



## Section 1. Product and Company Identification.

**1.1 Model Number;** TM104 v1  
**1.2 Description;** Multimeter 5-in-1  
Battery: 9 Volts. 35 grams.

**1.3 Manufacturer;**  
Sealey Group.  
Kempson Way,  
Bury St. Edmunds,  
Suffolk.  
IP32 7AR

**1.4 Emergency telephone number;** 44 (0) 1284 757 500 (Office Hours)

**Date of source compilation;** 2 January 2014

## Section 2. Hazards Identification.

Battery is hermetically sealed and does not present a hazard under normal conditions of use.  
Inappropriate handling and / or use can cause electrolyte to leak.

**Ingestion:** Contents of an open battery can cause chemical burns of mouth, oesophagus, and gastrointestinal tract.  
**Inhalation:** Contents of an open battery can cause respiratory irritation.  
**Skin Contact:** Contents of an open battery can cause skin irritation.  
**Eye Contact:** Contents of an open battery can cause irritation.



## Section 3. Substances.

3.1 Chemical Name (substance)	3.1 CAS No.	3.2 Concentration Weight	Classification	
			Hazard Class & Category Code	Hazard Statements
Manganese Dioxide	1313-13-9	28.88%	Acute Tox. 4 Acute Tox. 4 STOT RE 2 Aquatic Chronic 2	H302 H332 H373 H411
Zinc	7440-66-6	8.75%	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Ammonium Chloride	12125-02-9	8.7%	Acute Tox. 4 Skin Irrit. 2 Eye Irrit. 2 STOT SE 1 Muta. 2	H302 H315 H319 H335 H341
Acetylene Black	74-86-2	5.25%	Flam. Gas. 1 Press. Gas. STOT SE 3	H220 H280 H336
Zinc Chloride	7646-85-7	4.16%	Met. Corr. 1 Acute Tox. 4 Skin Corr. 1A Eye Dam. 1 STOT SE 3 Aquatic Acute 1 Aquatic Chronic 1	H290 H302 H314 H318 H335 H400 H410
Lead	7439-92-1	0.025%	Acute Tox. 4 Acute Tox. 4 Muta. 2 Carc. 2 Repr. 1A STOT RE 1 Aquatic Acute 1 Aquatic Chronic 1	H302 H332 H341 H351 H360 H372 H400 H410
Cadmium	7440-43-9	< 0.0005%	Pyr. Sol. 1 Acute Tox. 2 Muta. 2 Carc. 1B Repr. 2 STOT RE 1 Aquatic Acute 1 Aquatic Chronic 1	H250 H330 H341 H350 H361 H372 H400 H410



**Section 3. Substances, continued**

Mercury	7439-97-6	< 0.0001%	Acute Tox. 2 Skin Sens. 1 Acute Tox. 2 Muta. 2 Repr. 1A STOT SE 1 STOT RE 1 Aquatic Acute 1	H300 H317 H330 H341 H360 H371 H373 H400
---------	-----------	-----------	--	--

For full text of Phrases and Statements, see Section 16.

**Section 4. First Aid Measures.**

Batteries do not pose a risk to eyes or skin under normal circumstances.  
In the case of contact with internal substances;

**4.1** Description of first aid measures

- Inhalation** If breathing difficulties develop, remove the person to fresh air.  
Loosen close fitting clothing.  
Ensure that person is warm.  
Get medical attention.
- Skin Contact** Remove contaminated clothing.  
Wash affected area(s) with soap and water.  
Seek medical attention if chemical burn(s) appear or if symptoms persist.
- Eye Contact** irrigate eyes with water for at least 15 minutes while raising eyelid(s).  
Get medical attention.
- Ingestion** Do not induce vomiting.  
Do not give food or drink.  
Get medical attention.

Do not induce vomiting.  
Do not give food or drink.  
Seek medical attention.

**4.2.** Most important symptoms and effects, both acute and delayed  
No information available.

**4.3.** Indication of any immediate medical attention and special treatment needed  
No information available.



## Section 5. Fire Fighting Measures.

### 5.1. Extinguishing media

Any extinguishing media.

