

1 Identification

· Product identifier

· Trade name: **B 36 / 3.0 Li-Ion** **B 36 / 3.3 Li-Ion** **B 36 / 3.9 Li-Ion** **B 36 / 6.0 Li-Ion**
B 7 / 1.5 Li-Ion **B 12 / 2.6 Li-Ion** **B 14 / 1.6 Li-Ion** **B 14 / 3.3 Li-Ion**
B 18 / 1.6 Li-Ion **B 18 / 2.6 Li-Ion** **B 18 / 3.3 Li-Ion** **B 22 / 1.6 Li-Ion**
B 22 / 2.6 Li-Ion **B 22 / 3.3 Li-Ion** **B 36 / 2.4 Li-Ion** **B 36 / 2.6 Li-Ion**
B 144 / 2.6 Li-Ion **POA 80** **POA 84** **PRA 84** **PRA 84 02** **PRA 84 G**
PSA 81 **PSA 82** **AI E20** **AI E21**

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

· Article category AC3 Electrical batteries and accumulators

· Application of the substance / the mixture Rechargeable Lithium Ion battery for power tools

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Hilti, Inc.
 5400 South 122nd East Ave.
 US-Tulsa, OK 74146
 Phone: (800) 879-8000
 Fax: (800) 879-7000
 Español: (800) 879-5000

· Information department: see section 16

· Emergency telephone number:

Chem-Trec
 Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
 Tel.: 703 527 3887 (Other countries)

2 Hazard(s) identification

· Classification of the substance or mixture

The product is not classified according to the Globally Harmonized System (GHS).

· Additional information:

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. Elektrolyte 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.

· Label elements

· GHS label elements Void

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

· Classification system

· NFPA ratings (scale 0-4)



Health = 2
 Fire = 0
 Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description:

Lithium Ion rechargeable battery pack:

Name/Type	Lithium equivalent (g)	Energy content (Wh)
Hilti B 36 / 3.0 Li-Ion	9,0	108
Hilti B 36 / 3.3 Li-Ion	9,9	118,8

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Hilti B 36 / 3.9 Li-Ion	11,7	140
Hilti B 36 / 6.0 Li-Ion	18,0	216
Hilti B 7 / 1.5 Li-Ion	0,9	10,8
Hilti B 12 / 2.6 Li-Ion	2,34	28,1
Hilti B 14 / 1.6 Li-Ion	1,92	23
Hilti B 14 / 3.3 Li-Ion	3,84	46
Hilti B 18 / 1.6 Li-Ion	2,88	35
Hilti B 18 / 2.6 Li-Ion	4,68	56,16
Hilti B 18 / 3.3 Li-Ion	5,94	71,3
Hilti B 22 / 1.6 Li-Ion	2,88	35
Hilti B 22 / 2.6 Li-Ion	4,68	56,16
Hilti B 22 / 3.3 Li-Ion	5,94	71,3
Hilti B 36 / 2.6 Li-Ion	7,8	94
Hilti B 36 / 2.4 Li-Ion	7,2	86,4
Hilti B 144 / 2.6 Li-Ion	3,12	37,44
POA 80		19,8
POA 84		55
PRA 84		33,0
PRA 84 02		37,0
PRA 84 G		44,0
PSA 81		37
PSA 82		36
AI E20		8
AI E21		16

Dangerous components:

This product contains a positive electrode (Lithium cobalt oxide), a negative electrode (graphite) and electrolyte (ethylene carbonate, diethyl carbonate and lithium hexafluorophosphate). The physical form of the product, however, precludes exposure to workers under normal conditions of use.

1307-96-6	cobalt oxide	<30%
1313-13-9	manganese dioxide	<30%
1313-99-1	nickel monoxide	<30%
7440-44-0	carbon	<30%
	Electrolyte; main ingredients: Lithium hexafluorophosphate, organic carbonates	<20%
24937-79-9	Polyvinylidene fluoride (PVdF)	<10%
7429-90-5	Aluminium foil	2-10%
7440-50-8	Copper foil	2-10%

4 First-aid measures

Description of first aid measures

General information

This product contains an organic electrolyte. If the electrolyte is leaking out of the battery pack, the following measures have to be taken.

After inhalation

Take affected persons into fresh air and keep quiet.

Supply fresh air or oxygen; call for doctor.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Seek immediate medical advice.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**
 No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
 CO₂, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.
 Foam
- **Special hazards arising from the substance or mixture**
 Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
 Wear self-contained respiratory protective device.
 Wear fully protective suit.
 Ensure adequate ventilation

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 Ensure adequate ventilation
 Wear protective equipment. Keep unprotected persons away.
 Keep away from ignition sources
 Keep people at a distance and stay upwind.
- **Environmental precautions:** Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
 Pick up mechanically.
 Absorb liquid components with liquid-binding material.
- **Reference to other sections** See Section 7 for information on safe handling

7 Handling and storage

- **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.
 No special measures required.
- **Information about protection against explosions and fires:**
 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.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
 Avoid direct sunlight, high temperature, high humidity.
 Store in a cool place (temperature: -20 °C ~ 35 °C, humidity: 45 - 85%)
- **Information about storage in one common storage facility:**
 Store away from water.
 Do not store together with electrically conductive materials.
- **Further information about storage conditions:**
 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.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
 No technical measures are necessary during normal use. In case of leakage of substances contained within the cell, the information below may be useful.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:**
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves.

