

# Safety Data Sheet for STIHL Rechargeable Batteries

11 / 2015

## 1 Designation of Product and Company

### 1.1 Trade name

STIHL AK battery	4520-400-XXXX
STIHL AP battery	4850-400-XXXX
STIHL AR battery	4865-400-XXXX
Battery for STIHL HSA 25	4515-400-XXXX

Lithium-ion rechargeable battery

Specifications, see rating label on battery

### 1.2 Manufacturer/supplier

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## 2 Possible Hazards

Battery cells are hermetically sealed and not hazardous when used and handled according to the manufacturer's recommendations.

Never use chargers that are not recommended for the battery type.

Do not short circuit batteries.

Do not damage the batteries (drill, puncture, deform, disassemble, etc.).

Keep batteries out of reach of small children.

Always store batteries in a dry and cool place.

Do not immerse battery in fluids.

Do not incinerate batteries or heat them above the specified temperature.

Protect batteries from direct sunlight, heat and open fire – never throw into a fire.

Rechargeable batteries are safe in use when handled properly under the conditions recommended by the manufacturer. Leakage and the escape of battery contents and products of decomposition may be caused by mistreatment or circumstances resulting in irregular operation.

In principle it can be assumed that contact with battery ingredients represents a risk to health and the environment. Therefore, adequate body protection and breathing protection must be worn before any contact with suspicious batteries (leakage of contents, deformation, discoloration, dents or similar). Batteries may, e.g. in combination with fire, react very violently. In such a case battery contents can be expelled at high velocity.

### Handling and Operating Safety

Batteries must always be handled according to the manufacturer's recommendations. This applies in particular to observing the limits for mechanical and thermal loads.

STIHL AK , AP, AR batteries - 10°C to max. + 50°C

Battery for STIHL HSA 25 0°C to max. +40°C

STIHL batteries and STIHL chargers are placed on the market together as matching product packages. Batteries and chargers must not be modified or tampered with in any way.

Use STIHL batteries only with STIHL or VIKING power tools and charge them only with original STIHL chargers. Never use or charge a defective, damaged or deformed battery.

Even in an apparently discharged state, batteries can continue to be a source of danger and deliver a very high short circuit current.

### 3 Composition, Information on Ingredients

Cathode

- Li-, Ni-, Al- and Co/LiMn oxides (active material)
- Polyvinylidene fluoride (binder)
- Graphite (conductive material)

Anode

- Carbon (active material)
- Polyvinylidene fluoride (binder)

Electrolyte

- Organic solvent (non-aqueous liquid)
- Lithium salt

The product contains no metallic lithium or lithium alloys.

### 4 First Aid Measures

#### 4.1 Skin contact or eye contact with leaking substances (electrolyte)

Rinse the contact areas thoroughly with plenty of water for at least 15 minutes. In the event of contact with the eyes, always seek medical assistance in addition to rinsing thoroughly with water.

#### 4.2 Burns

Should burns have occurred, they must be treated appropriately. It is advisable to immediately contact a doctor in such a case.

#### 4.3 Respiratory tract

In the event of excessive smoke emission or release of gas, leave the room immediately. In the event of large quantities and irritation of respiratory tract, call a doctor. Ensure adequate ventilation if possible.

#### 4.4 Ingestion

Wash out mouth and area around mouth with water. Obtain immediate medical attention.

### 5 Fire Fighting Measures

Generally speaking, water can be used to fight battery fires. No special extinguishing agents are necessary. Fires around the batteries can be fought with conventional extinguishing agents. A battery fire cannot be viewed separately from a surrounding fire.

The cooling effect of water prevents the fire spreading to battery cells that have not yet reached the critical temperature which can result in thermal runaway.

Reduce calorific potential by separating large quantities and transporting them away from the danger zone.

### 6 Accidental Release Measures

Electrolyte leakage may occur if the battery case is damaged. Seal leaking batteries airtight in a plastic bag, adding dry sand, chalk powder (CaCO<sub>3</sub>) or vermiculite. Traces of electrolyte can be absorbed with dry kitchen paper. Protective gloves should be worn to avoid direct contact with the skin. Rinse affected area thoroughly with plenty of water.

Personal protective equipment commensurate with the situation should be worn (protective gloves, protective clothing, face shield, respirator).

### 7 Handling and Storage

Always observe the warnings on the batteries and in the instruction manuals of power tools and other applications. Use only the recommended types of battery.

Batteries should be stored preferably dry and at room temperature, extreme fluctuations in temperature should be avoided. Store STIHL batteries only within the recommended temperature range, see chapter 2 - "Handling and Operating Safety".

Local authorities and insurance companies should be consulted if large quantities of batteries are to be stored.

### 8 Exposure Limitation and Controls / Personal Protective Equipment

Batteries are products from which no substances are released under normal and reasonably foreseeable operating conditions.

### 9 Physical and Chemical Properties

Compact battery pack in plastic case.

