

Product Data Sheet

Section I – Product and Company Information

Product: Rechargeable Nickel-Metal Hydride batteries
Models: See Laerdal Product Battery Information Table, Section 14
Effective Date: June 2020
Version: 2020 A

Responsible Manufacturer:

Laerdal Medical
Tanke Svilandsgate 30
4007 Stavanger
Norway
Emergency Phone number: +47 92035459

Product details

Product types: Rechargeable Ni-MH cylindrical (or multi-cell assemblies of these basis cells including batteries packed with or contained in Laerdal Products (see product information table in Section 14).
Voltage: 1.2 V (or multiples of 1.2 V in case of assembled batteries)
Electrochemical system: Nickel metal hydride

Legal Remark (U.S.A.)

Safety Data Sheets are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an “article”. According to OSHA, Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.

Because all our batteries are defined as “articles”, they are exempted from the requirements of the Hazard Communication Standard.

Legal remark (EU)

These batteries are no “substances” or “mixtures” according to Regulation (EC) No 1907/2006 EC. Instead they must be regarded as “articles”; no substances are intended to be released during handling. Therefore, there is no obligation to supply a “safety data sheet according to Regulation (EC) 1907/2006, Article 31”.

General remark

This Safety Data Sheet is provided as a service to our customers. The details presented are in accordance with our present knowledge and experiences. They are no contractual assurances of product attributes.

Section II – Composition Information

Not chemically dangerous during normal use in accordance with Laerdal’s recommendations as stated in the user manuals or other similar documentation. Exposure to hazardous chemicals is not expected with normal handling and use. In particular, the cell or battery should not be opened or burned.

During charge process, the miscellaneous metal nickel alloy is loaded with hydrogen, this compound is flammable.

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Section III - Hazards identification

A sealed Nickel-Metal hydride cell/battery is not hazardous in normal use.

In case of mistreatment (abusive over charge, reverse charge, external short circuit...) and in case of fault, some electrolyte can leak from the cell through the safety device. In these cases, refer to the risks of potassium hydroxide solution or sodium hydroxide solution (corrosive, pH > 14). The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if exposed to fire.

Section IV - First-aid measures

After inhalation: Fresh air. Seek medical assistance.

After skin contact: Flush affected areas with plenty of water. Remove contaminated cloth immediately. Seek medical assistance.

After eye contact: Flush the eye gently with plenty of water (at least 15 minutes). Seek medical assistance.

After ingestion: Drink plenty of water. Avoid vomiting. Seek medical assistance.

Section V - Fire-fighting measures

Suitable extinguishing media: Use foam, dry powder or carbon dioxide (CO₂), as appropriate.

Extinguishing media with limited suitability: Water is only applicable for incipient fire.

Special protection equipment during firefighting: Contamination cloth including breathing apparatus.

Special hazard: Under fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides.

Section VI - Accidental release measures

Person related measures: Wear personal protective equipment adapted to the situation (protection gloves, cloth).

Environment protection measures: In the event of battery rupture, prevent skin contact and collect all released material in a plastic lined container.

Dispose off according to the local law and rules.

Avoid leaked substances to get into the earth, canalization or waters.

Treatment for cleaning: If battery casing is dismantled, small amounts of electrolyte may leak. Pack the battery including ingredients as described above. Then clean with water.

Section VII - Handling and storage

Guideline 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. For devices to be used by children, the battery casing should be protected against unauthorized access.

Unpacked batteries shall not lie about in bulk.

In case of battery change always replace all batteries by new ones of identical type and brand.

Do not swallow batteries.

Do not throw batteries into water.

Do not throw batteries into fire.

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Do not open or disassemble batteries.

Do not short-circuit batteries.

Avoid deep discharge. Use recommended charging time and current.

Storage:

Storage preferably at room temperature 20°C. Keep batteries between -20 °C and 35 °C for prolonged storage. When the cells are close to fully charged, the storage temperature should be between -20 °C and 30 °C.

