INTRODUCTORY STATEMENTS

EU

These batteries are neither "substances" nor "preparations" in the sense of REACH Regulation (EC) 1907/2006, but are instead to be regarded as "products". The intentional release of substances during use is not foreseen. Consequently, there is no obligation to provide a safety data sheet conforming to Article 31 of the REACH Regulation.

USA

Preparation of safety data sheets (SDS) is a subrequirement of the Hazard Communication Standard 29 CFR, Section 1910.1200, of the Occupational Safety and Health Administration (OSHA). This standard does not apply to "articles". The OSHA standard defines an "article" as a manufactured item other than a fluid or particle:

1. which is formed to a specific shape or design during manufacture;
2. which has end use function(s) dependent in whole or in part upon its shape or design during end use; and
3. which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

As all of our batteries are classified as "articles", they are exempted from the requirements of the Hazard Communication Standard.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: Nickel metal hydride batteries, rechargeable

No.	Ni-Mh rechargeable battery Model designation	Nominal voltage (V)	Amp hour (Ah)	Maximum capacity (Wh)
1	MXL	14.4 V	3.0 Ah	43 Wh

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

Product category AC3 – Electrical batteries and accumulators

1.3 Details of the supplier of the safety data sheet

Techtronic Industries GmbH
Max-Eyth-Straße 10
71364 Winnenden, Germany

Phone: +49 7195 120
www.ttigroup.com

Person providing the information

Maximilian Wieler
maximilian.wieler@tti-emea.com

See Section 16

1.4 Emergency telephone number

24-hour service

Chemtrec International: +1 703-741-5970
Chemtrec United States only: 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Cells in Ni-Mh batteries are hermetically sealed and are harmless when used in compliance with the manufacturer's instructions for use and handling.

These devices are classified as products in accordance with REACH Article 3 (3) and are therefore not subject to the labelling requirements of hazardous substance legislation.

According to the CLP Regulation the product(s) is/are not classified as hazardous to health or the environment.

2.2 Label elements

According to EC Regulation No. 1272/2008, labelling of the product is not obligatory.

Hazard pictogram	Not required
Signal word	Not required
Hazard statements	Not required

2.3 Other hazards

A pressure release vent opens in the event of improper use of the battery pack in combination with electrical load, fire or mechanical impact. If the product is damaged, the battery housing can rupture and allow the ingredients to be released.

Corrosive vapours can be released in the event of fire.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Rechargeable Ni-Mh battery pack

Chemical name	CAS No.	Content
Nickel Hydroxide Cobalt Hydroxide	12054-48-7 21041-93-0	15-25 wt. % 1-5 wt. %
Hydrogen absorbing alloy	7440-02-0 (Ni) 7440-48-4 (Co) 7439-96-5 (Mn) 7429-90-5 (Al)	20-35 wt.%
Nickel	7440-02-0	3-10 wt. %
Iron	7439-89-6	10-25 wt. %
Potassium Hydroxide Sodium Hydroxide Lithium Hydroxide	1310-58-3 1310-73-2 1310-65-2	0-15 wt. %

Contact with the ingredients is not possible under normal operating conditions.

4. FIRST AID MEASURES

(in case of electrolyte leakage from the battery)

Eye contact by electrolyte:	Do not rub eyes. Wash immediately with large amount of clean water such as tap water 15 minutes or more then receive the ophthalmologist's treatment promptly. It may cause such as losing sight when the right procedure is not taken.
Skin contact by electrolyte:	Wash the affected area under tepid running water using a mild soap. If appropriates procedures are not taken, this may cause sores on the skin. Get medical attention if irritation develops or persists.
Ingestion of electrolyte:	Wash in the mouth immediately with large amount of clean water and make the sufferer drink a lot of water. Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
Inhalation of electrolyte fume:	Remove to fresh air immediately. Take a medical treatment

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Dry sand, chemical powder fire extinguisher.

Specific Fire-Fighting Methods

1. When in firefighting, the air respiratory protection should be used because acrid or harmful gas might be generated when fire is extinguished.
2. Remove combustibles at once from a firefighting area.
3. Remove the batteries to safe area at once from firefighting place.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment appropriate to the situation (protective gloves, protective clothing, face protection, respiratory protection).

Wear protective gloves to prevent direct skin contact. Rinse with copious amounts of water.

