Safety information

for Gardena lithium-ion batteries

Gardena GmbH Version: 6.0 dated 02.12.2019

The Gardena batteries described below fall under the REACH definition "articles", from which no substances are released if used properly. There is no obligation to make safety data sheets available according to Article 31 of the REACH Directive for articles. As a result, important information regarding the batteries are made available in the form of these safety information documents.

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1. Product and company designation

Product information

Lithium-ion battery (battery pack with lithium-ion cells < 100 Wh)
Article numbers:
1559, 1748, 1749, 4025, 4052, 4054, 4055, 4071, 4072, 5023, 5033, 5039, 5043, 8025, 8866, 8877, 8881, 8885, 8887, 8890, 8893, 8894, 8895, 8897, 8898, 9335, 9339, 9340, 9341, 9360, 9822, 9823, 9825, 9827, 9836, 9837, 9838, 9839, 9842, 9852, 9853, 9854, 9855, 9856, 9857, 9858, 9860, 9865, 9866, 9876, 9878, 13300, 15001, 15002, 15004, 15005, 15101, 15102, 15103, 15104, 19060, 19061, 19064, 19065, 19066, 19069, 19090, 19113, 19114, 19115, 19116, 19200

Lithium-ion battery (battery pack with lithium-ion cells > 100 Wh)
Article numbers: 5038, 5041, 9338, 9843, 19091

Manufacturer / supplier information
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2. Potential hazards

Lithium batteries are safe to use if handled correctly and the parameters stated by the manufacturer are observed. Lithium batteries are sealed in a gas-tight manner and are harmless provided that the manufacturer's directives are observed when used and handled.

Warning
Mishandling or conditions that lead to improper use can lead to leaks and the escape of battery contents and decomposition products as well as associated severe hazardous reactions that pose a risk to health and the environment.
As various chemical ingredients are used, the manufacturer's provisions concerning immediate measures and first aid measures must be observed in the event of an accident.

Handling and operational safety
Only use original Gardena chargers for the respective battery type when re-charging batteries.
Do not short-circuit batteries!
Do not mechanically damage (pierce, deform, destroy, etc.)!
Do not heat above the permitted temperature or burn!
Keep batteries out the reach of children!
Store batteries in a cool and dry place!

In principle, contact with leaking battery components can pose a danger to health and the environment. Therefore, sufficient body and respiratory protection must be worn when in contact with conspicuous batteries (escaping content, deformations, decolouration, dents or similar issues). Batteries can react severely in combination with fire for example. In doing so, battery components can be emitted with significant energy.

Batteries must be handled in accordance with the manufacturer's information in all circumstances. This particularly applies with regard to compliance with the thermal load limits when loading, storing and transporting.

- Loading: At ambient temperatures of 0–40 °C
- Storage and transportation: Ideally < 25 °C (low self-discharge); max. 45 °C

Gardena batteries and the associated units are harmonised. Such product packages may not be modified or manipulated under any circumstances as this can lead to significant safety risks.

Even if presumably discharged, batteries continue to represent a source of danger and supply an extremely high short-circuit current.

3. Composition/component information

Battery pack which contains cells with a lithium metal oxide cathode.

Cathode:	Li, Ni, Al and Co/LiMn oxide (active material)
	Graphite (conductive material)
	Polyvinylidene fluoride (binder)
	Aluminium foil
Anode:	Carbon (active material)
	Polyvinylidene fluoride (binder)
	Copper foil
Electrolyte:	Organic solvent (non-aqueous liquid)
	Lithium salt

The product does not contain any metallic lithium or lithium alloys.

4. First aid measures

Skin or eye contact with escaping substance (electrolyte):
If such contact should occur, the affected areas must be thoroughly rinsed with water for at least 15 minutes.
In the event of eye contact, a doctor must be contacted in addition to the thorough rinsing with water.

Burns:
All burns must be treated appropriately. Contacting a doctor is urgently recommended.

Airways:
Leave the room immediately in the event of intensive smoke production or a gas leak. Also contact a doctor if high volumes of smoke or gas escape and in case of irritation of the airways. Ensure sufficient ventilation where possible

If swallowed:
Rinse the mouth and surrounding area with water. Obtain medical assistance immediately.

5. Fire-fighting measures

In principle, fires created by lithium-ion batteries can be tackled using water. No special extinguishing agents are required. Ambient fires in the proximity of batteries can be tackled using conventional extinguishing agents. A battery fire cannot be separated from an ambient fire.
The cooling effect of water restricts the transfer of a fire to battery cells that have not yet reached a critical temperature for ignition ("thermal runaway").
Reduce the fire load by isolating larger volumes and transport out of the danger zone.

