

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

- **Product identifier**
- **Trade name:** **NiMH Batteries**
SFB 105 / SFB 125 / SFB 126 / SFB 155 / SFB 185 / B 24/3,0
PSA 80 / PRA 801 / PRA 82 / PRA 810 / PRA 87 / PPA 82
- **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 NiMH battery pack for electric tools
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti Taiwan Co., Ltd.
4/F, No. 2 Jen Ai Road, Sec. 2,
Taipei, 10060
Taiwan
Tel 0800-221036
Fax 02-2397-3730
E-mail: twcs@hilti.com
- **Informing department:**
anchor.hse@hilti.com
see section 16
- **Emergency telephone number:**
Schweizerisches Toxikologisches Informationszentrum - 24 h Service
Tel.: 0041 / 44 251 51 51 (international)
- Hilti, Inc.
Tel 0800-221036
Fax 02-2397-3730

2 Hazards identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonised System (GHS).
- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Other hazards**
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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterisation: Mixtures**
 - **Description:**
Rechargeable NiMH battery pack:
- | Name/type | no. of cells | energy capacity [Wh] |
|-----------|--------------|----------------------|
| SFB 105 | 8 | 28,8 |
| SFB 125 | 10 | 36 |
| SFB 126 | 10 | 36 |
| SFB 155 | 13 | 46,8 |
| SFB 185 | 15 | 54 |
| B 24/3,0 | 20 | 72 |
| PSA 80 | 4 | 19,2 |

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PRA 801	3	30,6
PRA 82	2	19,2
PRA 810	3	42
PRA 87	4	44
PPA 82	4	32

This product contains a positive electrode (Nickel(III)-oxidehydroxide), a negative electrode (metallhydride powder) and electrolyte (potassium hydroxide / sodium hydroxide).

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

Dangerous components:

12054-48-7	nickel dihydroxide Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1A, H350; Repr. 1B, H360; STOT RE 1, H372; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Skin Sens. 1, H317	0-20%
	NiOOH	1-22%
	MmNiCoMnAl	2-34%
	(MmNiCoMnAl)Hx	3-35%
1310-58-3	potassium hydroxide Skin Corr. 1A, H314; Acute Tox. 4, H302	0-4%
1310-73-2	sodium hydroxide Skin Corr. 1A, H314	0-4%

Additional information For the wording of the listed risk phrases refer to section 16.

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 the open air and position comfortably
- **After skin contact** Instantly wash with water and soap and rinse thoroughly. If skin irritation persists, call a physician.
- **After eye contact** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

Extinguishing media

Suitable extinguishing agents

Water spray, carbon dioxide (CO₂), carbon dioxide blanket, foam, or dry powder.
Dry sand

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:

In the event of fire, wear self contained breathing apparatus
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources

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- **Environmental precautions:** Do not allow to enter the ground/soil.
- **Methods and material for containment and cleaning up:**
Collect mechanically.
Dilute with much water.
- **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

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.
- **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 containers:**
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.
Protect from heat and direct sunlight.
Protect from humidity and keep away from water.
- **Storage class**
As per VCI (1991) storage classification concept.
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- **Specific end use(s)** To be used only for the intended purpose. Please refer to the operating instructions.

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 compilation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
- **Breathing equipment:**
In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
- **Recommended filter device for short term use:** Filter AX

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· **Protection of hands:**



Protective gloves

Only use chemical-protective gloves with CE-labelling of category III.

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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: $\geq 0,12$ mm

· **Penetration time of glove material**

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed safety glasses.

· **Body protection:**



Protective work clothing.

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· Form:	plastic case
· Colour:	Black / Red
· Odour:	Odourless
· 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

· **Inflammability (solid, gaseous)** Not determined.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive.

· **Critical values for explosion:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapour pressure:** Not applicable.

· Density	Not applicable
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.

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- | | |
|--|--|
| · Solubility in / Miscibility with Water: | Unsoluble |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity:
dynamic: | Not applicable. |
| kinematic: | Not applicable. |
| · Solvent content:
Organic solvents: | 0,0 % |
| · 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**
In the event of misuse of a battery cell or the like, oxygen or hydrogen accumulates in the cell and the cell's internal pressure rises. These gases may be emitted through the gas release vent. The gases may ignite if in the proximity of a naked flame or source of ignition.
- **Conditions to avoid**
Do not connect the positive terminal to the negative terminal with electrically conductive material.
Do not overcharge.
Protect from heat and direct sunlight.
Protect from humidity and keep away from water.
- **Incompatible materials:** Conductive materials, water, seawater, strong oxidizers and strong acids.
- **Hazardous decomposition products:** Acrid 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:
Caustic effect on skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitisation:** No sensitizing effect known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** None

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.

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13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation** Dispose of this battery pack according to national regulations or return the used battery pack to Hilti.
 - **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**
- **ADR, IMDG, IATA** UN3496
- **ADN** not applicable
- **UN proper shipping name**
- **ADR, IMDG, IATA** Batteries, nickel-metal hydride
- **Transport hazard class(es)**
- **ADR, IMDG, IATA**
- **Class** 9 Miscellaneous dangerous substances and articles.
- **Packing group**
- **ADR** Void
- **Environmental hazards:**
- **Marine pollutant:** No
- **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.
- **Transport/Additional information:**
- **IMDG** Special Provision 963
- **IATA** Special Provision A199
- **UN "Model Regulation":** UN3496, Batteries, nickel-metal hydride

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Chemical safety assessment:** not required.

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.

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H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

· Department issuing data specification sheet:

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· Contact: Mechthild Krauter

· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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
IATA: International Air Transport Association
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)
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Muta. 2: Germ cell mutagenicity, Hazard Category 2
Carc. 1A: Carcinogenicity, Hazard Category 1A
Repr. 1B: Reproductive toxicity, Hazard Category 1B
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

· * Data compared to the previous version altered.