

Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau

Item no. 101121

## Material Safety Data Sheet

---

### 1. Product & Company Identification:

<b>Product:</b>	Buffer Solution pH 7.00 ±0.01
<b>Manufacturer:</b>	Conrad Electronic SE. Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	08.09.2014

### 2. Composition / Information on Ingredients:

#### Potassium Phosphate, Monobasic

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: May cause irritation.

#### Demineralized Water

Percent Range: >95.0

Percent Range Units: volume / volume

Hazard: No effects anticipated.

#### Other components, each

Percent Range: < 1.0

Percent Range Units: volume / volume

Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

#### Sodium Phosphate, Dibasic

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: May cause irritation.

### 3. Hazards Identification:

#### Emergency Overview::

Appearance: yellow and clear liquid

Odor: No

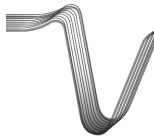
#### Potential Health Effects:

Eye Contact: No effects anticipated

Skin Contact: No effects anticipated

Medical Conditions Aggravated: None reported

Chronic Effects: No effects anticipated



## **Material Safety Data Sheet**

---

### **4. First Aid:**

Eye Contact:	Flush eyes with water. Call physician if irritation develops.
Skin Contact (First Aid):	Wash skin with plenty of water.
Ingestion (First Aid):	Give large quantities of water. Call physician immediately.
Inhalation:	None required.

### **5. Fire Fighting Measures:**

Flammable Properties:	Material will not burn.
Flash Point:	Not applicable
Method:	Not applicable
Flammability Limits:	Lower Explosion Limits: Not applicable Upper Explosion Limits: Not applicable
Autoignition Temperature:	Not applicable
Hazardous Combustion Products:	None
reported Fire / Explosion Hazards:	None reported
Static Discharge:	None reported.
Mechanical Impact:	None reported
Extinguishing Media:	Use media appropriate to surrounding fire conditions
Fire Fighting Instruction:	As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

### **6. Accidental Release Measures:**

#### **Containment Technique:**

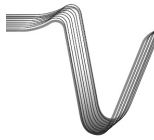
Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth).

#### **Clean-up Technique:**

Absorb spilled liquid with non-reactive sorbent material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse.

### **7. Handling / Storage:**

Handling:	Avoid contact with eyes Wash thoroughly after handling.
Storage:	Protect from: heat Keep container tightly closed when not in use.
Flammability Class:	Not applicable



---

## **Material Safety Data Sheet**

---

### **8. Exposure Controls / Protective Equipment:**

#### **Engineering Controls:**

Maintain general industrial hygiene practices when using this product.

#### **Personal Protective Equipment:**

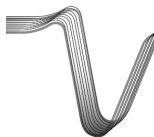
Eye Protection: Safety glasses with top and side shields  
Skin Protection: Not applicable  
Inhalation Protection: Adequate ventilation  
Precautionary Measures: Avoid contact with: eyes Wash thoroughly after handling.

### **9. Physical / Chemical Properties:**

Appearance: Yellow and clear, liquid  
Physical State: Liquid Molecular  
Weight: Not applicable  
Odor: None  
pH: 7.0 at 25°C  
Vapor Pressure: Not determined  
Vapor Density (air = 1): Not determined  
Boiling Point: ~100°C (~212°F)  
Melting Point: ~0°C (~32°F)  
Specific Gravity (water = 1): ~1.0  
Solubility: Water: Soluble  
Acid: Soluble  
Other: Not determined Metal Corrosivity: Not determined

### **10. Stability / Reactivity:**

Chemical Stability: Stable (be stored under proper conditions).  
Conditions to Avoid: Heat Evaporation  
Reactivity / Incompatibility: None reported  
Hazardous Decomposition: None reported



**Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau**

**Item no. 101121**

## **Material Safety Data Sheet**

---

### **11. Toxicological Information:**

**Product Toxicological Data:**

LD50: None reported

LC50: None reported

Dermal Toxicity Data: None reported

Skin and Eye Irritation Data: None reported

Mutation Data: None reported

Reproductive Effects Data: None reported

**Ingredient Toxicological Data:**

No toxicological data available for the ingredients of this product.

### **12. Ecological Information:**

**Product Ecological Information:**

No ecological data available for this product.

**Ingredient Ecological Information:**

No ecological data available for the ingredients of this product.

### **13. Disposal Considerations:**

**EPA Waste ID Number:**

None

**Special Instructions (Disposal):**

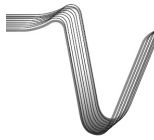
Open cold water tap completely, slowly pour the material to the drain.

**Empty Containers:**

Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):**

These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.



Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau

Item no. 101121

## Material Safety Data Sheet

---

### 14. Transport Information:

#### D.O.T.:

D.O.T. Proper Shipping Name: Not Currently Regulated  
DOT Hazard Class: NA  
DOT Subsidiary Risk: NA  
DOT ID Number: NA  
DOT Packing Group: NA

#### I.C.A.O.:

I.C.A.O. Proper Shipping Name: Not Currently Regulated  
ICAO Hazard Class: NA  
ICAO Subsidiary Risk: NA  
ICAO ID Number: NA

#### I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated  
I.M.O. Hazard Class: NA  
I.M.O. Subsidiary Risk: NA  
I.M.O. ID Number: NA  
I.M.O. Packing Group: NA

### 15. Regulatory Information:

#### U.S. Federal Regulations:

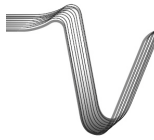
##### O.S.H.A.:

This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

##### E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.



**Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau**

**Item no. 101121**

## **Material Safety Data Sheet**

---

### **16. Other Information:**

**Intended Use:**

Buffer

**References:**

29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for

**Legend:**

NA - Not Applicable

w/w -weight/weight

ND - Not Determined

w/v -weight/volume

NV - Not Available

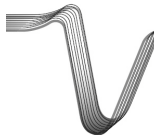
v/v - volume/volume

**USER RESPONSIBILITY:**

Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

This information was compiled from current manufacturer's MSDS's of the component parts of the product. Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.



Conrad Electronic SE, Klaus-Conrad-Str. 1, D-92240 Hirschau

Item no. 101121

## Material Safety Data Sheet

### 1. Product & Company Identification:

<b>Product:</b>	Carbon Zinc Battery
<b>Manufacturer:</b>	Conrad Electronic SE. Klaus-Conrad-Str. 1, D-92240 Hirschau
<b>Model:</b>	6F22UGG / 6F22KGG / 6F22SGG / 6F22 (UB)
<b>Nominal voltage:</b>	9 V
<b>Telephone:</b>	+49 (0) 9604 / 40 - 8988
<b>Date of issue:</b>	08.09.2014

These products are exempted from Material Safety data Sheet regulations. However, this manual provides you with referential information to safely use the products.

### 2. Composition, Information on Ingredients:

Material	CAS No.	Weight/Content
Manganese dioxide : MnO <sub>2</sub>	1313-13-9	28 - 30 wt%
*1 Zinc Chloride : ZnCl <sub>2</sub>	7546-85-7	2 - 6.5 wt%
Zinc Metal : Zn	7440-66-6	8 - 11 wt%
Lead : Pb	7439-92-1	Less than 0.01 wt%

\*1 : Categorize to Class 8 of the UN classification UN No.1840

### 3. Summary of Danger and Toxicity:

#### Fatal danger and toxicity:

No information available

#### Adverse human health effects:

When electrolyte touches skin, itch may occur.

#### Physical and chemical hazard:

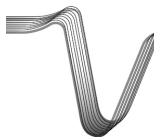
There is the risk of explosion if batteries are disposed in fire, heated above 100°C. Stacking or jumbling batteries may cause external short circuits, heat generation and explosion.

#### Effects to environment:

No information is available.

#### Overview of prospective emergency:

A cell may break or be shorted by an external mechanical or electrical stress



## **Material Safety Data Sheet**

---

### **4. First aid:**

#### **If inhaled:**

If a person inhales the vapor of contents because a cell breaks down, moves the person immediately to a place with fresh air. If he/her feels ill, immediately call a doctor for therapy and treatment.

#### **If adhered to skin:**

If a content adheres to skin because a battery is damaged, immediately wash it with a lot of clean water. If irritating, consult a doctor.

#### **If getting into eyes:**

If a content enters eyes because of breakage of a cell, rinse eyes with a large amount of clean water for more than 15 minutes, and ask a doctor for therapy and treatment.

#### **If swallowed:**

Immediately bring the victim to a doctor for treatment.

#### **If liquid leaked from a cell is licked:**

Immediately gargle, and visit a doctor for therapy.

### **5. Fire Fighting:**

#### **Fire extinguishers:**

Dry chemical extinguisher, carbon dioxide gas extinguisher, large amount of dry sand, and big deal of water.

#### **Specific fire fighting method:**

In the initial state of a fire, move cells/batteries from near the fire source, to a safe location. At that time, work at a windward location, as far as possible, and be sure to put on a protective breathing mask.

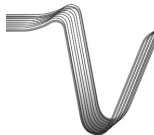
#### **Protection of fire fighting personnel:**

Be sure to have them wear protective breathing masks (Preferably, use a self-feeding type mask.)

### **6. Action upon Leakage and Removing Method:**

A cell contains constituents in a vessel, so contents normally may not leak out. However, if a content leaks because of a mechanical or electrical stress, wipe with mop or damp sponge to absorb it, and collect in a vessel. After that, flush the site with a large amount of water. At that time, be sure to put on protective-gloves, glasses and mask. Prevent spills from entering sewers, watercourses.





## **Material Safety Data Sheet**

---

### **7. Handling and Storing Precautions:**

**Handling:**

This cell is not for rechargeable. If the battery is improperly used, it may leak, heat or explode.

