Safety Information for STIHL Batteries and Products with Built In Batteries

11/2017

Contents

STIHL®

1 Explanatory Note

EU

The STIHL rechargeable batteries listed in this safety information are to be regarded as ‘products’. There is no intentional release of substances during use.

The batteries do not therefore come under the category of ‘substances’ or ‘mixtures’ within the meaning of the REACH Regulation (EC) 1907/2006. Therefore, there is no obligation to provide a safety data sheet in accordance with Article 31 of the REACH Regulation.

In order to provide information on the batteries nonetheless, STIHL has chosen to publish this safety information.

2 Designation of Product and Company

2.1 Trade name

The specifications are stated on the rating label on the battery, on the product or in the respective instruction manual.

The batteries are lithium-ion rechargeable batteries.

– 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
– STIHL BGA 45: 4513 011 XXXX
– STIHL FSA 45: 4512 011 XXXX
– STIHL HSA 45: 4511 011 XXXX

2.2 Manufacturer

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3 Possible Hazards

3.1 Overview

Battery cells are hermetically sealed. A battery is safe in use providing the manufacturer’s recommendations are observed.

⚠ WARNING

- Chargers not explicitly approved by STIHL for a battery or products with a built-in battery may cause a fire or explosion. This can result in serious or fatal injuries and damage to property.
  - ► Recharge batteries or products with a built-in battery only with a charger approved by STIHL for the battery or the product with a built-in battery.

⚠ WARNING

- A battery or product with built-in battery cannot operate reliably if it is not in a safe condition. This can result in serious injuries.
  - ► Never bridge a battery's contacts with metallic objects (short circuit).
  - ► Do not insert objects in openings in the battery or product with built-in battery.
  - ► Do not attempt to open batteries or products with a built-in battery.

⚠ WARNING

- Children are not aware of and cannot assess the dangers of a battery or a product with a built-in battery and can be seriously injured.
  - ► Keep children away from the work area.

⚠ WARNING

- A battery or a product with a built-in battery is not protected against all ambient influences. A battery or a product with built-in battery may be damaged if it is exposed to certain ambient influences.
  - ► Always store a battery or product with built-in battery in a clean and dry condition.
  - ► Protect a battery or product with built-in battery from rain and dampness and do not immerse in fluids.
  - ► Observe the permissible temperature range for the battery or product with a built-in battery.
  - ► Protect a battery or product with built-in battery from open fire.
  - ► Never throw a battery or product with built-in battery in a fire.
  - ► 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.

Batteries or products with a built-in battery 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,

bulges 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.

3.2 Handling and Operating Safety

Batteries and products with a built-in battery must always be handled according to the manufacturer's recommendations. This applies in particular to observing the limits for thermal loads during storage and transport.

Maximum temperature range

– up to +100°C (+212°F)

Permissible temperature range for operation, transport and storage

– STIHL AK , AP, AR batteries -10°C to +50°C (14°F to +120°F)
– STIHL BGA 45, FSA 45, HSA 45: -0°C to +50°C (32°F to +120°F)
– Battery for STIHL HSA 25: -0°C to 40 °C (32°F to +105°F)

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

Use STIHL batteries only with STIHL or VIKING power tools and charge STIHL batteries or products with a built-in battery only with the designated STIHL chargers. Never charge or use a defective, damaged or deformed battery. Never charge or use a defective, damaged or deformed product with a built-in battery.

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

4 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.

5 First Aid Measures

5.1 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.

5.2 Burns

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.

5.3 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.

5.4 Ingestion

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

6 Fire Fighting Measures

The cooling effect of water or sand 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.

No special extinguishing agents are necessary. Fires around batteries or products with a built-in battery can be fought with conventional extinguishing agents. A battery fire or fire in a product with a built-in battery cannot be viewed separately from a surrounding fire.

Allow fire to die down safely: Keep objects and bystanders away from the fire area.

7 Measures in Case of Damage

Electrolyte leakage may occur if the battery case or the housing of the product with a built-in battery is damaged. Place the batteries or products with a built-in battery in an airtight, fireproof container filled with dry sand, chalk powder ($CaCO_3$) or vermiculite. Any leaking chemicals are absorbed in this way. Traces of electrolyte can be picked up with dry kitchen paper. Protective gloves should be worn in such cases 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).

