Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200 & WHMIS 2015

Version: 1.0/EN
Product name: Alkaline Battery

Revision date: 01/01/2020
Issue date: 23/10/2020

1. Identification

identification

(a) Product identifier

étiquette d'un produit

Product name:	Alkaline Manganese Dioxide-Zinc Battery
Nom du produit:	Batterie alcaline au dioxyde de manganèse-zinc

(b) Other means of identification

Autres moyens d'identification

Product description:	Model: LR03（AAA）; LR6（AA）; LR14（C）; LR20（D）; LR61（AAAA）; 6LR61（9V）
Description du produit:	Modèle: LR03（AAA）; LR6（AA）; LR14（C）; LR20（D）; LR61（AAAA）; 6LR61（9V）

(b) Recommended use of the chemical and restrictions on use

Utilisation recommandée du produit chimique et restrictions d'utilisation

Recommended use:	Alkaline Manganese Dioxide-Zinc Battery
Utilisation recommandée:	Batterie alcaline au dioxyde de manganèse-zinc
Restriction on use:	No information available.
Pas d'information disponible.	Pas d'information disponible.

(c) Details of the supplier of the product

Détails du fournisseur du produit

Company name Nom de la compagnie	Fujian Nanping Nanfu Battery Co., Ltd.
Address: Adresse:	109 Industry Road, Nanping, Fujian, P.R.C., 353000
E-mail: Email:	Service@nanfu.com
Telephone: Téléphone:	+86 599 8735117

(e) Emergency phone number

Numéro de téléphone d'urgence

+86 599 8735117

2. Hazard(s) identification Identification des dangers

Hazards Identification： Identification des dangers

The battery is not restricted to IATA DGR according to special provision A123

La batterie n'est pas limitée à IATA DGR selon la disposition spéciale A123

This substance is considered to be non-hazardous for transport.

Cette substance est considérée comme non dangereuse pour le transport.

Emergency Overview： Aperçu des urgences

Avoid contact and inhalation the internal materials. Emit toxic fumes fire conditions.

Évitez le contact et l'inhalation des matériaux internes. Emettre des fumées toxiques en cas d'incendie.

3. Composition/information on ingredients

Composition / informations sur les composants

(a) Mixtures information Informations sur les mélanges

Chemical name	CAS No.	Concentration%
Manganese Dioxide	1313-13-9	41
Zinc	7440-66-6	17.5
Water (H2O)	7732-18-5	17
Graphite	7782-42-5	11.5
Potassium Hydroxide	1310-58-3	2.9
Iron	7439-89-6	5.47
Brass	12597-71-6	2.3
Zinc Oxide	1314-13-2	2.33

4. First-aid measures

Premiers secours

(a) Description of first aid measures

Description des premiers secours

General Advice First aid is upon rupture of sealed cell.

Conseil général Les premiers secours sont à la rupture de lacell scellée.

Eye contact: Show this safety data sheet to the doctor in attendance.

Lentilles de contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue

rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Montrer cette fiche de données de sécurité au médecin traitant.
Rincer immédiatement à grande eau, y compris sous les paupières, pendant au moins 15 minutes. Gardez les yeux grands ouverts pendant le rinçage. Retirez les lentilles cornéennes, si elles sont présentes et faciles à faire. Continuer à rincer. Consulter un médecin si une irritation se développe et persiste. Ne pas frotter la zone touchée.

Skin contact:
Contact avec la peau:
Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.
Retirer les vêtements contaminés et rincer la peau à grande eau. Consulter un médecin si vous ne vous sentez pas bien.

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Get medical advice / attention if you feel unwell.
Sortir à l'air frais. En cas d'arrêt respiratoire, pratiquer la respiration artificielle. Si la respiration est difficile, (du personnel qualifié devrait) donner de l'oxygène. Consulter un médecin si vous ne vous sentez pas bien.

Ingestion:
Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical aid.
Rincer la bouche immédiatement et boire beaucoup d'eau. Ne portez rien à la bouche d'une personne inconsciente. NE PAS faire vomir. Obtenez de l'aide médicale.

Self-protection of the first aider
Autoprotection du secouriste
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
Assurez-vous que le personnel médical connaît le (s) matériau (s) impliqué (s), prenez des précautions pour vous protéger et éviter la propagation de la contamination.

(b) Most important symptoms/effects, acute and delayed

Principaux symptômes / effets, aigus et différés

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system. Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

Le contact avec des composants internes peut provoquer une sensibilisation allergique de la peau (éruption cutanée) et irriter les yeux, la peau, le nez, la gorge et les voies respiratoires. Le cobalt et les composés de cobalt sont considérés comme des cancérogènes possibles pour l'homme.

(c) Immediate medical attention and special treatment

Soins médicaux immédiats et traitement spécial

No information available.
Pas d'information disponible.

5. Fire-fighting measures

Mesures de lutte contre l'incendie

(a) Extinguishing media

Moyens d'extinction

Suitable extinguishing media:	Use foam, dry powder or dry sand, CO_2 as appropriate.
Moyen d'extinction approprié:	Utilisez de la mousse, de la poudre sèche ou du sable sec et du CO2, selon le cas.
Unsuitable extinguishing media:	No information available.
Moyens d'extinction inappropriés:	Pas d'information disponible.

(b) Special hazards arising from the chemical

Dangers particuliers résultant du produit chimique

Under fire conditions,cells may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO_2, Metal oxides, Irritating fumes

En cas d'incendie, lescells peuvent éclater et libérer des produits de décomposition dangereux lorsqu'elles sont exposées à un incendie. Cela pourrait entraîner la libération de matériaux inflammables ou corrosifs. Produits de combustion dangereux: CO, CO2, Oxydes métalliques, Vapeurs irritantes

(C) Special protective equipment and precautions for fire-fighters

Équipements de protection spéciaux et précautions spéciales pour les pompiers

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

Les pompiers doivent porter un équipement de protection résistant au feu et un appareil respiratoire approprié. Le personnel doit être équipé d'un masque filtrant (masque complet) ou d'un appareil respiratoire isolé. Le personnel doit porter des vêtements qui peuvent protéger du feu et des gaz toxiques. Éteignez le feu dans la direction du vent. Retirez le conteneur dans l'espace ouvert dès que possible. Pulvérisez de l'eau sur les récipients dans le foyer pour les garder au frais jusqu'à l'extinction finale.

6. Accidental release measures

Mesures à prendre en cas de dispersion accidentelle

(a) Personal precautions, protective equipment and emergency procedures

Précautions individuelles, équipement de protection et procédures d'urgence

If the cell material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area, dispose the case after thecells cool and vapors dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

Si le matériau de lacell est libéré, éloignez le personnel de la zone jusqu'à ce que les vapeurs se dissipent. Fournir une ventilation maximale pour éliminer les gaz dangereux. La meilleure solution consiste à quitter la zone, à jeter le boîtier une fois les piles refroidies et les vapeurs dissipées. Fournir une ventilation maximale. Eviter le contact avec la peau et les yeux ou l'inhalation de vapeurs.

(b) Environmental Precautions
Précautions environnementales

Prevent material from contaminating soil and from entering sewers or waterways.
Empêcher le matériau de contaminer le sol et de pénétrer dans les égouts ou les voies navigables.

(c) Methods and materials for containment and cleaning up

Méthodes et matériel de confinement et de nettoyage

If the cell casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

Si le boîtier de lacell est démonté, de petites quantités d'électrolyte peuvent fuir.Récuplez tout le produit libéré dans un récipient doublé de plastique.Éliminer conformément à la loi et aux règles en vigueur Eviter que les substances lessivées pénètrent dans la terre, dans les canaux ou dans les eaux.

7. Handling and storage

Manutention et stockage

(a) Precautions for safe handling

Précautions à prendre pour une manipulation sans danger

Always follow the warning information on thecells and in the manuals of devices. Only use the recommended cell types. Keepcells away from children. For devices to be used by children, the cell casing should be protected against unauthorized access. Unpackedcells shall not lie about in bulk. In case of cell change always replace allcells by new ones of identical type and brand. Do not swallowcells. Do not throwcells into water. Do not throwcells into fire. Avoid deep discharge. Do not short-circuitcells Use recommended charging time and current.

Toujours après les informations d’avertissement figurant sur lescells et dans les manuels des appareils. Utilisez uniquement les types decell recommandés. Gardez lescells hors de portée des enfants. Pour les appareils destinés à être utilisés par des enfants, le boîtier de lacell doit être protégé par un accès non autorisé. En cas de changement de pile, remplacez toujours toutes les piles par des neuves du même type et de même marque. Ne jetez pas les piles dans l'eau. Ne jetez pas les piles au feu. Ne jetez pas les piles au feu. Circuit descells Utilisez le temps de charge et le

courant recommandés.

(b) Conditions for safe storage, including any incompatibilities

Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités

If the cell is subject to storage for such a long term as more than 3 months, it is recommended to recharge the cell periodically. And recommended at -5℃~45℃ for 1 month storage, at -5℃~35℃ for 3 months storage. Do not storage the cell haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children.

Si lacell est stockée pendant une période aussi longue que plus de 3 mois, il est recommandé de la recharger périodiquement, à une température comprise entre -5 ° C et 45 ° C pendant 1 mois, entre -5 ° C et 35 ° C pendant 3 mois. Mois de stockage Ne rangez pas lacell au hasard dans une boîte ou un tiroir où elle pourrait se court-circuiter ou être court-circuitée par d'autres objets métalliques.

8. Exposure controls/personal protection

Contrôles de l'exposition / protection individuelle

(a)Control parameters Paramètres de contrôle

ACGIH TLV: American Conference of Governmental Industrial Hygienists -Threshold Limit Value
Conférence américaine des hygiénistes industriels gouvernementaux - Valeur limite de seuil

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous t
Life or Health
Administration de la sécurité et de la santé au travail - Limites d'exposition admissibles immédiatemen
dangereuses pour la vie ou la santé

Other Exposure Guidelines: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2
962(11th Cir., 1992) See section 15 for national exposure control parameters
Autres directives d'exposition： Limites annulées révoquées par la décision de la Cour d'appel dans AFL-CIO c. OSHA
965 F.2d 962 (11th Cir., 1992) Voir la section 15 pour les paramètres nationaux de contrôle de l'exposition

(b) Appropriate engineering controls Contrôles d'ingénierie appropriés

Engineering Measures: 1. Showers Douches
Mesures d'ingénierie 2. Eyewash stations Douches oculaires
3. Ventilation systems Systèmes de ventilation

(c) Individual protection measures, such as personal protective equipment

Mesures de protection individuelle, telles que les équipements de protection individuelle

Eye/Face Protection: **Protection des yeux / du visage**	Not necessary under normal conditions, wear safety glasses if handling an open or leaking battery. Pas nécessaire dans des conditions normales, portez des lunettes de sécurité si vous manipulez une batterie ouverte ou qui fuit.
Skin and body Protection: **Protection de la peau et du corps**	Not necessary under normal conditions, wear protective gloves and protective clothing such as long-sleeved clothing, impervious gloves, chemical resistant apron, and antistatic boots if handling an open or leaking battery. Pas nécessaire dans des conditions normales, portez des gants de protection et des vêtements de protection tels que des vêtements à manches longues, des gants imperméables, un tablier résistant aux produits chimiques et des bottes antistatiques si vous manipulez une batterie ouverte ou qui fuit.
Respiratory Protection: **Protection respiratoire**	Not necessary under normal conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Pas nécessaire dans des conditions normales. En cas de dépassement des limites d'exposition ou d'irritation, une ventilation et une évacuation peuvent être nécessaires.
Hygiene Measures: **Mesures d'hygiène**	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink, or smoke in work area. Maintain good housekeeping. Manipuler conformément aux bonnes pratiques d'hygiène industrielle et de sécurité. Évitez tout contact avec la peau, les yeux ou les vêtements. Porter des gants appropriés et une protection oculaire / faciale. Ne pas manger, boire ou fumer dans la zone de travail. Maintenez un bon entretien ménager.

9. Physical and chemical properties

Propriétés physiques et chimiques

(a) Appearance		Silver Solid	Argent massif
(b) Odor	**Odeur**	Odorless	Inodore
(c) Odor threshold	**Seuil d'odeur**	Not available.	Indisponible
(d) pH		Not available.	Indisponible
(e) Melting point/freezing point **Point de fusion / point de congélation**		Not available.	Indisponible
(f) Initial boiling point and boiling range **Point d'ébullition initial et intervalle d'ébullition**		Not available.	Indisponible
(g) Flash point	**point de rupture**	Not applicable.	Indisponible
(h) Evaporation rate	**Taux d'évaporation**	Not applicable.	Indisponible
(i) Flammability	**Inflammabilité**	Nonflammable.	Ininflammable

(j) Upper/lower flammability or explosive limits **Limites supérieures / inférieures d'inflammabilité ou d'explosivité**	Not available.	Indisponible
(k) Vapor pressure La pression de vapeur	Not applicable.	N'est pas applicable
(l) Vapor density La densité de vapeur	Not available.	Indisponible
(m) Relative density Densité relative	Not available.	Indisponible
(n) Solubility(ies) Solubilité (s)	Insoluble in water.	Insoluble dans l'eau
(o) Partition coefficient: n-octanol/water **Coefficient de partage: n-octanol / eau**	Not available.	Indisponible
(p) Auto-ignition temperature **La température d'auto-inflammation**	130℃	
(q) Decomposition temperature **température de décomposition**	Not available.	Indisponible
(r) Viscosity Viscosité	Not available.	Indisponible

10. Stability and reactivity

Stabilité et réactivité

(a) Reactivity ***Réactivité***

Stable under recommended storage and handling conditions.
Stable dans les conditions de stockage et de manipulation recommandées.

(b) Chemical stability ***Stabilité chimique***

Stable under normal conditions. Stable dans des conditions normales.

(c) Possibility of hazardous reactions ***Possibilité de réactions dangereuses***

When heated above 150°C the risk of rupture occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition.
Au-dessus de 150 ° C, le risque de rupture est présent. En raison de la construction de sécurité spéciale, la rupture implique une libération contrôlée de la pression sans inflammation.

(d) Conditions to avoid ***Conditions à éviter***

Do not subject the cell to mechanical shock. Keep away from open flames, high temperature.
Ne soumettez pas lacell à des chocs mécaniques. Tenir à l'abri des flammes nues, des températures élevées.

(e) Incompatible materials ***Matériaux incompatibles***

Strong oxidizer, strong acid. Oxydant fort, acide fort.

(f) Hazardous decomposition products ***Produits de décomposition dangereux***

Under fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides.
En cas d'incendie, les matériaux des électrodes peuvent former des oxydes cancérigènes du nickel et du cobalt.

11. Toxicological information

Informations toxicologiques

(a) Information on the likely routes of exposure

Informations sur les voies d'exposition probables

Inhalation:	Inhalation of a large number of vapors or fumes released due to heat may cause respiratory. L'inhalation d'un grand nombre de vapeurs ou de vapeurs dégagées par la chaleur peut causer des problèmes respiratoires.
Ingestion:	Ingestion of cell contents may cause mouth, throat and intestinal burns and damage. L'ingestion du contenu de lacell peut provoquer des brûlures et des dommages à la bouche, à la gorge et à l'intestin.
Skin contact:	Contact with cell electrolyte may cause burns and skin irritation.
Contact avec la peau:	Le contact avec l'électrolyte de lacell peut provoquer des brûlures et une irritation de la peau.
Eye contact:	Contact with cell electrolyte may cause burns. Eye damage is possible.
Lentilles de contact:	Le contact avec l'électrolyte de lacell peut provoquer des brûlures. Les dommages aux yeux sont possibles.

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 4. Swallowing of a cell can be harmful. Call the local Poison Control Centre for advice and follow-up.

Dans des conditions normales (pendant le chargement et le déchargement), les ingrédients ne sont pas libérés. Si une libération accidentelle se produit, voir les informations de la section 4. L'ingestion d'une pile peut être nocive. Appelez le centre antipoison local pour obtenir des conseils et un suivi.

(b) Information on toxicological characteristics

Informations sur les caractéristiques toxicologiques

Acute toxicity: **Toxicité aiguë:**	No data available.	Pas de données disponibles
Skin corrosion/irritation: **Corrosion cutanée / irritation cutanée:**	The liquid in the cell irritates. Le liquide dans lacell irrite.	
Serious eye damage/irritation: **Lésions oculaires graves / irritation:**	The liquid in the cell irritates. Le liquide dans lacell irrite.	
Respiratory sensitization: **Sensibilisation respiratoire:**	The liquid in the cell may cause sensitization to some person. Le liquide dans lacell peut provoquer une sensibilisation chez une personne.	
Skin sensitization: **Sensibilisation de la peau:**	The liquid in the cell may cause sensitization to some person. Le liquide dans lacell peut provoquer une sensibilisation chez une personne.	
Carcinogenicity: **Cancérogénicité:**	Cobalt and Cobalt compounds are considered to be possible human carcinogen(s). Le cobalt et les composés de cobalt sont considérés comme des cancérogènes possibles pour l'homme.	
Germ Cell Mutagenicity: **Mutagénicité des cellules germinales:**	No data available.	Pas de données disponibles

Reproductive Toxicity:	No data available.	Pas de données disponibles
Toxicité pour la reproduction:		
STOT-Single Exposure:	No data available.	Pas de données disponibles
Exposition simple STOT:		
STOT-Repeated Exposure:	No data available.	Pas de données disponibles
Exposition répétée STOT:		
Aspiration Hazard:	No data available.	Pas de données disponibles
Danger d'aspiration:		

(c) Delayed and immediate effects as well as chronic effects from short and long-term exposure

Effets retardés et immédiats ainsi que les effets chroniques d'une exposition à court et à long terme

Sensitization:	No data available.	Pas de données disponibles
Sensibilisation:		
Mutagenic Effects:	No data available.	Pas de données disponibles
Effets mutagènes:		
Carcinogenicity:	No data available.	Pas de données disponibles
Cancérogénicité:		
Reproductive Toxicity:	No data available.	Pas de données disponibles
Toxicité pour la reproduction:		
Chronic Toxicity:	No data available.	Pas de données disponibles
Toxicité chronique:		
Target Organ Effects:	No data available.	Pas de données disponibles
Effets sur les organes cibles:		
Aspiration Hazard:	No data available.	Pas de données disponibles
Danger d'aspiration:		

12. Ecological information

Information écologique

(a) Ecotoxicity ***Écotoxicité***

Water hazard class 1(Self-assessment): slightly hazardous for water.
Classe de danger pour l'eau 1 (Auto-évaluation): légèrement dangereux pour l'eau.

(b) Persistence and Degradability ***Persistence and Degradability***

No information available. Pas d'information disponible.

(c) Bioaccumulative potential ***Potentiel bioaccumulatif***

No information available. Pas d'information disponible.

(d) Mobility in soil ***Mobilité dans le sol***

No information available. Pas d'information disponible.

(e) Other adverse effects

No information available.

Autres effets indésirables

Pas d'information disponible.

13. Disposal considerations

Considérations relatives à l'élimination

Safe handling and methods of disposal

Manipulation et méthodes d'élimination sûres

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Local regulations may be more stringent than regional or national requirements.
Product disposal recommendation: Observe local, state and federal laws and regulations.
Packaging disposal recommendation: Be aware discardedcells may cause fire, tape the cell terminals to insulate them. Don't disassembly the cell. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.
The potential effects on the environment and human health of the substances used incells and accumulators; the desirability of not disposing of wastecells and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

L'élimination doit être conforme aux lois et réglementations régionales, nationales et locales applicables.
Les réglementations locales peuvent être plus strictes que les exigences régionales ou nationales.
Recommandation concernant l'élimination des produits: Respectez les lois et réglementations locales, provinciales et fédérales.
Recommandation sur la mise au rebut de l'emballage: Sachez que les piles jetées peuvent provoquer un incendie, fixez-les avec du ruban adhésif pour les isoler. Ne démontez pas lacell. Déchargez complètement les récipients (pas de larmes, pas de poudre, soigneusement raclés). Les conteneurs peuvent être recyclés ou réutilisés. Respectez les lois et règlements locaux, provinciaux et fédéraux.
Les effets potentiels sur l'environnement et la santé humaine des substances utilisées dans les piles et les accumulateurs; l'opportunité de ne pas éliminer les déchets de piles et d'accumulateurs en tant que déchets municipaux non triés et de participer à leur collecte séparée afin de faciliter le traitement et le recyclage.

