

1. IDENTIFICATION OF PRODUCT AND OF THE COMPANY/UNDERTAKING

Product identifier:	Electrolux Rechargeable Lithium Ion Batteries
Battery Pack identification:	Articles covered by this SDS are shown in the attached list.
Recommended use:	Lithium Ion Battery in vacuum cleaner (see last page of models)
Details of supplier of the safety data sheet.	Electrolux AB S:t Göransgatan 143 Se-105 45 Stockholm Sweden +46 (0)87 38 60 00 info@electrolux.com
Emergency telephone number:	+46 (0)87 38 60 00 (only available during office hours)

2. HAZARDS IDENTIFICATION

Classification of the product:	<p>The product is not classified according to EC No 1272/2008 The battery is sealed hermetically. The ingredients have no hazardous potential, except when battery is violated or dismantled. If in case mistreated the ingredients are released, a spontaneous flammable gas mixture may be released under certain circumstances (measures according to chapter 4 and 6).</p> <p>Attention: If batteries are treated wrong the danger of burns or burs occurs. Batteries must not be heated above 100°C or incinerated. The battery content must not get in contact with water. If the negative electrode get in contact with water or humidity hydrogen gas is formed, which may inflame spontaneously.</p>
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Lithium ion Battery consisting of the following components

Material	CAS No/EC No	Content	Remark
Aluminium foil	7429-90-5 231-072-3	2-10%	
Metal oxide (proprietary)	Confidential	20-50%	Cathode (positive)
Binder	Confidential	<5%	
Copper foil	7440-50-8 231-159-6	2-10%	
Carbon (proprietary)	Confidential	10-30%	Anode (negative)
Electrolyte (proprietary)	Confidential	10-20%	
Inert Material	N/A	Remainder	

Ingredients shown are major constituent's representative of various compositions for lithium ion cells. Content and composition concentrations will vary with battery type/size.

During charge process lithium carbon intercalation phase is formed, which is highly flammable and corrosive, but not released under the circumstances of normal use

4. FIRST AID MEASUREMENTS

First aid – Inhalation	Exposure to content of an open or damaged battery: Move to fresh air. Get medical attention if any discomfort continues.
First aid – Skin contact	Exposure to content of an open or damaged battery: Remove solid particles and contaminated cloth immediately. Flush affected areas with plenty of water (at least 15 min).
First aid – Eye contact	Exposure to content of an open or damaged battery: Immediately rinse eye with plenty of tempered water (15-20°C) for at least 15 minutes. Seek for medical assistance.
First aid – Ingestion	Exposure to content of an open or damaged battery DO NOT induce vomiting. Drink plenty of water. No trials for neutralization. Seek for medical assistance.

5. FIRE-FIGHTING MEASURES

Extinguishing media	Metal fire extinction powder, rock salt or dry sand shall be used. In case only water is available, it can be used in large amounts
Extinguishing media with limited suitability:	Carbon dioxide (CO ₂) is not suitable Water in small quantities may have adverse effects.

Special protective equipment during fire-fighting:

Wear self-contained breathing apparatus and protective clothing.

Special hazard:

Cells may explode and release metal parts.
At contact of electrolyte with water trace of hydrofluoric acid may be formed. In this case avoid contact and take care for good ventilation.
At contact of charged anode material with water extremely flammable hydrogen gas is generated.

Attention:

Do not let used extinguishing media penetrate into surface water or ground water. If necessary, thicken water or foam with suitable solids. Dispose of properly.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Leak from a damage or opened battery: Avoid contact with skin and eyes. Do not touch damaged containers or spilled materials unless wearing protective clothing as described in section 8.
Keep unnecessary personnel away

Environmental precautions:

Bind released ingredients with powder (rock, salt, sand).
Dispose of according to the local law and rules.
Avoid leached substances to penetrate into the earth, canalization or water.

Method for cleaning up:

If battery casing is dismantled, small amounts of electrolyte may leak.
Package the battery tightly including ingredients together with lime, sand or rock salt.
Place in a designated labeled waste container, dispose according to local laws and rules
Then clean affected area with water.

7. HANDLING AND STORAGE

Precautions for safe handling:

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types.
Keep batteries away from children.
In case of a battery change always replace the battery by new ones of identical type.
Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.
Use recommended charging time and current.
Do not open, disassemble, crush or burn battery
Do not expose batteries to extreme heat or fire.