Note when storing damaged batteries or products with a built-in battery that a thermal reaction can take place even several days later. Therefore, always store in a safe place.

8 Handling and Storage

Always observe the warnings on the batteries or products with a built-in battery and in the instruction manuals of power tools and other applications. Use only the recommended types of battery.

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

Local authorities, fire services and insurance companies should be consulted if large quantities of batteries or products with a built-in battery are to be stored.

9 Exposure Limitation and Controls / Personal Protective Equipment

Batteries and products with a built-in battery are components from which no substances are released under normal and reasonably foreseeable operating conditions.

10 Physical and Chemical Properties

Compact battery pack in plastic case.

11 Toxicological Information

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

12 Ecological Information

No negative effects on the environment when handled properly.

13 Disposal Considerations

In the European Economic Area (EEA), the crossed out wheelie binsymbol indicates that batteries or products with a built-in battery must not be disposed of with household waste, but collected separately.

Take used batteries and products with a built-in battery, preferably in a discharged condition, to a STIHL servicing dealer for free-of-charge disposal or return them to an appropriate waste collection point. In the case of STIHL type AR rechargeable batteries it is not advisableto 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 or products with a built-in battery 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.:

– Products with built-in battery: Remove the activation key.
– Keeping the batteries or products with a built-in battery in the original packaging or a plastic bag.
– Taping the poles (terminals).
– Imbedding in dry sand.

14 Transport Information

14.1 Test and inspection specifications

Original STIHL batteries have successfully passed the tests in accordance with UN Manual of Tests and Criteria, Part III, Subsection 38.3, 4th edition or later, and are manufactured using a certified quality assurance program in accordance with para 2.2.9.1.7 e) ADR/RID/ADN, 2.9.4.5 IMDG Code and 3.9.2.6 e) IATA-DGR.

14.2 Classification and Transport Requirements

STIHL lithium-ion batteries transported separately are classified as:

– UN 3480 lithium-ion batteries

STIHL power tools packed with one or several lithium-ion batteries are classified as:

– UN 3481 lithium-ion batteries packed with equipment

STIHL power tools with a built-in lithium-ion battery are classified as

– UN 3481 lithium-ion batteries contained in equipment

The latest transport requirements for the different modes of transport apply:

– Transport by road in Europe: ADR
– Transport by rail in Europe: RID
– Transport on inland waterways in Europe: ADN
– International transport by air: ICAO-TI / IATA-DGR

– International transport by sea: IMDG Code

The applicable requirements for transport by road, rail and inland waterways in other countries are available from the competent authorities.

14.3 Transport by Private Persons

Private persons are exempted from the transport requirements in countries where ADR applies.

Nevertheless, the following criteria must be fulfilled:

– Goods are intended for personal or domestic use or for leisure or sport.

– Goods are in retail packaging.

– The load is adequately secured.

Transport as hand baggage or checked-in baggage on aircraft has to be agreed with the airline chosen. Different rules apply.

14.4 Transport by Tradesmen

In countries where ADR applies, the exemption regulations in accordance with 1.1.3.6 ADR (1000 points rule) apply for tradesmen transporting lithium-Ion batteries with an energy content of more than 100 Wh. Transport of batteries up to a gross weight of 333 kg is thus not subject to marking, i.e. no orange plates are required on the vehicle and it is only necessary to carry a 2 kg ABC dry powder fire extinguisher.

Extensive exemptions, so-called tradesmen's rules, apply to carriage for use (at customer's premises). The following recommendations are made:

– Safe and sturdy packaging (original packaging).

– Marking in accordance with ADR (original packaging).

– The load is adequately secured.

– Instructing staff who carry out transport.

There are no further requirements for lithium-ion batteries with an energy content not exceeding 100 Wh. Nevertheless, the following recommendations are made:

– Safe and sturdy packaging (original packaging).

– The load is adequately secured.

Supply journeys are not exempt.

14.5 Defective and Damaged Lithium-Ion Batteries

Although everything is done to ensure the safety of STIHL lithium-ion batteries, more care and caution are required in the case of defective or damaged batteries. Please contact your servicing dealer as soon as possible. He will advise you on the necessary action to be taken.

15 Regulatory Information

Transport regulations according to IATA, ADR, IMDG, RID

16 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 responsibility of distributors, shippers, recyclers and users 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).

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