14. Transport information

Informations sur le transport

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for alkaline batteries has been designed to be compliant with these regulatory concerns.

En général, toutes les batteries de tous les modes de transport (terrestre, aérien ou océanique) doivent être emballées de manière sûre et responsable. Les préoccupations réglementaires de toutes les agences pour un emballage sûr exigent que les piles soient emballées de manière à éviter les courts-circuits et à être contenues dans

un «emballage extérieur solide» qui empêche le déversement du contenu. Tous les emballages d'origine des piles alcalines ont été conçus pour être conformes à ces préoccupations réglementaires.

Alkaline batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Les piles alcalines (parfois appelées «piles sèches») ne sont pas répertoriées comme marchandises dangereuses en vertu de l'Accord européen ADR concernant le transport international des marchandises dangereuses par route, du Code maritime international des marchandises dangereuses IMDG, du Règlement sur les marchandises dangereuses de l'ONU, des marchandises dangereuses de l'IATA Réglementation, instructions techniques de l'OACI et réglementation américaine sur les matières dangereuses (49 CFR). Ces batteries ne sont pas soumises à la réglementation sur les marchandises dangereuses à condition qu'elles répondent aux exigences contenues dans les dispositions spéciales suivantes.

Regulatory Body Organisme de réglementation	Special Provisions Dispositions spéciales
ADR	Not regulated Non réglementé
IMDG	Not regulated Non réglementé
UN	Not regulated Non réglementé
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated Non réglementé

All alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words “not restricted” and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

Toutes les piles alcalines sont emballées de manière à éviter les courts-circuits ou la génération de quantités dangereuses de chaleur et répondent aux dispositions spéciales énumérées ci-dessus. De plus, le Règlement de l'IATA sur les marchandises dangereuses et les Instructions techniques de l'OACI exigent que les mots «sans restriction» et le numéro de disposition spéciale A123 soient indiqués sur la lettre de transport aérien, lorsqu'une lettre de transport aérien est émise.

15. Regulatory information

Informations réglementaires

OSHA hazard communication standard (29 CFR 1910.1200)

Norme de communication des dangers OSHA (29 CFR 1910.1200)

_____ ***Hazardous Dangereux*** _____V_____ ***Non-hazardous Non dangereux***

16. Other information, including date of preparation or last revision

Autres informations, y compris date de préparation ou dernière révision

(a) Preparation and revision information

Informations de préparation et de révision

Date of previous revision: Not applicable.
Date de la révision précédente: Non applicable.

Date of this revision: 01/01/2020
Date de cette révision: 01/01/2020

Revision summary: The first New SDS
Résumé de la révision: La première nouvelle SDD

(b)Abbreviations and acronyms

Abréviations et acronymes

TSCA:	Toxic Substances Control Act, The American chemical inventory. Toxic Substances Control Act, inventaire américain des produits chimiques.
DSL	Domestic Substances List Liste intérieure des substances
EINECS:	European Inventory of Existing Commercial chemical Substances Inventaire européen des substances chimiques commerciales existantes
ENCS	Japanese Existing and New Chemical Substances Substances chimiques existantes et nouvelles du Japon
ECL:	Existing Chemicals List, the Korean chemical inventory. Liste des produits chimiques existants, inventaire coréen des produits chimiques.
IECSC:	Inventory of existing chemical substances in China. Inventaire des substances chimiques existantes en Chine.

(c) Disclaimer Avertissement

Because all of ourcells are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

Étant donné que toutes noscells sont définies comme des "articles", elles sont exemptées des exigences de la norme de communication des dangers. Les informations contenues dans cette fiche signalétique contiennent toutes les données pertinentes de manière complète et sincère. Toutefois, les informations sont fournies sans aucune garantie quant à leur étendue et leur exactitude absolues. Cette FDS a été préparée pour fournir des mesures de sécurité

préventives aux utilisateurs ayant reçu une formation professionnelle. L'utilisateur personnel qui a obtenu cette fiche de données de sécurité doit décider en toute indépendance de son applicabilité dans des conditions particulières. Dans ces cas particuliers, nous n'assumons aucune responsabilité pour les dommages.

---------- End of the SDS ----------

---------- Fin de la SDS ----------

SPECIFICATION FOR
ALKALINE BATTERY
Type: LR14GCNN

RECEIVED

April 24,2015

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

G. Manager	Manager	Issued by

PRODUCT SPECIFICATION

1. Applicability

This specification is applicable to the following product.

Product : Alkaline Manganese Dioxide Battery **LR14GCNN**

Country of origin : China

Related standards : IEC 60086-1, IEC 60086-2

2. Ratings:

2. 1 Battery type: **LR14**

2. 2 Nominal voltage: 1.5V

2. 3 Shape and dimensions: See Fig. 1, Battery Dimensions.

2. 4 Standard weight: 72g

2. 5 Terminals: Positive electrode — cap terminal
Negative electrode — base terminal

2. 6 Operating temperature: −10~45℃ (If the operating temperature exceeds 40℃, the operating time shall be within 30 days.)

3. Quality requirements:

3. 1 Dimensions: Battery dimensions shall be as shown in Fig. 1, Battery Dimensions.

3. 2 Appearance: Batteries shall have no stain, flaw or deformation which may adversely affect their performance and actual use and shall have clearly visible markings.

3. 3 Quality characteristics: Requirements of Table 1 have to be satisfied.

(Table 1)

Items		Requirements		Conditions
Electrical characteristics	Off-load voltage (V)	Initial	1.50 ~ 1.65	DC voltmeter: The tolerances shall be not more than 0.25% of nominal voltage and the input resistance shall be not less than 1MΩ.
		After 12 months	1.45 ~ 1.65	
	On-load voltage (V)	Initial	1.35 or higher	Load resistance of 3.9±0.0195Ω shall be connected and the voltage shall be measured with the above voltmeter 0.8 second after the circuit is closed.
		After 12 months	1.30 or higher	
Minimum average duration	3.9-ohm continuous discharge (h)	Initial	13.0 or longer	Load resistance: 3.9±0.0195Ω Discharge time: 24 hours/day End-point voltage: 0.9V
		After 12 months	11.7 or longer	
	3.9-ohm intermittent discharge (h)	Initial	15.0 or longer	Load resistance: 3.9±0.0195Ω Discharge time: 1 hour/day End-point voltage: 0.8V
		After 12 months	13.5 or longer	

Items		Requirements		Conditions
Minimum average Duration	20-ohm intermittent discharge (h)	Initial	85.0 or longer	Load resistance: 20±0.1Ω Discharge time: 4 hours/day End-point voltage: 0.9V
		After 12 months	78.5 or longer	

NOTE 1. The requirements of Table 1 represent values measured or obtained at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 2. Test specimen batteries shall be stored at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 3. As for the average duration, the average value has to satisfy, initial and after 12 months, the requirement of Table 1, when tested with n=9 for each testing condition.

The test of average duration and its judgment shall be as follows.

① If the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is or less, these batteries are considered to conform to the requirement.

② If the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the test shall be repeated with other 9 pieces.
At the second test, if the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is 1 or less, these batteries are considered to conform to the requirement.

③ At the above second test, if the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the batteries are considered not to conform to the requirement. A third test shall not be performed.

NOTE 4. Either during storage or during duration tests, there shall be no leakage or deformation which can be noticed visually.

3．4 Leakage characteristics: Requirements of Table 2 have to be satisfied.

(Table 2)

Test items	Requirements		Test conditions
Electrolyte leakage on over discharge	Initial	No electrolyte leakage or deformation findable by visual check.	Temperature, humidity: 20±2℃, (60±15)%RH Load resistance: 3.9±0.0195Ω Completion of test: The instant when the on-load voltage decreases below 40% of the nominal voltage for the first time.
Electrolyte leakage at high temperature			Temperature: 45±2℃ Humidity: 70%RH or below Store time: To be kept standing open for 30 days.

4. Markings: Marking shall be as shown in Fig. 2, Battery Label.

5. Expiry date of use:

The date shall be indicated on the battery body with following symbols.
(The expiry date shall be 60 months after the manufacturing date.)

BEST BEFORE

○○−○○○○

Christian ear (4 figures)

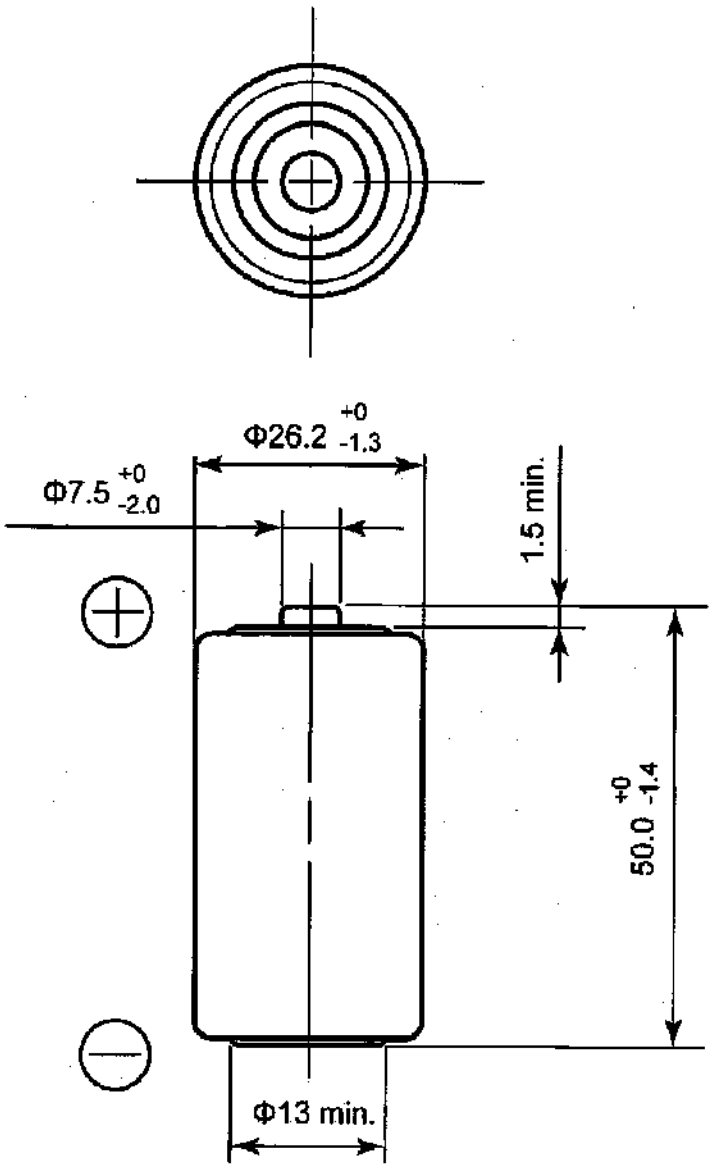
Month (2 figures)

[Example 1] 08-2013 : Expiry date of use, August 2013

[Example 2] 12-2013 : Expiry date of use, December 2013

6. Warranty term: 12 months after delivery.

(F i g. 1) BATTERY DIMENSIONS

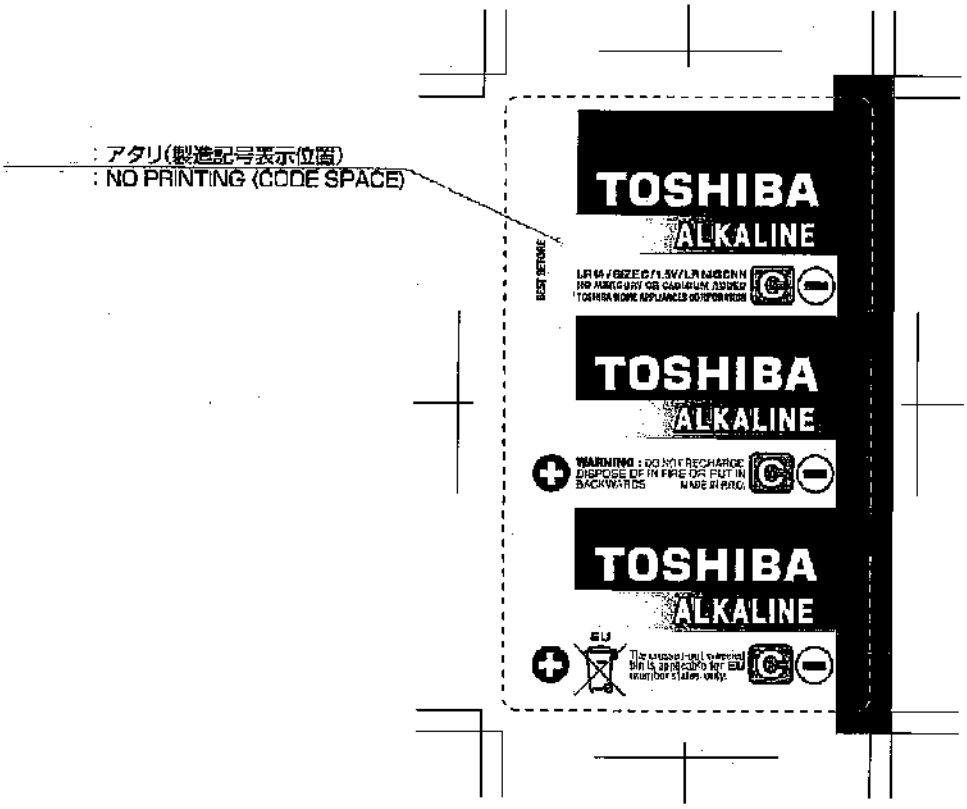


Unit: millimeter

Terminals: Positive-cap terminal, Negative-base terminal

Outer shell: Label

(Fig. 2) BATTERY LABEL



Precautions when using Alkaline manganese batteries

1. Precautions when designing battery appliances.

If the batteries are improperly used, leakage, heat, explosion, etc. may happen. Pay attention to the following matters at the designing of appliances.

(1)Precautions when designing battery compartment.

① The battery compartment should be made so that replacing of batteries is easy, while after loading of batteries easy release should be avoided.

② About the battery loading parts of battery compartment, pay attention for instance to the cover fixing method of the battery compartment so that the babies and little children cannot touch or take out batteries easily, to prevent swallowing by babies and little children or their injuries.
Besides, make known to everyone about "Keep batteries out of reach of babies and little children" with operating instructions or other ways.

③ When designing the dimensions and shapes of the battery compartment and the contacts, consider the dimensions and the tolerances of the batteries and their ⊕⊖ terminals to prevent contact failure or reverse insertion and to assure the adaptation of batteries put on the market.
The dimensions of the battery compartment should conform to IEC(International standards) and JIS(Japanese industrial standards) are adaptable.

④ Indicate clearly on the battery compertment, the type of the battery which suits the apparatus and the correct direction of insertion(polarity).
If the space for indication is not available, indicate them clearly in the operating instruction.

⑤ The electric circuit inside the battery compartment should be limited to the circuit connected to battery contacts; except contact section, the circuit should be completely isolated from the other electric circuits.

⑥ To minimize the damage of apparatus caused by leakage from the battery, if any, pay attention to the construction and arrangement of the battery compartment such as to detach completely the battery compartment from the mechanism compartment.

⑦ The battery compartment should maintain permeability for heat radiated from the compartment and for gas escaped from the batteries.
If complete airtight is unavoidable, pay attention to give a function such as safety vent for gas escape.

⑧ When there is a heat source in the apparatus, set the battery compartment away from the heat source, as much as possible.

⑨ When choosing the material for the battery compartment, shocks and environment should be considered.

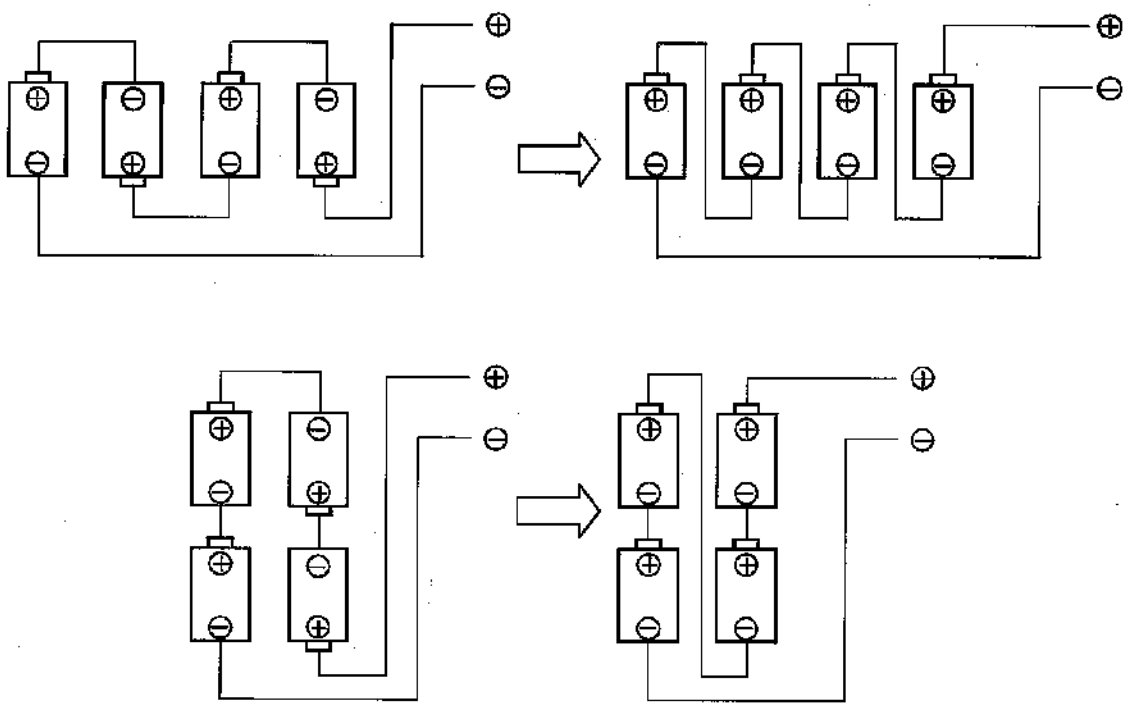
If vibration or shocks can be estimated, take a measure so that the construction of the compartment can absorb it.

⑩ Avoid the connection of batteries in serial-parallel or in parallel, as much as possible.

Pay attention. especially for serial-parallel or parallel connection because if the arrangement is mistaken, the batteries may continue to discharge or may be recharged even if the switch is off.

In case of series connection, the arrangements of batteries as indicated on reference figure with an arrow are recommended to minimize reverse insertion.

Reference figure series connection of batteries



⑪ Pay attention to the material and the shape of the battery contacts so that the electric contact will be perfect even by use of batteries having the dimensions prescribed by JIS.

The material of the contact should be chosen among nickel-plated iron, nickel-plated stainless steel or the like. If an especially low contact resistance is required, adopt gold-plating or the like.

⑫ The desirable battery contact pressure of the apparatuses is at minimum 10N (1 kg f) and at maximum 30N (3 kg f).

⑬ The circuit in the apparatus should not make electric contact with the batteries except at terminal contact point.

⑭ To avoid reverse insertion of batteries, the form of the contact point should make use of the shape difference of ⊕⊖ battery terminals, as much as possible.

⑮ When the external substitute electric source is used, the circuit should be designed to avoid charging or forced discharging of batteries.

⑯ To ensure the prevention of charging batteries, a protective circuit should be installed.

(2)Precautions at apparatus manufacturing

① Do not give ultrasonic vibration to the batteries.
By ultrasonic vibration, the contents of batteries will be finely powdered, which may cause internal short-circuit resulting in leakage, heat or explosion of batteries.

