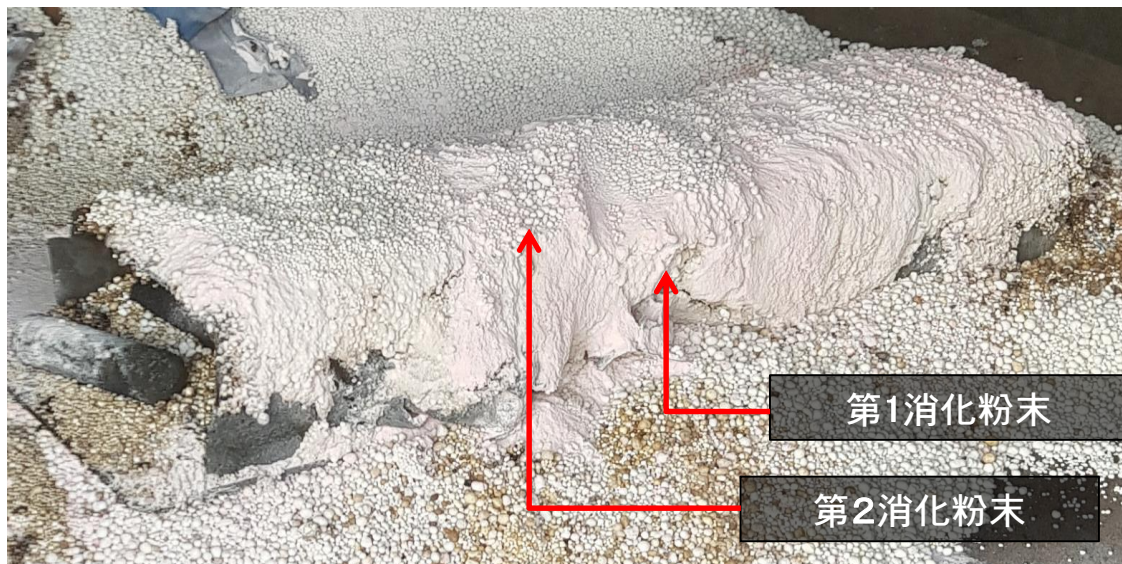


クレオマット/パッド Cleo Mat/Pad



クレオマット/パッドは、
リチウム電池、金属火災鎮圧用であり、
火災鎮圧原理は、冷却、窒息です。



*第1消化粉末(第一リン酸アンモニウム、石粉、バックカーボン等):
冷却効果がある。

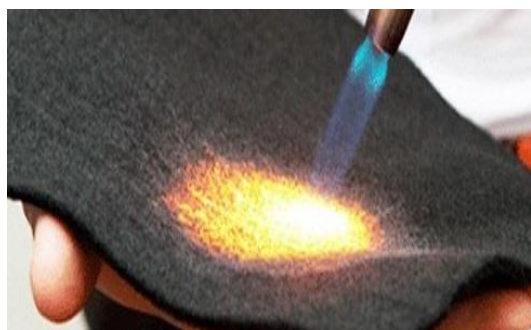
*第2消化粉末(中空膨張ガラスなど):
700° C以上で溶けてガラス皮膜を形成し、酸素の供給を遮断、
窒息消化の効果を出す。内部気孔は、有害ガス吸収する。

クレオマット(Cleo-Mat)は、

大型リチウム電池と金属火災(D級)鎮圧用です。



クレオマット (Cleo-Mat): 耐火繊維カバー



- ▶原産地:ドイツ
- ▶重量:285~315 g/m²
- ▶厚:2.85~3.15 mm
- ▶密度:0.1 g/cm³
- ▶耐火温度:1,000° C(最高:1500° C)

耐火繊維カバー:皮膚刺激がなく、人体に無害な繊維として最高1,500° Cで火に燃えず、消火薬剤飛散を防止し、リチウムイオン電池の爆発時のバッテリーセル(Cell)の破片の飛散を防止します。

