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## MSDS – MATERIAL SAFETY DATA SHEET

### PED SAFETY BAG

#### **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

##### **1.1. Product identifier**

Trade name: PED Safety Bag

P/N: UMACF018200-000, UMACF018300-000

##### **1.2. Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: PED Safety Bag is intended for containing Thermal runaway events on a lithium-ion battery-powered portable electronic devices (PEDs), primarily for use with the passenger aviation industry.

Uses advised against: uses not listed in the “identified uses” section above.

##### **1.3. Details of the supplier of the safety data sheet**

Accenture GmbH (FSCM CE579)

Blohmstr. 12

21079 Hamburg, Germany

E-Mail: [hw.customer-service@accenture.com](mailto:hw.customer-service@accenture.com)


Internet: [www.accenture.com](http://www.accenture.com)

##### **1.4. Emergency telephone number**

GIZ Giftinformationszentrum-Nord (24hours) **+49 (0) 551-19240**

Languages of the phone service: German, English

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**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

<b>Physical</b>	<b>Health</b>
Not Hazardous	Not Hazardous

**2.2. Label elements**



PRIMARY ROUTE (S) OF EXPOSURE: Inhalation

(Acute): Exposure to glass fibers sometimes causes irritation of the skin. Less frequently irritation of the eyes, nose or throat may occur. Ingestion may cause short-term irritation of the stomach and intestines.

(Chronic): There are no known health affects connected with long term use or contact with this product. See section 11 of SDS for toxicological information.

**2.3. Item description and other hazards**


The Article described by this MSDS is a fabric bag made of different material combinations which are needed in case of a Lithium-ion fire. It contains fire and temperature resistant materials based on Silica and aerogel. There are no regulated components within this product which contains hazardous material. Under conditions of normal use, it is unlikely that operators are exposed to any hazardous materials from this product. Normal use means that the Article remains enclosed in the under-pressure packaging and is only opened in case of an emergency Lithium-ion fire incident.

The PED fire containment bag is intended to be used by a qualified/trained person in accordance with the use and instructions accompanying the product. The product is intended to be used for inhabited aircraft compartments and are to be used for one thermal runaway event only.

Once the PED is secured inside the PED Bag, the bag needs to be transferred to a safe location away from passengers. Even when the Thermal runaway event is contained, the bag should not be opened until the flight has landed.

While opening the bag, care should be taken to protect from exposure to toxic gases and harmful electrolytes which has severe health hazards.

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Item	Material
Gloves	Leather
Smoke Bag	Black Printing ink
	PVC Fire retardant
	Hook and Loop Tape
	Fire retardant Zipper
	Nylon Webbing
Fire bag	Aerogel Fiberglass insulation
	Fireproof OPAN Non-woven Felt
	Fiberglass Mesh
	1000 Series Aluminum
	Nonwoven Silica Insulation
	Silicone coated Kevlar
	Coated Fiberglass Textile
	Hook and Loop Tape
	Nomex Yarn
	Kevlar-SS Thread

### 3.2. Mixtures

This product has been identified as “article” in accordance with the Reg. (CE) 1907/2006 “REACH” and Reg. (CE) 1272/2008 “CLP”.

Aerogel Fiberglass insulation:


Chemical name	CAS No.	Percent
Synthetic Amorphous Silica	7631-86-9	30 – 40
Methylsilylated Silica	68909-20-6	10 – 20
Fibrous Glass (textile grade)	Not Applicable	40 – 50
Iron Oxide (iron (III) oxide)	1309-37-1	1 – 10
Aluminum Trihydrate (aluminum hydroxide)	21645-51-2	1 – 5
Other components are either non-hazardous ingredients or are below the concentration limit for classification.	Mixture	Balance

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Fireproof OPAN Non-woven Felt:

CAS No	Chemical name	Quantity
68908-35-0	Polyacrylonitrile, oxidized	> 99%

Fiberglass Mesh:

<b>Component</b>	<b>CAS-No.</b>	<b>Weight %</b>
Polytetrafluoroethylene (PTFE)	9002-84-0	50-70
Glass Cloth	65997-17-3	30-50

Aluminum foil:

