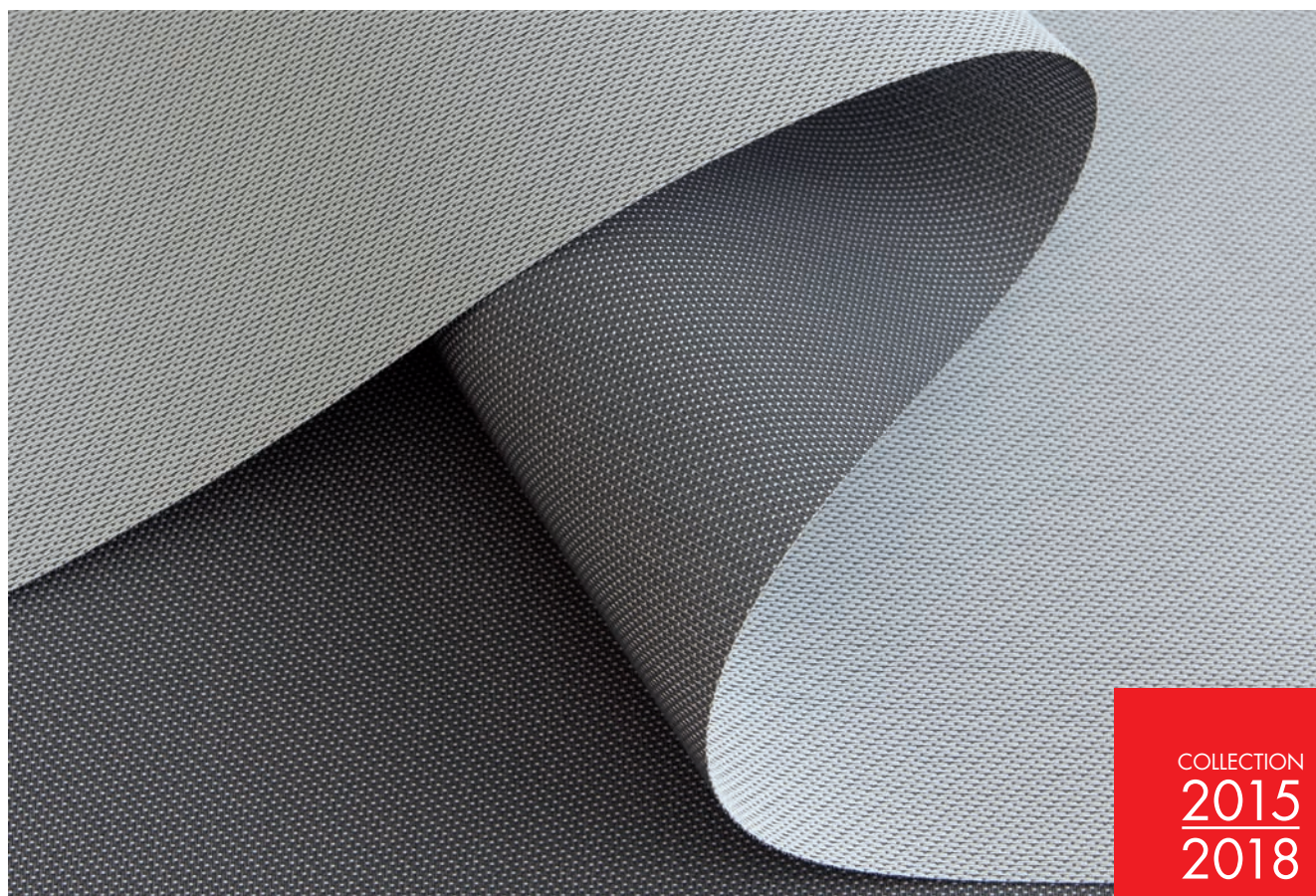


# 技 术 手 册 TECHNICAL BOOKLET



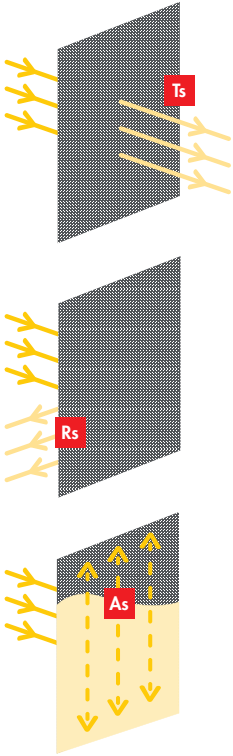
COLLECTION  
**2015**  
**2018**

INTELLIGENT FABRICS FOR SOLAR PROTECTION

梅 尔 美 — 智 能 遮 阳 织 物



# THERMAL FACTORS



Solar radiation is always partially transmitted through, absorbed or reflected by the fabric. The sum of all 3 equals 100.

