



Material Safety Data Sheet

1. Product & Company Identification

Product:	6 V alkaline battery, 476A
Manufacturer:	Conrad Electronic SE
Nominal voltage:	6 V
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	12.03.2014

2. Ingredients

Hazardous Components (Specific Chemical Identity, Common Complied with 98/101/EEC & 91/157/EEC Names):

Type	Specification (%)
1) Mercury Content	<0,0005
2) Cadmium Content	<0,025
3) Lead Content	<0,4

3. Hazards Identification

Boiling Point	KOH aqua solution = 140 °C
Specific Gravity (H ₂ O = 1)	MnO ₂ = 4,4 Zn = 7,1 KOH = 2,0
Vapor Pressure (mmHg)	KOH aqua solution = 3mmHg at 20 °C
Melting Point	MnO ₂ decomposes at 535 °C Zn = 420 °C KOH aqua = -35 °C
Solubility in Water	KOH = complete
Appearance and Color	MnO ₂ is a black powder Graphite is a black powder Zinc is a silver metal KOH aqua is a colorless liquid with stimulated odor.



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4. First Aid Measures

In case of skin contact with content of battery, flush immediately with water.

For eye contact, flush with copious amount of water for 10 minutes.

If irritation persists, get medical help.

5. Fire Fighting Measures

Flash Point (Method used) Incombustible

Extinguishing Media N/A

Special Fire Fighting Procedure N/A

Unusual Fire and Explosion Hazards N/A

6. Accidental Release Measures

Routes of Entry:

Inhalation: Yes

Skin: Yes

Ingestion Yes

Health Hazards (Acute and Chronic):

These chemicals are contained in a sealed can. Risk of exposure occurs only if battery is mechanically or electrically abused. The most likely risk is acute exposure when a cell vents KOH is caustic alkali and attack the skin and eyes. Contact of electrolyte with skin and eyes should be avoided.

Carcinogenicity NTP: None

IARC Monographs: None

OSHA Regulated: None

Signs and Symptoms of exposure:

KOH can cause chemical burn upon contact with skin.

Medical Conditions:

Generally aggravated by exposure: An acute exposure will not generally aggravate any medical help.

Emergency and First Aid Procedures:

In case of skin contact with content of battery, flush immediately with water. For eye contact, flush with copious amount of water for 10 minutes. If irritation persists, get medical help.



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7. Handling and Storage

Steps to be taken in case material is released or spilled: Wipe out by wet duster.

Waste Disposal Method:

General Abandonment.

Precautions to be taken in handling and storing:

Avoid mechanical or electrical abuse.

Other precautions:

Do not short circuit, charge or dispose of in fire. Battery may explode or leak.

8. Exposure Controls/Personal Protection

Flash Point (Method used)	Incombustible
Extinguishing Media	N/A
Special Fire Fighting Procedure	N/A
Unusual Fire and Explosion Hazards	N/A

9. Physical and Chemical Properties

Complied with 98/101/EEC & 91/157/EEC Names):

Type	Specification (%)
1) Mercury Content	<0,0005
2) Cadmium Content	<0,025
3) Lead Content	<0,4

10. Stability and Reactivity

Stability	Stable
Conditions to avoid:	Do not short-circuit, charge or dispose of in fire.
Incompatibility (Materials to avoid):	N/A
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition or byproducts:	Will occur.



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11. Toxicological Information

Routes of Entry:

Inhalation: Yes

Skin: Yes

Ingestion: Yes

Health Hazards (Acute and Chronic):

These chemicals are contained in a sealed can. Risk of exposure occurs only if battery is mechanically or electrically abused. The most likely risk is acute exposure when a cell vents KOH is caustic alkali and attack the skin and eyes. Contact of electrolyte with skin and eyes should be avoided.

Carcinogenicity NTP: None

IARC Monographs: None

OSHA Regulated: None

Signs and Symptoms of exposure:

KOH can cause chemical burn upon contact with skin.

Medical Conditions:

Generally aggravated by exposure: An acute exposure will not generally aggravate any medical help.

Emergency and First Aid Procedures:

In case of skin contact with content of battery, flush immediately with water. For eye contact, flush with copious amount of water for 10 minutes. If irritation persists, get medical help.

12. Disposal Considerations

Waste Disposal Method:

General Abandonment.

13. Other Information

Products are according to IEC60086-2000 and 98/101/EC standard.

Do not short circuit, charge or dispose of in fire. Battery may explode or leak.

Special provision A123 under the latest version 51th edition of dangerous goods is met.

Fulfil SP304 requirement of IMDG code; Special provision A123.



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14. Transportation

We further declare the battery terminals are protected and the cargo is in all respects in proper condition for transport.

Alkaline batteries are considered to be „dry cell“ batteries and are not subject to dangerous goods regulation for the purpose of transportation by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Dangerous Goods regulations (IMDG).

Alkaline batteries are offered for transport are not subject to other provisions of these Regulations if they meet the following:
„Cells and batteries are separated so as to prevent short circuits and are packed in strong packaging. The goods have been packaged in cards with strong blister and without shifting of the batteries so as not to allow battery to battery contact.“

Remark: „Referring the captioned shipment of battery, such battery have been packed in inner packing in such a manner as to effectively prevent from short circuits and the movement which could lead to short circuits“.

** For Air shipment, meet the requirements listed in special provision IATA A123 of the International Air Transport Association Dangerous Goods Regulation.**

15. Other Information

Steps to be taken in case material is released or spilled: Wipe out by wet duster. Avoid mechanical or electrical abuse.