② These batteries are allowed to be disposed as general incombustible refuse.
However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.
If the batteries are improperly disposed, they may be short-circuited causing leakage, heat or explosion; as a result, injuries or burns may happen.
Besides, do not dispose of batteries in fire. If the batteries are put in fire, they will be heated rapidly, which may cause explosion, etc.

③ Wipe clean with a cloth or the like the terminals of the apparatus and the batteries before the insertion of the batteries in the apparatus.
If the terminals are soiled, the apparatus may not operate normally due to contact failure.

④ To measure voltage of the batteries, use a voltmeter having high internal resistance.
The tolerance of the voltmeter shall be not more than 0.25% of nominal voltage.
Use voltmeter with an input resistance shall be not less than 1MΩ.

(3)Precautions against transport, display and storage.

① For the storage of batteries, avoid high temperature and high humidity; and to prevent dew condersation choose a well ventilated dry place where the temperature is not so high.
For store the batteries, a place having a normal temperature(20±15℃), little temperature fluctuation and a relative humidity of 70% and less is required.
Storage of the batteries at high temperature or high humidity may increase their performance deterioration or leakage.

② For storage in warehouse or display in shopwindow, keep the batteries away from long duration direct sunlight and from rain water.
The exposition of the batteries to high temperature may increase their deterioration or induce leakage.
Besides, if the batteries get wet, the insulation will decrease and rust gathering or leakage will occur more easily.
Besides, batteries stocked by families are increasing; in this case, the matters that require attention are as mentioned above.

③ Avoid rough handling during transport.
Rough handling may cause dent or deformation, which can bring decrease of performance or leakage.
Moreover, the battery compartment may be damaged, causing the batteries in disorder; if ⊕⊖ are short-circuited the batteries may be damaged by heating, and moreover leakage, explosion, fire, etc. may happen.

④ When piling up the outer packages of batteries, the number of tiers should be limited to the amount indicated on the outer-package.
If the packages are excessively piled up, the batteries in the lower layer may be deformed or leakage may be accelerated.

⑤ As for the distribution, such as transport, display, storage and others, observe strictly the first-in, first-out method and pay attention to avoid long-term stock.
The batteries have enough storage property at normal temperature and humidity conditions(normal temperature: 20±15℃, relative humidity: 70% and less); however since the long-term stock may deteriorate their performance, observe strictly the appropriate volume of inventories and the first-in, first-out method.

2. Warning notices to the customers regarding battery handling.

For the correct use of batteries when the apparatuses are used by the customers, the operating instructions of the apparatuses should contain the following warning statement regarding batteries.

〈Warning notices regarding battery handling, to be contained in the operating instructions of the apparatuses〉

○If the batteries are improperly used, they may leak, heat or explode, bringing about injury or device failure.
Therefore observe strictly the following matters.

⚠ DANGER

If the alkaline solution of the batteries touches the eyes, injury such as loss of eyesight may caused.
Do not rub the eyes, but flush the eyes amply with abundant clean water such as city water and then receive medical treatment without delay.

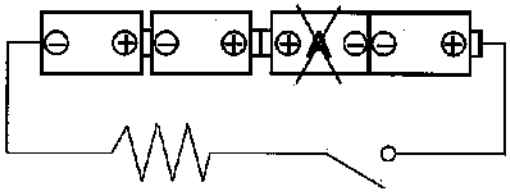
⚠WARNING

① Keep batteries out of reach of babies and little children.
If by any chance, the batteries are swallowed, consult the doctor without delay. …(An object of indication: LR03・LR1)

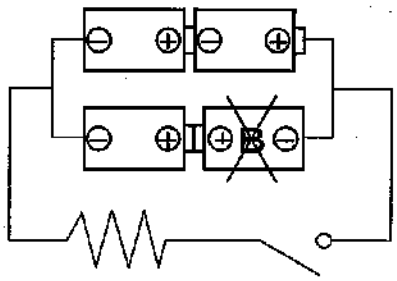
② Do not incinerate, heat, disassemble or remodel the batteries.
The insulator and the vent for gas excape and so on will be damaged, and the batteries may leak, heat or explode.

③ Do not insert batteries in reserve polarity.
By charging, short-circuiting or the like, the batteries may show abnormal reactions, and may leak, heat or explode.

Reference figure 1
Wrong series connection of batteries



Reference figure 2
Wrong serial-parallel connection of batteries



④ If the alkaline solution of the batteries is licked, rinse out the mouth and consult the doctor without delay.

⑤ If the alkaline solution of the batteries adheres to skin or clothes, skin injury may be caused. Wash liquid away immediately with abundant clean water such as city water.

⑥ Do not connect ⊕⊖ of the batteries with wire and do not carry or keep metallic necklace, hairpin, etc. together with batteries.
The batteries may be short-circuited, causing over-current and they may leak, heat or explode.

⑦ Do not mix and use "different types or brands of batteries" nor "used and new batteries" together.
The difference of characteristics may cause leakage, heat or explosion.

⑧ These batteries are not designed to be recharged.
If recharged, the insulator or the inside structure may be damaged, and the batteries may leak, heat or explode.

⑨ Remove promptly the used batteries from the apparatus.
If the used batteries are left in the apparatus, connected for long, gas will be formed in the batteries, which may cause battery leakage, heat or explosion and may cause damage of apparatus.

⑩ When not using the apparatus for a long period, remove the batteries from the apparatus.
Gas formed in the batteries may cause battery leakage or may damage the apparatus.

⚠ CAUTION

① Do not peel off or damage the outer label of the batteries.
The batteries may be short-circuited, they may leak, heat or explode.

② Do not expose batteries to strong impact by dropping or throwing the batteries. The batteries may leak, heat or explode.

③ Do not deform the batteries.
The insulator and the vent for gas escape, etc. may be damaged and the batteries may leak, heat or explode.

④ When using the batteries in complete airtight apparatus, follow the indications of the operating instructions of the apparatus.

⑤ Do not solder anything directly to the batteries.
The insulator and the vent for gas escape, etc. may be damaged by heat and the batteries may leak, heat or explode.

⑥ Do not use nor keep batteries at places exposed to strong direct sunlight or in cars under burning sun, etc. The batteries may leak, heat or explode.

⑦ At the storage or disposal of the batteries, insulate the terminal parts with tape or the like.
If the batteries are mixed with other batteries or metallic objects, the batteries may be short-circuited, and may leak, heat or explode.

⑧ Keep the batteries away from water. The batteries may heat.

⑨ The specification or the performance of the batteries may be sometimes not appropriate, depending on applications or apparatus; use correctly the appropriate batteries in accordance with the operating instructions and notices of the apparatus.

⑩ At the storage of batteries, avoid direct sunlight, high temperature and high humidity places. Leakage may happen. Beside, the performance and the life of the batteries may decrease.

⑪ These batteries are allowed to be disposed as general incombustible refuse. However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.

⑫ Do not forget to turn off the switch of the apparatus.

⑬ To keep the batteries taken out from packages, or to stock the batteries by families, pay attention to avoid contact between batteries and to keep out of short-circuit.

SPECIFICATION FOR
ALKALINE BATTERY
Type: LR20GCNN

RECEIVED

April 24,2015

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

G. Manager	Manager	Issued by

PRODUCT SPECIFICATION

1. Applicability

This specification is applicable to the following product.

Product : Alkaline Manganese Dioxide Battery **LR20GCNN**

Country of origin : China

Related standards : IEC 60086-1, IEC 60086-2

2. Ratings

2. 1 Battery type: **LR20**

2. 2 Nominal voltage: 1.5V

2. 3 Shape and dimensions: See Fig. 1, Battery Dimensions.

2. 4 Standard weight: 140 g

2. 5 Terminals: Positive electrode — cap terminal
Negative electrode — base terminal

2. 6 Operating temperature: —10~45℃ (If the operating temperature exceeds 40℃, the operating time shall be within 30 days.)

3. Quality requirements

3. 1 Dimensions: Battery dimensions shall be as shown in Fig. 1, Battery Dimensions.

3. 2 Appearance: Batteries shall have no stain, flaw or deformation which may adversely affect their performance and actual use and shall have clearly visible markings.

3. 3 Quality characteristics: Requirements of Table 1 have to be satisfied.

(Table 1)

Items		Requirements		Conditions
Electrical characteristics	Off-load voltage (V)	Initial	1.50 ~ 1.65	DC voltmeter: The tolerances shall be not more than 0.25% of nominal voltage and the input resistance shall be not less than 1MΩ.
		After 12 months	1.45 ~ 1.65	
	On-load voltage (V)	Initial	1.35 or higher	Load resistance of 2±0.01Ω shall be connected and the voltage shall be measured with the above voltmeter 0.8 second after the circuit is closed.
		After 12 months	1.30 or higher	
Minimum average duration	3.9-ohm continuous discharge (h)	Initial	26.0 or longer	Load resistance: 3.9±0.0195Ω Discharge time: 24 hours/day End-point voltage: 0.9V
		After 12 months	23.0 or longer	
	2.2-ohm intermittent Discharge (h)	Initial	17.0 or longer	Load resistance: 2.2±0.011Ω Discharge time: 1 hour/day End-point voltage: 0.8V
		After 12 months	15.5 or longer	

Items		Requirements		Conditions
Minimum average Duration	10-ohm intermittent Discharge (h)	Initial	95.0 or longer	Load resistance: 10±0.05Ω Discharge time: 4 hour/day End-point voltage: 0.9V
		After 12 months	87.0 or longer	

NOTE 1. The requirements of Table 1 represent values measured or obtained at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 2. Test specimen batteries shall be stored at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 3. As for the average duration, the average value has to satisfy, initial and after 12 months, the requirement of Table 1, when tested with n=9 for each testing condition.

The test of average duration and its judgment shall be as follows.

① If the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is or less, these batteries are considered to conform to the requirement.

② If the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the test shall be repeated with other 9 pieces.
At the second test, if the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is 1 or less, these batteries are considered to conform to the requirement.

③ At the above second test, if the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the batteries are considered not to conform to the requirement. A third test shall not be performed.

NOTE 4. Either during storage or during duration tests, there shall be no leakage or deformation which can be noticed visually.

3．4 Leakage characteristics: Requirements of Table 2 have to be satisfied.

(Table 2)

Test items	Requirements		Test conditions
Electrolyte leakage on over discharge	Initial	No electrolyte leakage or deformation findable by visual check.	Temperature, humidity: 20±2℃, (60±15)%RH Load resistance: 2.2±0.011Ω Completion of test: The instant when the on-load voltage decreases below 40% of the nominal voltage for the first time.
Electrolyte leakage at high temperature			Temperature: 45±2℃ Humidity: 70%RH or below Store time: To be kept standing open for 30 days.

4．Markings

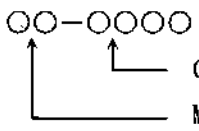
Marking shall be as shown in Fig. 2, Battery Label.

5．Expiry date markings of use

The date shall be indicated on the battery body with following symbols.

(The expiry date shall be 60 months after the manufacturing date.)

BEST BEFORE



Christian ear (4 figures)

Month (2 figures)

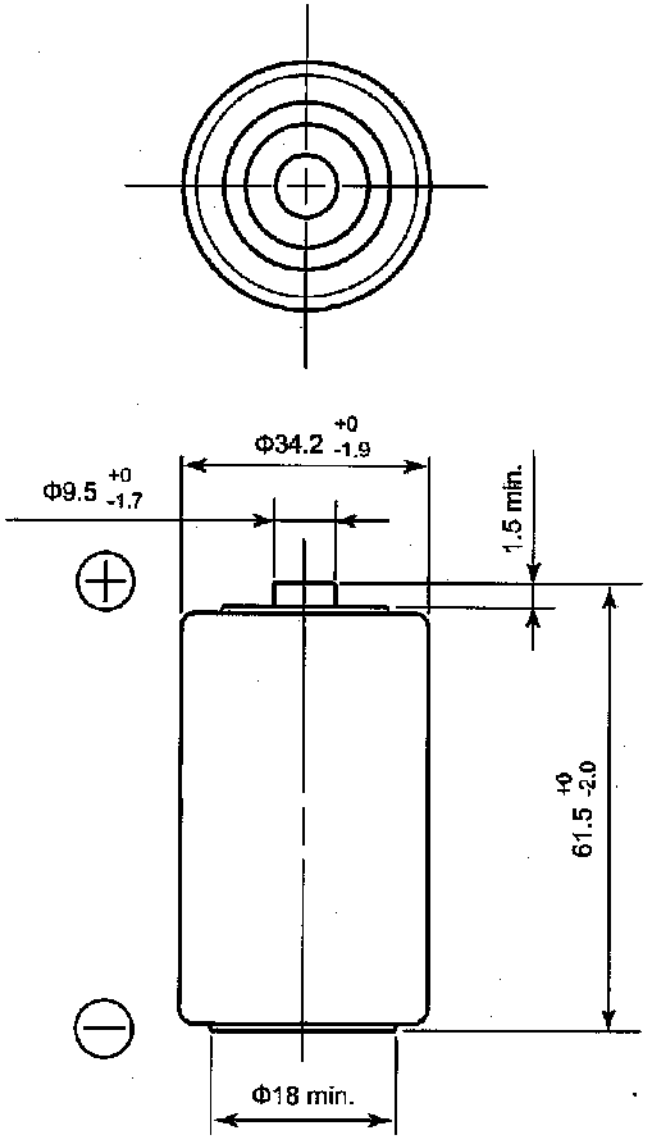
[Example 1] **08-2013 : Expiry date of use, August 2013**

[Example 2] **12-2013 : Expiry date of use, December 2013**

6．Warranty term

The warranty term shall be 12 months after delivery.

(F i g. 1) BATTERY DIMENSIONS

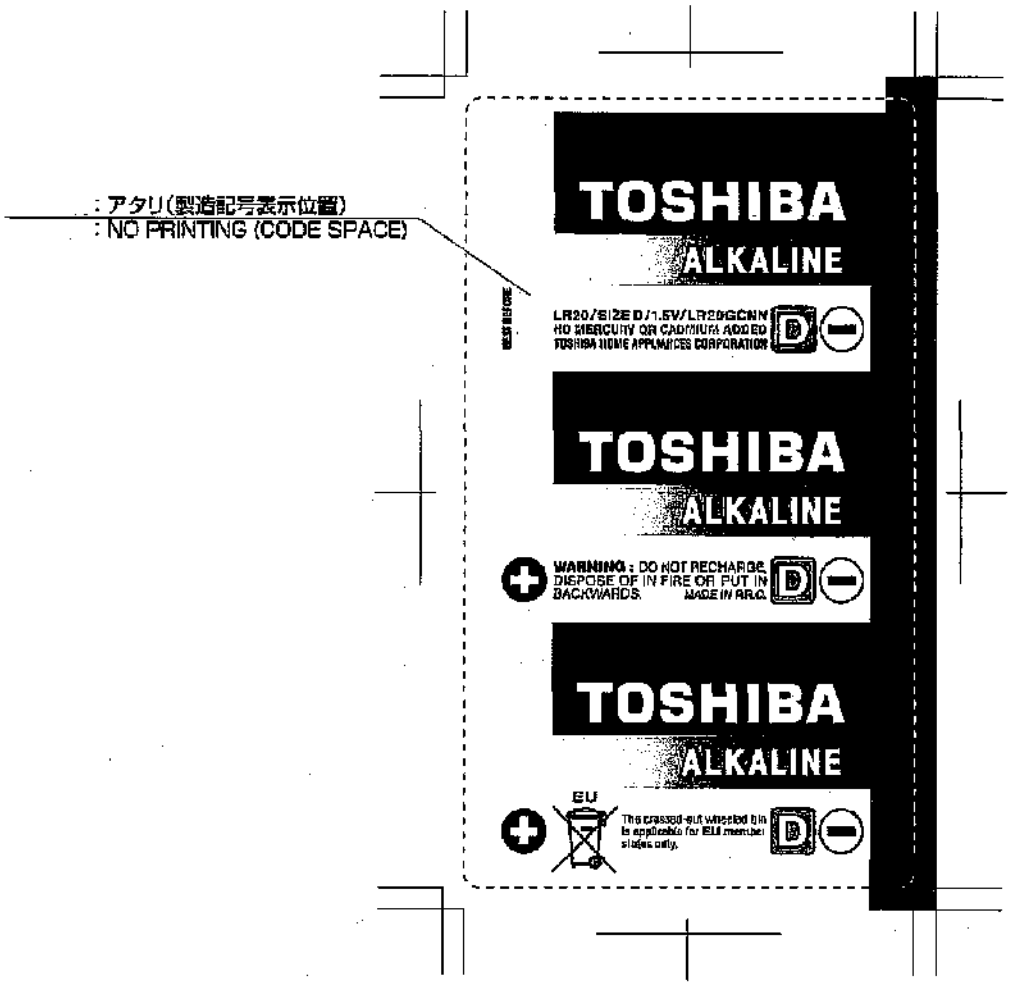


Unit: millimeter

Terminals: Positive-cap terminal, Negative-base terminal

Outer shell: Label

(Fig. 2) BATTERY LABEL



Precautions when using Alkaline manganese batteries

1. Precautions when designing battery appliances.

If the batteries are improperly used, leakage, heat, explosion, etc. may happen. Pay attention to the following matters at the designing of appliances.

(1)Precautions when designing battery compartment.

① The battery compartment should be made so that replacing of batteries is easy, while after loading of batteries easy release should be avoided.

② About the battery loading parts of battery compartment, pay attention for instance to the cover fixing method of the battery compartment so that the babies and little children cannot touch or take out batteries easily, to prevent swallowing by babies and little children or their injuries.
Besides, make known to everyone about "Keep batteries out of reach of babies and little children" with operating instructions or other ways.

③ When designing the dimensions and shapes of the battery compartment and the contacts, consider the dimensions and the tolerances of the batteries and their ⊕⊖ terminals to prevent contact failure or reverse insertion and to assure the adaptation of batteries put on the market.
The dimensions of the battery compartment should conform to IEC(International standards) and JIS(Japanese industrial standards) are adaptable.

④ Indicate clearly on the battery compertment, the type of the battery which suits the apparatus and the correct direction of insertion(polarity).
If the space for indication is not available, indicate them clearly in the operating instruction.

⑤ The electric circuit inside the battery compartment should be limited to the circuit connected to battery contacts; except contact section, the circuit should be completely isolated from the other electric circuits.

⑥ To minimize the damage of apparatus caused by leakage from the battery, if any, pay attention to the construction and arrangement of the battery compartment such as to detach completely the battery compartment from the mechanism compartment.

