



SAFETY DATA SHEET

According to EC 1907/2006 (REACH)

Date last verification : 2016-05-30
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Publication date : 2005-10-06

Version number : 4.0

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

SDS : 22815
Product code 12nc : 9898 031 08831
Supplier : PHILIPS HEALTHCARE, BOTHELL

22100 Bothell Everett Highway
98021 Bothell
Washington
United States of America
TEL:+1 425-908-2636

Tradename : FR2/FR2+ TRAINING AND ADMIN PACK (M3864A)

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

General description : BATTERY
Use : Various
Uses advised against : Data not available.

1.3. Details of the supplier of the safety data sheet

Supplier safety data sheet : Philips Electronics Nederland B.V., P.O. Box 218, 5600 MD Eindhoven, Tel. +31 (0)40 2747588
Responsible department : dangerous.goods@philips.com

1.4. Emergency telephone number

Emergency telephone number : +31 (0)497-598315

2. Hazards identification

2.1. Classification of the substance or mixture

GHS: (EC) No 1272/2008

Not classified according to GHS classification.

EC: (EC) No 67/548 or 1999/45

Not classified according to EC classification.

2.2. Label elements

GHS: (EC) No 1272/2008

GHS-Label : not applicable

Remarks on GHS-labelling : none

EC: (EC) No 67/548 or 1999/45

EC-Label : not applicable

Remarks on EC-labelling : none

2.3. Other hazards

If applicable: see section 6.1 and section 7.1.

3. Composition/information on ingredients

Component	CAS-no. EC-no.	Index No. Registration no.	Percentage(%)	GHS-Label EC-Label
NICKEL DIHYDROXIDE	12054-48-7	028-008-00-X		GHS07

Component	CAS-no.	Index No.	Percentage(%)	GHS-Label
	EC-no.	Registration no.		EC-Label
	235-008-5	01-2119472435-36		GHS08 GHS09 H302 Acute tox. 4 H315 Skin irrit. 2 H317 Skin sens. 1 H332 Acute tox. 4 H334 Resp. sens. 1 H341 Muta. 2 H350i Carc. 1A H360D Repr. 1B H372 STOT RE 1 H400 Aquatic acute 1 H410 Aquatic chronic 1 T,N;R: 49 61 20/22 38 42/43 48/23 50/53 68 Carc.Cat. 1 Muta.Cat. 3 Repr.Cat. 2
POTASSIUM HYDROXIDE	1310-58-3 215-181-3	019-002-00-8 01-2119487136-33		GHS05 GHS07 H302 Acute tox. 4 H314 Skin corr. 1A C;R: 22 35
SODIUM HYDROXIDE	1310-73-2 215-185-5	011-002-00-6 01-2119457892-27		GHS05 H314 Skin corr. 1A C;R: 35
METAL HYDRIDE				
* LITHIUM HYDROXIDE	1310-65-2 215-183-4	01-2119560576-31		GHS05 GHS06 H301 Acute tox. 3 H314 Skin corr. 1A H331 Acute tox. 3 H412 Aquatic chronic 3 T;R: 22 23 35 52/53

For the full text of the H-sentences, hazard statements and R-sentences mentioned in this section, see section 16.

4. First aid measures

4.1. Description of first aid measures

Skin : Not applicable.
Ingestion : Not applicable.
Inhalation : Not applicable.
Eyes : Not applicable.

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

Skin local : Not applicable.
 Skin general : Not applicable.
 Ingestion local : Not applicable.
 Ingestion general : Not applicable.
 Inhalation local : Not applicable.
 Inhalation general : Not applicable.
 Eyes local : Not applicable.
 Remarks symptoms : None

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

None

5. Firefighting measures

5.1. Extinguishing media

Suitable fire-extinguisher
 determined by surrounding

Unsuitable fire-extinguisher

not traceable

5.2. Special hazards arising from the substance or mixture

* **Hazardous decomposition products in fire** : potassium oxide, nickel oxides, sodium oxide, lithium oxide

5.3. Advice for firefighters

In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Precautions

Use protective equipment. See section 8.

Emergency procedure

Is not to be expected.

6.2. Environmental precautions

In accordance with local and national legislation.

6.3. Methods and material for containment and cleaning up

Spillage procedure

not applicable

6.4. Reference to other sections

See section 8 for appropriate personal protection.