6.2 Environmental precautions

Avoid seepage into the sewer system and/or soil.

6.3 Methods and materials for containment and cleaning up

Electrolyte can emerge if the battery housing is damaged. Place batteries in an air-tight plastic bag and add dry sand, lime powder ($CaCO_3$) or vermiculite. Electrolyte traces can be soaked up with dry paper towels.

6.4 Reference to other sections

See Section 7 for more information on safe handling.

See Section 8 for more information on personal protective equipment.

See Section 13 for more information on disposal.

7. HANDLING AND STORAGE

7.1 Reference to other sections

Handle discharged batteries carefully
Discharged batteries are also a hazard source because they can still deliver very high short-circuit currents. Even when batteries appear to be discharged, they must be handled just as carefully as when they are not discharged.

Avoid exposure to physical effects and/or blows
Blows and penetration of objects can damage the battery. That can lead to leaks, overheating, smoke formation, ignition or explosion of the battery.

Keep batteries away from other metallic objects
Including paper clips, coins, keys, screws, and other metallic objects which could cause shorting of the battery terminals. A short-circuit between the battery terminals can cause burns or fire.

Liquid can emerge from the battery if it is used improperly
Avoid contact with leaky batteries. In case of accidental contact, rinse with water. If the liquid comes in contact with the eyes, also seek medical attention. Emerging liquid can lead to skin irritation or burns.

Do not expose batteries to fire or high temperatures
If the batteries are thrown into a fire or exposed to temperatures above 85°C, the heat can lead to an explosion and/or fire and cause personal injuries. Do not incinerate batteries except in a waste incinerator approved for that purpose.

Do not dismantle batteries
Dismantling or altering the battery can degrade the protective measures. That can lead to overheating, smoke formation, ignition or explosion of the battery.

Do not immerse batteries in liquids, such as water or beverages
Contact with liquids can damage the battery. That can lead to overheating, smoke formation, ignition or explosion of the battery.

Recharge batteries only in battery chargers recommended by the manufacturer
There is a risk of fire if a charger is used with batteries other than those for which it is intended.

Use batteries only in the electrical tools and garden implements for which they are intended
Using other electrical tools or garden implements can lead to injuries or fire.

Do not use batteries which are damaged or in abnormal condition
Damaged batteries and batteries in abnormal condition can have unforeseeable properties which can lead to fire, explosion or personal injuries.

Do not use defective batteries
Stop using the battery immediately if it shows signs of abnormal properties, such as odour, heat, discolouration or deformation. Continued use of a defective battery can lead to overheating, smoke formation, ignition or explosion.

7.2 Conditions for safe charging with respect to incompatibilities

Always carefully observe the warning notices on the batteries and in the use instructions. Using only recommended battery types.

Ni-Mh batteries should preferably be stored in a dry place at room temperature (max. 50°C). Large temperature variations should be avoided (do not store close to heaters, avoid long-term exposure to direct sunlight, etc.).

Consult local authorities and/or insurance companies with regard to the storage of relatively large quantities of Ni-Mh batteries.

7.3 Specific end uses

No further relevant information available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Ni-Mh batteries are products which do not release any substances under normal and reasonably foreseeable conditions of use. Exposure control and personal protective equipment are therefore not normally required.

8.2 Exposure controls

If substances are released from the battery cells, the following instructions for accident prevention when handling chemicals must be observed.

Personal protective equipment

Protective gloves with CE mark conforming to category III of EN 374.

Closed safety glasses or goggles

Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General information

Form	Compact batteries with (plastic) enclosure and electrical terminals
Colour	Black
Odour	Odourless
Odour threshold	Not applicable

pH	Not applicable
Melting point / freezing point	Not applicable
Boiling point	Not applicable
Flash point	Not applicable
Flammability (solid, gas)	Not determined
Ignition temperature	Not determined
Decomposition temperature	Not determined
Spontaneous flammability	Not spontaneously flammable
Explosion hazard	No explosion hazard in normal and reasonably foreseeable use
Explosive limits (lower, upper)	Not determined
Vapour pressure	Not applicable
Density	Not determined
Solubility / miscibility in water	Insoluble
Partition coefficient	Not applicable
Viscosity	Not applicable
Solvent content	0.0%

9.2 Other information

No further relevant information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

10.2 Chemical stability

No decomposition when used as intended

10.3 Possibility of hazardous reactions

No hazardous reactions known

10.4 Conditions to avoid

If the upper temperature limit (e.g. 130°C) is exceeded, there is a risk that the batteries may burst or that the pressure relief vent may open.