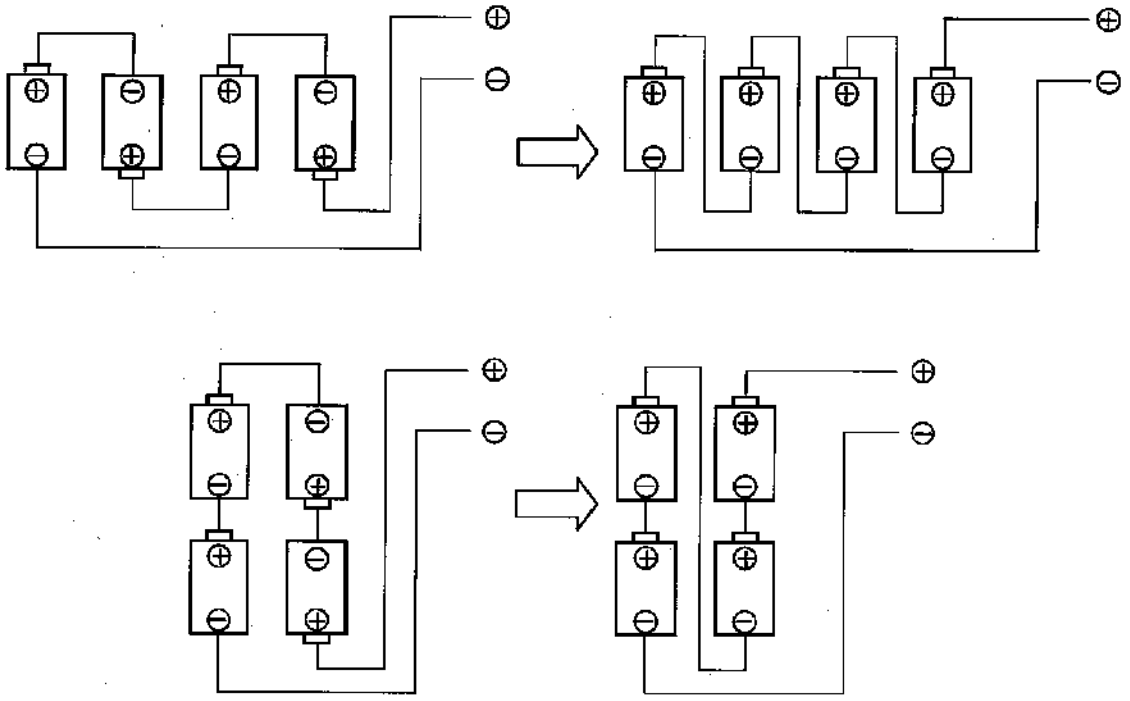
⑦ The battery compartment should maintain permeability for heat radiated from the compartment and for gas escaped from the batteries.
If complete airtight is unavoidable, pay attention to give a function such as safety vent for gas escape.

⑧ When there is a heat source in the apparatus, set the battery compartment away from the heat source, as much as possible.

⑨ When choosing the material for the battery compartment, shocks and environment should be considered.
If vibration or shocks can be estimated, take a measure so that the construction of the compartment can absorb it.

⑩ Avoid the connection of batteries in serial-parallel or in parallel, as much as possible.
Pay attention especially for serial-parallel or parallel connection because if the arrangement is mistaken, the batteries may continue to discharge or may be recharged even if the switch is off.
In case of series connection, the arrangements of batteries as indicated on reference figure with an arrow are recommended to minimize reverse insertion.

Reference figure series connection of batteries



⑪ Pay attention to the material and the shape of the battery contacts so that the electric contact will be perfect even by use of batteries having the dimensions prescribed by JIS.
The material of the contact should be chosen among nickel-plated iron, nickel-plated stainless steel or the like. If an especially low contact resistance is required, adopt gold-plating or the like.

⑫ The desirable battery contact pressure of the apparatuses is at minimum 10N (1 kg f) and at maximum 30N (3 kg f).

⑬ The circuit in the apparatus should not make electric contact with the batteries except at terminal contact point.

⑭ To avoid reverse insertion of batteries, the form of the contact point should make use of the shape difference of ⊕⊖ battery terminals, as much as possible.

⑮ When the external substitute electric source is used, the circuit should be designed to avoid charging or forced discharging of batteries.

⑯ To ensure the prevention of charging batteries, a protective circuit should be installed.

(2)Precautions at apparatus manufacturing

① Do not give ultrasonic vibration to the batteries.
By ultrasonic vibration, the contents of batteries will be finely powdered, which may cause internal short-circuit resulting in leakage, heat or explosion of batteries.

② These batteries are allowed to be disposed as general incombustible refuse.
However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.
If the batteries are improperly disposed, they may be short-circuited causing leakage, heat or explosion; as a result, injuries or burns may happen.
Besides, do not dispose of batteries in fire. If the batteries are put in fire, they will be heated rapidly, which may cause explosion, etc.

③ Wipe clean with a cloth or the like the terminals of the apparatus and the batteries before the insertion of the batteries in the apparatus.
If the terminals are soiled, the apparatus may not operate normally due to contact failure.

④ To measure voltage of the batteries, use a voltmeter having high internal resistance.
The tolerance of the voltmeter shall be not more than 0.25% of nominal voltage.
Use voltmeter with an input resistance shall be not less than 1MΩ.

(3)Precautions against transport, display and storage.

① For the storage of batteries, avoid high temperature and high humidity; and to prevent dew condersation choose a well ventilated dry place where the temperature is not so high.
For store the batteries, a place having a normal temperature(20±15℃), little temperature fluctuation and a relative humidity of 70% and less is required.
Storage of the batteries at high temperature or high humidity may increase their performance deterioration or leakage.

② For storage in warehouse or display in shopwindow, keep the batteries away from long duration direct sunlight and from rain water.
The exposition of the batteries to high temperature may increase their deterioration or induce leakage.
Besides, if the batteries get wet, the insulation will decrease and rust gathering or leakage will occur more easily.
Besides, batteries stocked by families are increasing; in this case, the matters that require attention are as mentioned above.

③ Avoid rough handling during transport.
Rough handling may cause dent or deformation, which can bring decrease of performance or leakage.
Moreover, the battery compartment may be damaged, causing the batteries in disorder; if ⊕⊖ are short-circuited the batteries may be damaged by heating, and moreover leakage, explosion, fire, etc. may happen.

④ When piling up the outer packages of batteries, the number of tiers should be limited to the amount indicated on the outer-package.
If the packages are excessively piled up, the batteries in the lower layer may be deformed or leakage may be accelerated.

⑤ As for the distribution, such as transport, display, storage and others, observe strictly the first-in, first-out method and pay attention to avoid long-term stock.
The batteries have enough storage property at normal temperature and humidity conditions(normal temperature: 20±15℃, relative humidity: 70% and less); however since the long-term stock may deteriorate their performance, observe strictly the appropriate volume of inventories and the first-in, first-out method.

2. Warning notices to the customers regarding battery handling.

For the correct use of batteries when the apparatuses are used by the customers, the operating instructions of the apparatuses should contain the following warning statement regarding batteries.

〈Warning notices regarding battery handling, to be contained in the operating instructions of the apparatuses〉

○If the batteries are improperly used, they may leak, heat or explode, bringing about injury or device failure.
Therefore observe strictly the following matters.

⚠ DANGER

If the alkaline solution of the batteries touches the eyes, injury such as loss of eyesight may caused.
Do not rub the eyes, but flush the eyes amply with abundant clean water such as city water and then receive medical treatment without delay.

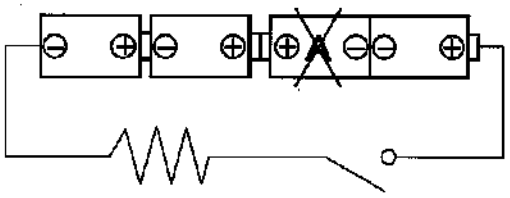
⚠ WARNING

① Keep batteries out of reach of babies and little children.
If by any chance, the batteries are swallowed, consult the doctor without delay. …(An object of indication: LR03·LR1)

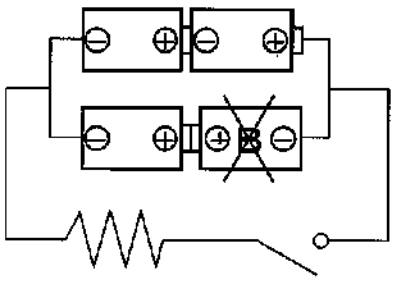
② Do not incinerate, heat, disassemble or remodel the batteries.
The insulator and the vent for gas excape and so on will be damaged, and the batteries may leak, heat or explode.

③ Do not insert batteries in reserve polarity.
By charging, short-circuiting or the like, the batteries may show abnormal reactions, and may leak, heat or explode.

Reference figure 1
Wrong series connection of batteries



Reference figure 2
Wrong serial-parallel connection of batteries



④ If the alkaline solution of the batteries is licked, rinse out the mouth and consult the doctor without delay.

⑤ If the alkaline solution of the batteries adheres to skin or clothes, skin injury may be caused. Wash liquid away immediately with abundant clean water such as city water.

⑥ Do not connect ⊕⊖ of the batteries with wire and do not carry or keep metallic necklace, hairpin, etc. together with batteries.
The batteries may be short-circuited, causing over-current and they may leak, heat or explode.

⑦ Do not mix and use "different types or brands of batteries" nor "used and new batteries" together.
The difference of characteristics may cause leakage, heat or explosion.

⑧ These batteries are not designed to be recharged.
If recharged, the insulator or the inside structure may be damaged, and the batteries may leak, heat or explode.

⑨ Remove promptly the used batteries from the apparatus.
If the used batteries are left in the apparatus, connected for long, gas will be formed in the batteries, which may cause battery leakage, heat or explosion and may cause damage of apparatus.

⑩ When not using the apparatus for a long period, remove the batteries from the apparatus.
Gas formed in the batteries may cause battery leakage or may damage the apparatus.

⚠ CAUTION

① Do not peel off or damage the outer label of the batteries.
The batteries may be short-circuited, they may leak, heat or explode.

② Do not expose batteries to strong impact by dropping or throwing the batteries. The batteries may leak, heat or explode.

③ Do not deform the batteries.
The insulator and the vent for gas escape, etc. may be damaged and the batteries may leak, heat or explode.

④ When using the batteries in complete airtight apparatus, follow the indications of the operating instructions of the apparatus.

⑤ Do not solder anything directly to the batteries.
The insulator and the vent for gas escape, etc. may be damaged by heat and the batteries may leak, heat or explode.

⑥ Do not use nor keep batteries at places exposed to strong direct sunlight or in cars under burning sun, etc. The batteries may leak, heat or explode.

⑦ At the storage or disposal of the batteries, insulate the terminal parts with tape or the like.
If the batteries are mixed with other batteries or metallic objects, the batteries may be short-circuited, and may leak, heat or explode.

⑧ Keep the batteries away from water. The batteries may heat.

⑨ The specification or the performance of the batteries may be sometimes not appropriate, depending on applications or apparatus; use correctly the appropriate batteries in accordance with the operating instructions and notices of the apparatus.

⑩ At the storage of batteries, avoid direct sunlight, high temperature and high humidity places. Leakage may happen. Beside, the performance and the life of the batteries may decrease.

⑪ These batteries are allowed to be disposed as general incombustible refuse. However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.

⑫ Do not forget to turn off the switch of the apparatus.

⑬ To keep the batteries taken out from packages, or to stock the batteries by families, pay attention to avoid contact between batteries and to keep out of short-circuit.

SPECIFICATION FOR
ALKALINE MANGANESE DIOXIDE BATTERY
Type: LR6GCL [TOSHIBA Brand]

RECEIVED

April 08,2019

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

G. Manager	Manager	Issued by

PRODUCT SPECIFICATION

1. Applicability: This specification is applicable to the following product:
Alkaline Manganese Dioxide Battery L R 6 G C L

2. Ratings:

2.1 Battery type: L R 6 G C L [LR6 under IEC standard]

2.2 Nominal voltage: 1.5V

2.3 Shape and dimensions: See Fig. 1, Battery Dimensions.

2.4 Standard weight: 23 g

2.5 Terminals: Positive electrode — cap terminal
Negative electrode — base terminal

3. Quality requirements:

3.1 Dimensions: Battery dimensions shall be as shown in Fig. 1, Battery Dimensions.

3.2 Appearance: Batteries shall have no stain, flaw or deformation which may adversely affect their performance and actual use and shall have clearly visible markings.

3.3 Quality characteristics: Requirements of Table 1 have to be satisfied.

(Table 1)

Items		Requirements		Conditions
Electrical characteristics	Off-load voltage (V)	Initial	1.50 ~ 1.65	DC voltmeter: The tolerances shall be not more than 0.25% of nominal voltage and the input resistance shall be not less than 1MΩ.
		After 12 months	1.45 ~ 1.65	
	On-load voltage (V)	Initial	1.45 or higher	DC voltmeter: Same as above. Load resistance: 10±0.05Ω
		After 12 months	1.40 or higher	
Minimum average duration	10-ohm continuous discharge (h)	Initial	13.5 or longer	Load resistance: 10±0.05Ω Discharge time: 24 hours/day End-point voltage: 0.9V
		After 12 months	11.0 or longer	
	3.9-ohm intermittent discharge (h)	Initial	4.5 or longer	Load resistance: 3.9±0.0195Ω Discharge time: 1 hour/day End-point voltage: 0.8V
		After 12 months	3.5 or longer	

Items		Requirements		Conditions
Minimum average duration	10-ohm intermittent discharge (h)	Initial	13.5 or longer	Load resistance: 10±0.05Ω Discharge time: 1 hour/day End-point voltage: 0.9V
		After 12 months	11.0 or longer	
	43-ohm intermittent discharge (h)	Initial	59.0 or longer	Load resistance: 43±0.215Ω Discharge time: 4 hours/day End-point voltage: 0.9V
		After 12 months	48.0 or longer	

NOTE 1. The requirements of Table 1 represent values measured or obtained at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 2. Test specimen batteries shall be stored at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 3. As for the average duration, the average value has to satisfy, initial and after 12 months, the requirement of Table 1, when tested with n=9 for each testing condition.

The test of average duration and its judgment shall be as follows.

① If the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is or less, these batteries are considered to conform to the requirement.

② If the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the test shall be repeated with other 9 pieces.
At the second test, if the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is 1 or less, these batteries are considered to conform to the requirement.

③ At the above second test, if the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the batteries are considered not to conform to the requirement. A third test shall not be performed.

NOTE 4. Either during storage or during duration tests, there shall be no leakage or deformation which can be noticed visually.

3.4 Leakage characteristics: Requirements of Table 2 have to be satisfied.

(Table 2)

Test items	Requirements		Test conditions
Electrolyte leakage on over discharge	Initial	No electrolyte leakage or deformation findable by visual check.	Temperature, humidity: 20±2℃, (60±15)%RH Load resistance: 10±0.05Ω Completion of test: The instant when the on-load voltage decreases below 40% of the nominal voltage for the first time.
Electrolyte leakage at high temperature			Temperature: 45±2℃ Humidity: 70%RH or below Store time: To be kept standing open for 30 days.

4. Markings: Marking shall be as shown in Fig. 2, Battery Label Marking.

5. Expiry date of use:

BEST BEFORR (Month-Christian ear)

(The expiry date shall be 60 months after the manufacturing date.)

The date shall be indicated on the battery body with following symbols.

OO−OOOO

Christian ear (4 figures)

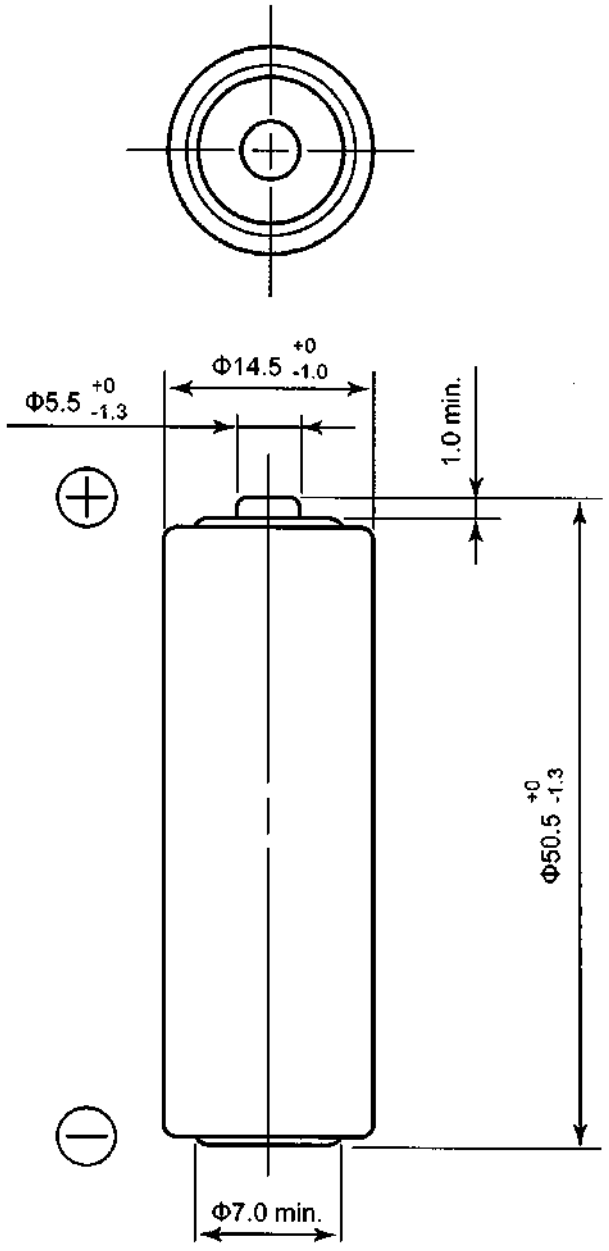
Month (2 figures)

[Example 1] 08-2013 : Expiry date of use, August 2013

[Example 2] 12-2013 : Expiry date of use, December 2013

6. Warranty term: 12 months after delivery.

(Fig. 1) BATTERY DIMENSIONS



Unit: mm

■ ALKALINE BATTERY_GCL Series Shrink label 【Scale:100%】

2019. 2.20

CELL image

LR6GCL

CELL image

LR03GCL

Precautions when using Alkaline manganese batteries

1. Precautions when designing battery appliances.

If the batteries are improperly used, leakage, heat, explosion, etc. may happen. Pay attention to the following matters at the designing of appliances.

(1)Precautions when designing battery compartment.

① The battery compartment should be made so that replacing of batteries is easy, while after loading of batteries easy release should be avoided.

② About the battery loading parts of battery compartment, pay attention for instance to the cover fixing method of the battery compartment so that the babies and little children cannot touch or take out batteries easily, to prevent swallowing by babies and little children or their injuries.
Besides, make known to everyone about "Keep batteries out of reach of babies and little children" with operating instructions or other ways.

③ When designing the dimensions and shapes of the battery compartment and the contacts, consider the dimensions and the tolerances of the batteries and their ⊕⊖ terminals to prevent contact failure or reverse insertion and to assure the adaptation of batteries put on the market.
The dimensions of the battery compartment should conform to IEC(International standards) and JIS(Japanese industrial standards) are adaptable.

④ Indicate clearly on the battery compertment, the type of the battery which suits the apparatus and the correct direction of insertion(polarity).
If the space for indication is not available, indicate them clearly in the operating instruction.

⑤ The electric circuit inside the battery compartment should be limited to the circuit connected to battery contacts; except contact section, the circuit should be completely isolated from the other electric circuits.

⑥ To minimize the damage of apparatus caused by leakage from the battery, if any, pay attention to the construction and arrangement of the battery compartment such as to detach completely the battery compartment from the mechanism compartment.

⑦ The battery compartment should maintain permeability for heat radiated from the compartment and for gas escaped from the batteries.
If complete airtight is unavoidable, pay attention to give a function such as safety vent for gas escape.

⑧ When there is a heat source in the apparatus, set the battery compartment away from the heat source, as much as possible.

⑨ When choosing the material for the battery compartment, shocks and environment should be considered.

