

## BATTERY INFORMATION SHEET for Tridonic NiCd Batteries with a capacity of 1.8 Ah, 4.0 Ah & 4.5 Ah

### 1. Identification

#### 1.1 Product

Trade name: Ni-Cd Rechargeable Battery

Application of the substance / the preparation: Consumable

#### 1.2 Supplier

Headquarters: Tridonic GmbH & Co KG

Address: Färbergasse 15, 6851 Dornbirn

Phone/Fax: +43 5572 395-0 / +43 5572 20176

#### 1.3 Emergency contact

In case of emergency please contact a Tridonic sales office in your region:

#### EUROPE:

##### Austria

Tridonic GmbH & Co KG

Head Office

Färbergasse 15

6851 Dornbirn

Austria

Tel: +43 5572 395-0

Fax: +43 5572 20176

sales@tridonic.com

www.tridonic.com

##### France

Tridonic France

8 Rue de Bruxelles

ZI Krafft

67150 Erstein

France

Tel: +33 3 88 59 62 70

Fax: +33 3 88 59 62 75

info.france@tridonic.com

www.tridonic.fr

##### Germany

Tridonic Deutschland GmbH

Edisonallee 1

89231 Neu-Ulm

Germany

Tel: +49 731 176629-0

Fax: +49 731 176629-15

vertrieb.deutschland@tridonic.com

www.tridonic.de

##### ITALY

Tridonic Italia srl

Viale della Navigazione

Interna, 115

35027 Noventa Padovana

Italy

Tel: +39 049 89 45 127

Fax: +39 049 87 04 715

vendite.italia@tridonic.com

servizio.tecnico@tridonic.com

www.tridonic.it

##### SPAIN

Tridonic Iberia, S.L.

OFICINA CENTRAL – MADRID

Calle Carpinteros nº 8, 2a

Poligono Industrial Pinares Llanos

28670 Villaviciosa de Odón (Madrid)

Spain

Tel: +34 916 162 095

Fax: +34 916 165 695

ventas@tridonic.com

www.tridonic.es

##### TURKEY

Tridonic Aydınlatma Tic.Ltd. Şti.

Kemankeş Mah., Necatibey cad.

Akçe Sok., Akçe Han No: 10

34420 Karaköy/Beyoğlu İSTANBUL

Turkey

Tel: +90 212 244 78 05

Fax: +90 212 244 78 06

satis@tridonic.com

www.tridonic.com

## **UNITED KINGDOM**

Tridonic UK Ltd  
Unit 7 Lindenwood  
Chineham Business Park  
Crockford Lane, Chineham  
RG24 8LB Basingstoke  
United Kingdom  
Tel: +44 1256 374300  
Fax: +44 1256 374200  
enquiries.uk@tridonic.com  
www.tridonic.com

## **SINGAPORE**

Tridonic S.E.A. Pte Ltd  
10 Tannery Lane  
#03-01  
347773 Singapore  
Singapore  
Tel: +65 62928148  
Fax: +65 62933700  
asean@tridonic.com  
www.tridonic.com

## **NEW ZEALAND**

Tridonic New Zealand  
PO Box 71134, Rosenbank  
27 Jomac Place, Avondale  
Auckland  
New Zealand  
Tel: +64 9 8201119  
sales@tridonic.co.nz  
www.tridonic.com

## **ASIA:**

### **CHINA**

Tridonic (Shanghai) Co., Ltd.  
(Headquarters)  
Room 602, Buliding B, Zhongshan  
International Plaza  
No.789 Tianshanxi Road  
200335 Shanghai  
China  
Tel: +86 21 52400599  
Fax: +86 21 52400230  
china@tridonic.com  
www.tridonic.com

### **UNITED ARAB EMIRATES**

Tridonic Middle East (FZE)  
P.O. Box 17972  
Jebel Ali Free Zone  
Dubai  
United Arab Emirates  
Tel: +971 4 8833664  
Fax: +971 4 8833665  
sales.middleeast@tridonic.com  
www.tridonic.ae

## **AFRICA:**

### **SOUTH AFRICA**

Tridonic SA (Pty) Ltd  
Unit 7, Ground Floor, Old Trafford Office Park  
C/O Trichardt and Leiths Road  
Bartlett, Boksburg 1459  
South Africa  
Tel: +27 11 894 3525  
Fax: +27 86 459 6035  
www.tridonic.com

## **INDIA**

Atco Controls (India) Pvt. Ltd.  
38B Nariman Bhavan,  
Nariman Point  
400 021 Mumbai  
India  
Tel: +91 22 2202 5528  
Fax: +91 22 2202 2304  
sales@atcocontrols.com  
www.tridonic.co.in