**$T_s + R_s + A_s = 100\%$  of solar energy.**

**$T_s$**   
 **$\tau_e$**

**SOLAR TRANSMITTANCE:** proportion of solar energy transmitted through the fabric. A low percentage means the fabric performs well at reducing solar energy.

**$R_s$**   
 **$\rho_e$**

**SOLAR REFLECTANCE:** proportion of solar radiation reflected by the fabric. A high percentage means the fabric performs well at reflecting solar energy.

**$A_s$**   
 **$\alpha_e$**

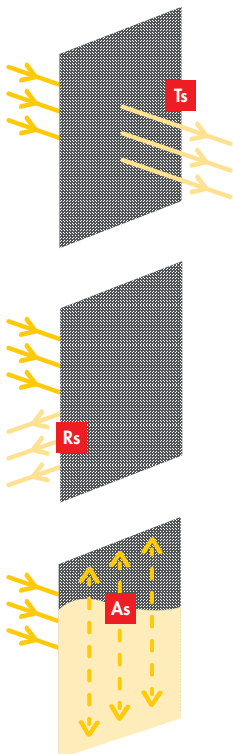
**SOLAR ABSORPTANCE:** proportion of solar radiation absorbed by the fabric. A low percentage means the fabric absorbs little solar energy.

**g<sub>tot</sub>**

**TOTAL SOLAR FACTOR:** percentage of solar energy which actually penetrates into a room through the blind and glazing. A low value means good thermal performance.



# 热学系数



太阳热辐射总是部分穿透织物，部分被织物吸收和反射。这三部份比例总和为100%。

**$T_s + R_s + A_s = 100\%$  太阳辐射热。**

**$T_s$**   
 **$\tau_e$**

**透过率(SOLAR TRANSMITTANCE):** 显示透过织物进入室内的太阳辐射热的比率。数值越低，织物降低太阳辐射热的性能越好。

**$R_s$**   
 **$\rho_e$**

**反射率(SOLAR REFLECTANCE):** 显示织物向外反射太阳辐射热的比率。数值越高，织物反射太阳辐射热的性能越好。

**$A_s$**   
 **$\alpha_e$**

**吸收率(SOLAR ABSORPTANCE):** 显示织物吸收太阳辐射热的比率。数值越低，织物吸收太阳辐射热就越少。

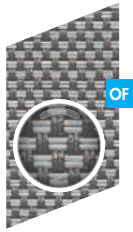
**g<sub>tot</sub>**

**总遮阳系数(TOTAL SOLAR FACTOR):** 表示透过遮阳织物和玻璃后进入室内的太阳辐射热。数值越低，隔热效果越好。





# OPTICAL FACTORS



OF

Co

**OPENNESS FACTOR (Tvnn):** relative area of the openings in the fabric (hole). It is considered as independent of the colour. For fabrics with the same weave, it should be measured using the darkest colour in the range.

Tv

TL

**VISIBLE LIGHT TRANSMITTANCE (Tvnh):** total percentage of light radiated through the fabric over a wavelength of 380 to 780 nm (nanometers), called the visible spectrum (total illumination).

Rv

$\rho_v$

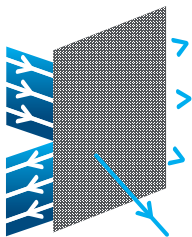
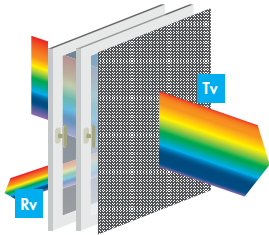
**VISIBLE LIGHT REFLECTANCE (Rvnh):** proportion of light reflected by the fabric.