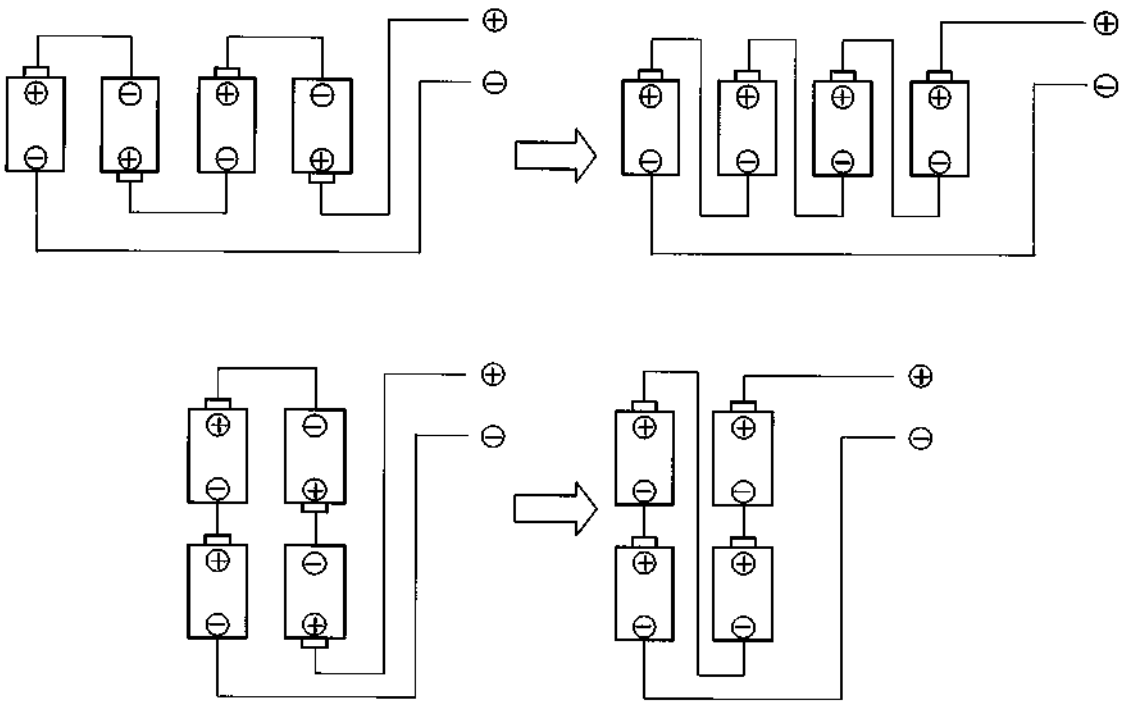
If vibration or shocks can be estimated, take a measure so that the construction of the compartment can absorb it.

⑩ Avoid the connection of batteries in serial-parallel or in parallel, as much as possible.

Pay attention especially for serial-parallel or parallel connection because if the arrangement is mistaken, the batteries may continue to discharge or may be recharged even if the switch is off.

In case of series connection, the arrangements of batteries as indicated on reference figure with an arrow are recommended to minimize reverse insertion.

Reference figure series connection of batteries



⑪ Pay attention to the material and the shape of the battery contacts so that the electric contact will be perfect even by use of batteries having the dimensions prescribed by JIS.

The material of the contact should be chosen among nickel-plated iron, nickel-plated stainless steel or the like. If an especially low contact resistance is required, adopt gold-plating or the like.

⑫ The desirable battery contact pressure of the apparatuses is at minimum 10N (1 kg f) and at maximum 30N (3 kg f).

⑬ The circuit in the apparatus should not make electric contact with the batteries except at terminal contact point.

⑭ To avoid reverse insertion of batteries, the form of the contact point should make use of the shape difference of ⊕⊖ battery terminals, as much as possible.

⑮ When the external substitute electric source is used, the circuit should be designed to avoid charging or forced discharging of batteries.

⑯ To ensure the prevention of charging batteries, a protective circuit should be installed.

(2)Precautions at apparatus manufacturing

① Do not give ultrasonic vibration to the batteries.
By ultrasonic vibration, the contents of batteries will be finely powdered, which may cause internal short-circuit resulting in leakage, heat or explosion of batteries.

② These batteries are allowed to be disposed as general incombustible refuse.
However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.
If the batteries are improperly disposed, they may be short-circuited causing leakage, heat or explosion; as a result, injuries or burns may happen.
Besides, do not dispose of batteries in fire. If the batteries are put in fire, they will be heated rapidly, which may cause explosion, etc.

③ Wipe clean with a cloth or the like the terminals of the apparatus and the batteries before the insertion of the batteries in the apparatus.
If the terminals are soiled, the apparatus may not operate normally due to contact failure.

④ To measure voltage of the batteries, use a voltmeter having high internal resistance.
The tolerance of the voltmeter shall be not more than 0.25% of nominal voltage.
Use voltmeter with an input resistance shall be not less than 1MΩ.

(3)Precautions against transport, display and storage.

① For the storage of batteries, avoid high temperature and high humidity; and to prevent dew condersation choose a well ventilated dry place where the temperature is not so high.
For store the batteries, a place having a normal temperature(20±15℃), little temperature fluctuation and a relative humidity of 70% and less is required.
Storage of the batteries at high temperature or high humidity may increase their performance deterioration or leakage.

② For storage in warehouse or display in shopwindow, keep the batteries away from long duration direct sunlight and from rain water.
The exposition of the batteries to high temperature may increase their deterioration or induce leakage.
Besides, if the batteries get wet, the insulation will decrease and rust gathering or leakage will occur more easily.
Besides, batteries stocked by families are increasing; in this case, the matters that require attention are as mentioned above.

③ Avoid rough handling during transport.
Rough handling may cause dent or deformation, which can bring decrease of performance or leakage.
Moreover, the battery compartment may be damaged, causing the batteries in disorder; if ⊕⊖ are short-circuited the batteries may be damaged by heating, and moreover leakage, explosion, fire, etc. may happen.

④ When piling up the outer packages of batteries, the number of tiers should be limited to the amount indicated on the outer-package.
If the packages are excessively piled up, the batteries in the lower layer may be deformed or leakage may be accelerated.

⑤ As for the distribution, such as transport, display, storage and others, observe strictly the first-in, first-out method and pay attention to avoid long-term stock.
The batteries have enough storage property at normal temperature and humidity conditions(normal temperature: 20±15℃, relative humidity: 70% and less); however since the long-term stock may deteriorate their performance, observe strictly the appropriate volume of inventories and the first-in, first-out method.

2. Warning notices to the customers regarding battery handling.

For the correct use of batteries when the apparatuses are used by the customers, the operating instructions of the apparatuses should contain the following warning statement regarding batteries.

〈Warning notices regarding battery handling, to be contained in the operating instructions of the apparatuses〉

○If the batteries are improperly used, they may leak, heat or explode, bringing about injury or device failure.
Therefore observe strictly the following matters.

⚠ DANGER

If the alkaline solution of the batteries touches the eyes, injury such as loss of eyesight may caused.
Do not rub the eyes, but flush the eyes amply with abundant clean water such as city water and then receive medical treatment without delay.

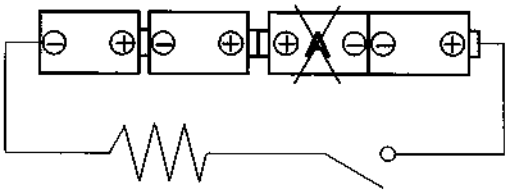
⚠ WARNING

① Keep batteries out of reach of babies and little children.
If by any chance, the batteries are swallowed, consult the doctor without delay. …(An object of indication: LR03・LR1)

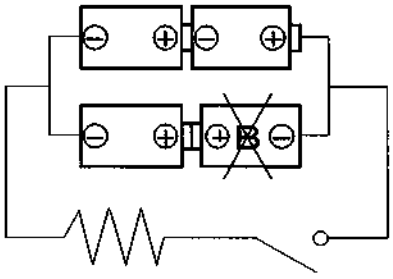
② Do not incinerate, heat, disassemble or remodel the batteries.
The insulator and the vent for gas excape and so on will be damaged, and the batteries may leak, heat or explode.

③ Do not insert batteries in reserve polarity.
By charging, short-circuiting or the like, the batteries may show abnormal reactions, and may leak, heat or explode.

Reference figure 1
Wrong series connection of batteries



Reference figure 2
Wrong serial-parallel connection of batteries



④ If the alkaline solution of the batteries is licked, rinse out the mouth and consult the doctor without delay.

⑤ If the alkaline solution of the batteries adheres to skin or clothes, skin injury may be caused. Wash liquid away immediately with abundant clean water such as city water.

⑥ Do not connect ⊕⊖ of the batteries with wire and do not carry or keep metallic necklace, hairpin, etc. together with batteries.
The batteries may be short-circuited, causing over-current and they may leak, heat or explode.

⑦ Do not mix and use "different types or brands of batteries" nor "used and new batteries" together.
The difference of characteristics may cause leakage, heat or explosion.

⑧ These batteries are not designed to be recharged.
If recharged, the insulator or the inside structure may be damaged, and the batteries may leak, heat or explode.

⑨ Remove promptly the used batteries from the apparatus.
If the used batteries are left in the apparatus, connected for long, gas will be formed in the batteries, which may cause battery leakage, heat or explosion and may cause damage of apparatus.

⑩ When not using the apparatus for a long period, remove the batteries from the apparatus.
Gas formed in the batteries may cause battery leakage or may damage the apparatus.

⚠ CAUTION

① Do not peel off or damage the outer label of the batteries.
The batteries may be short-circuited, they may leak, heat or explode.

② Do not expose batteries to strong impact by dropping or throwing the batteries. The batteries may leak, heat or explode.

③ Do not deform the batteries.
The insulator and the vent for gas escape, etc. may be damaged and the batteries may leak, heat or explode.

④ When using the batteries in complete airtight apparatus, follow the indications of the operating instructions of the apparatus.

⑤ Do not solder anything directly to the batteries.
The insulator and the vent for gas escape, etc. may be damaged by heat and the batteries may leak, heat or explode.

⑥ Do not use nor keep batteries at places exposed to strong direct sunlight or in cars under burning sun, etc. The batteries may leak, heat or explode.

⑦ At the storage or disposal of the batteries, insulate the terminal parts with tape or the like.
If the batteries are mixed with other batteries or metallic objects, the batteries may be short-circuited, and may leak, heat or explode.

⑧ Keep the batteries away from water. The batteries may heat.

⑨ The specification or the performance of the batteries may be sometimes not appropriate, depending on applications or apparatus; use correctly the appropriate batteries in accordance with the operating instructions and notices of the apparatus.

⑩ At the storage of batteries, avoid direct sunlight, high temperature and high humidity places. Leakage may happen. Beside, the performance and the life of the batteries may decrease.

⑪ These batteries are allowed to be disposed as general incombustible refuse. However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.

⑫ Do not forget to turn off the switch of the apparatus.

⑬ To keep the batteries taken out from packages, or to stock the batteries by families, pay attention to avoid contact between batteries and to keep out of short-circuit.

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Technical Data for Alkaline Dry Battery

Type: LR6

<Made in Chaina>

2019/04/08

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

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Ratings

Item \ Battery system		Alkaline Dry Battery		
Battery type		LR6		
Nominal Voltage		1.5V		
Standard Capacity (Service Life)		Discharge condition		Service Life
		(1) 10Ω Continuous (End-Voltage:0.9V)	:	18.5 hours.
		(2) 10Ω 1h/Day (End-Voltage:0.9V)	:	18.5 hours.
		(3) 3.9Ω 1h/Day (End-Voltage:0.8V)	:	7.0 hours.
		(4) 43Ω 4h/Day (End-Voltage:0.9V)	:	88.0 hours.
Standard Weight		23g		
Terminals	Cap Terminals	Fe + Ni plate		
	Base Terminals	Fe + Ni plate		
Outer dimensions	Overall height	50.5(0/-1.3)mm		
	Diameter	ϕ14.5(0/-1.0)mm		
Usable temperature range		-10 ~ 45deg.C		

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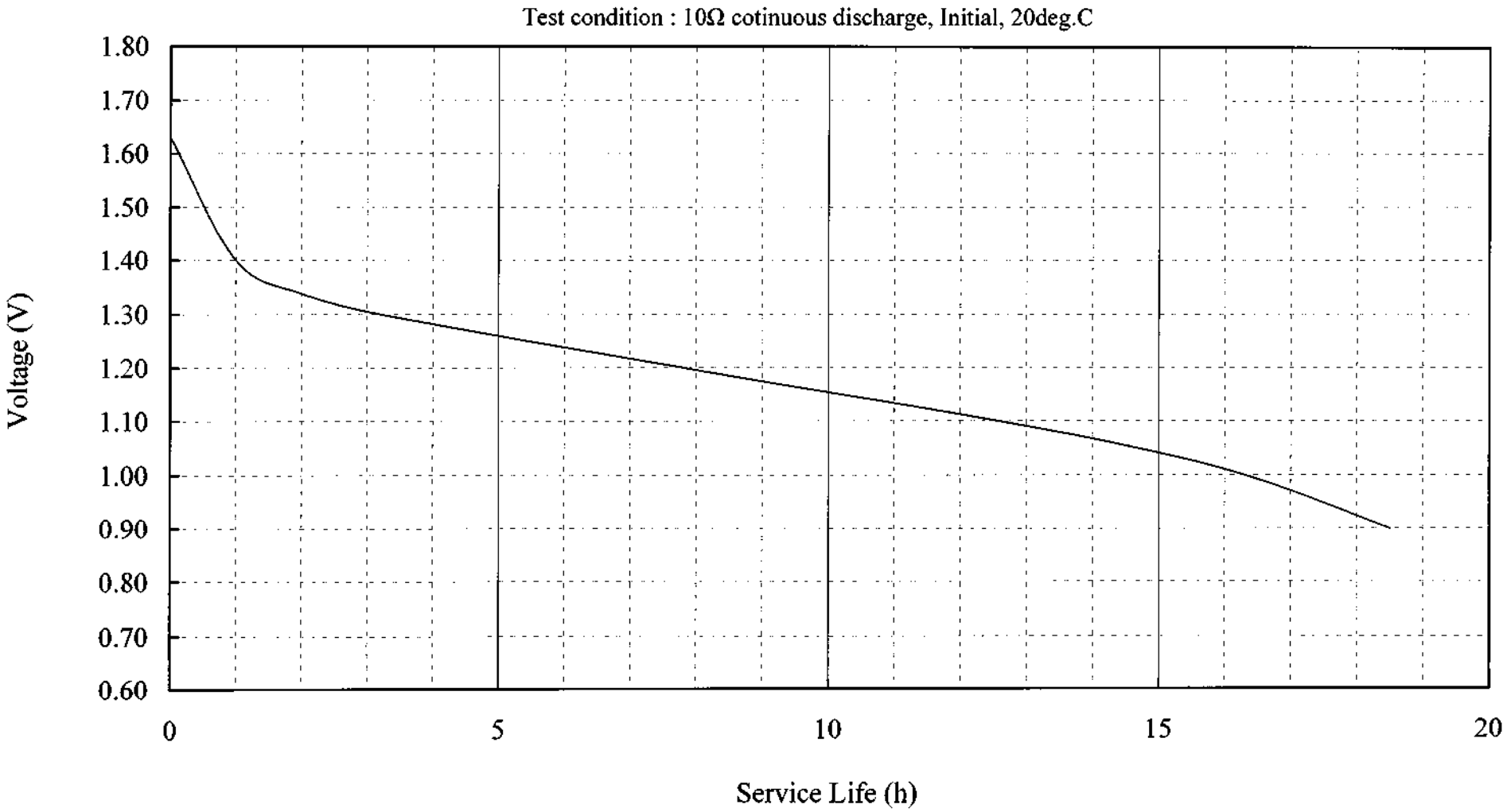
LR6 Discharge Characteristics



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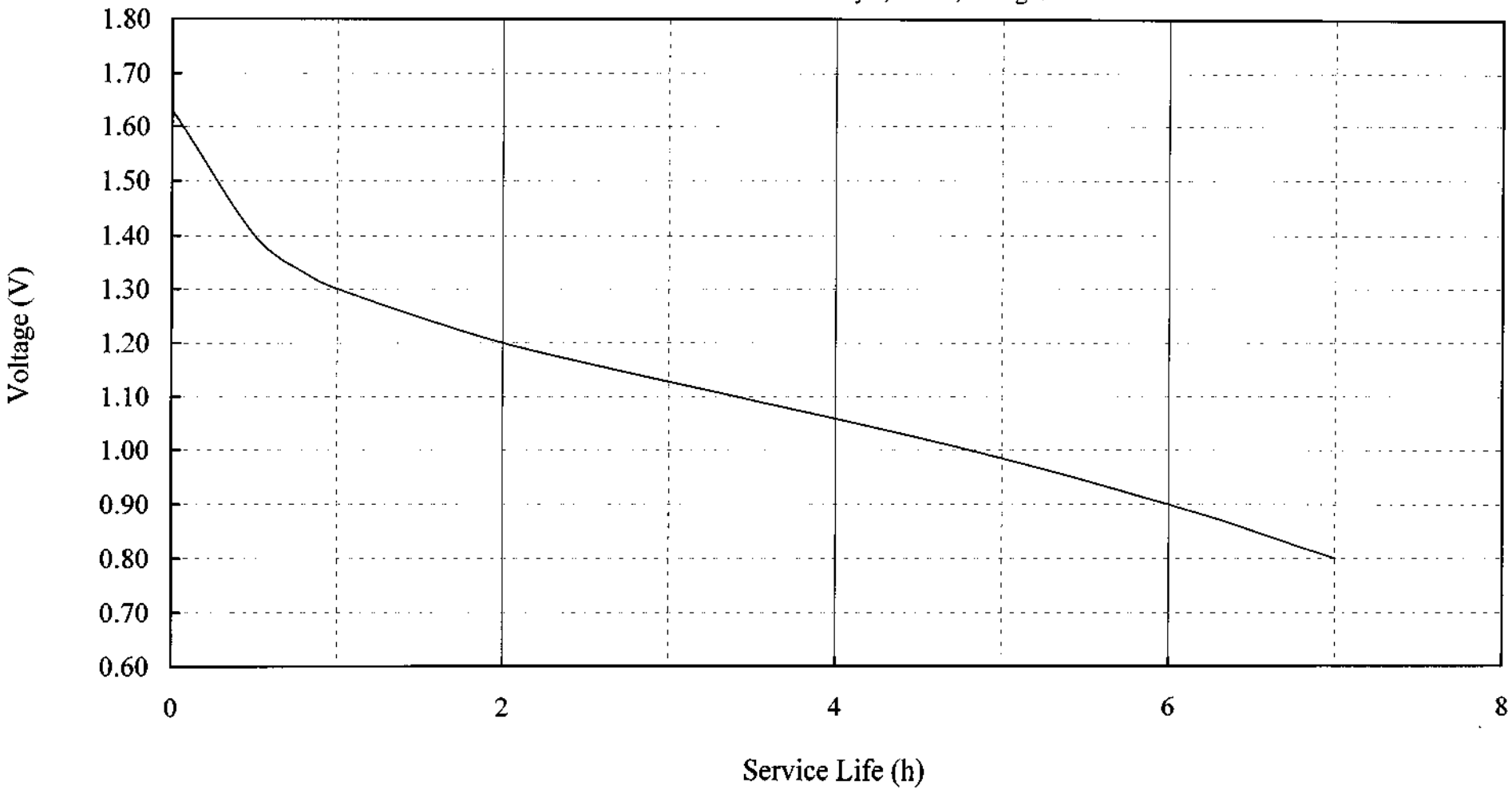
LR6 Discharge Characteristics

