



**DEFENSOR-Flex®**

## DEFENSOR-Flex® ML-28

ML28 - 9U15E28006-35

IMDS available on request

The DEFENSOR-Flex® multilayers can consist of a customer-oriented tailor-made combination of high-tech needle mats, fabrics, high-performance plastic, mica and/or aluminium foils and self-adhesive finishes

As the basis of the DEFENSOR-Flex® multilayers of the HKO Heat Protection Group, needle mats are used, which are manufactured in a modern manufacturing process, without the addition of binders, by purely mechanical needling.

Alternative high-performance fabrics can be used for producing thinner solutions than with needle mats.

Applications of DEFENSOR-Flex® multilayers:

- Fire barrier for thermal runaway of lithium-ion batteries
- Protection of vehicle occupants in the event of an accident against possible fires
- Protection of adjacent battery cells and modules and delay the thermal runaway propagation of lithium-ion batteries
- Provide protection under battery cells and on the exterior walls from fires on the road or when transporting vehicles.
- Allowing pressure relief in the event of battery explosions, reducing the escape of highly toxic gases and prevent the spread of flames and sparks.
- Use when transporting defective batteries in special transport packaging

DEFENSOR-Flex® ML-28 can be delivered in rolls or customized as make-to-order-product, designed to functional requirements. Cut edge sealing optionally available.

Also available as DEFENSOR-Flex® ML-28-PSA, one side pressure sensitive adhesive.



**SAINT-GOBAIN**

# DEFENSOR-Flex® ML-28

DEFENSOR-Flex®

functional layers		3
width [mm]		max 1.000
construction		balanced
HAKOTHERM®-1200-mat		Silica
high temperature lamination		
both sides scrim reinforced mica		
operating temperature [°C]		-40 to 1.000
total area weight [g/sqm]		1.230
thickness [mm]		3,8
Specific heat [J/g°K]	at 20°C	0,764
	at 200°C	0,958
Electrical resistance [kV]	ASTM D149-97a, Meth. A	>12
CTI [V] (classification)	IEC 60112	600 (class I)

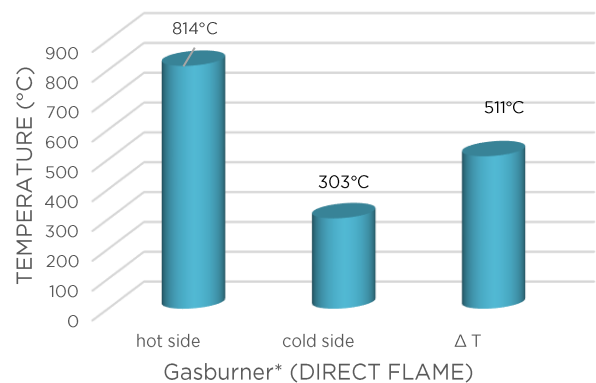
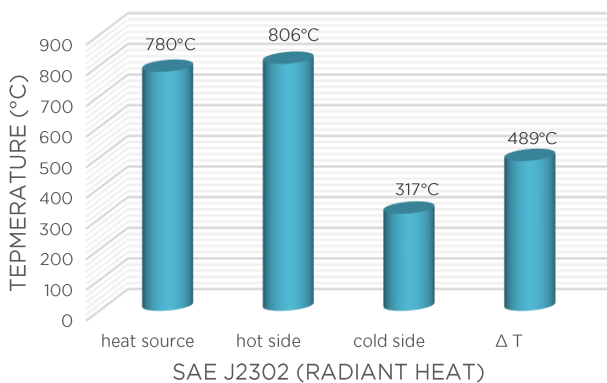
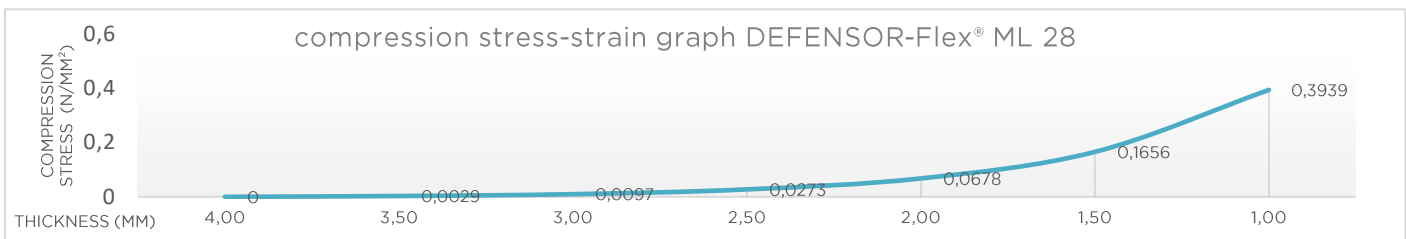
REACH / RoHS compliant

## Thermal Performance:

Tested according	SAE J2302	
	heat source	>780°C
	hot side	806°C
	cold side	317°C
	Δ T	489°C
burning behaviour	FMVSS-302	SE
	UL 94 V	0

## Thermal conductivity (GHP):

t in °C	50	100	200	300	400	500	600	700	800	900	1000
λ W/(m*K)	0,052	0,061	0,081	0,104	0,131	0,163	0,198	0,238	0,282	0,331	0,385



## TRUST THE EXPERTS | HKO

H.K.O. Isolier- und Textiltechnik GmbH

Zum Eisenhammer 54 • 46049 Oberhausen • Germany

Phone: +49 208 85994 0 • Fax: +49 208 85994 70

E-Mail: hko@saint-gobain.com • www.hko.de

### Remark:

This technical information sheet comprises technical specifications and product information according to the state of the art at the time of printing; it will lose validity on publication of a reprint. The technical data sheet applies in connection with other documents of HKO. The technical data of the product may be changed without prior notice. HKO reserves the right to make alterations of the technical data and the materials herein without prior notice in order to keep up with engineering progress and new developments. All technical information and recommendations are based on previous experience and are given after careful review. Due to the variety of influences during processing and application, these pieces of information/recommendations do not release the user from the obligation of own examinations and tests. The technical values are not intended for compiling specifications. The data and explanations in the technical data sheets of HKO in connection with this print do not constitute an acceptance of guarantee. Proposals for application are no assurance of the suitability for the recommended purpose and do not release the user from checking possible infringements of rights of third parties.

HKO does not assume liability for obvious misprints and compositor's errors.

SAINT-GOBAIN