Safe storage:	<p>Store in a dry place, preferably at room temperature (approx. 20°C).</p> <p>Avoid large temperature changes.</p> <p>Do not store close to heating devices.</p> <p>Avoid direct sunlight.</p> <p>Elevated temperatures can result in reduced battery performance.</p> <p>Prefer storage at 50% of the nominal capacity.</p>
Storage category according to TRGS 510:	<p>It is recommended to consider the "technical Rule for Hazardous Substances TRGS 510-Storage of hazardous substances in nonstationary containers" and to handle lithium ion batteries do according to storage category 11 ("combustible solids").</p>
Storage of large amounts:	<p>Follow the recommendations of the German Insurance Association (GDV - "Gesamtverband der Deutschen Versicherungswirtschaft e.V.") concerning lithium batteries: http://vds.de/fileadmin/vds_publicationen/vds_3103_web.pdf</p> <p>In case of storage of large amounts (used storage volume > 7 m³ and/or more than 6 pallets) batteries shall be stored in fire-resistant or separated rooms or areas (e.g. warehouse or container for hazardous materials). Mixed storage with other products is not allowed. The storage area shall be monitored by an automatic fire detection system, connected to a permanently manned place. A fire-extinguishing system shall reflect the extinguishing agents mentioned in chapter 5.</p>
Specific use:	Vacuum Cleaners

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Under normal conditions during charge and discharge release of ingredients does not occur

Occupational exposure limits No exposure limits noted for the ingredients.

Eye protection:

Hand protection: Not necessary under normal conditions
 Leak from a damaged or opened battery: Wear chemical goggles

Body protection: Not necessary under normal conditions
 Leak from a damaged or opened battery: Wear chemical resistant impervious gloves

Respiratory protection: Not necessary under normal conditions
 Leak from a damaged or opened battery: Use protective suit

Hygiene measures Not necessary under normal conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Not applicable is closed.

10. STABILITY AND REACTIVITY

Reactivity:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability:	The product is stable under normal conditions of use, storage and transport.
Conditions to avoid:	When heated above 100°C the risk of rupture occurs. At contact of electrolyte with water trace of hydrofluoric acid may be formed. At contact of charged anode material with water extremely flammable hydrogen gas is generated

11. TOXICOLOGICAL INFORMATION

Under normal conditions (during charge and discharge) release of ingredients does not occur. In case of accidental release see information in chapter 2, 3, 4.

12. ECOLOGICAL INFORMATION

Ecotoxicity	No ecological impacts expected under normal use conditions.
Persistence and degradability:	No data available.
Bioaccumulative potential	No data available.
Mobility in soil:	No data available.

13. DISPOSAL CONSIDERATIONS**Disposal Method USA:**

Lithium ion batteries are classified by the federal government as non-hazardous waste and are safe for disposal in the normal municipal waste stream.

These batteries, however, do contain recyclable materials and are accepted for recycling by Call2Recycle, Inc. Please go to their website at www.call2recycle.org for additional information.

Always consider federal, state and local regulations.

Disposal Method EU:

In the European Union, manufacturing, handling and disposal of batteries is regulated on the basis of the DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC.

Customers find detailed information on disposal in their specific countries using the web site of the European Portable Batteries Association

(http://www.epbaeurope.net/legislation_national.html).

Importers and users outside EU should consider the local law and rules.

Always consider federal, state and local regulations.

In order to avoid short circuit and heating, used lithium ion batteries should never be stored or transported in bulk. Proper measures against short circuit are:

- Storage of batteries in original packaging

- Coverage of the terminals

- Embedding in dry sand

14. TRANSPORT INFORMATION

IATA	Lithium Ion Batteries¹	Batteries packed with equipment²
UN Number	UN 3480	UN 3481
UN Proper shipping name:	LITHIUM ION BATTERIES	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Class	9	9
Subsidiary risk	-	-
Label(s)	9A	9A
Packaging group	-	-
Environmental Hazards	No	No
IMDG	Lithium Ion Batteries¹	Batteries packed with equipment²
UN Number	UN 3480	UN 3481
UN Proper shipping name:	LITHIUM ION BATTERIES	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Class	9	9
Subsidiary risk	-	-
Label(s)	9A	9A
Packaging group	-	-
Marine pollutant	No	No
EmS	F-A, S-I	F-A, S-I

¹ Rechargeable lithium ion batteries manufactured are considered to be UN 3480 Lithium Ion Batteries, and are tested according to 38.3 of the "UN Manual of Tests and Criteria" for compliance with the requirements of special provisions ADR 188, IMDG 188, as well as the requirements of DOT / 49 CFR § 173.185, and the requirements of IATA DGR packing instruction 965. Test results as well as other relevant information required for transportation are given in dedicated "Declarations of Conformity".

²May also be transported as UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

During the transportation of large amounts of batteries by ship, trailer or railway, do not store them in places of high temperature and do not allow them to be exposed to condensation. During the transportation do not allow the packaging to be damaged, as a damage of the packaging may cause fire. In the event packaging is damaged, special procedures must be used including inspection and repackaging if necessary and handle with care.

Code of practice for packaging and shipment of secondary batteries given in IEC 62133: The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

Compilations of transport requirements for Lithium batteries can be found in:

<https://www.lithium-batterie-service.de/en/> <http://www.iata.org/whatwedo/cargo/dgr/Documents/lithium-battery-guidance-document-2017-en.pdf>

Each cell/battery is manufactured under the quality management program described in IATA DGR clause 3.9.2.6, ADR clause 2.2.9.1.7 e), and IMDG code clause 2.9.4.