クレオマット(Cleo-Mat)使用場所

リチウム電池取り扱い場所



エネルギー貯蔵装置



電気自動車充電所



バッテリーの保存場所



研究室、実験室



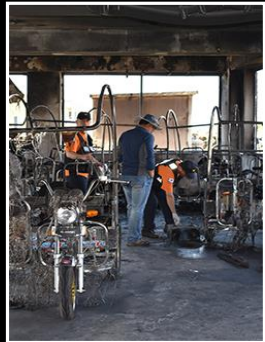
キックボードスクーター



ゴルフカート



ドローン、RC玩具



電動自転車、車椅子

可燃性金属取り扱い場所



金属加工工場



金属鑄造工場



金属粉保存場所



研究室、実験室

クレオパッド(Cleo-Pad)は、
小型リチウム電池と金属火災(D級)鎮圧用です。



クレオパッド(Cleo-Pad)は、

家庭用寝具(枕、クッション)としても使用することができます。



クレオパッド(Cleo-Pad)使用場所

携帯電話&補助バッテリー火災



電動キックボード火災



RC(ドローンなど)玩具火災



仕様



商品名	品番	数量	質量	体積	寸法(cm)
クレオマット	CLM34	1	3.4 kg	12.0 L	30*40*10
クレオパッド	CLP33	1	3.3 kg	12.0 L	30*40*10

消火薬剤火災鎮圧証明書



認証機関

MPA DRESDEN (ドイツの火災試験認証機関)


Certification-NO. 20140494-2

リチウムイオン(リチウム系)電池の火災 - 火災鎮圧性能認証

Certification-NO. 20140494-1

可燃性金属 (D級金属) 火災 - 火災鎮圧性能認証

Bauaufsichtlich anerkannte Prof., Überwachungs- und Zertifizierungsstelle
Prüfstelle für Feuerlöschmittel und -geräte
DIN EN ISO/IEC 17025 D-PL-17819-01-00
DIN EN ISO/IEC 17065 D-ZE-17819-01-00
DIN EN ISO/IEC 17020 D-IS-17819-01-00
ZLS-GS-0066
Notified Body no. 0767



MPA Dresden GmbH • Fuchsmühlenweg 6F • D 09599 Freiberg

Dennert Poraver GmbH
Mozartweg 1
96132 Schlusselfeld

Freiberg, 23rd May 2014
Author: Herr Romberg
Telephone: +49 (0)3731 203 93 154
Fax: +49 (0)3731 203 93 110
eMail: h.romberg@mpa-dresden.de

Your order dated 2014-03-24 to test the extinguishing capability of mineral fire extinguishing granulate based on foamed glass (EXTOVER)

Test report no. 20140494-2

Mineral fire extinguishing granulate EXTOVER
Fire extinguishing tests with EXTOVER as the fire extinguishing medium on the fire objects lithium primary battery and lithium-ion battery (12 x pouch cells)


Customer: Dennert Poraver GmbH
Mozartweg 1
96132 Schlusselfeld

Subject matter of test: The use of EXTOVER as fire extinguishing medium for the fighting of fires on lithium-ion batteries

Test method: Fire extinguishing test with EXTOVER on lithium-ion batteries in accordance with a test plan without Standard specification

Laboratory: MPA Dresden GmbH
Officially recognised test station for fire extinguishing media and equipment
Fuchsmühlenweg 6F, 09599 Freiberg, Germany

Report: This test report comprises 10 pages including 5 page appendix





MPA Dresden GmbH
Fuchsmühlenweg 6F
09599 Freiberg
www.mpa-dresden.de


Geschäftsführer: Thomas Hübler
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Fax +49(0)3731-20393-110
E-Mail: info@mpa-dresden.de

Amtsgericht Chemnitz HRB 28266
Steuernummer: Z20114/03364
USt-IdNr: DE291271296

Sparkasse Mittelsachsen
Poststraße 1a
09599 Freiberg
IBAN DE68 870520003115024672
BIC: WELADED1FGX

Bauaufsichtlich anerkannte Prof., Überwachungs- und Zertifizierungsstelle
Prüfstelle für Feuerlöschmittel und -geräte
DIN EN ISO/IEC 17025 D-PL-17819-01-00
DIN EN ISO/IEC 17065 D-ZE-17819-01-00
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ZLS-GS-0066
Notified Body no. 0767



MPA Dresden GmbH • Fuchsmühlenweg 6F • D 09599 Freiberg

Dennert Poraver GmbH
Mozartweg 1
96132 Schlusselfeld

Freiberg, 23rd May 2014
Author: Herr Romberg
Telephone: +49 (0)3731 203 93 154
Fax: +49 (0)3731 203 93 110
eMail: h.romberg@mpa-dresden.de

Abstract of test report no. 20140494-1

Fire protection system EXTOVER
Fire extinguishing tests with EXTOVER as fire extinguishing medium on the fire objects magnesium and sodium (fire classification D) as described in the Standard DIN EN 3-7:2007.

