⚡ Proven thermal and mechanical stability
- ⚡ Designed from multifunctional materials

- ⚡ *Thermiga P 9008*
- ⚡ *Thermiga P 9029*
- ⚡ *Thermiga P 9037*
- ⚡ *Thermiga P 9069*



Our design approach uses interchangeable materials, allowing flexibility and customization in the construction according to your requirements

Material	Construction	Nomex type	Film type	Thickness range	Temperature class	ATF resistant
	µm			mm	°C	

FOR LOW THERMAL STRESS AND ONLY AIR OR WATER-JACKET COOLING (e.g. mHEV) :

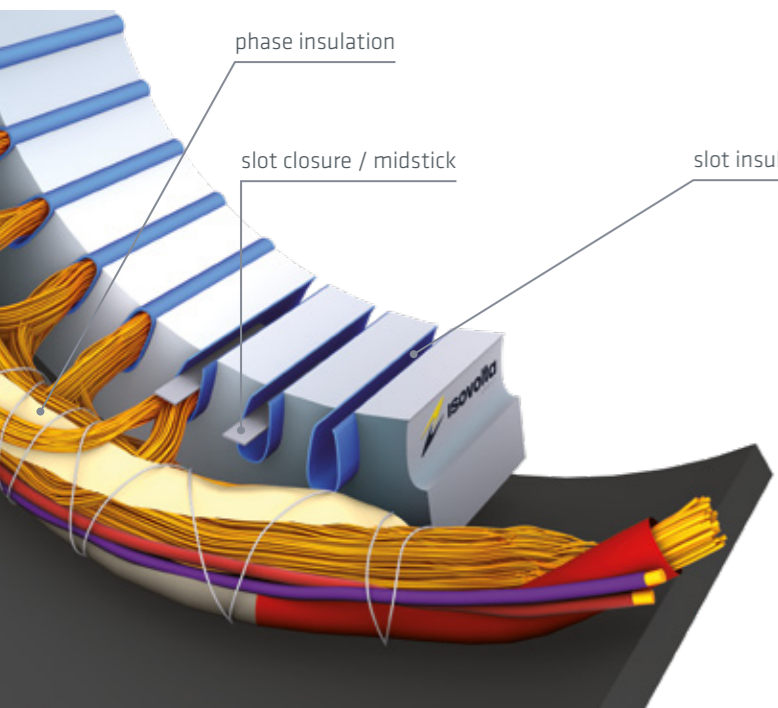
ISONOM® NMN A 3519	40 - X - 40	464	PET	0.11-0.35	180	x
ISONOM® NMN A 0881	50 - X - 50	464	PET	0.14-0.48	180	x
ISONOM® NMN A 8 0883	80 - X - 80	416	PET	0.19-0.53	180	x

FOR HIGH THERMAL STRESS AND/OR INCLUDING OIL COOLING (e.g. HEV, BEV) :