Name	Product identifier	%
Aluminum	(CAS No) 7429-90-5	97 – 99.9
Silicon	(CAS No) 7440-21-3	0.05 – 1.7
Iron	(CAS No) 7439-89-6	0.05 – 1.7
Manganese	(CAS No) 7439-96-5	<0.03 – 1.5

Silicone coated Kevlar:

CHEMICAL / COMMON NAME	C.A.S. NUMBER	% BY WEIGHT (opt)
• Polysiloxanes (Silicone)(Cured)	63148-53-8	
• Zinc Borate	10192-46-8	Trace

Coated Fiberglass Textile:


CHEMICAL / COMMON NAME	C.A.S. NUMBER	% BY WEIGHT (opt)
• Continuous Filament Fiber Glass	65997-17-3	
• Vermiculite	1318-00-9	2-5%
• Quartz	14808-60-7	< 0.06%
• Sizing	N/A	<2%
• Polysiloxanes (Silicone) (Cured)	63148-53-8	
• Titanium Dioxide	13463-67-7	Trace
(See section 8 of SDS for the data on the exposure limits for this component)		

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**General:**

Limits: Treat particulates as a nuisance dust. Recommended TLV is 10 mg/m<sup>3</sup> (total dust) and 5mg/m<sup>3</sup> (respirable dust).

**In case of skin contact:**

Mechanical irritation accompanied by itching or dermatitis may occur from exposure to loose particles of fibers.

**In case of eyes contact:**

Particulates may cause eye irritation.

**In case of ingestion:**

Chemically inert; no known hazard.

**In case of inhalation:**

Dust may produce mechanical irritation to the mucous membranes of the nose, throat and upper respiratory tract.


### 4.2. Most important symptoms and effects, both acute and delayed

Not needed under normal conditions of handling charges.

### 4.3. Indication of any immediate medical attention and special treatment needed

No specific treatment required.

Information for health personnel: symptomatic treatment.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

The inner fire bag can withstand up to a temperature of 1200°C. The inner bag will not burn or propagate fire.

The PVC outer bag and the Product packaging are made of Fire-retardant materials which will self-extinguish when the fire source is taken away.

Suitable extinguishing media: Class A and class B Fire extinguishers if the outbreak is contained. Large volumes of water.

Non-suitable extinguishing media: None in particular.

### 5.2. Special hazards arising from the substance or mixture

In the event of a fire involving the Article:

- exposure to temperatures in excess of 570°F (300°C) can result in the production of the following gases: nitrogen-containing products; NH<sub>3</sub> (ammonia), HCN (hydrogen cyanide), N<sub>2</sub>, and monomeric acrylonitrile. Off-gas volume depends on temperature and duration of exposure.


The amount of off-gas of HCN in moderate to extreme heat and flame environments is expected to be well within any published tolerances of off-gas. The inner and outer layers of inner bag will only produce off-gas when directly exposed to extreme heat and flame consistent a flash fire event.

### 5.3. Advice for firefighters

Cool down the product with water jets to prevent Article decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water which must not be discharged into drains. Dispose of contaminated water used for extinction and the remains according to current regulations.

#### EQUIPMENT

Normal clothing for fire fighting, such as a compressed air breathing apparatus open circuit (EN 137), complete flame retardant (EN469), flame-resistant gloves (EN 659) and boots for the Fire Brigade (HO A29 or A30).

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## **SECTION 6: Accidental release measure**

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### **6.1. Personal precautions, protective equipment and emergency procedures**

Not applicable

### **6.2. Environmental precautions**

Not Applicable

### **6.3. Methods and material for containment and cleaning up**

After the usage, the disposal of PED Safety bag must be carried out in accordance with the provisions of section 13.

### **6.4. Reference to other sections**

Any information on personal protection and disposal is given in sections 8 and 13.

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**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

The PED fire containment product is intended to be used by a qualified/trained person in accordance with the use and instructions accompanying the product. Always use safety, Do not eat, drink or smoke while handling the Article. Remove contaminated clothing and protective equipment before entering areas in which you eat.