Test condition : 3.9Ω 1h/Day , Initial, 20deg.C



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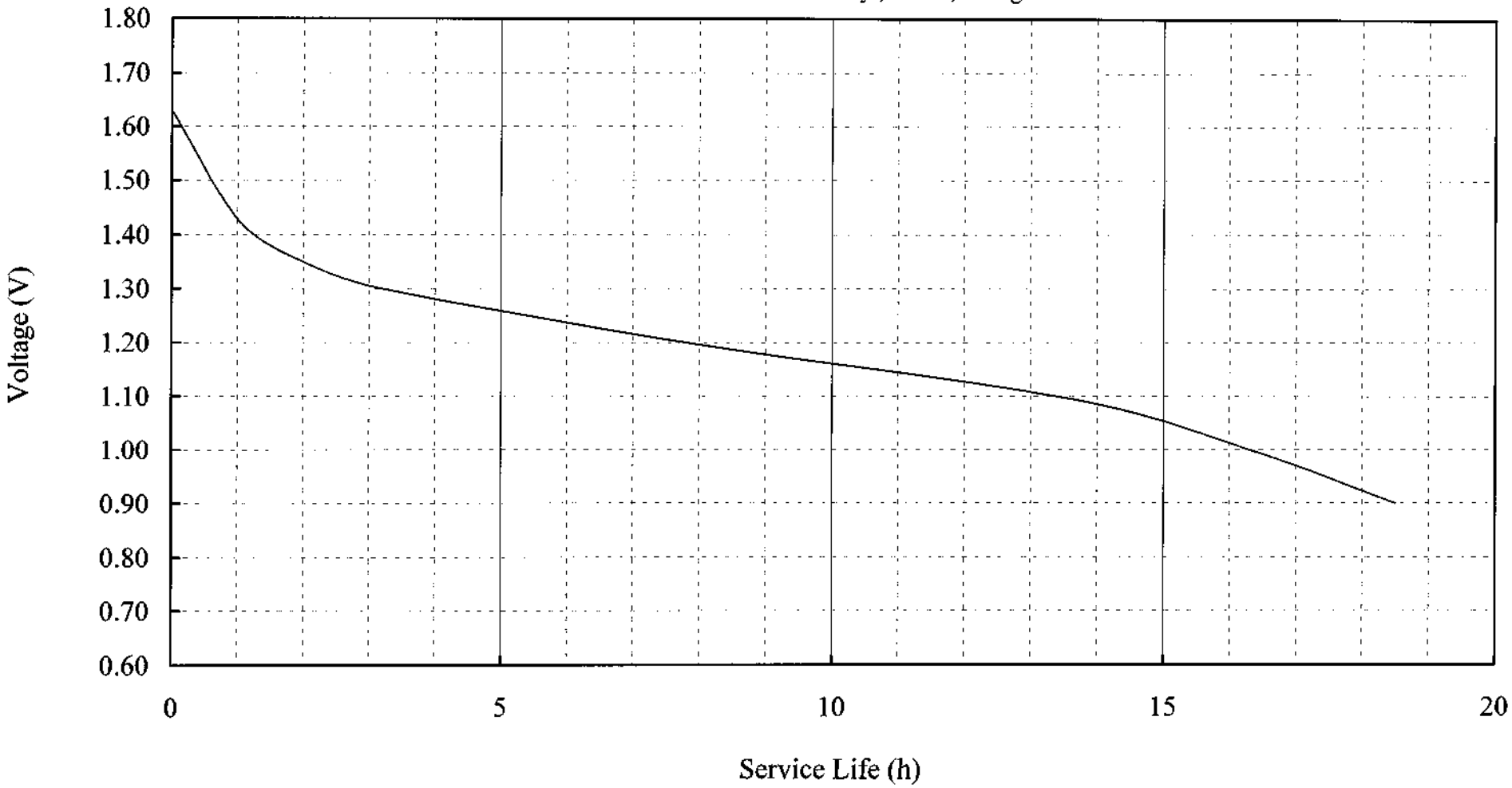
LR6 Discharge Characteristics

Test condition : 10Ω 1h/Day , Initial, 20deg.C



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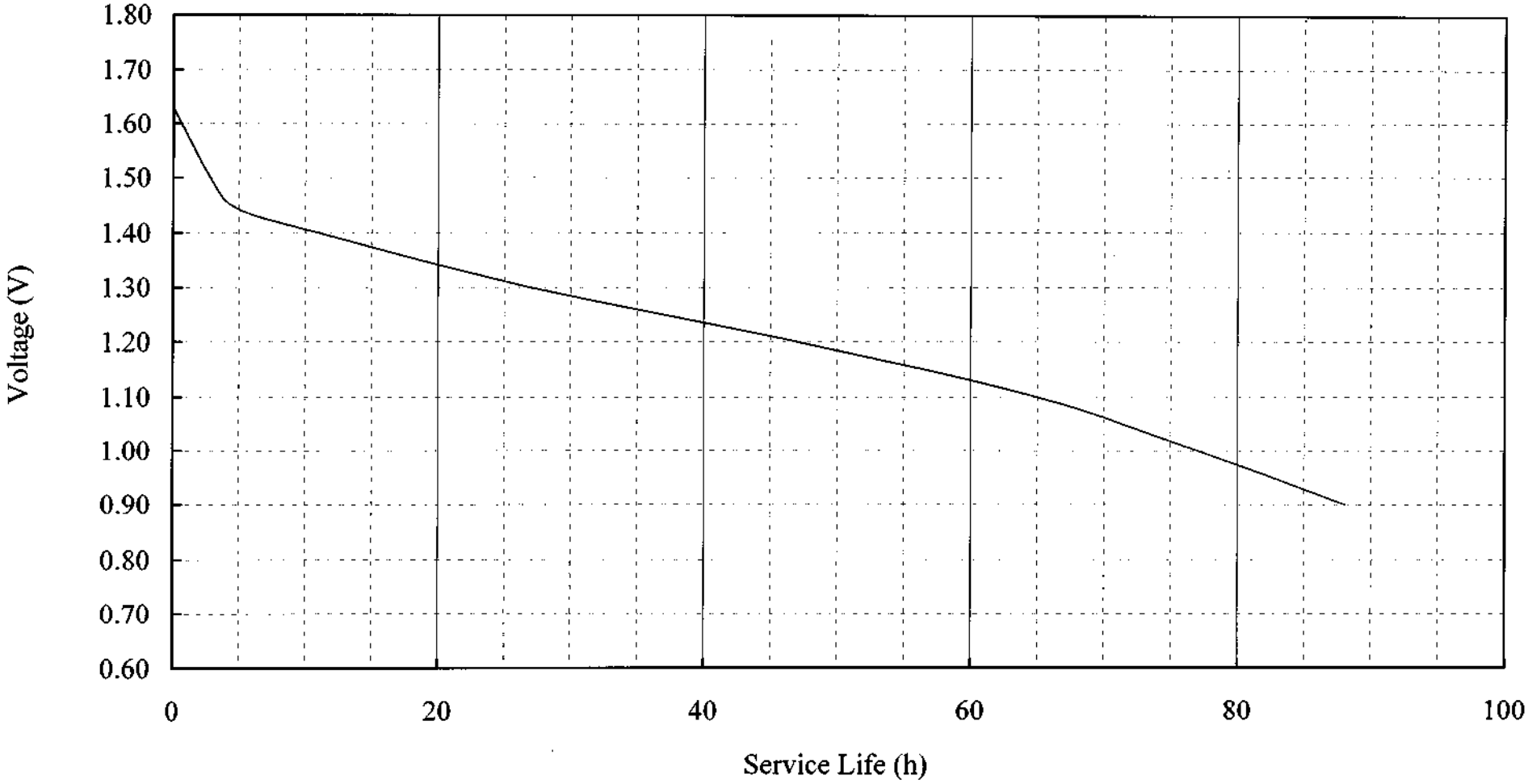
LR6 Discharge Characteristics

Test condition : 43Ω 4h/Day , Initial, 20deg.C



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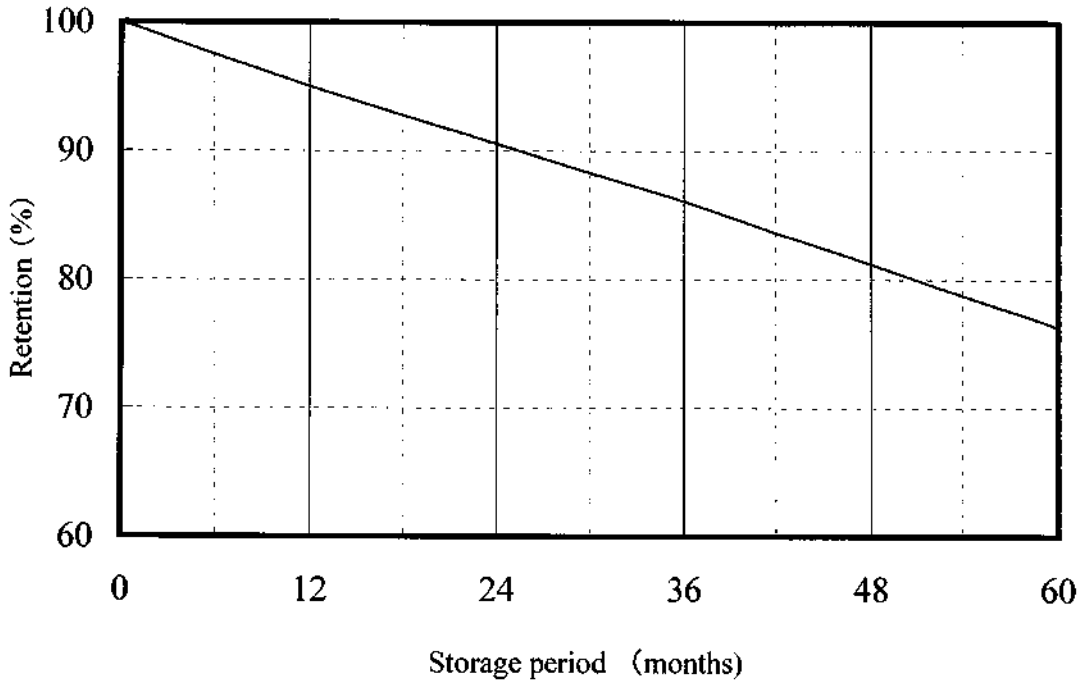
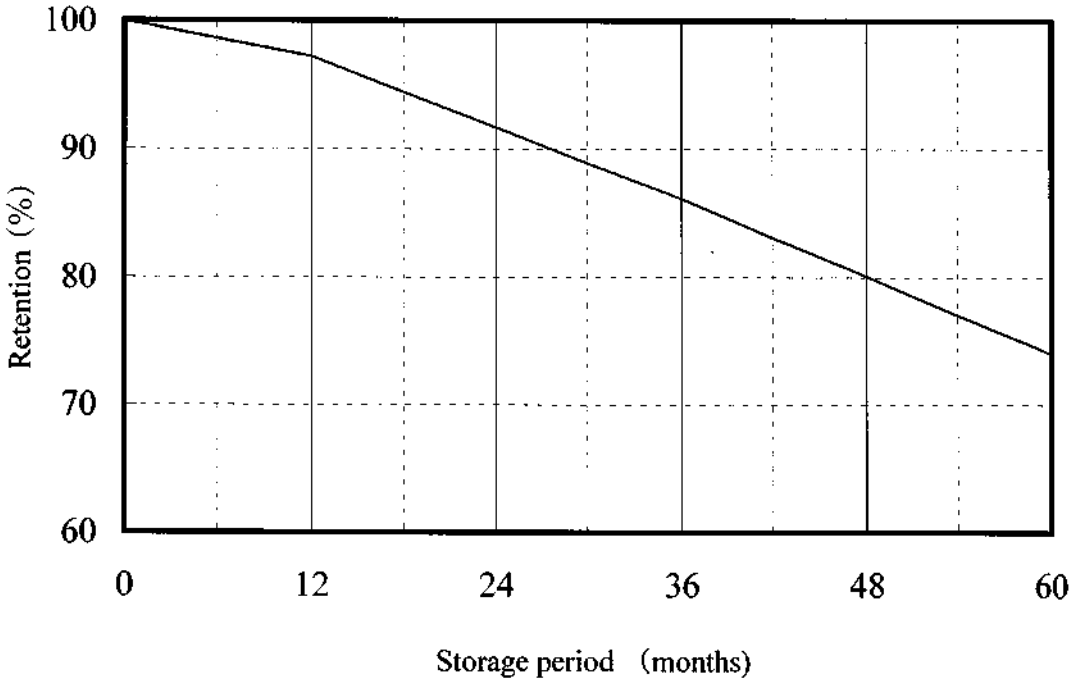
LR6 Storage Characteristics

[①Discharge condition : 10Ω 1h/Day End-voltage 0.9V]



[②Discharge condition : 43Ω 4h/day End-voltage 0.9V]



[Note] 1.Discharge temperature, relative humidity:20±2℃,(65±20)%RH
2.Storage temperature, relative humidity:20±2℃,(65±20)%RH
3.Retention:Self-discharge rate

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LR6 Leakage Performance

Test items / Storage period / Test condition		Electrolyte Leakage (%)					
		20days	40days	60days	90days	1year	2year
Room condition	Room temperature	0	0	0	0	0	0
Storage at high temperature and high humidity	45deg.C-70%RH	0	0	0	-	-	-
	60deg.C-90%RH	0	0	-	-	-	-

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5year
0
-
-

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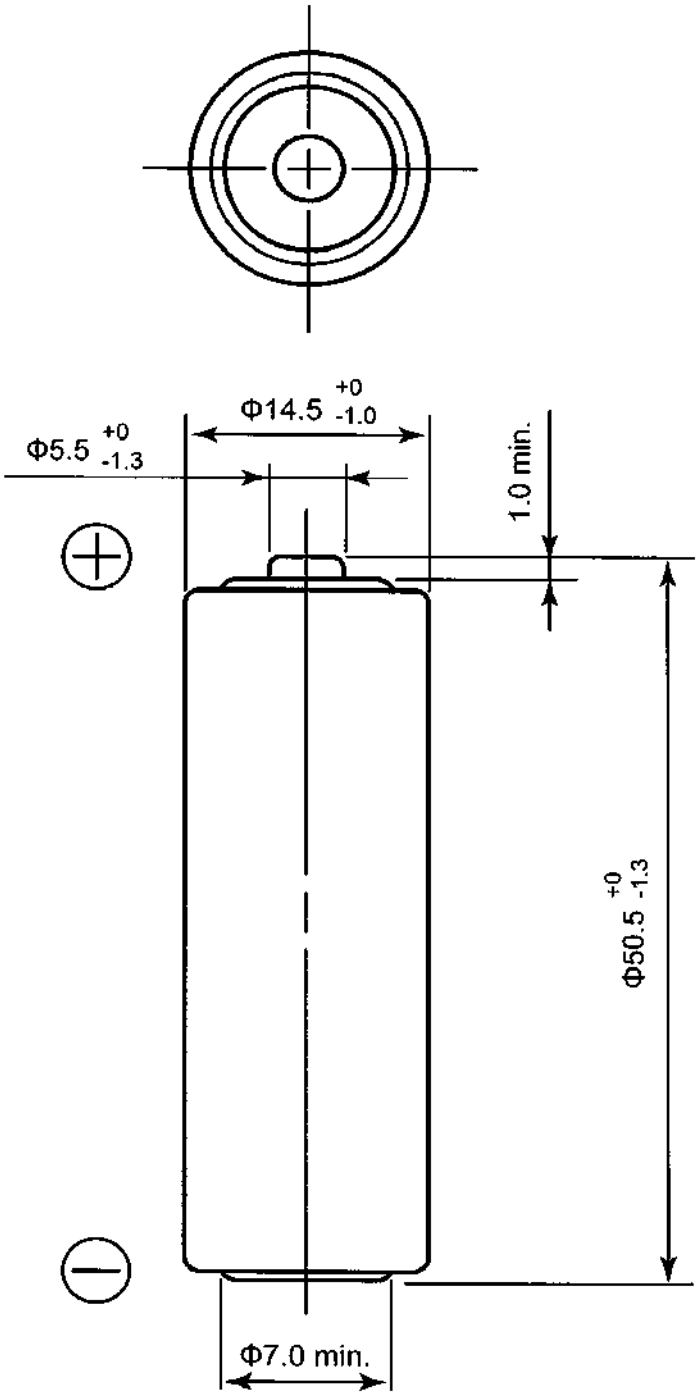
LR6 Battery Dimentions



Unit: mm
Terminals: Positive-cap terminal
Negative-base terminal
Outer shell: Shrink-label

SPECIFICATION FOR
ALKALINE MANGANESE DIOXIDE BATTERY
Type : LR03 GCL[TOSHIBA Brand]

RECEIVED

April 08,2019

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

G. Manager	Manager	Issued by

PRODUCT SPECIFICATION

1. Applicability: This specification is applicable to the following product:
Alkaline Manganese Dioxide Battery LR03GCL

2. Ratings:

2.1	Battery type:	LR03GCL[LR03 under IEC standard]
2.2	Nominal voltage:	1.5V
2.3	Shape and dimensions:	See Fig. 1, Battery Dimensions.
2.4	Standard weight:	11.4 g
2.5	Terminals:	Positive electrode — cap terminal Negative electrode — base terminal

3. Quality requirements:

3.1 Dimensions: Battery dimensions shall be as shown in Fig. 1, Battery Dimensions.

3.2 Appearance: Batteries shall have no stain, flaw or deformation which may adversely affect their performance and actual use and shall have clearly visible markings.

3.3 Quality characteristics: Requirements of Table 1 have to be satisfied.

(Table 1)

Test items		Requirements		Conditions
Electrical characteristics	Off-load voltage (V)	Initial	1.50 ～ 1.65	DC voltmeter: The tolerances shall be not more than 0.25% of nominal voltage and the input resistance shall be not less than 1MΩ.
		After 12 months	1.45 ～ 1.65	
	On-load voltage (V)	Initial	1.45 or higher	DC voltmeter: Same as above. Load resistance: 20±0.1Ω
		After 12 months	1.40 or higher	
Minimum average duration	20-ohm continuous discharge (h)	Initial	12.0 or longer	Load resistance: 20±0.1Ω Discharge time: 24 hours/day End-point voltage: 0.9V
		After 12 months	10.0 or longer	
	10-ohm intermittent discharge (h)	Initial	5.5 or longer	Load resistance: 10±0.05Ω Discharge time: 1 hour/day End-point voltage: 0.9V
		After 12 months	4.5 or longer	

Test items		Requirements		Conditions
Minimum average duration	75-ohm intermittent discharge (h)	Initial	45.0 or longer	Load resistance: 75±0.375Ω Discharge time: 4 hours/day End-point voltage: 0.9V
		After 12 months	38.5 or longer	

NOTE 1. The requirements of Table 1 represent values measured or obtained at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 2. Test specimen batteries shall be stored at the ambient temperature of 20±2℃ and at the relative humidity of (60±15)%.

NOTE 3. As for the average duration, the average value has to satisfy, initial and after 12 months, the requirement of Table 1, when tested with n=9 for each testing condition.

The test of average duration and its judgment shall be as follows.

① If the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is or less, these batteries are considered to conform to the requirement.

② If the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the test shall be repeated with other 9 pieces.
At the second test, if the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value of Table 1 is 1 or less, these batteries are considered to conform to the requirement.

③ At the above second test, if the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the batteries are considered not to conform to the requirement. A third test shall not be performed.

NOTE 4. Either during storage or during duration tests, there shall be no leakage or deformation which can be noticed visually.

3.4 Leakage characteristics: Requirements of Table 2 have to be satisfied.

(Table 2)

Items	Requirements		Conditions
Electrolyte leakage on over discharge	Initial	No electrolyte leakage or deformation findable by visual check.	Temperature, humidity: 20±2℃, (60±15)%RH Load resistance: 20±0.1Ω Completion of test: The instant when the on-load voltage decreases below 40% of the nominal voltage for the first time.
Electrolyte leakage at high temperature			Temperature: 45±2℃ Humidity: 70%RH or below Store time: To be kept standing open for 30 days.

4. Markings: Marking shall be as shown in Fig. 2, Battery Label Marking.

5. Expiry date of use:

BEST BEFORR (Month-Christian ear)

(The expiry date shall be 60 months after the manufacturing date.)

The date shall be indicated on the battery body with following symbols.