## **PACIFIC:**

### **AUSTRALIA**

Tridonic Australia Pty Ltd  
2/7 Millner Avenue  
Horsley Park, NSW 2175  
Australia  
Tel: +61 2 9832 6600  
Fax: +61 2 9832 6688  
infoau@tridonic.com  
www.tridonic.com

## 2. Hazard identification

### 2.1 Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

### 2.2 GHS Label elements, including precautionary statements

Emergency Overview:

Signal word                      Danger

Hazard Statements

Causes skin irritation

Causes serious eye damage

May cause an allergic skin reaction

Suspected of causing cancer



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

Appearance White

Physical State

Solid Odor

Odorless

#### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not breathe dust/fume/gas/mist/vapors/spray.

Do not eat, drink or smoke when using this product.

#### Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label).

Get medical advice/attention if you feel unwell.

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Immediately call a POISON CENTER or doctor/physician

#### Skin

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a POISON CENTER or doctor/physician

### Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

### Precautionary Statements - Storage

No information available.

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

### 2.3 Hazards not otherwise classified (HNOC)

No information available.

### 2.4 Unknown Toxicity

10% of the mixture consists of ingredient(s) of unknown toxicity.

### 2.5 Other information

No information available.

### 2.6 Interactions with Other Chemicals

No information available.

## 3. Composition / information on ingredients

### 3.1 Mixtures information

Chemical name	Concentration	Cas No.
Nickel hydroxide	25.80 %	12054-48-7
Cobalt oxide	1.60 %	11104-61-3
Cadmium	10.40 %	69011-70-7
Cadmium oxide	26.70 %	1306-19-0
Graphite	0.30 %	7782-42-5
Sodium hydrogen phosphate	0.30 %	7558-79-4
The diaphragm	4.30 %	31175-20-9
Carboxymethyl cellulose	0.20 %	9004-32-4
Ploy(tetrafluoroethylene)	0.80 %	9002-84-0
Ploy(vinyl alcohol)	0.20 %	9002-89-5
Styrene 1,3-butadiene polymer	0.10 %	9003-55-8
Nickel	4.90 %	7440-02-0
Sodium hydroxide	4.80 %	215-185-5
Potassium hydroxide	0.50 %	1310-58-3
Water	17.80 %	7732-18-5
Cobalt	0.50 %	7440-48-4
Zinc	0.80 %	7740-66-6

## 4. First-Aid measures

### 4.1 Description of first aid measures

**General Advice:** First aid is upon rupture of sealed battery.

**Eye contact:** Show this safety data sheet to the doctor in attendance. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.

**Skin contact:** Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Get medical advice / attention if you feel unwell.

**Ingestion:** Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical aid.

**Self-protection of the first aider:** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### 4.2 Most important symptoms/effects, acute and delayed

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system. Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

### 4.3 Immediate medical attention and special treatment

No information available.

## 5. Fire-Fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media: Use foam, dry powder or dry sand, CO<sub>2</sub> as appropriate.

Unsuitable extinguishing media: No information available.

### 5.2 Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials.

Hazardous combustion products: CO, CO<sub>2</sub>, Metal oxides, Irritating fumes.

### 5.3 Hazardous Combustion Products

Carbon oxides.

### 5.4 Explosion Data

Sensitivity to Mechanical Impact: No.

Sensitivity to Static Discharge: No.

### 5.5 Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### 6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### 6.3 Methods and materials for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### 7.1 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. 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. Avoid deep discharge. Do not short-circuit batteries Use recommended charging time and current.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. It is recommended at -20 ... +40 °C for 1 month storage, at -20 ... +30 °C for 6 months storage. Do not storage the Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

## 8. Exposure controls / personal protection

### 8.1 Controls parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel 7440-02-0	TWA: 15 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup>

ACGIH TLV: American Conference of Governmental Industrial Hygienists -Threshold Limit Value

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits

NIOSH IDLH Immediately Dangerous to Life or Health

### 8.2 Appropriate engineering controls

Engineering Measures:

1. Showers
2. Eyewash stations
3. Ventilation systems

### 8.3 Individual protection measures, such as personal protective equipment

Eye/Face Protection: Not necessary under normal conditions, wear safety glasses if handling an open or leaking battery.

Skin and body Protection: Not necessary under normal conditions, Wear protective gloves and protective clothing such as long sleeved clothing, impervious gloves, chemical resistant apron, and antistatic boots if handling an open or leaking battery.

**Respiratory Protection:** Not necessary under normal conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink, or smoke in work area. Maintain good housekeeping.