Tdif

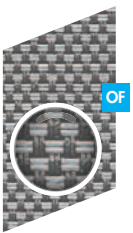
**DIFFUSE TRANSMISSION FACTOR :** correlation of the two factors above:  $Tdif = Tv - OF$ . Tvndif is indicated as **Tvndif** for the aspects of glare and shape recognition (outward visibility / night privacy). A low figure shows a better visual comfort. However, for natural light control, it is indicated as **Tvdifh**. It is used to ascertain a fabric's light diffusion capacity. A high figure means more natural light.

$$Tv = Tvnh = Tvnn + Tvndif$$

The regulations value the gtot factor for thermal comfort and Tv for visual comfort.



# 光学系数



OF

Co

**开孔率 (Tvnn):** 面料上孔隙的相对面积。不受颜色影响，对于相同织法的面料，必须用系列中最深色的用于测试。

Tv

TL

**可见光穿透率 (Tvnh):** 显示波长在380-780nm(纳米)间的可见光线穿透织物的比率 (总光照度)。

Rv

$\rho_v$

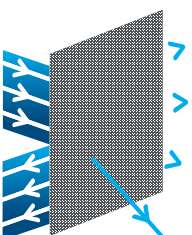
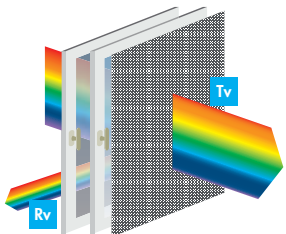
**可见光反射率 (Rvnh):** 显示织物向外反射可见光的比率。

Tdif

**漫透射系数 :** 上面提到的两个系数相关联:  $Tdif = Tv - OF$ . 在表示眩光和形状识别 (透景/夜隐私) 方面, 它被标识为 **Tvndif**, 数值越低视觉舒适度越好; 然而, 对于自然光的控制, 它标识为 **Tvdifh**. 它用于确定织物的光扩散能力, 数值越高自然光越多;

$$Tv = Tvnh = Tvnn + Tvndif$$

总遮阳系数 (gtot) 用于表示热舒适度, 透光系数 (Tv) 用于表示视觉舒适度







# ZOOM EN 14501

■ Thermal and optical values, as defined in the European standard EN 14501 (Blinds and Shutters, Thermal and Visual Comfort, Performance Characteristics and Classification), are used to measure the performance of a fabric's solar protection properties. The standard is based on a number of criteria and establishes various comfort classifications:

- for thermal comfort: the solar factor
- for visual comfort: control of opacity, privacy at night, vision to the exterior, glare control, use of natural light, colour rendering.

**There are 5 levels of performance classification:**

- ① very little effect ② little effect ③ moderate effect  
④ good effect ⑤ very good effect

■ The EN 14501 standard defines the total solar factor **gtot** (fabric + glass) as the most important property for **thermal comfort** and the **Tv value** for **visual comfort**.

■ To calculate the total solar factor, two calculation standards are used:

**EN 13363-1 – the Simplified method** – calculates approximate values for the total solar energy transmittance (gtot) of glazing and shading combined. Inputs for this calculation are solar integrated optical and thermal parameters of glazing and shading. The calculation procedure is straightforward and can easily be performed in a spreadsheet. The results of this calculation are generally higher (up to 0.1) than the more precise values obtained from EN 13363-2.

**EN 13363-2 – the Detailed calculation method** – calculates more precise values for the total solar energy transmittance (gtot) of glazing and shading combined. This calculation is based on the spectral transmission and reflection data of the solar protection device and the glazing. The calculation requires specialized software to solve the non-linear system of equations. The outcomes of calculations according to EN 13363-2 are suited as input for cooling load calculations.

■ The **Textinergie®** tool ([www.textinergie.org](http://www.textinergie.org)) helps quantify the **energy savings where textile solar protection** is used, by simply specifying the geographical situation, building's orientation, glazed surface of the room, blind position and colour of the fabric.