○○-○○○○

Christian ear (4 figures)

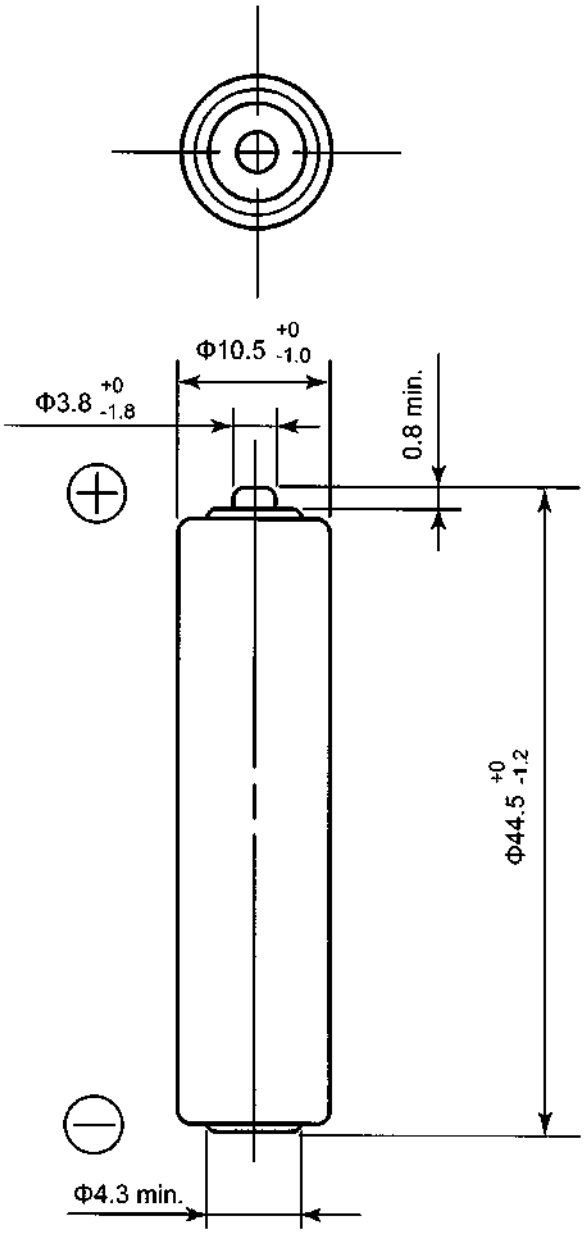
Month (2 figures)

[Example 1] 08-2013 : Expiry date of use, August 2013

[Example 2] 12-2013 : Expiry date of use, December 2013

6. Warranty term: 12 months after delivery.

(Fig. 1) BATTERY DIMENSIONS



Unit: mm

■ ALKALINE BATTERY_GCL Series Shrink label 【Scale:100%】

2019. 2.20

CELL image

LR6GCL

CELL image

LR03GCL

Precautions when using Alkaline manganese batteries

1. Precautions when designing battery appliances.

If the batteries are improperly used, leakage, heat, explosion, etc. may happen. Pay attention to the following matters at the designing of appliances.

(1) Precautions when designing battery compartment.

① The battery compartment should be made so that replacing of batteries is easy, while after loading of batteries easy release should be avoided.

② About the battery loading parts of battery compartment, pay attention for instance to the cover fixing method of the battery compartment so that the babies and little children cannot touch or take out batteries easily, to prevent swallowing by babies and little children or their injuries.
Besides, make known to everyone about "Keep batteries out of reach of babies and little children" with operating instructions or other ways.

③ When designing the dimensions and shapes of the battery compartment and the contacts, consider the dimensions and the tolerances of the batteries and their ⊕⊖ terminals to prevent contact failure or reverse insertion and to assure the adaptation of batteries put on the market.
The dimensions of the battery compartment should conform to IEC(International standards) and JIS(Japanese industrial standards) are adaptable.

④ Indicate clearly on the battery compertment, the type of the battery which suits the apparatus and the correct direction of insertion(polarity).
If the space for indication is not available, indicate them clearly in the operating instruction.

⑤ The electric circuit inside the battery compartment should be limited to the circuit connected to battery contacts; except contact section, the circuit should be completely isolated from the other electric circuits.

⑥ To minimize the damage of apparatus caused by leakage from the battery, if any, pay attention to the construction and arrangement of the battery compartment such as to detach completely the battery compartment from the mechanism compartment.

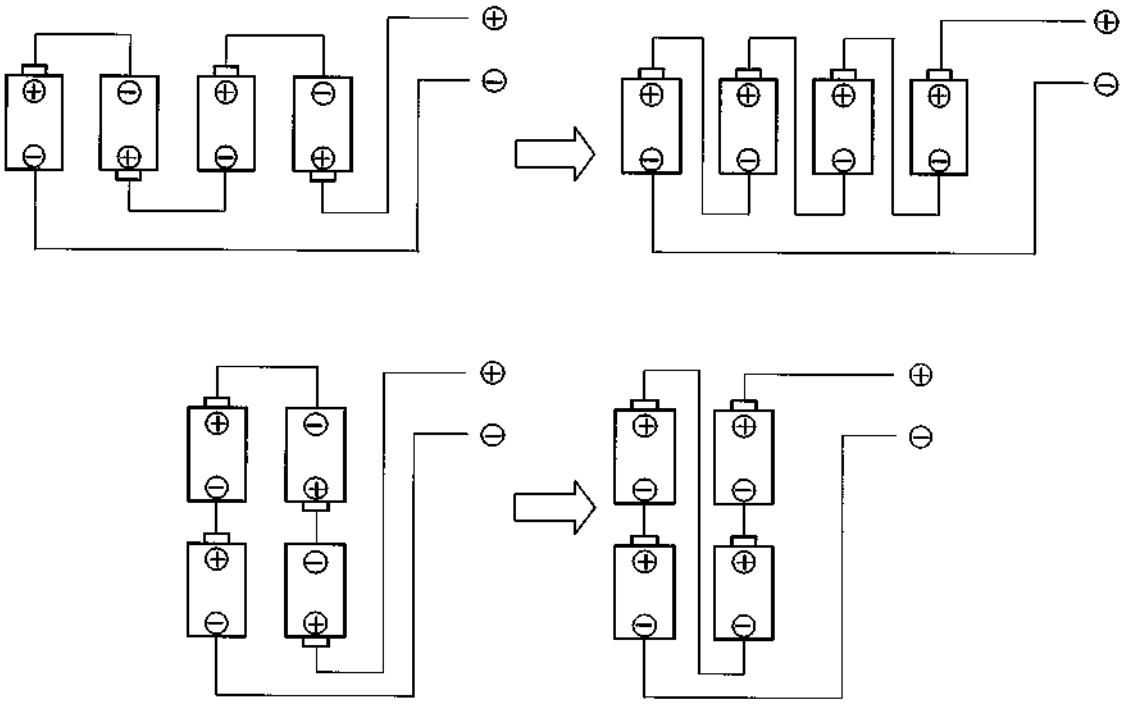
⑦ The battery compartment should maintain permeability for heat radiated from the compartment and for gas escaped from the batteries.
If complete airtight is unavoidable, pay attention to give a function such as safety vent for gas escape.

⑧ When there is a heat source in the apparatus, set the battery compartment away from the heat source, as much as possible.

⑨ When choosing the material for the battery compartment, shocks and environment should be considered.
If vibration or shocks can be estimated, take a measure so that the construction of the compartment can absorb it.

⑩ Avoid the connection of batteries in serial-parallel or in parallel, as much as possible.
Pay attention especially for serial-parallel or parallel connection because if the arrangement is mistaken, the batteries may continue to discharge or may be recharged even if the switch is off.
In case of series connection, the arrangements of batteries as indicated on reference figure with an arrow are recommended to minimize reverse insertion.

Reference figure series connection of batteries



⑪ Pay attention to the material and the shape of the battery contacts so that the electric contact will be perfect even by use of batteries having the dimensions prescribed by JIS.
The material of the contact should be chosen among nickel-plated iron, nickel-plated stainless steel or the like. If an especially low contact resistance is required, adopt gold-plating or the like.

⑫ The desirable battery contact pressure of the apparatuses is at minimum 10N (1 kg f) and at maximum 30N (3 kg f).

⑬ The circuit in the apparatus should not make electric contact with the batteries except at terminal contact point.

⑭ To avoid reverse insertion of batteries, the form of the contact point should make use of the shape difference of ⊕⊖ battery terminals, as much as possible.

⑮ When the external substitute electric source is used, the circuit should be designed to avoid charging or forced discharging of batteries.

⑯ To ensure the prevention of charging batteries, a protective circuit should be installed.

(2)Precautions at apparatus manufacturing

① Do not give ultrasonic vibration to the batteries.
By ultrasonic vibration, the contents of batteries will be finely powdered, which may cause internal short-circuit resulting in leakage, heat or explosion of batteries.

② These batteries are allowed to be disposed as general incombustible refuse.
However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.
If the batteries are improperly disposed, they may be short-circuited causing leakage, heat or explosion; as a result, injuries or burns may happen.
Besides, do not dispose of batteries in fire. If the batteries are put in fire, they will be heated rapidly, which may cause explosion, etc.

③ Wipe clean with a cloth or the like the terminals of the apparatus and the batteries before the insertion of the batteries in the apparatus.
If the terminals are soiled, the apparatus may not operate normally due to contact failure.

④ To measure voltage of the batteries, use a voltmeter having high internal resistance.
The tolerance of the voltmeter shall be not more than 0.25% of nominal voltage.
Use voltmeter with an input resistance shall be not less than 1MΩ.

(3)Precautions against transport, display and storage.

① For the storage of batteries, avoid high temperature and high humidity; and to prevent dew condersation choose a well ventilated dry place where the temperature is not so high.
For store the batteries, a place having a normal temperature(20±15℃), little temperature fluctuation and a relative humidity of 70% and less is required.
Storage of the batteries at high temperature or high humidity may increase their performance deterioration or leakage.

② For storage in warehouse or display in shopwindow, keep the batteries away from long duration direct sunlight and from rain water.
The exposition of the batteries to high temperature may increase their deterioration or induce leakage.
Besides, if the batteries get wet, the insulation will decrease and rust gathering or leakage will occur more easily.
Besides, batteries stocked by families are increasing; in this case, the matters that require attention are as mentioned above.

③ Avoid rough handling during transport.
Rough handling may cause dent or deformation, which can bring decrease of performance or leakage.
Moreover, the battery compartment may be damaged, causing the batteries in disorder; if ⊕⊖ are short-circuited the batteries may be damaged by heating, and moreover leakage, explosion, fire, etc. may happen.

④ When piling up the outer packages of batteries, the number of tiers should be limited to the amount indicated on the outer-package.
If the packages are excessively piled up, the batteries in the lower layer may be deformed or leakage may be accelerated.

⑤ As for the distribution, such as transport, display, storage and others, observe strictly the first-in, first-out method and pay attention to avoid long-term stock.
The batteries have enough storage property at normal temperature and humidity conditions(normal temperature: 20±15℃, relative humidity: 70% and less); however since the long-term stock may deteriorate their performance, observe strictly the appropriate volume of inventories and the first-in, first-out method.

2. Warning notices to the customers regarding battery handling.

For the correct use of batteries when the apparatuses are used by the customers, the operating instructions of the apparatuses should contain the following warning statement regarding batteries.

〈Warning notices regarding battery handling, to be contained in the operating instructions of the apparatuses〉

○If the batteries are improperly used, they may leak, heat or explode, bringing about injury or device failure.
Therefore observe strictly the following matters.

⚠ DANGER

If the alkaline solution of the batteries touches the eyes, injury such as loss of eyesight may caused.
Do not rub the eyes, but flush the eyes amply with abundant clean water such as city water and then receive medical treatment without delay.

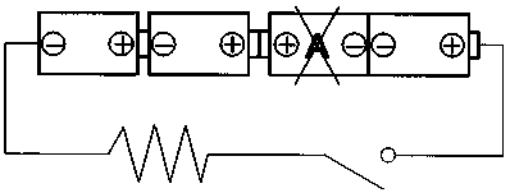
⚠ WARNING

① Keep batteries out of reach of babies and little children.
If by any chance, the batteries are swallowed, consult the doctor without delay. …(An object of indication: LR03·LR1)

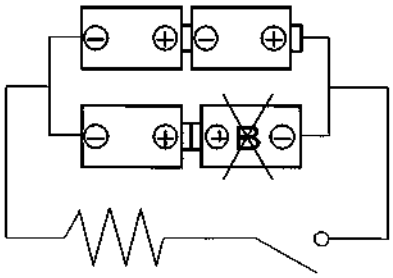
② Do not incinerate, heat, disassemble or remodel the batteries.
The insulator and the vent for gas excape and so on will be damaged, and the batteries may leak, heat or explode.

③ Do not insert batteries in reserve polarity.
By charging, short-circuiting or the like, the batteries may show abnormal reactions, and may leak, heat or explode.

Reference figure 1
Wrong series connection of batteries



Reference figure 2
Wrong serial-parallel connection of batteries



④ If the alkaline solution of the batteries is licked, rinse out the mouth and consult the doctor without delay.

⑤ If the alkaline solution of the batteries adheres to skin or clothes, skin injury may be caused. Wash liquid away immediately with abundant clean water such as city water.

⑥ Do not connect ⊕⊖ of the batteries with wire and do not carry or keep metallic necklace, hairpin, etc. together with batteries.
The batteries may be short-circuited, causing over-current and they may leak, heat or explode.

⑦ Do not mix and use "different types or brands of batteries" nor "used and new batteries" together.
The difference of characteristics may cause leakage, heat or explosion.

⑧ These batteries are not designed to be recharged.
If recharged, the insulator or the inside structure may be damaged, and the batteries may leak, heat or explode.

⑨ Remove promptly the used batteries from the apparatus.
If the used batteries are left in the apparatus, connected for long, gas will be formed in the batteries, which may cause battery leakage, heat or explosion and may cause damage of apparatus.

⑩ When not using the apparatus for a long period, remove the batteries from the apparatus.
Gas formed in the batteries may cause battery leakage or may damage the apparatus.

⚠ CAUTION

① Do not peel off or damage the outer label of the batteries.
The batteries may be short-circuited, they may leak, heat or explode.

② Do not expose batteries to strong impact by dropping or throwing the batteries. The batteries may leak, heat or explode.

③ Do not deform the batteries.
The insulator and the vent for gas escape, etc. may be damaged and the batteries may leak, heat or explode.

④ When using the batteries in complete airtight apparatus, follow the indications of the operating instructions of the apparatus.

⑤ Do not solder anything directly to the batteries.
The insulator and the vent for gas escape, etc. may be damaged by heat and the batteries may leak, heat or explode.

⑥ Do not use nor keep batteries at places exposed to strong direct sunlight or in cars under burning sun, etc. The batteries may leak, heat or explode.

⑦ At the storage or disposal of the batteries, insulate the terminal parts with tape or the like.
If the batteries are mixed with other batteries or metallic objects, the batteries may be short-circuited, and may leak, heat or explode.

⑧ Keep the batteries away from water. The batteries may heat.

⑨ The specification or the performance of the batteries may be sometimes not appropriate, depending on applications or apparatus; use correctly the appropriate batteries in accordance with the operating instructions and notices of the apparatus.

⑩ At the storage of batteries, avoid direct sunlight, high temperature and high humidity places. Leakage may happen. Beside, the performance and the life of the batteries may decrease.

⑪ These batteries are allowed to be disposed as general incombustible refuse. However if rules for battery disposal exist, such as regulations of local government, dispose of the batteries in accordance with the rules.

⑫ Do not forget to turn off the switch of the apparatus.

⑬ To keep the batteries taken out from packages, or to stock the batteries by families, pay attention to avoid contact between batteries and to keep out of short-circuit.

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Technical Data for Alkaline Dry Battery

Type: LR03 GCL

<Made in Chaina>

2011/04/08

TOSHIBA HOME APPLIANCES CORPORATION

Battery Business Div.

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Ratings

Item \ Battery system		Alkaline Dry Battery		
Battery type		LR03 GCL		
Nominal Voltage		1.5V		
Standard Capacity (Service Life)		Discharge condition		Service Life
		(1) 20Ω Continuous (End-Voltage:0.9V)	:	17.5 hours.
		(2) 10Ω 1h/day (End-Voltage:0.9V)	:	8.0 hours.
		(3) 75Ω 4h/Day (End-Voltage:0.9V)	:	70.0 hours.
Standard Weight		11.4 g		
Terminals	Cap Terminals	Fe + Ni plate		
	Base Terminals	Fe + Ni plate		
Outer dimensions	Overall height	44.5(0/-1.2)mm		
	Diameter	ϕ10.5(0/-1.0)mm		
Usable temperature range		-10 ~ 45deg.C		

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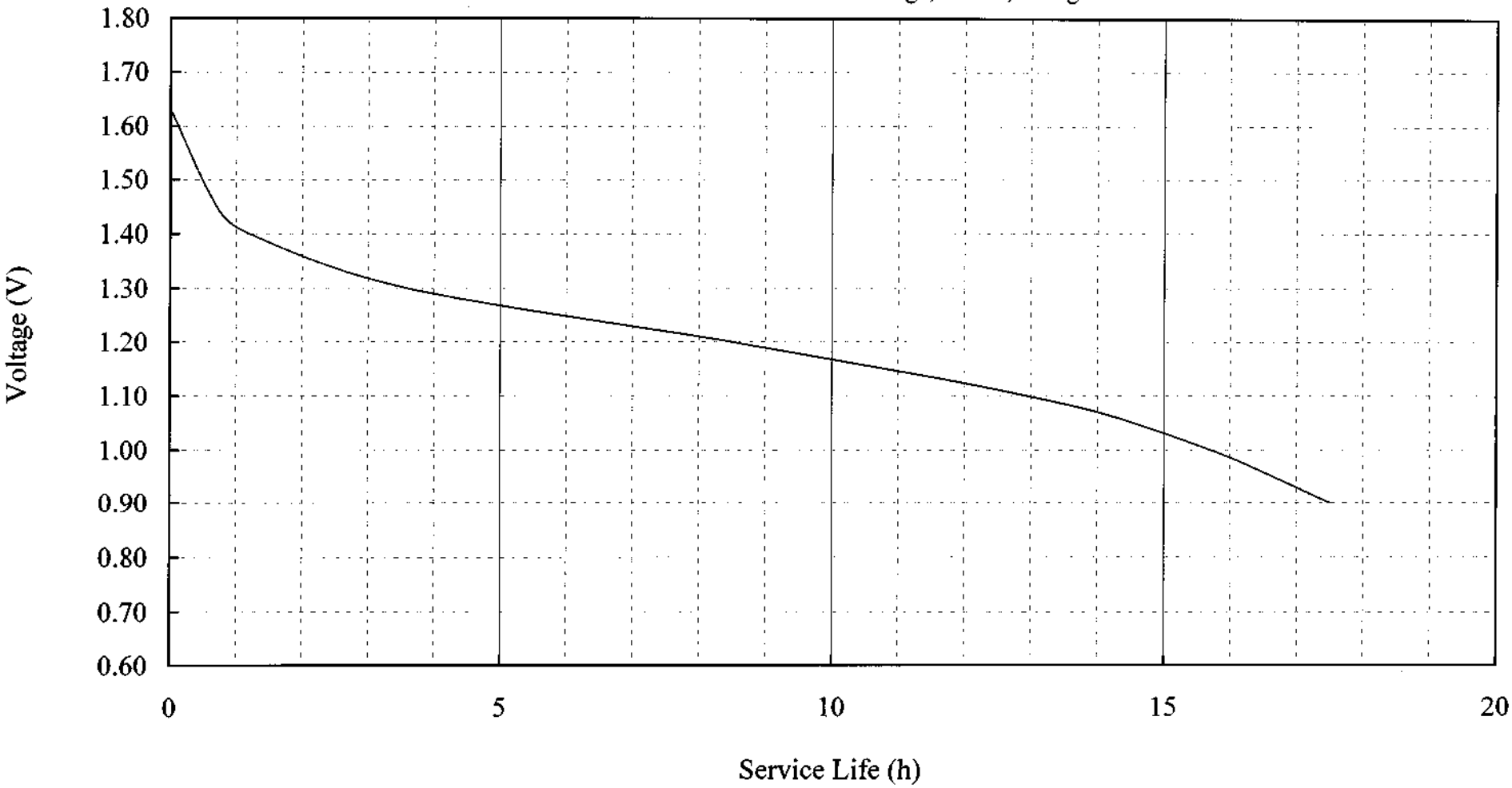
LR03 Discharge Characteristics