15. REGULATORY INFORMATION

Marking consideration:	<p>European Union: According to Directive 2006/66/EC, the batteries have to be marked with the crossed wheel bin symbol. According to Commission Regulation (EU) No 1103/2010 portable secondary (rechargeable) batteries and accumulators shall be marked with a capacity marking, except those which are incorporated or designed to be incorporated in appliances before being provided to end-users, and not intended to be removed.</p> <p>Rechargeable Lithium ion batteries, which contain electronic modules (e.g. PCM) and which are subjected to the EMC directives 2004/108/EC or 2014/35/EU (as they are end-user replaceable devices), must undergo a CE conformity assessment and must wear the CE marking.</p> <p>According to Dangerous Goods Regulations (see 14.) battery packs have to be marked with the Watt-hour rating.</p>
International safety standards:	The basis cells are Recognized Components according to UL 1642
Water hazard class	The regulations of the German Federal Water Management Act (WHG) are not applicable as Lithium ion batteries are articles and not substances, thus there is no risk of water pollution, except the batteries are violated or dismantled.
Safety, health and environmental regulations/legislation of product	<p>EU regulation (EC) no 1272/2008 (CLP)</p> <p>EC DIRECTIVE 2008/98/EC (waste)</p> <p>EU Regulation (EC) no.1907/2006 (REACH)</p>

16. OTHER INFORMATION

Note	<p>Date of issue of the transport regulations: ADR 2017, RID 2017, IATA 2022 (63rd edition), IMDG 2020, DOT / 49 CFR 2018.</p> <p>Latest covered modification of the European Battery Directive 2006/66/EC: Directive 2013/56/EU.</p>																							
ROHS relevant substances and content in product	<table border="1"> <thead> <tr> <th>Contents</th> <th>CAS No.</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>< 1 mg/kg</td> <td>7440-43-9</td> <td>Cadmium</td> </tr> <tr> <td>< 10 mg/kg</td> <td>7439-92-1</td> <td>Lead</td> </tr> <tr> <td>< 1 mg/kg</td> <td>7439-97-6</td> <td>Mercury (none intentionally introduced, see below)</td> </tr> <tr> <td>< 5 mg/kg</td> <td></td> <td>Hexavalent Chromium (Cr6+)</td> </tr> <tr> <td>< 5 mg/kg</td> <td></td> <td>PBB</td> </tr> <tr> <td>< 5 mg/kg</td> <td></td> <td>PBDE</td> </tr> </tbody> </table>	Contents	CAS No.	Material	< 1 mg/kg	7440-43-9	Cadmium	< 10 mg/kg	7439-92-1	Lead	< 1 mg/kg	7439-97-6	Mercury (none intentionally introduced, see below)	< 5 mg/kg		Hexavalent Chromium (Cr6+)	< 5 mg/kg		PBB	< 5 mg/kg		PBDE		
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Information

The Lithium ion batteries do not contain heavy metals as defined by the European directives 2006/66/EC Article 21; they comply with the chemical composition requirements of this Directive.

Mercury has not been "intentionally introduced (as distinguished from mercury that may be incidentally present in other materials)" in the sense of the U.S.A. "Mercury-Containing and Rechargeable Battery Management Act" (May 13 1996).

The Regulation on Mercury Content Limitation for Batteries promulgated on 1997-12-31 by the China authorities including the State Administration of Light Industry and the State Environmental Protection Administration defines 'low mercury' as 'mercury content by weight in battery as less than 0.025%', and 'mercury free' as 'mercury content by weight in battery as less than 0.0001%'. And therefore: VARTA lithium ion batteries belong to the category of mercury-free battery (mercury content lower than 0.0001%).

PQ9/QX9 battery pack (Platform PANGU & Pangu Yeti)PABP216LI21-VTC4
PABP252LI21-VTC445.36
52.92**WQ61/QX6/WQ71/QX7/WQ81/QX8 battery pack (Platform Bacchus)**BABP185LI20-TP(5INR19/66)
BABP222LI20-TP(61NR19/66)
BABP259LI20-TP(61NR19/66)37
44.4
51.8**Ergorapido battery pack (platform ARBORINA)**

ARBPI80TP-20

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PANGU FLES62CB25UG, ES62CP25DB, ES62AB25UG, ES62HB25SH, ES62HB25UV, ES62P25WET, ES62A252XN, ES62B25GRN, AS62CB25DH,
AS62CB25HI, AS62CB25UG, AS62CP25DB, AS62AB25UG, AS62HB25SH, AS62HB25UV, AS62P25WET, AS62A252XN, AS62A25UOT,
AS62B25GRN, AS62B25OKO, EFS71421, EFS71423, EFS71425, EFS71425WH, EFS71435, EFS71436, EFS71423GR

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Fortuna with AA/LR 1.5V battery

PC91-ALRG1, PC91-5IBM