

# MATERIAL SAFETY DATA SHEET

## 1. Product Identification

Product Name: Zinc- Manganese Dry Battery

## 2. Composition /Information on ingredients

### MATERIALS

#### APPROXIMATE PERCENT OF TOTAL WEIGHT (%)

3R12 4R25 6F22

**ZINC** 23.25 % 16.15% 8.95%

**MANGANESE DIOXIDE** 27.96% 32.96% 27.09%

**CARBON ROD** 3.90% 5.85% /

**ACETYLENE BLACK** 3.96% 4.48% 5.72%

**ZINC CHLORIDE** 3.15% 3.13% 3.51%

**AMMONIUM CHLORIDE** 9.65% 11.57% 8.80%

**TIN ( Fe )** / 0.33% 21.25%

**BRASS** 0.98% 0.85% 3.80%

**PAPER** 2.80% 0.81% 2.30%

**PLASTIC** 11.95% 11.85% 5.66%

**WATER** 9.45% 10.09% 6.10%

**ASPHALT (WAX)** 1.60 % 1.20% 6.50%

**STANNUM (TIN)** 1.10% 0.28% 0.15%

**MERCURY** <1ppm <1ppm <1ppm

**CADMIUM** <20ppm <20ppm <20ppm

**LEAD** 4000ppm 1000PPM

**OTHER** 0.25% 0.45% 0.17%

## 3. Hazards identifications

General advice: The common known rules for handling of chemicals should be obeyed. These chemicals

Are contained in a sealed steel can. For consumer use, adequate hazard warnings are

Printed on both the package and the battery. Potential for exposure should not exist

Unless the battery leaks, is exposed to high temperatures or is mechanically or

Electrically abused. Concentrated potassium hydroxide contained is caustic. Anticipated

Potential leakage of the electrolyte is 2-20 ml, depending on battery size. Do not eat and

Drink batteries. Keep batteries away from small children.

Physical-Chemical Hazards: This preparation is not classified as dangerous according to the criteria of

Directive 99/45/EEC.

Hazards to man: If battery leaking, exposure to caustic ingredients may occur. Therefore, may cause

Sensitization by skin contract.

Hazards to environment: N.A...

## 4. First-aid measures:

Inhalation: In case of excessive in halation due to leaking batteries remove to fresh air. Obtain medial

Advice.

Skin Contact: If exposed to a leaking battery, remove contaminated clothing. Wash exposed areas with

Plenty of water and soap. IF irritation occurs, consult a physician.

Eye contact: Not anticipated due to size of batteries. Choking may occur with the smaller size batteries. If

Exposed to a leaking battery, rinse mouth and surrounding areas with running water for at least 15minutes.

Give plenty of water to drink. Do not induce vomiting. Obtain medical advice.

## **5. Fire-fighting measures**

Suitable extinguishing media: Carbon dioxide, foam, dry chemical powder.

Extinguishing media not to be used: Never use a direct water jet.

Exposure hazards from combustion products: In case of fire, carbon monoxide and other toxic organic

Substances will be generated. Do not inhale fumes and smoke.

Personal protective equipments: Wear full protective clothing. Use self-contained breathing apparatus.

## **6. Accidental release measures**

Personal precautions: Notify safety personnel of large spills. Caustic potassium hydroxide may be

Released from leaking or ruptured batteries. Avoid eye or skin contact and inhalation of vapors. Increase

The ventilation. Wear protective clothing. Keep unprotected persons away.

Environmental precautions: Avoid discharge and penetration into sewerage systems, waterways, pits, and

Cellars.

Methods for cleaning up: Collect spilled material with an inert standard absorbent like sand or silica.

Care for well-ventilated conditions. Recycle or dispose of the materials in an appropriate way.

## **7. Handling and storage**

General handling: Obey the common known rules and precautions for handling with chemicals. Avoid

Mechanical and electrical abuse. Do not short battery or install incorrectly. Batteries may explode,

Pyrolyze or vent if disassembled. Crushed, recharged or exposed to high temperatures. Install batteries

According to equipment instructions. Do not mix battery systems, such as alkaline and zinc-carbon.

Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag. Do not

Remove battery labels.

Storage: Store product in well-filled, appropriate coated and tightly closed containers avoiding influence

Of oxygen/air, light and humidity. Storage at room temperature.

## **8. Exposure controls and personal protection**

Exposure/Technical measures: Atmospheric vapor concentrations must be minimized by adequate

Ventilation.

Protection of hands, eyes and skin: None required under normal use conditions. When handling leaking

Batteries use neoprene, rubber or nitrile gloves and wear safety glasses to protect hands, eyes and skin.

General safety and hygiene measures: use only as directed.

## **9. Physical and chemical properties**

Physical state: Stainless steel top battery Colour: Contents dark and gray in colour

Odour: N.A.

Melting point: N.A.

Boiling point: N.A.

Flash point: N.A.

Explosion limit: Not available

Ignition temperature: Not available

Vapor pressure: Not available

Specific gravity: N.A.

Solubility in water: N.A.

Solubility in other solvents: N.A.

PH value: Not available

Partition coefficient: Not available

Viscosity: Not available

## **10. Stability and Reactivity**

Thermal decomposition: batteries may burst and release hazardous decomposition products when exposed

To fire.

Substances to avoid: Strong Oxidation agents.

Hazardous reactions: Contents incompatible with strong oxidizing agents.

Hazardous decomposition products: Thermal degradation may produce hazardous fumes of zinc and

Manganese; hydrogen gas; caustic vapors of potassium hydroxide and other toxic by-products

## **11. Toxicological information**

Toxicity information is available on the battery ingredients noted in Section 2, but in general, N.A. to

Intact batteries.

Chronic health effects: N.A.

## **12. Ecological information**

Not available

## **13. Disposable consideration**

Product: Dispose in accordance with appropriate regulations. If in doubt, contact your local government

Office concerned for information. Do not incinerate, since batteries may explode at excessive Temperatures.

## **14. Transport Information**

Road (ADR/RID): Not regulated

Air (ICAO/IATA): Not regulated

Sea (IMDG): Not regulated

These batteries are not regulated by international agencies as hazardous materials or dangerous goods

When shipped. A shipping name of “Zinc-Carbon batteries- Non hazardous” may be used on all domestic

And international bills of lading.

### **15. Regulatory Information**

Symbol: N/A

EC labeling: None

Risk phrases: None

Safety phrases: None

Labeling is not required because alkaline batteries are classified as “articles” under the Dangerous

Preparations Directive and as such are exempt from the requirements of the Directive.

### **16. Other information**

The information on this Material Safety Data Sheet (MSDS) was obtained from current and reputable

Sources. However, the data is provided without any warranty; expressed or implied, regarding its

Correctness or accuracy. It is the user’s responsibility to assume liability on loss, injury, damage, or

Expense resulting from improper use of this product. Any previous MSDS of this product mentioned

Above are hereby replaced with this new document. We urge you to make this information available as

Appropriate in your organization and to any others with whom you arrange to handle this product.