

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Name of the substance	GARDENA Lithium Ion Batteries (above 100Wh)
Identification number	- (CAS number)
Registration number	-
Synonyms	None.
Product code	Articles covered by this SDS are shown on the attached list.
Issue date	07-December-2016
Version number	01
Revision date	-
Supersedes date	-

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Lithium ion battery.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier/Manufacturer	Gardena Manufacturing GmbH
Address	Hans-Lorensen-Straße 40, 89079 Ulm, Germany
Telephone	+49(0) 7 31 490 0
Fax	+49(0) 7 31 490 219
	www.husqvarnagroup.com

1.4. Emergency telephone number	+1-760-476-3961 (Access code 333721)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

This product is an article according to REACH.

Classification according to Regulation (EC) No 1272/2008 as amended

Not applicable.

Hazard summary	Exposure to contents of an open or damaged battery: Harmful if swallowed. Causes skin and eye burns. Causes damage to organs through prolonged or repeated exposure. Possible risk of impaired fertility.
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2.2. Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains:	GARDENA Lithium Ion Batteries (above 100Wh)
Hazard pictograms	None.
Signal word	None.
Hazard statements	Not assigned.

Precautionary statements

Prevention	
P102	Keep out of reach of children.
Response	Not assigned.
Storage	Store as indicated in Section 7.
Disposal	Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information	None.
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2.3. Other hazards	None known.
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SECTION 3: Composition/information on ingredients**3.1. Substances**

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
GARDENA Lithium Ion Batteries (above 100Wh)	100	-	-	-	
Classification:	-				

Constituents

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Cobalt lithium dioxide	25 - 45	12190-79-3 235-362-0	-	-	
Aluminum foil	10 - 30	7429-90-5 231-072-3	-	013-002-00-1	
Carbon black	5 - 25	1333-86-4 215-609-9	-	-	
Copper foil	5 - 25	7440-50-8 231-159-6	-	-	
Electrolyte	5 - 25	-	-	-	**

List of abbreviations and symbols that may be used above

** Electrolyte: CAS 21324-40-3, CAS 96-49-1, CAS 616-38-6, CAS 623-53-0

SECTION 4: First aid measures

General information Show this safety data sheet to the doctor in attendance.

4.1. Description of first aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move to fresh air. Get medical attention if any discomfort continues.
Skin contact	Exposure to contents of an open or damaged battery: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if any discomfort continues.
Eye contact	Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if any discomfort continues.
Ingestion	Exposure to contents of an open or damaged battery: Rinse mouth thoroughly. Get medical attention if any discomfort occurs.

4.2. Most important symptoms and effects, both acute and delayed

Skin and eye burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards The product is not flammable. Will burn if involved in a fire.

5.1. Extinguishing media

Suitable extinguishing media	Dry chemical powder. SPECIFIC RECOMMENDATIONS. Class D fire extinguisher.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Containers can burst violently when heated, due to excess pressure build-up. Fire may produce irritating, corrosive and/or toxic gases.

5.3. Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective clothing.
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** Leak from a damaged or opened battery: Avoid contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- For emergency responders** Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not contaminate water sources or sewer.

6.3. Methods and material for containment and cleaning up

Leak from a damaged or opened battery: Wipe up with absorbent material (e.g. cloth, fleece). Place in a designated labeled waste container, dispose as hazardous waste.

6.4. Reference to other sections

For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire. Do not open, disassemble, crush or burn battery. Do not expose battery to extreme heat or fire. Elevated temperatures can result in reduced battery service life.
Observe good industrial hygiene practices. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Keep out of reach of children. Store in a cool, dry place. Store away from incompatible materials (See Section 10).
Storage temperature: between -10°C and 40°C. Relative Humidity range between 45% and 85%.

7.3. Specific end use(s)

Lithium ion battery.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Constituents	Type	Value	Form
Cobalt lithium dioxide (CAS 12190-79-3)	TWA	0.1 mg/m3	
Aluminum foil (CAS 7429-90-5)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.
Carbon black (CAS 1333-86-4)	STEL	7 mg/m3	
	TWA	3.5 mg/m3	
Copper foil (CAS 7440-50-8)	STEL	2 mg/m3	Inhalable dusts and mists.
	TWA	1 mg/m3	Inhalable dusts and mists.
		0.2 mg/m3	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

Exposure guidelines

Airborne exposures to hazardous substances are not expected when product is used for its intended purpose.

8.2. Exposure controls

Appropriate engineering controls

Ventilation is not normally required. Leak from a damaged or opened battery: Provide adequate ventilation if fumes or vapours are generated.

Individual protection measures, such as personal protective equipment

General information

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Not necessary under normal conditions. Wear chemical goggles if handling an open or leaking battery.

Skin protection

- Hand protection

Not necessary under normal conditions.
Leak from a damaged or opened battery: Wear chemical-resistant, impervious gloves.

- Other

Not necessary under normal conditions.

Respiratory protection

Not necessary under normal conditions.

Thermal hazards

Not applicable.