■ 热学和光学系数，由欧标EN 14501定义（窗帘和百叶，热舒适和视觉舒适，性能特性和分级），用来评估织物遮阳性能，该标准基于若干个标准，建立多种不同的舒适分级：

- 热舒适：太阳热系数
- 视觉舒适：光线控制、夜晚隐私、透景效果、眩光控制、自然光利用、色彩表现

**有5个等级的性能分级：**

- ① 效果非常小 ② 效果小 ③ 效果适度 ④ 效果好 ⑤ 效果非常好

■ EN 14501 标准定义总遮阳系数gtot（织物+玻璃）为最重要的热舒适特性，而透光系数Tv为视觉舒适的最重要特性。

■ 计算总遮阳系数，会用到两个计算标准：

**EN 13363-1 – 简易计算方法** – 计算穿透玻璃和窗帘的总太阳能的近似值。这种计算输入的太阳通过玻璃和窗帘的光热参数。计算过程简单直接，能简单在电子表格中完成。这种计算的结果通常会比由EN 13363-2计算得出的精确值要高（达到0.1）。

**EN 13363-2 – 详细计算方法** – 用于更精确地计算穿透玻璃和窗帘的总太阳能 (gtot)。这种计算基于光谱对遮阳设备和玻璃的透射和反射。这种计算要求专门的软件去解决非线性方程组。EN 13363-2的计算结果适合被输入作为冷却负荷计算。

■ **Textinergie®**工具([www.textinergie.org](http://www.textinergie.org))帮助我们量化出因织物用于遮阳而节约的能源，依靠简单的注明地理位置、建筑方位、房间的玻璃表面、窗帘的位置和织物的颜色。

## THERMAL AND OPTICAL FACTORS of reference glazings - EN 14501

### 基准玻璃热学和光学系数 — EN 14501

Reference glazings / 基准玻璃	Thermal transmittance 热穿透系数 W/(m²K)	Solar Factor 遮阳系数	Light Transmittance 透光系数	Light Reflectance 光反射系数
	U	g	Tv	Rv
A: clear single glazing / 透明单层玻璃	5,8	0,85	0,83	0,08
B: clear double glazing / 透明双层玻璃	2,9	0,76	0,69	0,14
C: low emission double glazing / 低辐射率双层玻璃	1,2	0,59	0,49	0,29
D: reflective double glazing with a low emission layer 低辐射涂层的反光双层玻璃	1,1	0,32	0,27	0,29



# ADVICE AND CARE INSTRUCTIONS

## 织物维护指南

■ **STORAGE CONDITIONS:** The fabric should always remain in its native outer packaging (plastic film, cardboard mandrel) during storage, and/or moving. It is better to place the rolls of fabrics in individual cardboard tubes. The rolls of fabric should be stored horizontally, but not piled up, in a place where the temperature and level of humidity are as constant as possible. Long-time storage under high temperature ( $> 45^{\circ}\text{C}$ ) may cause fading of colours.

The fabric should never be folded. For long-term storage, it is strongly inadvisable to leave rolled or folded panels on top of each other.

■ **储存方式：**在存储或移动过程中，面料应始终存放在其原始包装内(塑料薄膜，纸芯)。将每卷面料单独存放在纸筒内为佳，并将其水平存放于尽可能恒温恒湿的环境中，切不可堆叠。长时间存放于高温下( $> 45^{\circ}\text{C}$ )可能会导致面料褪色。

面料切忌折叠。如需长时间存放，强烈不建议将卷起或折叠的面料堆叠在一起。

■ **RECOMMENDATIONS FOR HANDLING:** For an easier handling of wide width fabric and to avoid having marks on it, Mermet recommends to roll the panel(s) onto a tube at each stage of the making-up.

For fabrics with a white acrylic coating on one side (Kibo 8500, Flocké 11201), it is recommended to handle it on a clean dust-free and dry surface. Screen Nature Ultimetal, Satiné 5500 Low E and 5500 Métal: As for all metallised fabrics, cotton gloves must be worn during the making-up process to prevent footprint on the metal side; it is advised not to use this fabric in a humid environment.

■ **加工建议：**为使宽幅面料方便加工，并避免产生各种痕迹，梅尔美建议在加工的各个关节都将帘布卷在纸管上。

加工背面具有白色遮光涂层的面料(如Kibo 8500, Flocké 11201)，建议将其放置在洁净干燥的台面上。针对SNU、Satiné 5500 Low E和5500 Métal这类具有金属背层的织物，加工时应戴棉手套以避免手印留于面料表面；同时，也不建议在潮湿环境中使用此类面料。

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■ **THE FOLLOWING CARE INSTRUCTIONS APPLY TO ALL OF OUR FABRICS / 以下维护须知适用于所有梅尔美面料：**

