

# Li-Ion Batteries >100 Wh

## Product Safety Information Sheet

A safety data sheet is not required for this product under Article 31 of REACH. This Product Safety Information Sheet has been created on a voluntary basis  
Issue date: 07/12/2021      Revision date: 07/12/2021      Supersedes version of: 10/12/2018      Version: 5.12

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

#### 1.1. Product identifier

|                               |                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product form                  | Article                                                                                                                                                                                                                                                                                                                                                        |
| Product name                  | Li-Ion Batteries >100 Wh                                                                                                                                                                                                                                                                                                                                       |
| Product code                  | BU ET&A                                                                                                                                                                                                                                                                                                                                                        |
| Other means of identification | Hilti B 18 / 5.2 Li-Ion (01), Hilti B 22 / 5.2 Li-Ion (01), Hilti B 22 / 8.0 Li-Ion (01), Hilti B 36 / 3.0 Li-Ion (01), Hilti B 36 / 3.3 Li-Ion (01), Hilti B 36 / 3.9 Li-Ion (01), Hilti B 36 / 5.2 Li-Ion (01), Hilti B 36 / 6.0 Li-Ion (01), Hilti B 36 / 9.0 Li-Ion (01), Hilti B 22-110 Li-Ion (01), Hilti B22-170 Li-Ion (01), Hilti B22-255 Li-Ion (01) |

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

##### 1.2.1. Relevant identified uses

|                                  |                                                  |
|----------------------------------|--------------------------------------------------|
| Industrial/Professional use spec | For professional use only                        |
| Use of the substance/mixture     | Rechargeable Lithium Ion battery for power tools |

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of product safety information sheet

| Supplier                                                                                                                                                                             | Department issuing data specification sheet                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hilti France S.A.S.<br>126 rue Gallieni<br>92100 Boulogne-Billancourt - France<br>T +33 825 01 05 05<br><a href="mailto:fr-contactez-nous@hilti.com">fr-contactez-nous@hilti.com</a> | Hilti Entwicklungsgesellschaft mbH<br>Hiltistraße 6<br>86916 Kaufering - Deutschland<br>T +49 8191 906876<br><a href="mailto:anchor.hse@hilti.com">anchor.hse@hilti.com</a> |

#### 1.4. Emergency telephone number

|                  |                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------|
| Emergency number | Schweizerisches Toxikologisches Informationszentrum – 24h Service<br>+41 44 251 51 51 (international) |
|------------------|-------------------------------------------------------------------------------------------------------|

### SECTION 2 Hazards identification

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

Classification according to Regulation (EC) No. 1272/2008 [CLP] Mixtures/Substances: SDS EU > 2015: According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

Not classified

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

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### 2.3. Other hazards

Other hazards which do not result in classification

For the battery chemical materials are stored in a hermetically sealed metal case, designed to withstand Temperatures and pressures encountered during normal use. As a result, during normal use there is no physical danger of ignition or explosion and chemical danger of hazardous materials leakage.

It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage move the battery from fire immediately.

However if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery case will be broken at the extreme, hazardous materials may be released.

Moreover, if heated strongly by a surrounding fire, acrid gas may be emitted.

## SECTION 3 Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Comments

Lithium Ion rechargeable battery pack:

| Name/Type | Energy content (Wh) |
|-----------|---------------------|
|-----------|---------------------|

|                              |        |
|------------------------------|--------|
| Hilti B 18 / 5.2 Li-Ion (01) | 112    |
| Hilti B 22 / 5.2 Li-Ion (01) | 112    |
| Hilti B 22 / 8.0 Li-Ion (01) | 172,8  |
| Hilti B 36 / 3.0 Li-Ion (01) | 108    |
| Hilti B 36 / 3.3 Li-Ion (01) | 118,8  |
| Hilti B 36 / 3.9 Li-Ion (01) | 140,4  |
| Hilti B 36 / 5.2 Li-Ion (01) | 187,2  |
| Hilti B 36 / 6.0 Li-Ion (01) | 216    |
| Hilti B 36 / 9.0 Li-Ion (01) | 324    |
| Hilti B 22-110 Li-Ion (01)   | 110,16 |
| Hilti B 22-170 Li-Ion (01)   | 170,64 |
| Hilti B 22-255 Li-Ion (01)   | 255,96 |

This product contains a positive electrode (Lithium cobalt oxide (CAS-No. 12190-79-3)), a negative electrode (graphite (CAS-No. 7782-42-5)) and electrolyte (ethylene carbonate (CAS-No. 96-49-1), diethyl carbonate (CAS-No. 105-58-8) and lithium hexafluorophosphate (CAS-No. 21324-40-3)).