Hygiene measures	Do not store food, drink and tobacco near the product. Practice good housekeeping.
Environmental exposure controls	Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Battery.
Physical state	Solid.
Form	Prismatic.
Colour	Silver-white.
Odour	Odourless.
Odour threshold	Not determined.
pH	Not determined.
Melting point/freezing point	Not determined.
Initial boiling point and boiling range	Not determined.
Flash point	Not determined.
Evaporation rate	Not determined.
Flammability (solid, gas)	Not determined.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Not determined.
Solubility(ies)	Not determined.
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Product is not self-igniting.
Decomposition temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not determined.
Oxidising properties	Not determined.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	The product is stable under normal conditions of use, storage and transport.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire. Heat, sparks, flames, elevated temperatures.
10.5. Incompatible materials	Do not immerse in seawater or other high conductivity liquids.
10.6. Hazardous decomposition products	Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

SECTION 11: Toxicological information

General information	Low hazard for usual industrial or commercial handling by trained personnel.
Information on likely routes of exposure	
Inhalation	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: May cause irritation to the respiratory system.
Skin contact	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes skin burns.
Eye contact	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes serious eye damage.
Ingestion	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Harmful if swallowed.
Symptoms	Exposure to contents of an open or damaged battery: Causes skin and eye burns.
11.1. Information on toxicological effects	

Acute toxicity Expected to be a low hazard for usual industrial or commercial handling by trained personnel.
Exposure to contents of an open or damaged battery: Harmful if swallowed.

Toxicological data

Constituents	Species	Test results
Carbon black (CAS 1333-86-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 3000 mg/kg
<i>Oral</i>		
LD50	Rat	> 8000 mg/kg
Copper foil (CAS 7440-50-8)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 2.77 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	481 mg/kg
Skin corrosion/irritation	Exposure to contents of an open or damaged battery: Causes skin burns.	
Serious eye damage/eye irritation	Exposure to contents of an open or damaged battery: Causes serious eye damage.	
Respiratory sensitisation	No data available.	
Skin sensitisation	Not a skin sensitiser.	
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Carbon black (CAS 1333-86-4)	2B Possibly carcinogenic to humans.	
Cobalt lithium dioxide (CAS 12190-79-3)	2B Possibly carcinogenic to humans.	
Reproductive toxicity	Contains a substance/a group of substances which may impair fertility.	
Specific target organ toxicity - single exposure	No data available.	
Specific target organ toxicity - repeated exposure	Exposure to contents of an open or damaged battery: Causes damage to organs (bones, teeth) through prolonged or repeated exposure.	
Aspiration hazard	No data available.	
Mixture versus substance information	Not available.	
Other information	No data available.	

SECTION 12: Ecological information

12.1. Toxicity No ecological impacts expected under normal use conditions.

Constituents	Species	Test results
Carbon black (CAS 1333-86-4)		
Aquatic		
<i>Acute</i>		
Fish	LC50 Leuciscus idus	>= 1000 mg/l, 96 Hours
12.2. Persistence and degradability	No data available.	
12.3. Bioaccumulative potential	No data available.	
Partition coefficient n-octanol/water (log Kow)	Not applicable.	
Bioconcentration factor (BCF)	Not available.	
12.4. Mobility in soil	Not available.	
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.	
12.6. Other adverse effects	No data available.	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose in accordance with applicable federal, state, and local regulations.
Contaminated packaging	Not applicable.
EU waste code	16 06 05
Disposal methods/information	Do not dispose in fire. Dispose waste and residues in accordance with applicable federal, state, and local regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN3480
14.2. UN proper shipping name	LITHIUM ION BATTERIES
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Hazard No. (ADR)	-
Tunnel restriction code	E
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN3480
14.2. UN proper shipping name	LITHIUM ION BATTERIES
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	II
14.5. Environmental hazards	No
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN3480
14.2. UN proper shipping name	LITHIUM ION BATTERIES
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	II
14.5. Environmental hazards	No
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN3480
14.2. UN proper shipping name	LITHIUM ION BATTERIES
14.3. Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
14.4. Packing group	II
14.5. Environmental hazards	No
ERG Code	-
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number	UN3480
14.2. UN proper shipping name	LITHIUM ION BATTERIES
14.3. Transport hazard class(es)	
Class	9

Subsidiary risk	-
Label(s)	9
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-I
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
General information	From 1st January 2017 a revised label, 9A replaces label 9. Use of label 9 is permitted until 31st December 2018. May also be transported as UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Dimethyl carbonate (CAS 616-38-6)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Dimethyl carbonate (CAS 616-38-6)

Other regulations

According to REACH Regulation 1907/2006 EC, the product is considered as an article. The preparation of a safety data sheet in accordance with Article 31 of the Regulation (EC) No.1907/2006 is not legally required for articles. This Safety Data Sheet (SDS) is provided on a voluntary basis for informational purposes only.

National regulations

Not available.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

List of abbreviations

PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
TWA: Time weighted average.

References	STEL: Short term exposure limit. European Treaty for international road transport of dangerous goods (ADR) International Maritime Code for the Transport of Dangerous Goods (IMDG)
Information on evaluation method leading to the classification of mixture	This product is an article according to REACH.
Full text of any H-statements not written out in full under Sections 2 to 15	None.
Training information	Follow training instructions when handling this material.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.

Gardena Branded Li-Ion batteries more than 100 Wh

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