

Li-Ion Batteries >100 Wh

Safety information for Lithium-Ion batteries

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

Product identifier

Trade name 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)

Relevant identified uses of the substance or mixture and uses advised against

Rechargeable Lithium Ion battery for power tools

Manufacturer/Supplier

Supplier

Hilti, Inc.
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Department issuing data specification sheet

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SECTION 2: Hazards identification

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 breaked 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

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

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.

SECTION 4: First aid measures

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	Assure fresh air breathing. 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.

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First-aid measures after eye contact	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
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Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Cool batteries and accumulators with water jet. Foam. Dry powder. Carbon dioxide. Sand.
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Special hazards arising from the substance or mixture

No additional information available

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

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.
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For non-emergency personnel

Emergency procedures	Evacuate unnecessary personnel.
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For emergency responders

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

Environmental precautions

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

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.

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SECTION 7: Handling and storage

Precautions for safe handling

Precautions for safe handling	<p>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.</p> <p>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.</p>
Hygiene measures	<p>Always wash hands after handling the product.</p>

Conditions for safe storage, including any incompatibilities

Storage conditions	<p>Avoid direct sunlight, high temperature, high humidity. Store in a cool place (temperature: -20 °C ~ 40 °C, humidity: 45 - 85%).</p>
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	-20 - 40 °C
Information on mixed storage	<p>Store away from water. Do not store together with electrically conductive materials.</p> <p>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.</p>

SECTION 8: Exposure controls/personal protection

Exposure controls

Appropriate engineering controls	<u>If the electrolyte is leaking out of the battery pack, the following measures have to be taken.</u>
Personal protective equipment	Avoid all unnecessary exposure.
Hand protection	Wear protective gloves.

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

Eye protection Chemical goggles or safety glasses



Other information Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	plastic case.
Colour	red. Black.
Explosive properties	Risk of explosion by shock, friction, fire or other sources of ignition.

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Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity

No additional information available

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

Heating may cause a fire or explosion.

Conditions to avoid

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

Incompatible materials

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

Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

Information on toxicological effects

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.

Other information

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.

SECTION 12: Ecological information

Additional information

Do not allow battery packs to penetrate the soil.
The battery cell may corrode and electrolyte may leak.

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
20 01 34 - batteries and accumulators other than those mentioned in 20 01 33

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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ADR	IMDG	IATA	RID
UN number			
3480	3480	3480	3480
UN proper shipping name			
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES	Lithium ion batteries	LITHIUM ION BATTERIES
Transport document description			
UN 3480 LITHIUM ION BATTERIES, 9, (E)	UN 3480 LITHIUM ION BATTERIES, 9		
Transport hazard class(es)			
9	9	9	9
Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

Special precautions for user

- Overland transport

Classification code (ADR)	M4
Special provisions (ADR)	230, 636b, 376, 377
Limited quantities (ADR)	0
Packing instructions (ADR)	P903, P908, P909
Tunnel restriction code (ADR)	E

- Transport by sea

Special provisions (IMDG)	230b, 376, 377
Limited quantities (IMDG)	0
Packing instructions (IMDG)	P903, P908, P909
EmS-No. (Fire)	F-A
EmS-No. (Spillage)	S-I
Stowage category (IMDG)	A
MFAG-No	147

- Air transport

PCA packing instructions (IATA)	965
PCA max net quantity (IATA)	5kg
CAO packing instructions (IATA)	965
Special provisions (IATA)	A88, A99, A154, A164, A183

- Rail transport

Special provisions (RID)	230, 636b, 376, 377
Limited quantities (RID)	0

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Packing instructions (RID) P903, P908, P909

Carriage prohibited (RID) No

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No additional information available

SECTION 15: Regulatory information

No additional information available

SECTION 16: Other information

Indication of changes:

5.1	Suitable extinguishing media	Added	
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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product