**Protection of personnel from exposure:**

Never solder a cell.

**Safety precautions for handling:**

Do not contact battery terminals between each other, or with another conductor. Neither throw into fire, decompose, heat, dent, deform, charge nor drop a cell. Do not dip a cell in water or seawater.

**Storage:**

Store cells without direct sunlight, high temperature, high humidity, rain, dew, etc., and select a storage location with a temperature as low as possible (preferable temperature  $20\pm 15^{\circ}\text{C}$  and relative humidity 70% or less). In addition, keep cells away from dangerous matter such as combustible or ignitable materials. Absolutely never place a cell in contact with a combustible or conductive substance. Prepare appropriate firefighting equipment.

**Note:**

See handling and storing precautions described in the product catalog, specification, etc.

### **8. Prevention from Exposure:**

**Protection of respiratory organs:**

Not required in a normal operating state

**Protection of eyes:**

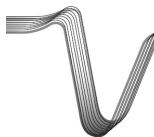
Not required in a normal operating state

**Other protective tools etc.:**

Not required in a normal operating state

### **9. Physical and Chemical Properties:**

Shape:	Cylindrical.
PH:	Not applicable because a cell is not soluble with water.
Boiling point/boiling range (°C):	No information
Melting point (°C):	No information
Decomposition temperature (°C):	No information
Flash point (°C):	No information



## **Material Safety Data Sheet**

---

### **10. Stability and Reactivity:**

#### **Conditions to be avoided:**

If a number of cells are mixed up without insulating terminals, they may short and possibly heat, break and ignite. When a battery is charged, it may possibly burst or fire. If a cell is heated or thrown into fire, it may explode or fire with the electrolyte etc. bursting from inside of the cell. If decomposed, there is a possibility of overheating or fire due to short circuit.

### **11. Information on Toxicity**

There is no toxicity because chemical substances are sealed in a metal vessel or wrapped with tube. As a reference, chemical substances composing a cell are described below.

#### **Manganese dioxide**

Acute toxicity: LDLo: 45 mg/kg (Intravenous injection, rabbit)

LD : 422 mg/kg (Hypodermic injection, mouse)

Irritation: Irritating eyes, nose, throat and skin.

Chronic toxicity: If a person is exposed to powder for a long time or repeatedly, the lung and the nervous system may be affected, possibly causing bronchitis, pneumonia, nervous disease or mental disease.

Procreation toxicity: TCLo: 49 mg/m<sup>3</sup> (Inhalation, mouse)

#### **Zinc Chloride**

Acute toxicity: TCLo : LD5o 4800 mg/m<sup>3</sup> (30min.)

LD50: 350 mg/kg (oral, rat)

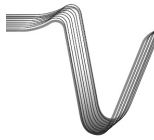
### **12. Ecological Information:**

No information as a cell.

### **13. Disposal Precautions:**

Disposal of the substance should be done according to the laws and regulations. Although used cells can be discarded basically as "nonflammable refuse," some local governments sort and collect them at their own discretion. Therefore, observe instructions of the government you belong to, to dispose of the substance. Keep the following discarding precautions:

- Even a used cell sometimes stores electric energy. Therefore, to prevent the cell from short-circuit, isolate cells from each other by a method such as taping +, - terminals of batteries, or using the individual housing case of a battery, used when you bought the battery, and orderly encasing cells in a box, then submit an application of disposal to the local government of your residence, using the designated form.
- Pack cells so that they are not shorted, and prevent the package from being wetted.
- If cells must be discarded in a country other than Japan, observe the instructions of the country and local government.



## **Material Safety Data Sheet**

---

### **14. Transportation Precautions:**

Avoid high temperature, high humidity and condensation. Store cells at room temperature (45°C or less: recommendation is 20°C±15°C) with minimum temperature variations and a RH of not more than 70%. Carefully handle containers, and do not strike them so strongly as denting a cell. Pack batteries and prevent them from short-circuit. Also fix cells so as not to result in a load shift during transportation.

### **15. Applicable Laws and Regulations:**

There are no special laws and regulations applied to cells.

A dangerous object does not regulate.

### **16. Other Information:**

1. Contents of this manual have been edited based on data, information, etc. that we could acquire when editing the manual, so the manual may be revised by new information, if any. Contents of the manual assume normal handling of cells, and are provided as referential information. Therefore, the manual provides no warranties. The customer is requested to use batteries on the basis of appropriate measures established depending on individual conditions, application and operation. Any numerals such as contents and concentration ranges and others are not guaranteed.
2. Information on the U.S. toxic substance control act (TSCA) The Carbon Zinc battery (cell) fall in the category of "Article" defined by EPA (U.S. Environment Protection Agency), and chemical substances used in a battery satisfy the application exemption conditions (40.cfr.720.3.c) as part of "Article," so the cells are not regulated by TSCA.