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**
 Nitrile rubber, NBR
 Recommended thickness of the material: ≥ 0.12 mm
- **Penetration time of glove material** Value for the permeation: Level 6 (> 480 min)
- **Eye protection:**



Tightly sealed goggles.

- **Body protection:**



Protective work clothing.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: plastic case

Color: Black / Red

- **Odor:** Odorless

- **Odour threshold:** Not determined

- **pH-value:** Not applicable

- **Change in condition**

Melting point/Melting range: Not applicable

Boiling point/Boiling range: Not applicable

- **Flash point:** Not applicable

- **Flammability (solid, gaseous)** Not applicable

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Material Safety Data Sheet

acc. to ISO 11014

Printing date 01/30/2015

Version number 5

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· Ignition temperature:	Not applicable
· Decomposition temperature:	Not applicable
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Risk of explosion by shock, friction, fire or other sources of ignition.
· Explosion limits:	
Lower:	Not applicable
Upper:	Not applicable
· Oxidizing properties	Not applicable
· Vapor pressure:	Not applicable
· Density:	Not applicable
· Relative density	Not applicable
· Vapour density	Not applicable
· Evaporation rate	Not applicable
· Solubility in / Miscibility with Water:	Not applicable
· Viscosity:	
dynamic:	Not applicable.
	Not applicable.
kinematic:	Not applicable.
	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Conductive materials, water, seawater, strong oxidizers and strong acids.
- **Hazardous decomposition products:** Acidic or harmful gas is emitted during fire

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:**
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:
Irritant to skin and mucous membranes.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological 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.
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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· Carcinogenic categories

· NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability** No further relevant information available.· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.

· Additional ecological information:

· General notes:

Do not allow battery packs to penetrate the soil.

The battery cell may corrode and electrolyte may leak.

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· Waste treatment methods

· Recommendation

Dispose of this battery pack according to national regulations or return the used battery pack to Hilti.

Smaller quantities can be disposed of with household waste.

· European waste catalogue:

16 06 05 other batteries and accumulators

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

· Uncleaned packagings:

· **Recommendation:** Dispose of packaging according to regulations on the disposal of packagings.

14 Transport information

· UN-Number

· **DOT, ADR, IMDG, IATA** UN3480

· UN proper shipping name

· **DOT, IMDG, IATA** LITHIUM ION BATTERIES· **ADR** UN3480 LITHIUM ION BATTERIES

· Transport hazard class(es)

· **DOT, ADR, IMDG, IATA**· **Class** 9 Miscellaneous dangerous substances and articles

· Packing group

· **DOT, ADR, IMDG, IATA** Void· **Environmental hazards:** Not applicable.

· Special precautions for user

Warning: Miscellaneous dangerous substances and articles

· EMS Number:

F-A,S-I

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

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· Transport/Additional information:	Lithium-ion batteries are tested in accordance with: UN manual of Tests and Criteria, Part III, subsection 38.3
· DOT	Not regulated, but require the following label for ground shipment, "Lithium Batteries Forbidden for Transport Aboard Aircraft & Vessels."
· ADR	
· Remarks:	Lithium ion batteries with an energy content ≤100 Wh offered for carriage are not subject to other provisions of ADR/RID/GGVSE. They meet the requirements of special provision SP 188.
· IMDG	
· Remarks:	Lithium ion batteries with an energy content ≤100 Wh offered for carriage are not subject to other provisions of IMDG/GGVSee. They meet the requirements of special provision SP 188.
· IATA	
· Remarks:	Lithium ion batteries with an energy content ≤100Wh offered for transport are not subject to other additional requirements of these regulations. They meet the requirements of Packing Instruction 965/II (≤2 batteries) and 965/IB (>2 batteries).
· UN "Model Regulation":	UN3480, LITHIUM ION BATTERIES, 9

15 Regulatory information

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

· **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65:**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** not required.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:**

Hilti Entwicklungsgesellschaft mbH
 Hiltistrasse 6
 D-86916 Kaufering
 Tel.: +49 8191 906310

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Fax: +49 8191 90176310

e-mail: anchor.hse@hilti.com

· **Contact:** Mechthild Krauter

· **Date of preparation / last revision** 01/30/2015 / 4

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

· *** Data compared to the previous version altered.**

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