Use extinguishing media that is appropriate for the surrounding area.

### 5.2. Special hazards arising from the substance or mixture

Move batteries away from a fire incident, if safe to do so.

Cool batteries to reduce the risk of rupture.

### 5.3. Advice for fire-fighters

Fire Fighters should wear self-contained breathing apparatus and appropriate Personal Protective Equipment.

Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas, caustic vapours of potassium hydroxide and other toxic by-products.

## Section 6. Accidental Release Measures.

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

Wear appropriate protective clothing, see section 8.

### 6.2. Environmental precautions

Ventilate area.

### 6.3. Methods and material for containment and cleaning up

Collect in a leak proof container.

Place battery in a sealed bag with an absorbent such as sand, silica, chalk, lime powder or vermiculite.

Rinse contamination with water.

Prevent contaminated water from entering sewers or water courses.

### 6.4. Reference to other sections

See Section 7 for information on Safe Handling

See Section 8 for information of Personal Protective Equipment.

See Section 13 for information on disposal.



## Section 7. Handling and Storage.

### 7.1. Precautions for safe handling

Wear appropriate protective clothing, see section 8

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

Store batteries in a well ventilated area.

Do not short circuit a battery. A short circuit causes heating and can lead to ignition of surrounding materials.

To minimize the risk of a short circuit, always store batteries in an appropriate container to prevent contact with conductive materials.

Keep batteries away from children.

### 7.3. Specific end use(s)

Intended for use as the battery for the Model Number identified in 1.1 with Description stated in 1.2.

## Section 8. Exposure Controls/Personal Protection.

### 8.1. Control parameters

In the event of battery rupture and leakage:

Ventilate the area.

Remove sources of ignition.

### 8.2. Exposure controls

The use of Personal Protective Equipment (PPE) is not necessary under conditions of normal use.

If handling a leaking or ruptured battery, ensure that the following Personal Protective Equipment (PPE) is used.

#### Eye/Face Protection

Chemical grade full face shield

#### Skin Protection

Acid resistant, natural rubber or neoprene gloves.

Protective rubber apron

Appropriate Personal Protection with long sleeves and long trousers.

#### Respiratory Protection

Acid gas filter mask or self-contained breathing apparatus.



## Section 9. Physical and Chemical Properties.

### 9.1. Information on basic physical and chemical properties

The following information is not a technical specification or sales specification.

(a) Appearance:	MnO <sub>2</sub> is a black powder. Acetylene Black is a black powder. Zinc is a silver metal. ZnCl <sub>2</sub> & NH <sub>4</sub> Cl aqua is a colourless liquid.
(b) Odour:	ZnCl <sub>2</sub> & NH <sub>4</sub> Cl has stimulative odour.
(c) Odour threshold;	No data available.
(d) pH:	No data available.
(e) Melting point;	MnO <sub>2</sub> decompose at 535°C Zn = 420°C ZnCl <sub>2</sub> & NH <sub>4</sub> Cl aqua = - 2°C
(f) Boiling point;	ZnCl <sub>2</sub> & NH <sub>4</sub> Cl aqua solution = 104°C
(g) Flash point;	No data available.
(h) Evaporation rate;	No data available.
(i) Flammability (solid, gas);	No data available.
(j) Upper/lower flammability or explosive limits;	No data available.
(k) Vapour pressure;	ZnCl <sub>2</sub> aqua solution = 3mmHg at 20°C NH <sub>4</sub> Cl aqua solution = 2mmHg at 20°C
(l) Vapour density;	No data available.
(m) Relative density;	No data available.
(n) Solubility in water;	ZnCl <sub>2</sub> & NH <sub>4</sub> Cl – complete
(o) Partition coefficient: n-octanol/water;	No data available.
(p) Auto-ignition temperature;	No data available.
(q) Decomposition temperature;	No data available.
(r) Viscosity;	No data available.
(s) Explosive properties;	No data available.
(t) Oxidising properties.	No data available.