The physical form of the product, however, precludes exposure to workers under normal conditions of use.

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH Annex II

## SECTION 4 First aid measures

### 4.1. Description of first aid measures

First-aid measures general

If the electrolyte is leaking out of the battery pack, the following measures have to be taken.

First-aid measures after inhalation

Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact

Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after eye contact

First-aid measures after ingestion

Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects Not expected to present a significant hazard under anticipated conditions of normal use.

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

Treat symptomatically.

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media Cool batteries and accumulators with water jet. In case of fire in the surroundings: Use extinguishing agent suitable for surrounding fire.

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

Hazardous decomposition products in case of fire Formation of toxic gases is possible during heating or in case of fire.

### 5.3. Advice for firefighters

Firefighting instructions Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.  
Protection during firefighting Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6 Accidental release measures

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

General measures No flames, no sparks. Eliminate all sources of ignition. Isolate from fire, if possible, without unnecessary risk.

#### 6.1.1. For non-emergency personnel

Protective equipment Wear protective gloves, protective clothing. Safety goggles. Gas mask.  
Emergency procedures Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment Equip cleanup crew with proper protection.  
Emergency procedures Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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

Methods for cleaning up Take up liquid spill into absorbent material.  
Other information Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed Normal use of this product shall imply use in accordance with the instructions on the packaging and in line with the expectations of a professional user.

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### Precautions for safe handling

Do not soak in water or seawater.  
Do not expose to strong oxidizers.  
Do not give a strong mechanical shock or fling.  
Never disassemble, modify or deform.  
Do not connect the positive terminal to the negative terminal with electrically conductive material.  
Use only the chargers / electric tools specified by Hilti to charge or discharge the battery.

Do not throw into fire or expose to high temperatures (>85 °C).  
Do not connect the positive terminal to the negative terminal with electrically conductive material.

### Hygiene measures

Always wash hands after handling the product.

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

### Storage conditions

Avoid direct sunlight, high temperature, high humidity.  
Store in a cool place (temperature: -20 °C ~ 40 °C, humidity: 45 - 85%).

### Incompatible products

Strong bases. Strong acids.

### Incompatible materials

Sources of ignition. Direct sunlight.

### Storage temperature

-20 – 40 °C

### Information on mixed storage

Store away from water.  
Do not store together with electrically conductive materials.

The accu-pack should be stored at 30 to 50% of the charging capacity.  
Avoid storing in places where it is exposed to static electricity.  
Store in a well-ventilated place.

### Storage area

## 7.3. Specific end use(s)

No additional information available

## SECTION 8 Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. National occupational exposure and biological limit values

##### Additional information

No technical measures are necessary during normal use. In case of leakage of substances contained within the cell, the information below may be useful.

| Li-Ion Batteries >100 Wh              |                                                                                                                             |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| France - Occupational Exposure Limits |                                                                                                                             |
| Local name                            | Acétate d'éthyle                                                                                                            |
| VME (OEL TWA)                         | 734 mg/m <sup>3</sup>                                                                                                       |
| VME (OEL TWA) [ppm]                   | 200 ppm                                                                                                                     |
| VLE (OEL C/STEL)                      | 1468 mg/m <sup>3</sup>                                                                                                      |
| VLE (OEL C/STEL) [ppm]                | 400 ppm                                                                                                                     |
| Remark                                | Valeurs réglementaires contraignantes                                                                                       |
| Regulatory reference                  | Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n°2021-434) |

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

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### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

##### Appropriate engineering controls

If the electrolyte is leaking out of the battery pack, the following measures have to be taken.

#### 8.2.2. Personal protection equipment

##### Personal protective equipment

Avoid all unnecessary exposure.