## 10 Toxicological Information

No known health impairment when handled properly and generally applicable hygiene standards are observed.

## 11 Ecological Information

No negative effects on the environment when handled properly.

## 12 Disposal Considerations



In the European Economic Area (EEA), the crossed out wheeled bin symbol indicates that batteries must not be disposed of with household waste, but collected

separately. Take used rechargeable batteries back to a STIHL servicing dealer for free-of-charge disposal or return them to an appropriate public waste collection point. In the case of STIHL type AR rechargeable batteries it is not advisable to return them to a public waste collection point because the battery may still have a design-related electric charge even though it is de-energized at the outer contacts. Take STIHL type AR batteries back to a STIHL servicing dealer for disposal.

Observe applicable local regulations on environment friendly disposal.

To reduce the risk of short circuits and accompanying heat buildup, batteries must never be stored or transported unprotected in bulk form. The battery must be returned suitably protected against short circuit. Suitable measures against short circuits include, e.g.:

- Keeping the batteries in the original packaging or a plastic bag.
- Taping the poles (terminals).
- Imbedding in dry sand.

## 13 Transport Information

Commercial transport of batteries is subject to dangerous goods regulations. The preparations for transport and transport itself are to be carried out exclusively by appropriately trained persons or the process must be accompanied by appropriately qualified experts or companies.

### 13.1 Transport regulations

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Batteries are subject to the following dangerous goods regulations and exceptions to them - in the applicable version in each case.

#### UN 3480

- Lithium-ion-batteries

#### UN 3481

- Lithium-ion batteries contained in equipment or
- Lithium-ion batteries packed with equipment

**Class: 9**

**Packing group: II**

**ADR, RID**

- Special provisions: SP188, SP230, SP376, SP377, SP636b
- Packing instructions: P903, P908, P909
- Transport category: II
- Tunnel category: E

**IMDG Code: 310**

- Special provisions: SP188, SP230, SP376, SP377, SP636b
- Packing instructions: P903, P908, P909
- EmS: F-A, S-I
- Stowage category: A

**ICAO, IATA-DGR**

- Special provisions: A88, A99, A154, A164, A183
- Packing instructions: PI965, PI966, PI967

### 13.2 Test and inspection specifications

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In accordance with the dangerous goods regulations for rechargeable lithium ion batteries, each new type of cell or battery must have passed all tests listed in the UN Manual of Tests and Criteria, Part III, Section 38.3. This applies in particular if multiple cells or batteries have been assembled to create new batteries (battery packs or battery assemblies).

Defective or damaged batteries are subject to more stringent regulations, up to and including a complete transport ban. The transport ban applies to air transport carriers (ICAO T.I., IATA DGR - special provision A154). Contact the STIHL sales company before transporting defective or damaged rechargeable batteries.

However, for the transport of used, but not damaged, batteries, refer also to the corresponding special regulations (636), and/or packing instructions (P903a and P903b / ADR).

Waste batteries and batteries shipped for recycling or disposal are banned in air cargo (IATA special provision A 183).

Exceptions must be approved by the responsible authority of the country of origin and the country of the airline company.

## 14 Regulatory Information

Transport regulations according to IATA, ADR, IMDG, RID

## 15 Information for AK, AP

### Observe LEDs on battery

1 glows red	Battery too hot or too cold. Battery cannot be charged in this condition.  Allow battery to cool down or warm up.
4 flash red	Malfunction in battery.  Remove battery from power tool and refit it.
3 glow red	Power tool too hot.  Wait for the power tool to cool down.
3 flash red	Malfunction in power tool.  Have power tool checked by STIHL servicing dealer.

## 16 Information for AR

### Observe LEDs on battery

1 glows red	Battery too hot or too cold. Battery cannot be charged in this condition.  Allow battery to cool down or warm up.
4 flash red for about 5 seconds and acoustic warning signal (rapid sequence of beeps)	Malfunction in battery.  Disconnect battery from power tool, take it off your back, observe battery and contact your STIHL servicing dealer immediately.
3 glow red	Power tool too hot.  Wait for the power tool to cool down.
3 flash red	Malfunction in power tool.  Have checked by STIHL servicing dealer.

If the battery emits fumes, heats up, smells, makes noises or shows signs of deformation, disconnect it from the power tool, take it off your back, put it down and immediately move a safe distance away. Keep children and animals away from the work area. Keep battery away from combustible materials.

## 17 Other Information

The information provides assistance for complying with legal specifications, but does not replace them. It is based on the current level of knowledge.

The above information was compiled to the best of our knowledge and belief.

It does not represent any guarantee of properties. It is the distributor's and user's responsibility to observe applicable laws and regulations.

This document is based on "Safety Information for Lithium-Ion Batteries in Electric Power Tools and Garden Tools" issued by EPTA (European Power Tool Association).

ANDREAS STIHL AG & Co. KG