6. Measures in the event of unintentional release

Electrolyte can escape if the battery housing is damaged. Batteries or products equipped with an integrated battery must be sealed air-tight in a sealable, non-flammable container. Dry sand, chalk powder ($CaCO3$) or vermiculite is to be added. Electrolyte traces can be absorbed with dry household paper. In doing so, direct contact with the skin shall be prevented by wearing protective gloves. Thoroughly rinse with water.

Personal protective equipment that is suitable for the situation should be worn (protective gloves, protective clothing, face protection, respiratory protection).

7. Handling and storage

Handling:
The warning information stated on batteries or products equipped with integrated battery as well as the operating instructions belonging to devices and other applications must be carefully adhered to. Only use the recommended battery types.

Storage:
Batteries or products equipped with integrated battery should preferably be stored at room temperature and in a dry place (max. 45 °C). Only store Gardena batteries within the permitted temperature range, see Chapter 2, “Handling and operational safety”. Large temperature fluctuations should be avoided (e.g. do not store close to radiators; do not expose to permanent sunlight).

Consult the local authorities, the fire brigade or insurance companies when storing larger volumes of batteries or products equipped with integrated battery.

8. Limitation and monitoring of the exposure

Batteries or products with integrated battery are products (articles according to REACH) from which no substances are released under normal reasonably foreseeable operating conditions.

9. Physical and chemical properties

Compact battery pack with plastic coating.

10. Stability and reactivity

When an upper temperature limit is exceeded (see operating instructions belonging to the respective battery type), there is a risk that the batteries will burst.

Compliance with the upper voltage limit must always be observed when charging a rechargeable system. The batteries may burst or explode if the limits are exceeded.

Furthermore, the cutoff voltage should not fall below the stipulated value. There is also a risk of bursting here.

11. Toxicological information

There is no risk to health if handled correctly and the generally valid hygiene provisions are observed.

12. Environmental-related information

No damage to the environment is expected if handled properly.

13. Disposal information

The symbol of the crossed-out waste bin reminds end users that batteries may not be disposed of with domestic waste within the European Economic Area (EEA) and must be collected separately.
Used batteries must be returned (free of charge) to a GARDENA specialist dealer or public collection point.

Please observe the respective regional directives concerning environmentally-friendly disposal.

In order to prevent short-circuits and the subsequent heating, batteries may never be stored or transported unprotected in loose ballast. Suitable measures against short-circuits include:

- Placing the batteries in original packaging or a plastic bag
- Masking the poles
- Embedding in dry sand

14. Transportation information

General information
The commercial transportation of lithium-ion batteries is subject to the hazardous goods law. The transportation preparation and the transport itself may only be performed by respectively trained or briefed persons and the process must be accompanied by respective experts or qualified companies.

Transport provisions
Lithium-ion batteries are subject to the following hazardous goods directives and the exceptions from this – in the respectively valid version:

Class 9

UN 3480	LITHIUM-ION BATTERIES
UN 3481	LITHIUM-ION BATTERIES IN EQUIPMENT (i.e. inserted in the battery-powered product) or LITHIUM-ION BATTERIES, PACKAGED WITH THE EQUIPMENT (i.e. together with the battery-powered product)

Tunnel category E

ADR, RID:

Special directive:	SV188, SV230, SV376, SV377, SV636 (b)
Packaging instruction:	P903, P908, P909, LP903, LP904

Transport category 2
Tunnel category E

IMDG Code:

Special directives:	SV188, SV230, SV376, SV377, SV636b
Packaging instruction:	P903, P908, P909

EmS: F-A, S-I
Stowing category A

IATA:
A88, A99, A154, A164, A181, A182, A183, A185, A201, P965, P966, P967, P968, P969, P970

Test and inspection directives
In accordance with the hazardous goods directives, all aforementioned lithium batteries successfully passed Test 38.3 and are therefore compliant with the UN regulations. GARDENA Manufacturing GmbH is in possession of the respective evidence of this.

15. Legal provisions

Transportation directives according to IATA, ADR, IMDG, RID

16. Further information

The information provides assistance regarding the compliance of statutory provisions but do not replace them. They are based upon the current state of knowledge. The aforementioned information was compiled to the best of our knowledge and belief. They do not represent a guarantee of characteristics. The persons marketing, transporting, disposing and using the products are responsible for compliance with the applicable laws and provisions.

This document is based on Data Sheet 2 “Safe Handling of Lithium Batteries” from ZVEI (German Electrical Engineering and Electronics Industry) dated May 2016.