##### Personal protective equipment symbol(s)



##### 8.2.2.1. Eye and face protection

###### Eye protection

Chemical goggles or safety glasses

##### 8.2.2.2. Skin protection

###### Hand protection

Wear protective gloves.

| Type              | Material             | Permeation        | Thickness (mm) | Penetration | Standard   |
|-------------------|----------------------|-------------------|----------------|-------------|------------|
| Disposable gloves | Nitrile rubber (NBR) | 6 (> 480 minutes) | 0,12           |             | EN ISO 374 |

##### 8.2.2.3. Respiratory protection

###### Respiratory protection

Wear appropriate mask

##### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

##### Other information

Do not eat, drink or smoke during use.

No additional information available

## SECTION 9 Physical and chemical properties

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

|                             |                                                                          |
|-----------------------------|--------------------------------------------------------------------------|
| Physical state              | Solid                                                                    |
| Colour                      | red. Black.                                                              |
| Appearance                  | plastic case.                                                            |
| Odour                       | Odourless.                                                               |
| Odour threshold             | Not available                                                            |
| Melting point               | Not available                                                            |
| Freezing point              | Not available                                                            |
| Boiling point               | Not available                                                            |
| Flammability                | Non flammable.                                                           |
| Explosive properties        | Risk of explosion by shock, friction, fire or other sources of ignition. |
| Explosive limits            | Not applicable                                                           |
| Lower explosive limit (LEL) | Not applicable                                                           |

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|                                                 |                |
|-------------------------------------------------|----------------|
| Upper explosive limit (UEL)                     | Not applicable |
| Flash point                                     | Not applicable |
| Auto-ignition temperature                       | Not applicable |
| Decomposition temperature                       | Not available  |
| pH                                              | Not available  |
| pH solution                                     | Not available  |
| Viscosity, kinematic                            | Not applicable |
| Solubility                                      | Not available  |
| Partition coefficient n-octanol/water (Log Kow) | Not available  |
| Vapour pressure                                 | Not available  |
| Vapour pressure at 50 °C                        | Not available  |
| Density                                         | Not available  |
| Relative density                                | Not available  |
| Relative vapour density at 20 °C                | Not applicable |
| Particle size                                   | Not available  |
| Particle size distribution                      | Not available  |
| Particle shape                                  | Not available  |
| Particle aspect ratio                           | Not available  |
| Particle aggregation state                      | Not available  |
| Particle agglomeration state                    | Not available  |
| Particle specific surface area                  | Not available  |
| Particle dustiness                              | Not available  |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10 Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Heating may cause a fire or explosion.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Water, humidity.

### 10.5. Incompatible materials

Conductive materials, water, seawater, strong oxidizers and strong acids.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11 Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

|                             |                |
|-----------------------------|----------------|
| Acute toxicity (oral)       | Not classified |
| Acute toxicity (dermal)     | Not classified |
| Acute toxicity (inhalation) | Not classified |
| Skin corrosion/irritation   | Not classified |

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|                                   |                                                                  |
|-----------------------------------|------------------------------------------------------------------|
| Additional information            | Based on available data, the classification criteria are not met |
| Serious eye damage/irritation     | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| Respiratory or skin sensitisation | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| Germ cell mutagenicity            | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| Carcinogenicity                   | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| Reproductive toxicity             | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| STOT-single exposure              | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| STOT-repeated exposure            | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |
| Aspiration hazard                 | Not classified                                                   |
| Additional information            | Based on available data, the classification criteria are not met |

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

No additional information available

#### 11.2.2. Other information

Potential adverse human health effects and symptoms

This product contains an organic electrolyte. If the electrolyte is leaking out of the battery pack, the following effects are known when getting into contact: Irritation: severely irritant to eyes, Irritation: may cause irritation to the respiratory system  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us

Other information

## SECTION 12 Ecological information

### 12.1. Toxicity

|                                                           |                |
|-----------------------------------------------------------|----------------|
| Hazardous to the aquatic environment, short-term (acute)  | Not classified |
| Hazardous to the aquatic environment, long-term (chronic) | Not classified |

### 12.2. Persistence and degradability

| Li-Ion Batteries >100 Wh      |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Li-Ion Batteries >100 Wh  |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Endocrine disrupting properties

No additional information available

### 12.7. Other adverse effects

|                        |                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------|
| Additional information | Do not allow battery packs to penetrate the soil.<br>The battery cell may corrode and electrolyte may leak. |
|------------------------|-------------------------------------------------------------------------------------------------------------|