See section 13 for additional information on waste treatment.

7. Handling and storage

7.1. Precautions for safe handling

Observe label precautions.

Do not eat, drink or smoke in work areas. Remove contaminated clothing and protective equipment. Wash hands after leaving the work area.

Local exhausting : Under normal circumstances not applicable.

Storage code (on behalf of PGS : M11
15)

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : See also any precautionary statements and S-phrases in section 2.2.
Store product protected from proximity to other sources of heat, dry.

Storage temperature : ≥ -20 °C - ≤ 35 °C

7.3. Specific end use(s)

Data not available.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure limits :

applicable to: The Netherlands

No TWA has been laid down.

No TWA has been laid down.

No TWA has been laid down.

No TWA has been laid down.

*No TWA has been laid down.

NICKEL DIHYDROXIDE
POTASSIUM HYDROXIDE
SODIUM HYDROXIDE
METAL HYDRIDE
LITHIUM HYDROXIDE

applicable to: Belgium (20 °C; 1013 mbar)

TWA(8 hours): 0.2 mg/m³

TWA(15 minutes): 2 mg/m³ C

TWA(8 hours): 2 mg/m³ C

NICKEL DIHYDROXIDE(as nickel)
POTASSIUM HYDROXIDE
SODIUM HYDROXIDE

applicable to: Germany (20 °C; 1013 mbar)

TWA(8 hours): 0.05 mg/m³

TWA(8 hours): 2 mg/m³

NICKEL DIHYDROXIDE(as nickel, inhalable dust)
SODIUM HYDROXIDE

applicable to: United States of America (25 °C; 1013 mbar)

TWA(8 hours):	0.2 mg/m3		NICKEL DIHYDROXIDE(as nickel, insoluble) - [according to ACGIH]
TWA(8 hours):	1 mg/m3		NICKEL DIHYDROXIDE(as nickel) - [according to OSHA]
TWA(15 minutes):	2 mg/m3	C	POTASSIUM HYDROXIDE
TWA(15 minutes):	2 mg/m3	C	SODIUM HYDROXIDE- [according to ACGIH]
TWA(8 hours):	2 mg/m3		SODIUM HYDROXIDE- [according to OSHA]

applicable to: Sweden (20 °C; 1013 mbar)

TWA(8 hours):	0.1 mg/m3		NICKEL DIHYDROXIDE(as nickel, dust)
TWA(8 hours):	1 mg/m3		POTASSIUM HYDROXIDE(as inhalable dust)
TWA(8 hours):	2 mg/m3	C	POTASSIUM HYDROXIDE(as inhalable dust)
TWA(8 hours):	1 mg/m3		SODIUM HYDROXIDE
TWA(8 hours):	2 mg/m3	C	SODIUM HYDROXIDE
*TWA(8 hours):	0.02 mg/m3	C	LITHIUM HYDROXIDE(as lithium, inhalable dust)

applicable to: Switzerland (20 °C; 1013 mbar)

TWA(8 hours):	0.05 mg/m3		NICKEL DIHYDROXIDE(as nickel, inhalable dust)
TWA(8 hours):	2 mg/m3		POTASSIUM HYDROXIDE(as inhalable dust)
TWA(8 hours):	2 mg/m3		SODIUM HYDROXIDE(as inhalable dust)
TWA(15 minutes):	2 mg/m3		SODIUM HYDROXIDE(as inhalable dust)

applicable to: China (20 °C; 1013 mbar)

TWA(8 hours):	1 mg/m3		NICKEL DIHYDROXIDE(as nickel)
TWA(8 hours):	2 mg/m3		POTASSIUM HYDROXIDE
TWA(8 hours):	2 mg/m3		SODIUM HYDROXIDE

C=Ceiling; S=Skin

Remarks exposure limits :

none

DNEL (Derived No Effect Level)

Worker - Inhalation - Long term exposure - Systemic effects: 1 mg/m3

Worker - Inhalation - Long term exposure - Local effects: 1.0 mg/m3

Consumer - Inhalation - Long term exposure - Local effects: 1.0 mg/m3

* Worker - Inhalation - Long term exposure - Systemic effects: 10 mg/m3

* Worker - Dermal - Long term exposure - Systemic effects: 41 mg/kg bw/day

POTASSIUM HYDROXIDE
Source : Chemicalcards
 SODIUM HYDROXIDE
Source : Supplier
 SODIUM HYDROXIDE
Source : Supplier
 LITHIUM HYDROXIDE
Source : Chemicalcards
 LITHIUM HYDROXIDE
Source : Chemicalcards