Do not store close to the heating. Avoid direct sunlight.

Storage of large amounts of batteries only:

If possible, store the batteries in original packaging (short circuit protection); A fire alarm is recommended; For automatic fire extinction consider chapter 5 "Firefighting measures".

Storage category according to TRGS 510:

It is recommended to consider the "Technical Rule for Hazardous Substances TRGS 510 - Storage of hazardous substances in nonstationary containers" and to handle Nickel metal hydride cylindrical cells/batteries according to storage category 11 ("combustible solids").

Section VIII - Exposure controls/personal protection

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

Section IX - Physical and chemical properties

Not applicable if closed.

Section X - Stability and reactivity

Dangerous reactions: When heated above 150°C the risk of rupture occurs.

Section XI - Toxicological information

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section IV, V and VI

Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up.

Section XII - Ecological information

Laerdal's Nickel metal hydride cylindrical cells/batteries do not contain heavy metals as defined by the European directive 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: Laerdal's Nickel metal hydride cylindrical cells/batteries belong to the category of mercury-free battery (mercury content lower than 0.0001%).

Section XIII - Disposal considerations

USA: Nickel metal hydride cylindrical cells/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

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are accepted for recycling by the Rechargeable Battery Recycling Corporation's (RBRC) Battery Recycling Program. Please go to the RPRC website at www.call2recycle.org for additional information.

In the European Union, manufacturing, handling and disposal of batteries is regulated based on 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.

Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment. Do not throw out a used battery cell. Recycle it through a recycling company.

In order to avoid short circuit and heating, used nickel metal hydride cylindrical cells/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

Section XIV - Transport information

Laerdal's nickel metal hydride cylindrical cells/batteries and products containing Nickel metal hydride batteries are considered to be "dry cell" batteries and are unregulated for purposes of transportation by the International Civil Aviation Administration (ICAO), International Air Transport Association (IATA), the "Accord Européen Relatif au Transport International des Marchandises Dangereuses par Route" (ADR) and the "Règlement concernant le transport international ferroviaire de marchandises Dangereuses" (RID).

IATA DGR: Special Provision A199: The UN number UN 3496 is only applicable in sea transport. Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Regulations provided they are prepared for transport so as to prevent: a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and (b) unintentional activation. The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

EU (ADR/RID): Chapter 3.2 Table A: "Batteries, nickel-metal hydride, UN 3496, not subject to ADR"

USA: 49 CFR § 172.102 Special Provision 130: "Batteries, dry, sealed, n.o.s.," commonly referred to as dry batteries, are hermetically sealed and generally utilize metals (other than lead) and/or carbon as electrodes. These batteries are typically used for portable power applications. The rechargeable (and some non-rechargeable) types have gelled alkaline electrolytes (rather than acidic) making it difficult for them to generate hydrogen or oxygen when overcharged and therefore, differentiating them from non-spillable batteries. Dry batteries specifically covered by another entry in the §172.101 Table must be transported in accordance with the requirements applicable to that entry. For example, nickel-metal hydride batteries transported by vessel in certain quantities are covered by another entry (see Batteries, nickel-metal hydride, UN3496). Dry batteries not specifically covered by another entry in the §172.101 Table are covered by this entry (i.e., Batteries, dry, sealed, n.o.s.) and are not subject to requirements of this subchapter except for the following: [...] (b) Preparation for transport. Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent: (1) A dangerous evolution of heat; (2) Short circuits, including but not limited to the following methods: [...] (ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices or conductive materials (e.g., metal) in the packaging [...]; and (3) Damage to terminals. If not impact resistant, the outer packaging should not be used as the sole means of protecting the battery terminals from damage or short circuiting. Batteries must be securely cushioned and packed to prevent shifting which could loosen terminal caps or reorient the terminals to produce short circuits." Special Provision 340: This entry applies only to the vessel transportation of nickel-metal hydride batteries as cargo. Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel are not subject to the requirements of this special provision. See "Batteries, dry, sealed, n.o.s." in the §172.101 Hazardous Materials Table (HMT) of this part for transportation