- Remove dust with vacuum cleaner or compressed air.
- Do not scrub.
- Do not use solvents or any abrasive substance that might damage the coating of fabric.
- All types of chemicals will cause permanent damage to the fabric. Therefore, if cleaning windows etc., the blind will have to be raised to avoid any direct or indirect spray or splatter of chemicals on the fabric.
- 建议使用鸡毛掸子或压缩空气除去灰尘。
- 请勿搓洗
- 请勿使用可能破坏织物表面涂层的溶剂或研磨物质清洗面料。
- 所有类型的化学物质都会对面料产生永久性地破坏。因此，如要清洗窗户，请务必将遮阳帘收拢以避免任何直接或间接对织物的喷射或飞溅。同时，请勿对织物使用溶剂、商用清洁剂、化学品或任何研磨类清洁剂。

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## ■ SCREEN VISION - SCREEN DESIGN - SCREEN THERMIC - EXTERNAL SCREEN CLASSIC

### ■ ACOUSTICS

- Clean with a sponge or soft brush dipped in soapy water (a high pressure water spray can be used at a distance on external blinds).
- Rinse with clear water.
- Leave the blind down until completely dry.
- 以海绵或软刷蘸取皂液清洗(户外遮阳帘可适用高压水柱 以适当距离冲洗)。
- 以净水冲洗
- 将帘布自然垂放，直至其完全晾干

## ■ Satiné 5500 LOW E – 5500 MÉTAL

- Handle the fabric with care (clean and dry hands, and use of gloves)
- 小心维护面料(保持手部清洁干燥，建议戴手套)。

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## ■ SCREEN NATURE – SCREEN NATURE ULTIMETAL

- Handle the fabric with care (clean and dry hands, and use of gloves).
- Pay much attention to the metalized side of Screen Nature Ultimetel.
- Regular light dusting with feather duster is suggested. A hand-held vacuum with low suction may also be used. When vacuuming, avoid pulling or stretching the fabric.
- Use a plant-based eraser gently to remove superficial stains.
- When needed, and exclusively for metalized side for Screen Nature Ultimetel, fabric can be spot cleaned by gently blotting with a very soft humid cloth.
- Leave the blind down until completely dry.
- 小心维护面料(保持手部清洁干燥，建议戴手套)
- 加工金属背层的SNU面料时须格外注意。
- 推荐适用轻质鸡毛掸子; 低吸力手提式吸尘器也可以使用, 吸尘时，应避免拖拽面料。
- 可使用植物性橡皮轻柔地擦去浅渍。
- 如需清洁SNU面料的背银面，可使用极柔软的湿布进行点触式擦拭。
- 将帘布自然垂放，直至其完全晾干

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## ■ BLACKOUT 100%

- Handle the fabric with care (clean and dry hands, or use of gloves).
- For internal blinds, Kibo 8500 – Flocké 11201, use a plant-based eraser to remove superficial stains.
- For external blinds, Satiné 21154, clean with a sponge or soft brush dipped in soapy water. Rinse with clear water. Leave the blind down until completely dry.
- 小心维护面料(保持手部清洁干燥，建议戴手套)
- 针对室内用全遮光帘布Kibo 8500 – Flocké 11201，可使用植物性橡皮轻柔地擦去浅渍。
- 针对室外用全遮光帘布Satiné 21154，以海绵或软刷蘸取皂液清洗。净水冲洗后，将帘布自然垂挂，直至其完全晾干。



## 5 YEAR WARRANTY / 5年质保

The solar protection fabrics in the Mermet® collection, made of coated fibreglass yarns or treated fibreglass, are covered by a warranty of five years.

This warranty can be applied only under normal conditions of use and care of the fabrics as described in the technical specifications and according to the maintenance advice of Mermet in its 2015-2018 catalogue.

Mermet®系列中由经覆裹的玻璃纤维纱线和经涂层处理的玻璃纤维织成的织物，承诺5年的质保期。

此质保期适用于面料正常使用的条件下，且面料的维护符合技术指标中说明的方法及梅尔美2015-2018样本中的建议。

### ■ TERMS OF APPLICATION

The warranty is subject to full payment of the invoice and comes into effect on the date of purchase of the fabrics; it covers:

- breaking strength: equal to at least 70% of its original value according to standard ISO 1421
- the fire-resistance classifications specified in the product brochures of the 2015-2018 MERMET® collection
- uniform fading due to ultraviolet radiation
- colour fastness to light: all colours of Mermet® fabrics (except White for which colour fastness is not guaranteed) have a value of 7/8 on a scale of 1 to 8 according to the standard ISO 105-B02.