Customer: Dennert Poraver GmbH,
Mozartweg 1, 96132 Schlusselfeld

Laboratory: MPA Dresden GmbH
Officially recognised test station for fire extinguishing agents and equipment
Fuchsmühlenweg 6F, 09599 Freiberg, Germany


Summary:

In fire extinguishing tests with fire objects (see above) as described in the Standard DIN EN 3-7:2007, EXTOVER was used for extinguishment by deposit method. The extinguishing medium EXTOVER was deposited onto the test fire objects after the specified fire period using suitable apparatus so that a complete covering or envelopment took place. The effectiveness of EXTOVER is based on isolation (envelopment) and smothering of the fire source.


The result of the extinguishing tests establishes that all fire objects tested were successfully extinguished with EXTOVER. The suitability of EXTOVER for fire extinguishing purposes based on the tests performed is hereby confirmed

General notes:
Only those facilities and materials as stated in this report have been used for the tests. The test results relate solely to the specimen tested. The publishing of reports and references to tests for the purposes of advertising require the written consent of MPA Dresden GmbH in each individual case.

23rd May 2014



Dipl.-Ing. Dittrich
Test laboratory manager





MPA Dresden GmbH
Fuchsmühlenweg 6F
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www.mpa-dresden.de

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Amtsgericht Chemnitz HRB 28266
Steuernummer: Z20114/03364
USt-IdNr: DE291271296

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Poststraße 1a
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IBAN DE68 870520003115024672
BIC: WELADED1FGX






消火薬剤環境の証明書




認証機関	IBR (ドイツ: 建築生物学研究所)
Certification-NO. 3018-977	
人体に無害と安全性認証	

認証機関	BLAUER ENGEL (ドイツ: 連邦環境庁)
環境に配慮し、マークBlue Angel"Der Blaue Engel"を受ける	
製造、使用、廃棄の過程で環境と健康に害を及ぼさない	



 Institut für **Baubiologie** Rosenheim GmbH
Certificate of Award
 Based on the excellent test results, the Seal of Approval


 is hereby awarded to

Dennert Poraver
 D-96132 Schlüsselfeld
 for the tested product


Feuerlöschmittel
(Certification-No. 3018 - 977)

by the Institut für Baubiologie Rosenheim GmbH.