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requirements for nickel-metal hydride batteries transported by other modes and for nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel. Nickel-metal hydride batteries subject to this special provision are subject only to the following requirements: (1) The batteries must be prepared and packaged for transport in a manner to prevent a dangerous evolution of heat, short circuits, and damage to terminals; and are subject to the incident reporting in accordance with §171.16 of this subchapter if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a nickel metal hydride battery; and (2) when loaded in a cargo transport unit in a total quantity of 100 kg gross mass or more, the shipping paper requirements of Subpart C of this part, the manifest requirements of §176.30 of this subchapter, and the vessel stowage requirements assigned to this entry in Column (10) of the §172.101 Hazardous Materials Table.

International Maritime Organization (IMO), IMDG Code: Regulated as “Batteries, nickel-metal hydride, UN 3496”, Special Provision 963: “...nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are not subject to other provisions of this Code provided that they are loaded in a cargo transport unit in a total quantity of less than 100 Kg gross mass. When loaded in a cargo transport unit in a total quantity of 100 Kg gross mass or more, they are not subject to other provisions of this Code except those of 5.4.1, 5.4.3 and column (16) of the dangerous goods list in Chapter 3.2.” This do not affect Nickel metal Hydride batteries packed with or contained in products.

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 to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in equipment are not subject to the provisions of this Code.

The following table provides Laerdal Product Battery Information:

Item Number	Description	Batteries pr. product	Battery package information
123-50127	Battery charger w/ 4 batteries	4	Packed with equipment
246-00050	SimBaby Light	2	Contained in equipment
246-00150	SimBaby Medium	2	Contained in equipment
246-00250	SimBaby Dark	2	Contained in equipment
247-00050	SimBaby Trach Light	2	Contained in equipment
247-00150	SimBaby Trach Medium	2	Contained in equipment
247-00250	SimBaby Trach Dark	2	Contained in equipment
246-63550	Upper Legs w batteries	2	Contained in equipment
295-00050	Premature Anne Standard	1	Contained in equipment
296-62050	Legs, upper, left, right	2	Contained in equipment
296-00050	SimNewB Light	2	Contained in equipment
296-00250	SimNewB Dark	2	Contained in equipment
M3864A	Training & adm pack	1	Standalone Battery
78000000	LSU w/Reusable Canister Northern Europe	1	Packed with equipment
78000002	LSU w/Reusable Canister Swedish(S)	1	Packed with equipment
78000003	LSU w/Reusable Canister (GB)	1	Packed with equipment
78000004	LSU w/Reusable Canister Dutch (NL)	1	Packed with equipment
78000005	LSU w/Reusable Canister Japanese(J)	1	Packed with equipment
78000007	LSU w/Reusable Canister French(F)	1	Packed with equipment
78000008	LSU w/Reusable Canister Finnish (SF)	1	Packed with equipment