**7.2. Conditions for safe storage, including any incompatibilities.**

Store only in the original packaging. Store the articles in easily accessible locations without getting compressed. Keep the packaging tightly sealed. Absolutely avoid contact with water or other liquids used on aircrafts. Store product away from any incompatible materials, checking section 10. If the product is used to store PEDs

**7.3. Specific end use(s)**


The PED fire containment bag is intended to be used by a qualified/trained person in accordance with the use and instructions accompanying the product. The product is intended to be used for inhabited aircraft compartments and are to be used for one thermal runaway event only. The product should not be used for batteries larger than the specified Capacity. See the instructions on the packaging for the designated maximum battery capacity of the bag.

If the Lithium-ion battery is already on fire, use the available fire extinguishers or cold water to extinguish the fire and cool down the devise before transferring to the PED containment bag.

In case if the product is used only as precautionary without any Thermal runaway event, it can be folded and sealed back in the original packaging. Find the CMM 25-65-00 for the detailed packaging instructions.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Additional advice on limit values

VND = hazard identified but no DNEL / PNEC available; NEA = no anticipated exposure; NPI = no identified hazard.

It is recommended to consider in the process of risk assessment of occupational exposure limit values provided by 'ACGIH for inert powders not otherwise classified (PNOC respirable fraction: 3 mg / mc; PNOC inhalable fraction: 10 mg / mc). In case of exceeding these limits, we recommend the use of a P-type filter, the class (1, 2 or 3) must be chosen depending on the outcome of the risk assessment.

### 8.2. Exposure controls

Treat particulates as a nuisance dust. Recommended TLV is 10 mg/m<sup>3</sup> (total dust) and 5 mg/m<sup>3</sup> (respirable dust).

#### Respiratory protection:

When dust concentration exceeds recommended TLV of 10 mg/m<sup>3</sup> (total dust) or 5 mg/m<sup>3</sup> (respirable dust) wear NIOSH approved particulate respirator.

#### Eye protection:

It is advisable to wear protective airtight goggles (ref. Standard EN 166).

#### Protection for skin:


Wear work clothing with long sleeves and safety footwear for professional use category I (ref. 2016/425 Regulations and standard EN ISO 20344). Wash with soap and water after removing protective clothing.

#### Protection for hands:

Wear textiles gloves.

#### Other Information:

Ensure good ventilation at the workplace.

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties


a. appearance	Low pressure packaged PED Safety bag
b. odour	N/A
c. olfactory threshold	N/A
d. pH	N/A
e. melting point/freezing point	N/A
f. initial boiling point and boiling range	N/A
g. flash point	N/A
h. evaporation rate	N/A
i. flammability (solids, gases)	N/A
j. upper/lower flammability or explosive limits	N/A
k. vapour pressure	N/A
l. vapour density	N/A
m. relative density	N/A
n. solubility	N/A
o. partition coefficient octanol/water (Kow)	N/A
p. auto-ignition temperature	N/A
q. decomposition temperature	N/A
r. viscosity	N/A
s. explosive properties	N/A
t. oxidizing properties	N/A

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**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

The Article is stable under the conditions described in Section 7.

**10.2. Chemical stability**

The Article is stable under the conditions described in Section 7.

**10.3. Possibility of hazardous reactions**

The Article is stable under the conditions described in Section 7.

**10.4. Conditions to avoid**

Direct contact with moisture and sunlight


**10.5. Incompatible materials**

N/A

**10.6. Hazardous decomposition products**

Hydrogen Cyanide (HCN)

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Metabolism, kinetics, mechanism of action and other information

Information not available

#### Information on likely routes of exposure

Information not available

#### Immediate, delayed and chronic effects and effects from short- and long-term exposure

Information not available

#### interactive effects

Information not available

#### ACUTE TOXICITY

Information not available

#### SKIN CORROSION / IRRITATION

Mechanical irritation accompanied by itching or dermatitis may occur from exposure to loose particles of fibers.

#### SERIOUS EYE DAMAGE / IRRITATION

Particulates may cause eye irritation.