 Reimut Hentschel, Managing Director
 Rosenheim, May 2018

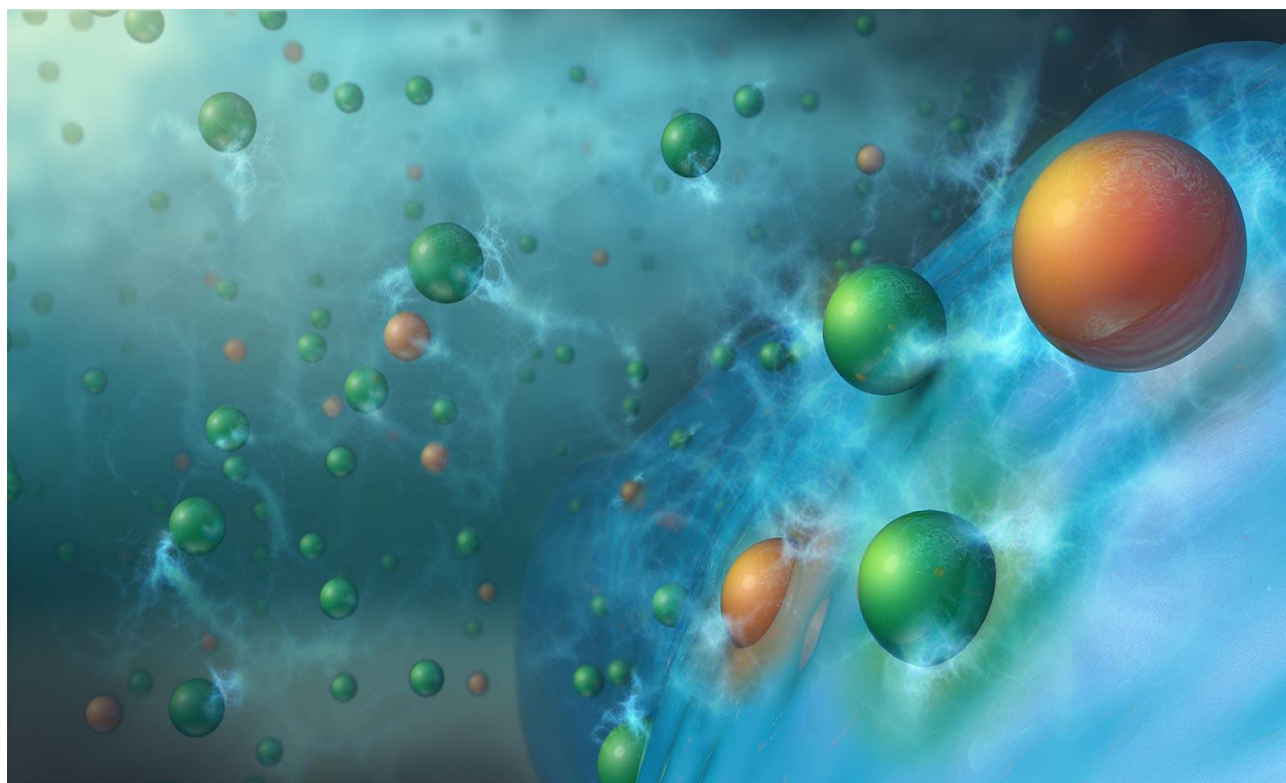
The Seal of Approval is awarded for 2 years. In the interest of consumers, follow-up testing of the products must be performed in due time before the Seal of Approval expires. The applicant will have to reapply for these tests.

IBR Institut für **Baubiologie** GmbH D-83022 Rosenheim Münchener Straße 18
 Tel. +49 (0)8031 / 3675-0 Fax +49 (0)8031 / 3675-30 www.baubiologie-ibr.de


www.blauer-engel.de/uz132




9.消火薬剤電解液吸収証明書



認証機関

BAM (連邦物質研究所)

リチウム電池電解液吸収認証

 <p>BAM Bundesanstalt für Materialforschung und -prüfung D-12205 Berlin Telefon: 0 30/81 04-0 Telefax: 0 30/8 11 20 29</p>		Order number:	5.4/013/14
<p>Sorption Capacity Determination</p>		Standard:	BS 7959-1:2004
Reference	5.4/013/14	Department:	5.4 Ceramic Process Engineering and Biomaterials
Copy	1 von 2	Auditor:	Mr. Ulf Linow
Client	Celono Dr.-Ing. Thomas Forchert Helmholtzstr. 2 10587 Berlin	Test date:	2014-09-21
Order date	2014-08-27	Test Material:	Expanded Glass EXTOWER
Mark	-	Measuring fluid:	BASF Electrolyte LP 50 EC:EMC (1:1)
Registered	2014-08-27	Sample temperature:	20°C
Test material	Expanded Glass EXTOWER	Immersion time:	15s
Registered	2014-08-29	Number of measurements	10
Test date	2014-09-21	Sorption capacity:	2,12 l/kg
Test location	BAM Berlin, Department: Ceramic Process Engineering and Biomaterials	Standard variance:	0,12 l/kg
Test referral	The test was carried out in accordance with the BS 7959-1: 2004 „Materials used for the control of liquid spillages- Part 1: Determination of sorbency“		
<p>This test report consists of pages 1 to 2 and annexes 1 to 2.</p> <p><small>Test reports may only be published in full text and without additions. For altered reproduction and extracts, the BAM's written consent must be obtained before. The content of the test report relates exclusively to the examined objects.</small></p> <p>RLB-2.7.3-Ant.1 / 2008-03-04</p> <p><small>Sicherheit und Zuverlässigkeit in Chemie- und Materialtechnik</small></p>			
<p style="writing-mode: vertical-rl; text-orientation: upright; font-size: 2em; font-weight: bold;">PRÜFBERICHT</p> 