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Item Number	Description	Batteries pr. product	Battery package information
78000009	LSU w/Reusable Canister Italian(I)	1	Packed with equipment
78000010	LSU w/Reusable Canister German(D)	1	Packed with equipment
78000011	LSU w/Reusable Canister Danish (DK)	1	Packed with equipment
78000016	LSU w/Reusable Canister Canadian French	1	Packed with equipment
78000020	LSU w/Reusable Canister Canada Fr/Eng	1	Packed with equipment
78000026	LSU w/Reusable Canister Chinese (CH)	1	Packed with equipment
78000029	LSU w/Reusable Canister Spanish€	1	Packed with equipment
78000033	LSU w/Reusable Canister International	1	Packed with equipment
78000043	LSU w/Reusable Canister Polish (PL)	1	Packed with equipment
78000057	LSU w/Reusable Canister Eastern Europe	1	Packed with equipment
78002001	LSU w/Bemis Canister	1	Packed with equipment
78003000	LSU w/Serres Suction Bag Can Sys Northern EU	1	Packed with equipment
78003002	LSU w/Serres Suction Bag Canister System (S)	1	Packed with equipment
78003003	LSU w/Serres Suction Bag Canister System (GB)	1	Packed with equipment
78003004	LSU w/Serres Suction Bag Canister System (NL)	1	Packed with equipment
78003005	LSU w/Serres Suction Bag Canister System (J)	1	Packed with equipment
78003007	LSU w/Serres Suction Bag Canister System (F)	1	Packed with equipment
78003008	LSU w/Serres Suction Bag Canister System (SF)	1	Packed with equipment
78003009	LSU w/Serres Suction Bag Canister System (I)	1	Packed with equipment
78003010	LSU w/Serres Suction Bag Canister System (D)	1	Packed with equipment
78003011	LSU w/Serres Suction Bag Canister System (DK)	1	Packed with equipment
78003016	LSU w/Serres Suction Bag Canister,Canadian French	1	Packed with equipment
78003020	LSU w/Serres Suction Bag Canister, Canada Fr/Eng	1	Packed with equipment
78003029	LSU w/Serres Suction Bag Canister System (E)	1	Packed with equipment
78003033	LSU w/Serres Suction Bag Can. Syst. International	1	Packed with equipment
78003043	LSU w/Serres Suction Bag Canister System (P)	1	Packed with equipment
78003057	LSU w/ Serres Suction Bag Eastern Europe	1	Packed with equipment
780800	LSU Battery	1	Standalone Battery
880051	LCSU 4	1	Contained in equipment
880052	LCSU 4	1	Contained in equipment
880061	LCSU 4	1	Contained in equipment
880062	LCSU 4	1	Contained in equipment
88005101	LCSU 4	1	Contained in equipment
88005103	LCSU 4	1	Contained in equipment
88005105	LCSU 4	1	Contained in equipment
88005140	LCSU 4	1	Contained in equipment
88005201	LCSU4	1	Contained in equipment
88005203	LCSU4	1	Contained in equipment
88005205	LCSU4	1	Contained in equipment
88005240	LCSU4	1	Contained in equipment
88006101	LCSU 4	1	Contained in equipment
88006103	LCSU 4	1	Contained in equipment



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Item Number	Description	Batteries pr. product	Battery package information
88006105	LCSU 4	1	Contained in equipment
88006140	LCSU 4	1	Contained in equipment
88006201	LCSU 4	1	Contained in equipment
88006203	LCSU 4	1	Contained in equipment
88006205	LCSU 4	1	Contained in equipment
88006240	LCSU 4	1	Contained in equipment
886113	Rechargeable NiM-Battery	1	Standalone Battery

Section XV - Regulatory information

Marking consideration:

European Union: According to Directive 2006/66/EC, the batteries must 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.

International safety standards:

The following cells/batteries are recognized components according to UL 2054: VH 700 AAA, VH 1300 AA, VH 1600 AA, VH 1800 AA, VH 2700 A, VH 4500 4/3FA, VH2100 4/5A, VH 4000 4/3A..

Water hazard class:

The regulations of the German Federal Water Management Act (WHG) are not applicable as nickel metal hydride cylindrical cells/batteries are articles and not substances, thus there is no risk of water pollution, except if the batteries are violated or dismantled.

Section XVI - Other information

Preparation Date: June 5, 2020

Prepared by: Øyvind Våge, Global Trade & Dangerous Goods Specialist, Laerdal Medical

Revision: 2020A

Date of issue of the transport regulations: ADR 2019, RID 2019, IATA 2020 (61st edition), IMDG 2018, DOT / 49 CFR 2018.

Latest covered modification of the European Battery Directive 2006/66/EC: Directive 2013/56/EU.