## 9. Physical and chemical properties

Appearance	White Solid
Odor	Odorless
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability	Non flammable.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not applicable.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	130 °C
Decomposition temperature	Not available.
Viscosity	Not available.

## 10. Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage and handling conditions.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

When heated above 150 °C the risk of rupture occurs. Due to special safety construction, rupture implies cont release of pressure without ignition.

### 10.4 Conditions to avoid

Do not subject Ni-Cd Battery to mechanical shock. Keep away from open flames, high temperature.

### 10.5 Incompatible materials

Strong oxidizer, strong acid.

### 10.6 Hazardous decomposition products

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

## 11. Toxicological information

### 11.1 Information on the likely routes of exposure

**Inhalation:** Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

**Ingestion:** Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

**Skin contact:** Contact with battery electrolyte may cause burns and skin irritation.

**Eye contact:** Contact with battery electrolyte may cause burns. Eye damage is possible.

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

If accidental release occurs see information in section 2, and 4. Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up.

### 11.2 Information on toxicological characteristics

**Acute toxicity:** No data available.

**Skin corrosion/irritation:** The liquid in the battery irritates.

**Serious eye damage/irritation:** The liquid in the battery irritates.

**Respiratory sensitization:** The liquid in the battery may cause sensitization to some person.

**Skin sensitization:** The liquid in the battery may cause sensitization to some person.

**Carcinogenicity:** No data available.

**Germ Cell Mutagenicity:** No data available.

**Reproductive Toxicity:** No data available.

**STOT-Single Exposure:** No data available.

**STOT-Repeated Exposure:** No data available.

**Aspiration Hazard:** No data available.

### 11.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization:** No data available.

**Mutagenic Effects:** No data available.

**Carcinogenicity:** No data available.

**Reproductive Toxicity:** No data available.

**Chronic Toxicity:** No data available.

**Target Organ Effects:** No data available.

**Aspiration Hazard:** No data available.

## 12. Ecological information

### 12.1 Reactivity

Water hazard class 1(Self-assessment): slightly hazardous for water.

### 12.2 Persistence and Degradability

No information available.

### 12.3 Bioaccumulative potential

No information available.

### 12.4 Mobility in soil

No information available.

### 12.5 Other adverse effects

No information available.



## 13. Disposal considerations

### 13.1 Safe handling and methods of disposal

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Local regulations may be more stringent than regional or national requirements.

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the

battery terminals to insulate them. Don't disassembly the battery. Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

The potential effects on the environment and human health of the substances used in batteries and accumulators; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

## 14. Transport information

This battery is a Nickel-Cadmium Battery, it belongs to non-spillable battery. According to 2019 IATA DGR 60th edition.

The International Maritime Dangerous Goods (IMDG Code (inc Amdt 38-16)), this battery can be classified as not restricted items.

- Not a hazard material or hazard good for transportation.
- Separate nickel-cadmium batteries when shipping to prevent short-circuiting, they should be packed in strong for support during transport, take in a cargo of them without falling, dropping, and breakage.
- Prevent collapse or cargo piles and wet by rain, the container must be handled carefully.
- Do not give shocks that result in a mark of hitting on a cell .
- Please refer to Section 7 – Handling and storage.
- Not regulated for air transportation as „dangerous goods“.

UN No.		N/A
Name and description		Batteries, Nickel-cadmium
Subsidiary risk /		/
Un packing group		/
Special provision		A123
Limited and excepted quantities	7 <sup>①</sup>	0
	7 <sup>②</sup>	EO <sup>③</sup>
Packing and IBCs	Packing instruction	N/ N/A
	Special packing provisions	/
Portable tanks and bulk containers	Instructions	/
	Special provisions	/

<sup>①</sup> A123: This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2-List of Dangerous Goods.

<sup>②</sup> "O" for each entry not permitted to be transported in accordance with this chapter.

<sup>③</sup> EO: Not permitted as excepted quantity.

## 15. Regulatory information

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous	No
Non-hazardous	Yes

## 16. Other information

### 16.1 Preparation and revision information

Date of previous revision: Not applicable.

Date of this revision: 2019-01-24

Revision summary: The first New SDS

### 16.2 Abbreviations and acronyms

TSCA: Toxic Substances Control Act, The American chemical inventory.

DSL: Domestic Substances List

EINECS: European Inventory of Existing Commercial chemical Substances

ENCS: Japanese Existing and New Chemical Substances

ECL: Existing Chemicals List, the Korean chemical inventory

IECSC: Inventory of existing chemical substances in China.

### 16.3 Disclaimer

Because all of our batteries are defined as „articles“, they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.