Specific gravity;

Zn = 7.1  
ZnCl<sub>2</sub> = 2.91

NH<sub>4</sub>Cl = 2.0

## Section 10. Stability and Reactivity.

<b>10.1.</b> Reactivity	No information available.
<b>10.2.</b> Chemical stability	Stable.
<b>10.3.</b> Possibility of hazardous reactions	Hazardous polymerisation will not occur.
<b>10.4.</b> Conditions to avoid	Do not short circuit, charge or dispose of in fire.
<b>10.5.</b> Incompatible materials	No information available.
<b>10.6.</b> Hazardous decomposition products	No information available.



## Section 11. Toxicological Information.

### 11.1. Information on toxicological effects

The materials that comprise this battery are hermetically sealed.

The potential for exposure to materials is negligible when this battery is used as directed. See Section 7.

Inappropriate handling and / or inappropriate use of this battery may result in release of the materials that are sealed within.

Inhalation, skin contact and eye contact are possible when the battery is opened.

Exposure to internal components and corrosive fumes will cause irritation to the eyes skin and mucous membranes.

## Section 12. Ecological Information.

When properly used and disposed of correctly, the battery does not present environmental hazard.

Do not release internal components into water ways, wastewater or ground water.

12.1. Toxicity	No data available.
12.2. Persistence and degradability	No data available.
12.3. Bioaccumulative potential	No data available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	No data available.
12.6. Other adverse effects	No data available.

## Section 13. Disposal Considerations.

### 13.1. Waste treatment methods

Disposal of the battery must be in accordance with local authority regulations.

The battery should be completely discharged prior to disposal and the terminals taped or capped to prevent short circuit.

Do not dispose of batteries with household waste.

Do not dispose of batteries at landfill sites.

Do not incinerate batteries.



## Section 14. Transport Information.

ADR. International Carriage of Dangerous Goods by Road.

Not subject to ADR.

IATA. International Air Transport Association.

Special Provision A123.

Batteries not otherwise listed as Dangerous Goods concerning transport by air, no UN Code refers.

Examples of such batteries are (but not restricted to) alkali-manganese, zinc-carbon and nickel cadmium batteries.

Any electrical battery or battery powered device, equipment or vehicle having the potential of a dangerous evolution of heat must be prepared for transport so as to prevent:

(a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by the disconnection of the battery and protection of exposed terminals); and

(b) accidental activation.

The statement "Not restricted, as per Special Provision A123" must be included in the description of the article on the Air Waybill when required.

IMDG. International Maritime Dangerous Goods.

Not subject to IMDG.

## Section 15. Regulatory Information.

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

No information available.

**15.2.** Chemical safety assessment

No information available.





**Section 16. Additional Information.**

Full text of Phrases and Statements used in Section 3;

- H220: Extremely flammable gas.
- H250: Catches fire spontaneously if exposed to air.
- H280: Contains gas under pressure; may explode if heated.
- H290: May be corrosive to metals.
- H300: Fatal 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.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H332: Harmful if inhaled.
- H335: May cause respiratory irritation.
- H336: May cause drowsiness or dizziness.
- H341: Suspected of causing genetic defects.
- H350: May cause cancer.
- H351: Suspected of causing cancer.
- H360: May damage fertility or the unborn child.
- H361: Suspected of damaging fertility or the unborn child.
- H371: May cause damage to organs.
- H372: Causes damage to organs through prolonged or repeated exposure.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
- H411: Toxic to aquatic life with long lasting effects.

The above information is believed to be accurate and represents the best information currently available.

No warranty is expressed or implied by the above information.

We assume no liability resulting from use of the above information.

The end user should conduct their own investigations to determine the suitability of the above information for their particular purpose.

Issue level	Date	Revisions
1	29/06/15	First issue.
2	02/08/16	Sections 1.2, 3, 7, 8 & 14.

End of Safety Data Sheet.