Storage temperatures above 60°C can lead to accelerated ageing and premature loss of functionality.

10.5 Incompatible materials

Strong oxidants, strong acids, electrically conductive materials

10.6 Hazardous decomposition products

Vapours harmful to health are released in the event of fire.

11. TOXOLOGICAL INFORMATION

11.1 Information about toxicological effects

Ni-Mh batteries are products which do not release any substances under normal and reasonably foreseeable conditions of use. Organic electrolyte and other ingredients may be released if the product is damaged. Primary irritative effect:

On the skin

Irritating to the skin and mucous membranes.

On the eyes

Irritating

Additional toxicological information

According to the calculation procedure of the latest EC version of the General Classification Guideline, the product is not subject to labelling requirements.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No further relevant information available

12.2 Persistence and degradability

No further relevant information available

12.3 Bioaccumulative potential

No further relevant information available

12.4 Mobility in soil

No further relevant information available

12.5 Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

12.6 Other adverse effects

General considerations

No adverse effects on the environment are to be expected under normal and reasonably foreseeable conditions of use. The batteries do not contain any heavy metals (lead, cadmium, mercury, etc.).

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of the battery pack in accordance with national regulations.

In the EU, used batteries may not be disposed of as household waste and may not be mixed with batteries of different types, in order to avoid difficulties with recycling and hazards to people and the environment.

Used batteries must be taken back (at no charge) by the sales point or handed in to a disposal facility (industrial or commercial).

In accordance with the European directive for batteries, Ni-Mh batteries are marked with the "symbol for sorted collection" (a waste bin with a strike-through line) as shown in the figure.

To prevent short circuits and resulting heat generation, Ni-Mh batteries may never be stored or transported unprotected in loose bulk. Suitable measures to prevent short circuits include:

- Placing the battery in the original package, in the original device or in a plastic bag
- Taping over the terminals
- Embedding in dry sand

European Waste Catalogue

16 06 05	Other batteries and accumulators
20 01 34	Batteries and accumulators other than those falling under 20 01 33

14. TRANSPORT INFORMATION

IATA Dangerous Goods Regulations 58th Edition (2017)

ICAO Technical Instructions for the safe transport of dangerous goods by air

The product is handled as Non-Dangerous Goods based on IATA (A199) for air transportation.

The product is handled as following based on IMDG Code UN3496 (SP963) for marine transportation.

1. Nickel-metal hydride button cell or nickel-metal hydride cells or batteries packed with or contained in equipment are Non-Dangerous Goods.

2. All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are Non-Dangerous Goods provided they are loaded in a cargo transport unit in a total quantity of less than 100kg gross mass.

3. When loaded in cargo transport unit in a total quantity of 100kg gross mass or more, they are Dangerous Goods (Class 9)

Prior to transportation,

1. During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to dew condensation.

2. Avoid transportation with the possibility of the collapse of cargo piles and the packing damage.

3. Protect the terminals of batteries and prevent them from short circuit so as not to cause dangerous heat generation.

For air transportation, the words “Not Restricted, as per Special Provision A199” must be included in the description of the substance on the Air Waybill, when an Air Waybill is issued.

15. REGULATORY INFORMATION

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

National regulations

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
- Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)
- 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

Classification according to the German Plant Safety Ordinance (BetrSichV)

None

Other regulations, restrictions or prohibitory ordinance

None

Substances of very high concern (SVHC) according to REACH Article 57

None

15.2 Substance safety assessment

None

Transport regulations according to IATA, ADR, IMDG, RID. See also Section 14.

16. OTHER INFORMATION

The information in this document is intended to provide assistance for compliance with statutory regulations but does not replace them. It is based on the current state of our knowledge.

The information in this document has been compiled to the best of our knowledge and ability.

It does not constitute a warranty of properties. Distributors and users of the product are directly responsible for determining and complying with applicable legislation and regulations.

Issued by

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Abbreviations and acronyms

RID	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO	International Civil Aviation Organisation
ADR	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG	International Maritime Code for Dangerous Goods
IATA	International Air Transport Association
CLP	Classification, labelling and packaging of substances and mixtures
CAS	Chemical Abstracts Service (division of the American Chemical Society)