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### SECTION 13 Disposal considerations

#### 13.1. Waste treatment methods

|                                            |                                                                                                                                               |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Product/Packaging disposal recommendations | Dispose in a safe manner in accordance with local/national regulations. Refer to manufacturer/supplier for information on recovery/recycling. |
| Ecology - waste materials                  | Avoid release to the environment.                                                                                                             |
| European List of Waste (LoW) code          | 16 06 05 - other batteries and accumulators<br>20 01 34 - batteries and accumulators other than those mentioned in 20 01 33                   |

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

| ADR                                                                                 | IMDG                                                                                | IATA                                                                                 | RID                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>14.1. UN number or ID number</b>                                                 |                                                                                     |                                                                                      |                                                                                       |
| UN 3480                                                                             | UN 3480                                                                             | UN 3480                                                                              | UN 3480                                                                               |
| <b>14.2. UN proper shipping name</b>                                                |                                                                                     |                                                                                      |                                                                                       |
| LITHIUM ION BATTERIES                                                               | LITHIUM ION BATTERIES                                                               | Lithium ion batteries                                                                | LITHIUM ION BATTERIES                                                                 |
| Transport document description                                                      |                                                                                     |                                                                                      |                                                                                       |
| UN 3480 LITHIUM ION BATTERIES, 9A, (E)                                              | UN 3480 LITHIUM ION BATTERIES, 9A                                                   | UN 3480 Lithium ion batteries, 9A                                                    | UN 3480 LITHIUM ION BATTERIES, 9A                                                     |
| <b>14.3. Transport hazard class(es)</b>                                             |                                                                                     |                                                                                      |                                                                                       |
| 9A                                                                                  | 9A                                                                                  | 9A                                                                                   | 9A                                                                                    |
|  |  |  |  |
| <b>14.4. Packing group</b>                                                          |                                                                                     |                                                                                      |                                                                                       |
| Not applicable                                                                      | Not applicable                                                                      | Not applicable                                                                       | Not applicable                                                                        |
| <b>14.5. Environmental hazards</b>                                                  |                                                                                     |                                                                                      |                                                                                       |
| Dangerous for the environment: No                                                   | Dangerous for the environment: No<br>Marine pollutant: No                           | Dangerous for the environment: No                                                    | Dangerous for the environment: No                                                     |
| No supplementary information available                                              |                                                                                     |                                                                                      |                                                                                       |

#### 14.6. Special precautions for user

##### Overland transport

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| Classification code (ADR)     | : M4                                                       |
| Special provisions (ADR)      | : 230, 377, 376, 636, 310, 348                             |
| Limited quantities (ADR)      | : 0                                                        |
| Packing instructions (ADR)    | : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906 |
| Transport category (ADR)      | : 2                                                        |
| Tunnel restriction code (ADR) | : E                                                        |

##### Transport by sea

|                             |                                                            |
|-----------------------------|------------------------------------------------------------|
| Special provisions (IMDG)   | : 230, 376, 377, 310, 348, 384                             |
| Limited quantities (IMDG)   | : 0                                                        |
| Packing instructions (IMDG) | : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906 |
| EmS-No. (Fire)              | : F-A                                                      |
| EmS-No. (Spillage)          | : S-I                                                      |

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Stowage category (IMDG) : A  
Stowage and handling (IMDG) : SW19  
MFAG-No : 147

### Air transport

PCA packing instructions (IATA) : Forbidden  
PCA max net quantity (IATA) : Forbidden  
CAO packing instructions (IATA) : See 965  
Special provisions (IATA) : A88, A99, A154, A164, A183

### Rail transport

Special provisions (RID) : 230, 376, 377, 636  
Limited quantities (RID) : 0  
Packing instructions (RID) : P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15 Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no substance on the REACH candidate list

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16 Other information

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### Indication of changes:

| Section | Changed item                                                   | Change   | Comments |
|---------|----------------------------------------------------------------|----------|----------|
|         | SDS EU format according to COMMISSION REGULATION (EU) 2020/878 | Added    |          |
| 1.1     | Product name - Trade name                                      | Added    |          |
| 3.2     | Comments                                                       | Modified |          |

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