



DEFENSOR-Flex® ML-39 /ML-39W

ML39 • 47MLE28030

ML39W • 47MLE28031

IMDS available on request

The DEFENSOR-Flex® multilayers can consist of a 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 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.

According to WHO guidelines, the fibres used are considered harmless to health as they are not respirable with a diameter of $\geq 6 \mu\text{m}$. DEFENSOR-Flex® multilayers offer extreme fire protection against the special features of lithium-ion fires. They also have very good cold resistance.

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-39 and ML-39W can be delivered in rolls or customized as make-to-order-product, designed to functional requirements.

Also available as DEFENSOR-Flex® ML-39-PSA or ML-39W-PSA, one side pressure sensitive adhesive.



ML-39 / ML-39W

functional layers	3
width [mm]	max 1.000
construction	balanced
THERMO-E-Glass fabric	E-Glass
TG1000/9L vermiculite	
treatment	
high temperature lamination	
both sides scrim reinforced mica	
operating temperature [°C]	-40 to 1.000
total area weight [g/sqm]	1.555
thickness [mm]	1,7
Electrical resistance [kV]	>12
CTI [V] (classification)	600 (class I)
REACH / RoHS	compliant

Thermal Performance:

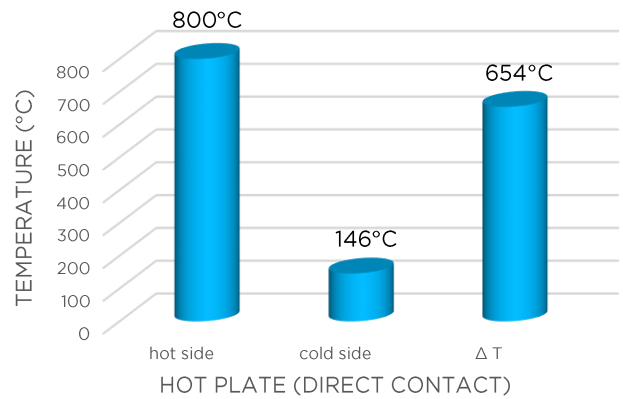
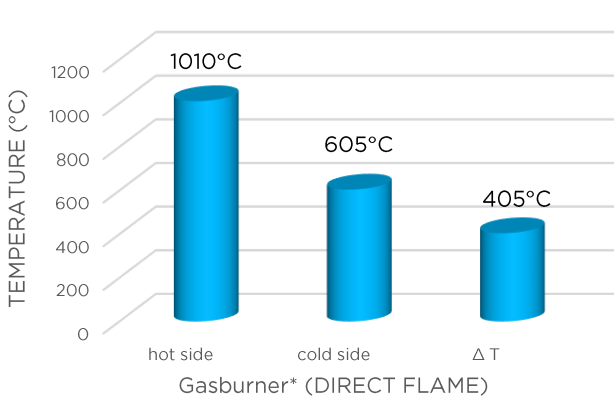
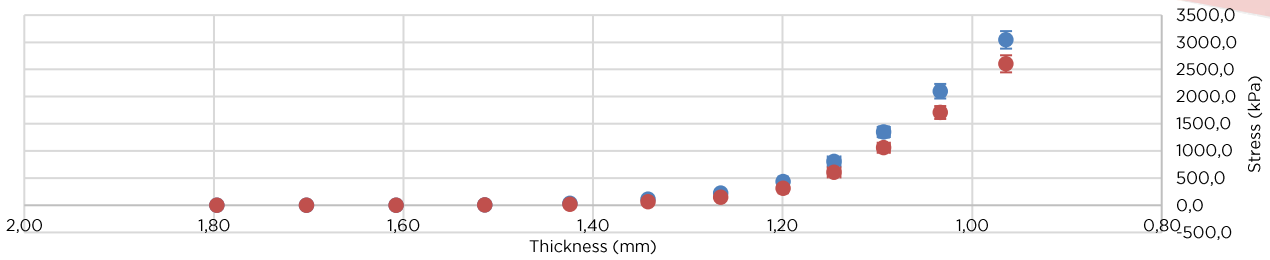
Tested according

	HKO FLAME TORCH TEST	HOT PLATE (@SGR NA)
hot side [°C]	1010	800
cold side [°C]	605	146
ΔT [°K]	405	654

burning behaviour

FMVSS-302	DNI
UL 94 V	0

● Compressive stress ● Relaxation stress



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

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