PNEC (Predicted No Effect Concentration)

* Fresh water: 2.3 mg/l

LITHIUM HYDROXIDE

Source : Chemicalcards

* Marine water: 0.23 mg/l

LITHIUM HYDROXIDE

Source : Chemicalcards

* Intermittent releases: 0.34 mg/l

LITHIUM HYDROXIDE

Source : Chemicalcards**8.2. Exposure controls****Advised personal protection :**

Hands	:	not applicable
Breakthrough time	:	not applicable
Eyes	:	not applicable
Inhalation	:	not applicable
Skin	:	none (when used normally)

9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	:	battery	
Colour	:	type dependent	
Odour	:	odourless	
Odour threshold (20°C; 1013 mbar)	:	not traceable	
pH	:	not applicable	
Melting point/range	:	not traceable	
Boiling point/range	:	not traceable	
Flash point/range	:	not applicable	
Vapor rate/range	:	not applicable	
Flammability (solid, gas)	:	data not available	
Explosive limits	:	not applicable	
Vapour pressure	:	not applicable	
Density	:	not traceable	
Solubility in water	:	not applicable	
Log Po/w	:	0.83	POTASSIUM HYDROXIDE
Autoignition temperature	:	not applicable	
Decomposition temperature	:	not traceable	
Viscosity	:	not applicable	
Dust explosions possible in air	:	not applicable	

Source : Supplier

Oxidising properties : no

9.2. Other information

Solubility in fat : not applicable
Electrostatic chargement : not traceable

10. Stability and reactivity

10.1. Reactivity

See section 10.2 - 10.6.

10.2. Chemical stability

The substance or mixture is stable under normal conditions. See also section 10.4.

10.3. Possibility of hazardous reactions

Reactions with water : no
Other hazardous conditions : Data not available.

10.4. Conditions to avoid

Data not available.

10.5. Incompatible materials

Hazardous reactions with : none

10.6. Hazardous decomposition products

Hazardous decomposition products at heating : none

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD-50: 1.5 g/kg (ORL-RAT)

NICKEL DIHYDROXIDE

LD-50: 333 mg/kg (ORL-RAT)

POTASSIUM HYDROXIDE

Method : OECD 425

Source : ChemDat (Merck)

LDLo: 500 mg/kg (ORL-RBT)

SODIUM HYDROXIDE

* LD-50: 210 mg/kg (ORL-RAT)

LITHIUM HYDROXIDE

Source : ChemDat (Merck)

Acute dermal toxicity

LD-50: 1.35 g/kg (SKN-RBT)

SODIUM HYDROXIDE

Source : Supplier

Acute inhalation toxicity

* LC-50: 0.960 mg/l/4H (IHL-RAT)

LITHIUM HYDROXIDE

Source : Easi View

Ames test

negative

SODIUM HYDROXIDE

Source : IUCLID

Skin corrosion/irritation

The substance or mixture is not classified for skin corrosion/-irritation.

Serious eye damage/irritation

The substance or mixture is not classified for serious eye damage/irritation.

Respiratory or skin sensitisation

The substance or mixture is not classified for respiratory or skin sensitisation.

Germ cell mutagenicity

The substance or mixture is not classified for germ cell mutagenicity.

Carcinogenicity

The substance or mixture is not classified for carcinogenicity.

Additional information regarding carcinogenicity (NTP, IARC, OSHA)

NTP: KHC

IARC: 1

OSHA: no

NICKEL DIHYDROXIDE

NTP: no

IARC: no

OSHA: no

POTASSIUM HYDROXIDE

NTP: no

IARC: no

OSHA: no

SODIUM HYDROXIDE

* NTP: no

IARC: no

OSHA: no

LITHIUM HYDROXIDE

Reproductive toxicity

The substance or mixture is not classified for reproductive toxicity.

Specific target organ toxicity-single exposure

The substance or mixture is not classified for specific target organ toxicity-single exposure.

Specific target organ toxicity-repeated exposure

The substance or mixture is not classified for specific target organ toxicity-repeated exposure.

Aspiration hazard

The substance or mixture is not classified for aspiration hazard.