#### RESPIRATORY OR SKIN SENSITIZATION

Not responding to the classification criteria for this hazard class

#### THE GERM CELL MUTAGENICITY

Not responding to the classification criteria for this hazard class

#### CARCINOGENICITY

Not responding to the classification criteria for this hazard class

#### TOXIC TO REPRODUCTION

Not responding to the classification criteria for this hazard class

#### SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE


Not responding to the classification criteria for this hazard class

#### SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE

Not responding to the classification criteria for this hazard class

#### HAZARD INTAKE

Not responding to the classification criteria for this hazard class

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**SECTION 12: Ecological information**

This Product is not considered a hazardous waste under current RCRA regulations.

**12.1. Toxicity**

Data not available

**12.2. Persistence and degradability**

Information not available

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available


**12.5. Results of PBT and vPvB assessment**

Information not available

**12.6. Other adverse effects**

Information not available

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**SECTION 13: Disposal considerations**


**13.1. Waste treatment methods**

Do not incinerate. Waste material should be bagged or containerized, sealed and disposed of in an approved landfill in accordance with federal, state and local regulation. Product is not considered a hazardous waste under current RCRA regulations. Disposal must be performed through an authorized waste management, in compliance with national and local regulations.  
The transport of waste may be subject to ADR.

**CONTAMINATED PACKAGING**

Contaminated packaging must be recovered or disposed of in compliance with national regulations on waste management.

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## SECTION 14: Transport information

### 14.1. UN number

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT		Not Regulated			
TDG		Not Regulated			
IMDG		Not Regulated			
IATA		Not Regulated			

### 14.2. UN proper shipping name

Not dangerous goods according to DOT, IATA and IMDG.

### 14.3. Transport hazard class(es)

Not applicable.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

ADR/RID/ADN: not applicable

IMO: not applicable

ICAO: not applicable

### 14.6. Special precautions for user

Not applicable.

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable – product is transported only in packaged form.

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**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

CERCLA: This product is not subject to CERCLA release reporting. Many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

SARA Hazard Category (311/312): Not Hazardous

EPA SARA 313: This product contains the following chemicals regulated under SARA Title III, section 313: None

EPA TSCA Inventory: This product is a manufactured article and not subject to TSCA premanufacturing notification requirements.

CANADIAN Regulations: All chemical substances in this product are included on or exempted from the Canadian Domestic Substance List (DSL)


NFPA Rating: Health = 1 Flammability = 0 Instability = 0

HMIS Rating: Health = 1 Flammability = 0 Physical Hazard = 0

**15.2. Chemical safety assessment**

N/A



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## SECTION 16: Other information


### Abbreviations and acronyms

Ox. Liq. 1	Combustion Liquid, Category 1
Ox. Sol. 1	Oxidising solid, category 1
Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	specific target organ toxicity - repeated exposure, category 2
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Aquatic Chronic 2	Hazardous to the aquatic environment Chronic Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment Chronic Category 3
H204	Fire or projection.
H271	It may cause a fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H318	It causes serious eye damage.
H319	It causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### LEGEND:

- ADR: European Agreement on the Transport of Dangerous Goods by Road
- CAS NUMBER: Number of the Chemical Abstract Service
- EC50: Concentration that gives effect to 50% of the population subject to testing
- EC NUMBER: Identification number for ESIS (European database of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived no effect level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- IATA DGR: Regulation for the transport of dangerous goods by the International Air Transport Association
- IC50: Concentration of immobilization of 50% of the population subject to testing
- IMDG: International Maritime Code for Dangerous Goods
- IMO: International Maritime Organization
- INDEX NUMBER: identification number in Annex VI of the CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic according to REACH
- PEC: Predicted Environmental Concentration
- PEL: Predicted Exposure Level
- PNEC: Predicted No Effect Concentration
- REACH: EU Regulation 1907/2006
- RID: Regulations for the international carriage of dangerous goods by rail
- TLV: TLV
- TLV CEILING: Concentration which must not be exceeded during any time of occupational exposure.
- TWA STEL: Short Term Exposure Limit
- TWA: Medium term exposure limit weighed
- VOC: Volatile Organic Compound

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- vPvB: Very persistent and very bioaccumulative according to REACH
- Water hazard class: Water hazard class (Germany).

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Note: this MSDS is not to be considered as a MSDS compiled in accordance with the art. 31 of Regulation (CE) 1907/2006 since the product is defined as “article”.

**Previous MSDS version**

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