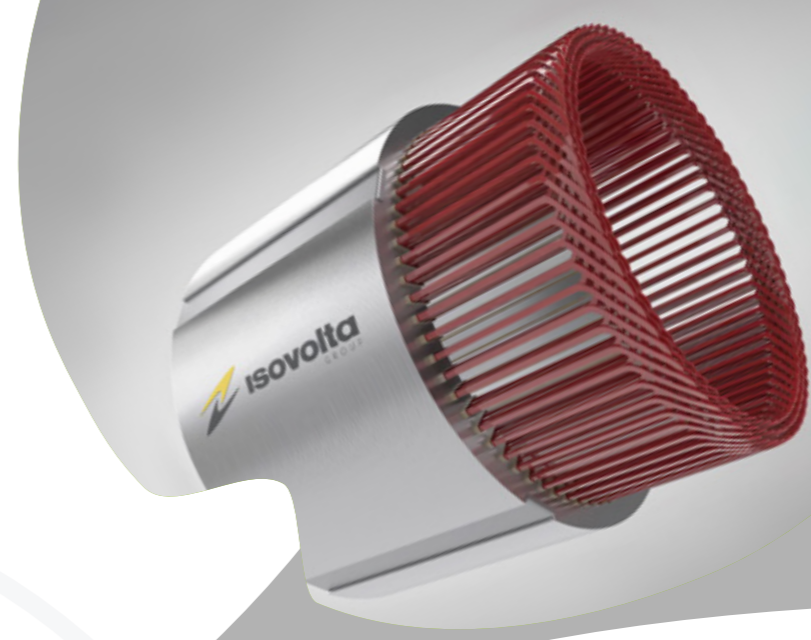
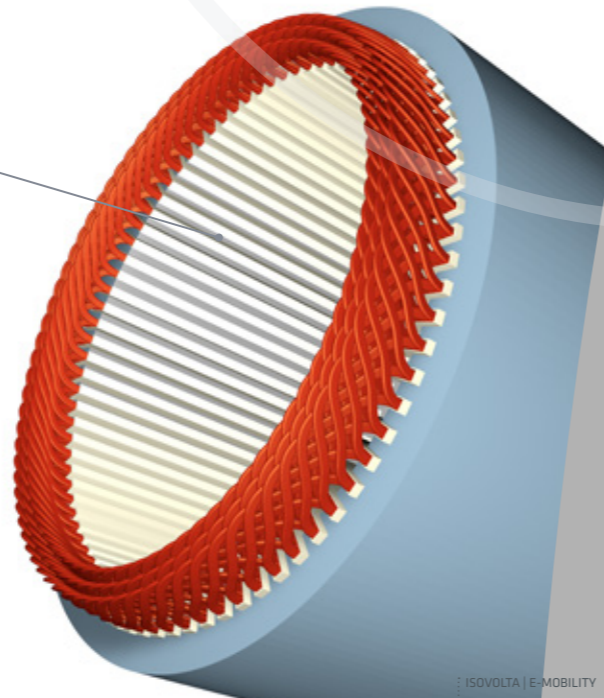
ISONOM® NKN A 6020	40 - X - 40	464	PI	0.11-0.21	200	⚡
ISONOM® NKN A 0885	50 - X - 50	464	PI	0.15-0.23	200	⚡
ISONOM® NKN A 8 0886	80 - X - 80	416	PI	0.20-0.30	200	⚡
NOMEX® 410	Discrete	410	-	0.05-0.76	220	⚡
NOMEX® 710	Discrete	710	-	0.18-0.25	220	⚡

All information given here is based on currently available facts and on the results of experiments performed with all due care in our laboratories. It does not in any way reduce the responsibility of the user for carrying out further tests in order to ensure successful processing and use in specific applications.

ROUND WIRE RANDOM WOUND WINDING STYLE



HAIRPIN WINDING STYLE



ELECTRICAL INSULATION MATERIALS

Product category	Additional Functionality	Benefits	TI	Application
			°C	
ISONOM® NKN A CR 2667	PD Resistant Properties	Lifetime under High Voltage Stress	180°-200°	Slot Insulation
ISONOM® NMN A 3804	PD Resistant Properties	464	180°	Slot Insulation
ISONOM® NKN A HTC	High Thermal Conductivity	Heat Transfer/ Weight Reduction	180°-200°	Slot Insulation
ISONOM® NMN-NKN A PH	Easy Fixation	Production Efficiency	180°-200°	Phase Insulation
ISONOM® NMN-NKN A with surface treatment	Low Friction	Production Efficiency	180°	Slot Insulation
ISONOM® NMN A 2035	High Resin absorption	Flexibility and impregnation	180°	Phase Insulation
VOLTAFLEX® GK	High Resin absorption	Flexibility and impregnation	180°-200°	Slot and Phase insulation

LIQUID EPOXY RESINS

Product Range	Additional Functionality	Benefits	TI	Processing	Stator	Rotor
			°C			
Ultimeg 2002	Single Part Epoxy Resin	Range of Viscosity, Universal applications	180°	Dip & Bake/Trickle/VPI	⚡	
Ultimeg 2220	Single Part Epoxy Resin	Excellent Chemical Resistance, High Tg	220°	Trickle/Roll Dip/VPI	⚡	⚡
Ultimeg 2021	Two Part Epoxy Adhesive	Room Temperature Cure, High Temperature Resistance	180°	Trickle/Dispense/Pour/Brush		⚡

Locations & Partners



Typing and printing errors reserved. Responsible for the content: ISOVOLTA Group, created by bigpen.at

ADDRESS

Headquarters

ISOVOLTA AG
IZ, NÖ – Süd, Strasse 3
2355 Wiener Neudorf
Austria
T: +43 5 9595 0
F: +43 5 9595 9050
headquarters@isovolta.com

www.isovolta.com