- Under this warranty, Mermet undertakes to replace free of charge the panels of fabric accepted as defective, after inspection and agreement by its quality department. For this purpose, the panels of fabric must be made available to Mermet. In case of replacement, the duration of the warranty is not extended and is still effective as from the date of purchase. All claims must be submitted with the invoice of the fabric purchased and sent, within 30 days after the defect has been noticed, by registered letter to:

**Turnils-Mermet(shanghai)Co.,Ltd.**

After sale service

NO.2805# , Zhong Chun Road ShangHai

**The warranty does not cover defects or deterioration due to the following reasons:**

- transport or storage conditions
- poor preparation or making up
- improper mechanisms for use of the fabric
- installation of the mechanism
- normal wear and tear or ageing of the fabric
- accidents, bad weather or neglect for which Mermet cannot be held liable: high winds, atmospheric pollution, accidental discharges.

Furthermore, the warranty does not cover the costs of labour, dismantling, reassembly and transport. Mermet accepts no liability if the product is used for applications for which it was not intended.

### ■ 质保条款

针对全额支付的发票，质保期自采购日起生效：

- 断裂前伸长：相当于至少70%的原始数据，参考依据 ISO 1421
- 阻燃等级：根据MERMET®2015-2018系列产品样册中的规定
- 因紫外线造成的褪色
- 日照色牢度：梅尔美所有颜色的面料（除白色外）色牢度数值为7（数值范围为1到8），参考依据 ISO 105-B02标准。

质保期内，梅尔美保证免费替换经法国质量部门检测确认存在质量问题的面料。如需替换，不延长质保期限，仍自采购日起生效。

所有质量投诉必须随同采购发票一起于发现质量问题后的30天内以书面形式递交至：

特奈窗饰材料(上海)有限公司

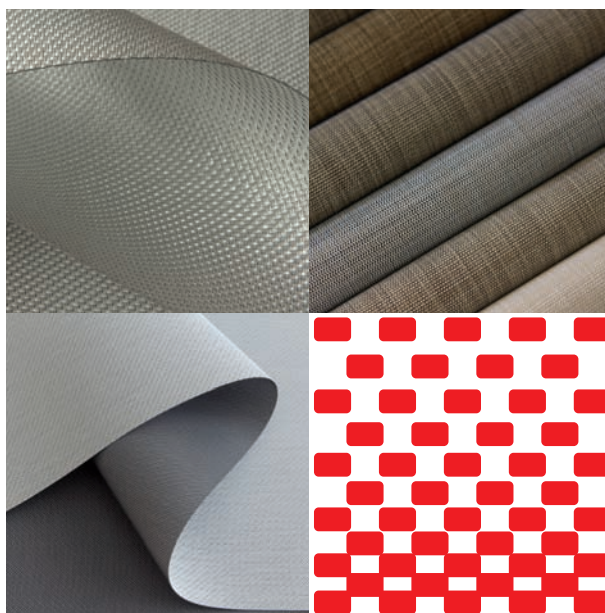
销售服务部

上海中春路2805号

**免责范围：因以下原因引起的质量问题，不适用于此质保期**

- 运输或储存条件
- 不适当加工或制作
- 使用不适当的机构或安装
- 正常磨损和撕破，或面料老化
- 对于事故，恶劣的天气或疏忽：强风，大气污染，意外褪色等，梅尔美不负有责任。

此外，质保不包含人工成本及拆除，重装和运输的费用。



[www.sunscreen-mermet.com](http://www.sunscreen-mermet.com)



58, chemin du Mont Maurin - FR-38630 Veyrins - Tel. +33(0) 474 336 615 - Fax +33(0) 474 339 729

This brochure must be read and interpreted in accordance with the General Terms & Conditions of Sale of MERMET SAS, with which it forms an indissoluble whole. The General Terms & Conditions of Sale that are current at any time are those contained on the MERMET SAS website at the following address: [www.sunscreen-mermet.com](http://www.sunscreen-mermet.com).