Symptoms

Skin	local	: Not applicable.
	general	: Not applicable.
Ingestion	local	: Not applicable.
	general	: Not applicable.
Inhalation	local	: Not applicable.
	general	: Not applicable.
Eyes	local	: Not applicable.
Remarks symptoms		: None

12. Ecological information

12.1. Toxicity

Ecotoxicity

LC-50: 80 mg/l/96H (Fish)

LC-50: 45.4 mg/l/96H (Fish)

EC-50: ≥ 33 - ≤ 100 mg/l/48H (Daphnia)

* EC-50: 19.1 mg/l/48H (Daphnia)

POTASSIUM HYDROXIDE

SODIUM HYDROXIDE

SODIUM HYDROXIDE

LITHIUM HYDROXIDE

Source : IUCLID

Source : ACROS

12.2. Persistence and degradability

Biological oxygen demand : not traceable

Chemical oxygen demand : not traceable

Biological/chemical oxygen demand ratio : not traceable

Degradability : not traceable

12.3. Bioaccumulative potential

Bioconcentration factor (BCF) : not traceable

Log Po/w : 0.83 POTASSIUM HYDROXIDE

Source : Supplier

12.4. Mobility in soil

Henry Constant : not traceable

12.5. Results of PBT and vPvB assessment

Data not available.

12.6. Other adverse effects

Remarks on ecotoxicity : none

13. Disposal considerations

13.1. Waste treatment methods

In accordance with local and national legislation.

14. Transport information

14.1. UN number

ADR/RID : Not subject to Transport-regulation Dangerous Substances

IMDG/IMO : 3496

IATA/ICAO : Not subject to Transport-regulation Dangerous Substances

Remarks IMDG/IMO : For transport exemptions consult IMDG special provision 963.

Remarks IATA/ICAO : For transport exemptions consult IATA special provision A199.

14.2. UN proper shipping name

ADR/RID : Not subject to Transport-regulation Dangerous Substances

IMDG/IMO : BATTERIES, NICKEL-METAL HYDRIDE

IATA/ICAO : Not subject to Transport-regulation Dangerous Substances

14.3. Transport hazard class(es)

ADR/RID : Not subject to Transport-regulation Dangerous Substances
IMDG/IMO : 9
IATA/ICAO : Not subject to Transport-regulation Dangerous Substances

14.4. Packing group

ADR/RID : Not subject to Transport-regulation Dangerous Substances
IMDG/IMO : NONE
IATA/ICAO : Not subject to Transport-regulation Dangerous Substances

14.5. Environmental hazards

Marine pollutant : no

14.6. Special precautions for user

Hazard identification number (ADR/RID) : none
EmS (IMDG/IMO) : F-A, S-I

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Data not available.

15. Regulatory information

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

- Data not available.

15.2. Chemical safety assessment

- Data not available.

16. Other information

Remarks on SDS : none

Overview relevant H-sentences from all components in section 3

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350i May cause cancer by inhalation.
H360D May damage the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Overview relevant hazard statements from all components in section 3

C CORROSIVE
N DANGEROUS FOR THE ENVIRONMENT
T TOXIC

Overview relevant R-sentences from all components in section 3

20/22 Harmful by inhalation and if swallowed.
22 Harmful if swallowed.
23 Toxic by inhalation.
35 Causes severe burns.
38 Irritating to skin.
42/43 May cause sensitization by inhalation and skin contact.
48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
49 May cause cancer by inhalation.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
61 May cause harm to the unborn child.
68 Possible risk of irreversible effects.

Training advice

Provide adequate information, instruction and training for operators.

A key or legend to abbreviations and acronyms used in the safety data sheet

REACH	Registration, Evaluation and Authorisation of CHemicals
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
CAS	Chemical Abstracts Service
TGG = TWA	Time Weighted Average
LEL	Lower Explosive Limit
UEL	Upper Explosive Limit
NTP	National Toxicology Program
KHC	Known Human Carcinogen
RAHC	Reasonably Anticipated Human Carcinogen
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
RID	Règlement concernant le transport international ferroviaire des marchandises dangereuses
UN	United Nations
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
Ems	Emergency Schedule

* Point to alterations with regard to the previous version.

The information provided in this Safety Data Sheet is believed to be correct as of the date issued. Philips Electronics Nederland B.V. makes no warranty as to its contents, nor as to its fitness for any particular purpose or use.