Test condition : 20Ω cotinuous discharge, Initial, 20deg.C



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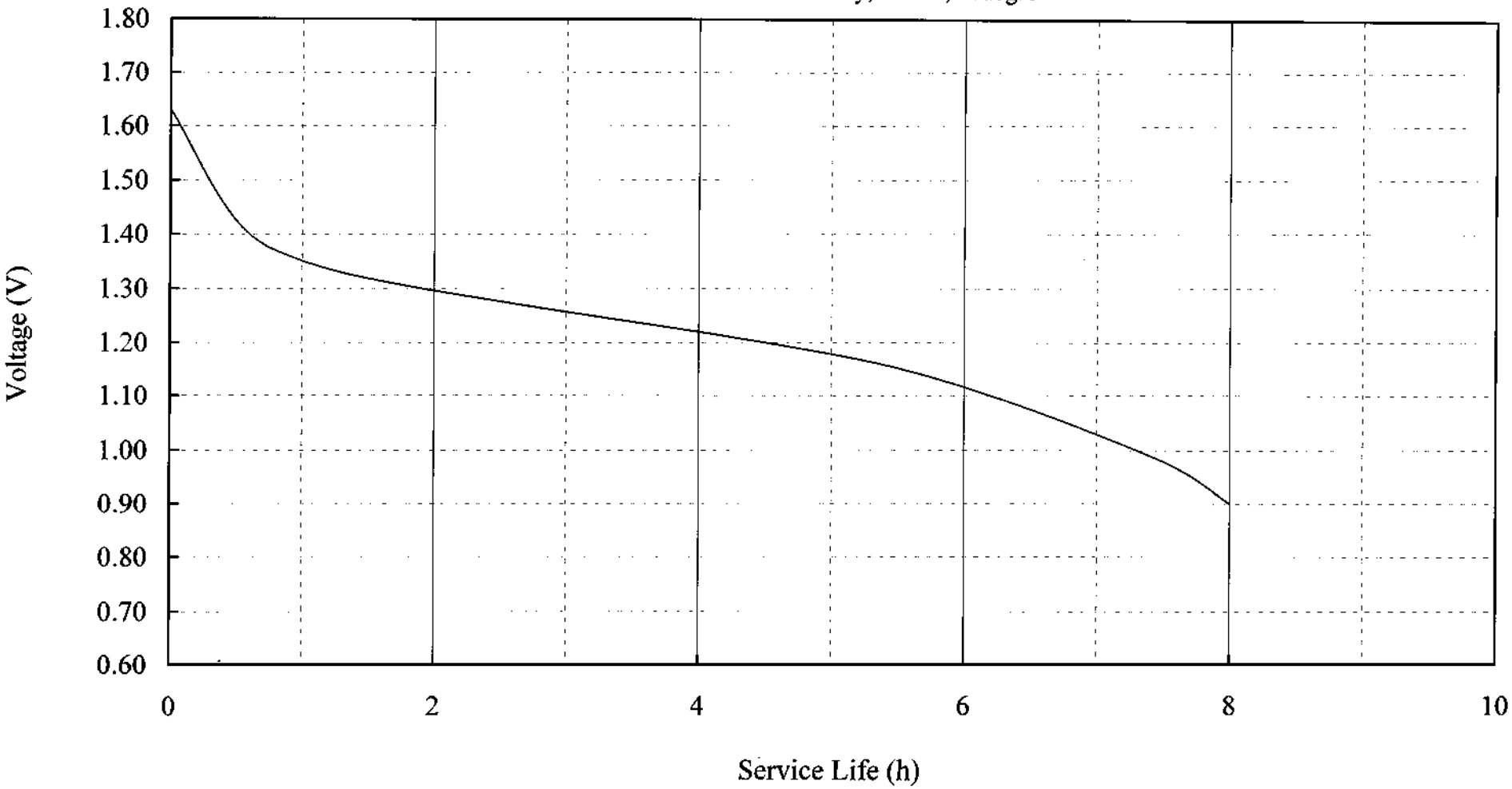
LR03 Discharge Characteristics

Test condition : 10Ω 1h/Day, Initial, 20deg.C



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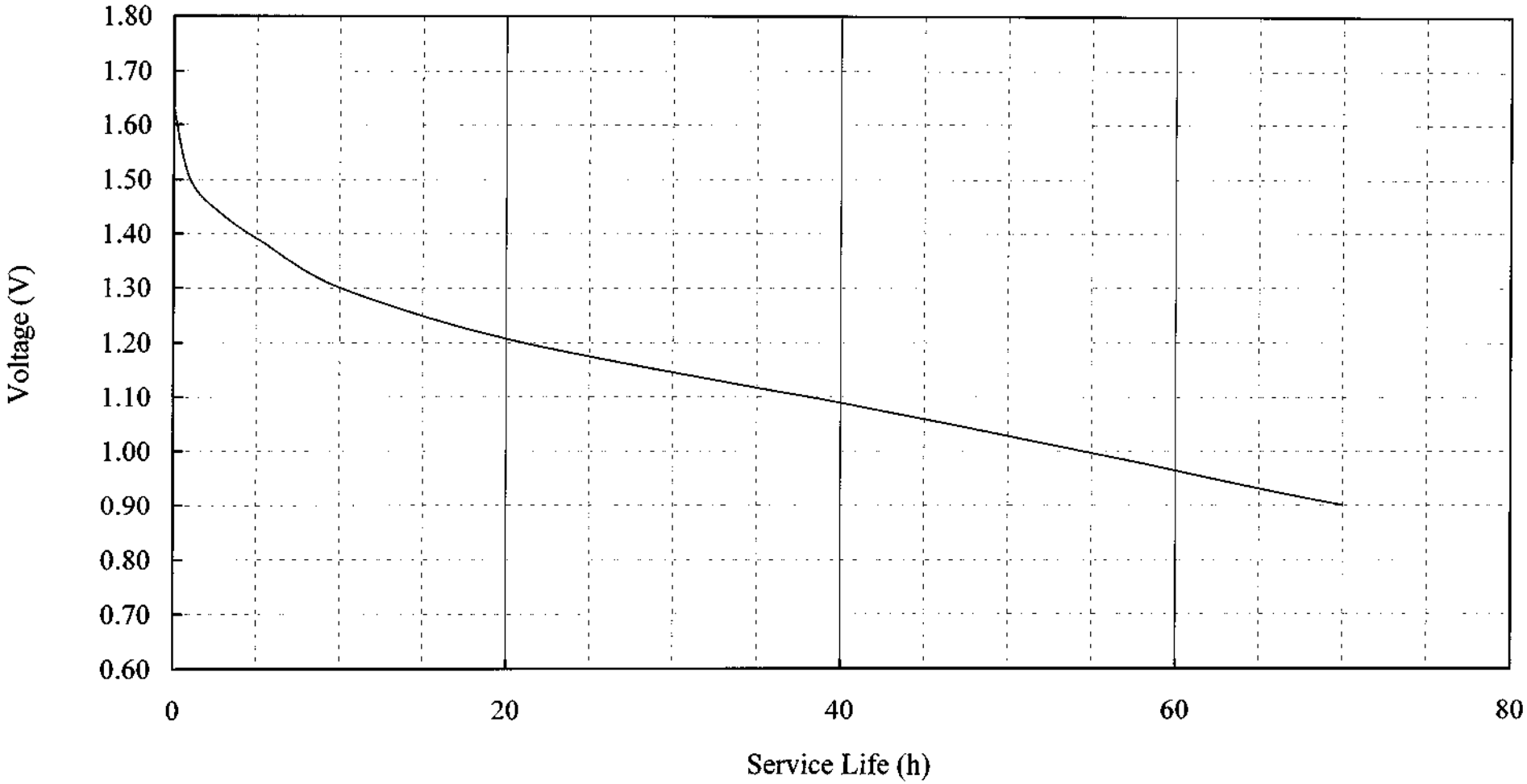
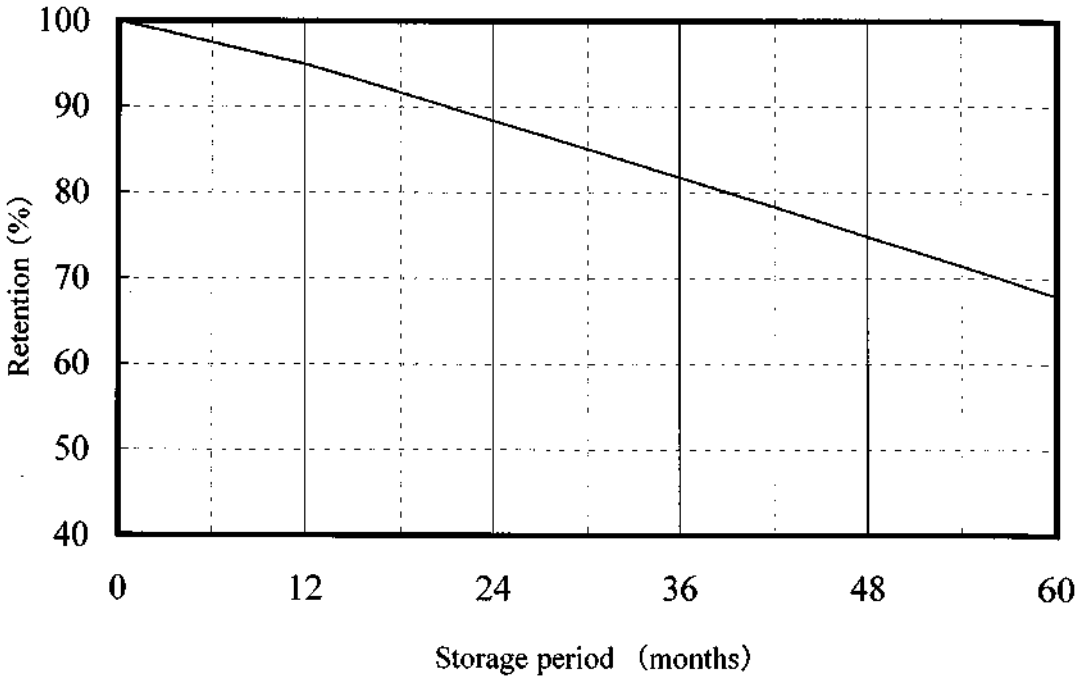
LR03 Discharge Characteristics

Test condition : 75Ω 4h/Day, Initial, 20deg.C

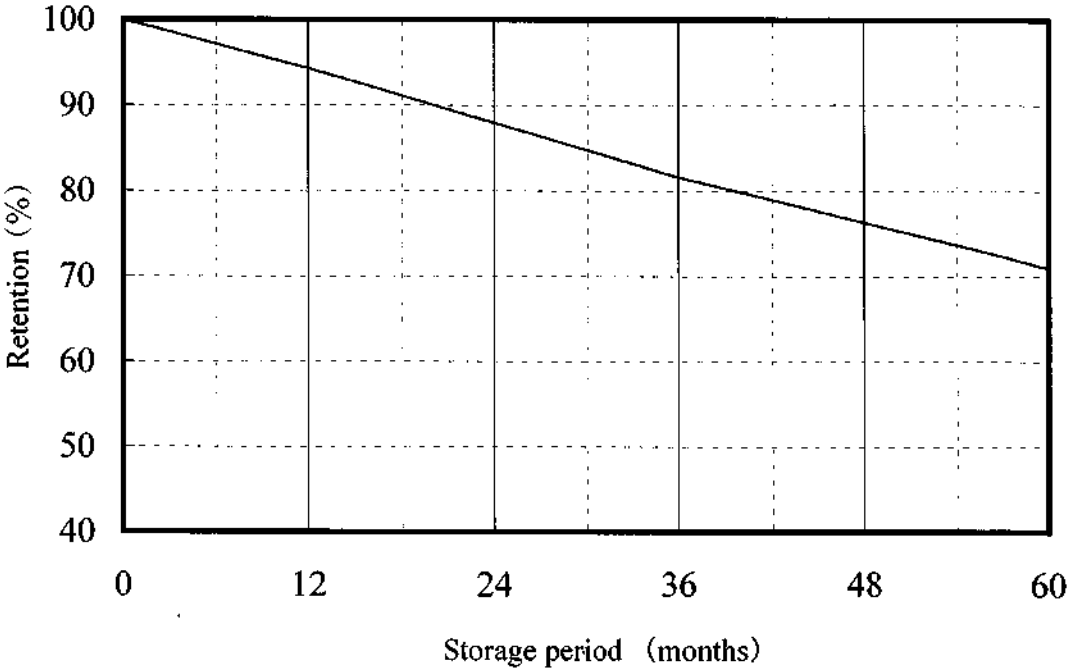


LR03 Storage Characteristics

[①Discharge condition: 10Ω 1h/Day End-voltage 0.9V]



[②Discharge condition: 75Ω 4h/Day End-voltage 0.9V]



[Note] 1.Discharge temperature, relative humidity:20±2℃,(65±20)%RH
2.Storage temperature, relative humidity:20±2℃,(65±20)%RH
3.Retention:Self-discharge rate

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LR03 Leakage Performance

Test items / Storage period / Test condition		Electrolyte Leakage (%)						
		20days	40days	60days	90days	1year	2year	5year
Room condition	Room temperature	0	0	0	0	0	0	0
Storage at high temperature and high humidity	45deg.C-70%RH	0	0	0	-	-	-	-
	60deg.C-90%RH	0	0	-	-	-	-	-

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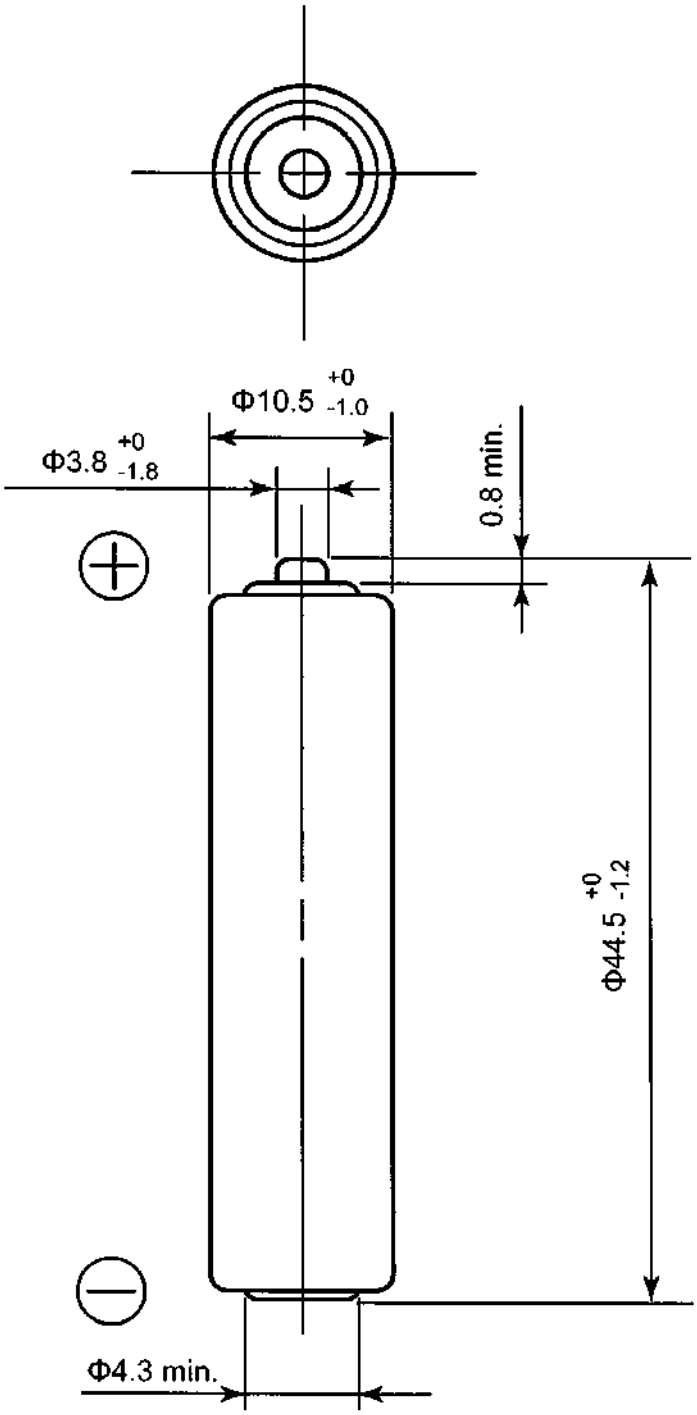
LR03 Battery Dimentions



Unit: mm
Terminals: Positive-cap terminal
Negative-base terminal
Outer shell: Shrink-label

This is only for reference.(not guaranteed.) This information contained herein may be changed without prior notice.

Safety Data Sheet

Fiche de données de sécurité

Report No.: MTi240528004-01A1

Date of issue: Jun. 20, 2024

Sample Name: Nom de l'échantillon:	Alkaline Zinc-Manganese Battery
Model: Modèle:	LR6
Applicant: Candidat:	Fujian Nanping Nanfu New Energy Co.,ltd.
Address: Address:	109# Industry Road, Yanpin District, Nanping City, Fujian Province, P.R.China

Shenzhen Microtest Co., Ltd.
http://www.mtitest.com

Tel:(86-755)88850135 Fax: (86-755) 88850136 Web:http: //www.mtitest.com E-mail: mti@51mti.com
Add: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China.

** The SDS is prepared based on the information provided by client. The contents and formats of this SDS are revised as per client's request.*
** la FDS est préparée en fonction des informations fournies par le client. Le contenu et les formats de cette FDS sont révisés selon la demande du client.*

Section 1- Identification
Section 1- Identification

(a) Product identifier
(a) identifiant du produit

Product name Nom du produit	Alkaline Zinc-Manganese Battery

(b) Other means of identification
(b)autres moyens d'identification

Product description Description du produit	ModelModèle:LR6

(c) Recommended use of the chemical and restrictions on use
(c) utilisation recommandée du produit chimique et restrictions d'utilisation

Recommendeduse Utilisation recommandée	Mercury free Battery
Uses advised against Utilisations déconseillées	No information available.

(d) Details of the supplier of the safety data sheet
(d) Détails du fournisseur de la fiche de données de sécurité

Supplier Name Nom du fournisseur	Fujian Nanping Nanfu New Energy Co.,ltd.
Supplier Address Adresse du fournisseur	109# Industry Road, Yanpin District, Nanping City, Fujian Province, P.R.China
Manufacture Company Société de fabrication	Fujian Nanping Nanfu New Energy Co.,ltd.
Manufacture Address Adresse de la fabrication	109# Industry Road, Yanpin District, Nanping City, Fujian Province, P.R.China
Supplier Phone Number Numéro de téléphone du fournisseur	+86 13392837729

(e) Emergency telephone numberD
(e) Numéro de téléphone d'urgence

+86 13392837729

Section 2- Hazards Identification
Section 2- Identification des dangers

Emergency overview: This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.
Aperçu d'urgence: ce produit est une batterie. L'utilisation prévue du produit ne devrait pas entraîner d'exposition à la substance chimique. En cas de rupture, les risques ci-dessous existent.

Skin corrosion/irritation Corrosion /irritation de la peau	Category 2
Serious eye damage/eye irritation Lésions oculaires graves/irritation oculaire	Category 2A
Acute toxicity, oral Toxicité aiguë, orale	Category 4
Hazardous to the aquatic environment, long-term hazard Dangereux pour le milieu aquatique, danger à long terme	Category 2

Specific target organ toxicity, single exposure; Respiratory tract irritation Toxicité spécifique pour l'organe cible, exposition unique; Irritation des voies respiratoires	Category 3

(b) GHS Label elements, including precautionary statements
(b)Éléments de l'étiquette GHS, y compris les énoncés de précaution

Emergency Overview
Aperçu des urgences

Signal word **Mot de Signal**	Warning

Hazard Statements Énoncés de danger

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

H411 Toxic to aquatic life with long lasting effects

H302 nocif en cas d'ingestion

H315 provoque une irritation de la peau

H319 provoque une grave irritation des yeux

H335 peut causer une irritation respiratoire

H411 toxique pour les organismes aquatiques, ayant des effets à long terme

AppearanceAppearance: No information available Aucune information disponible

Physical StateÉtat physique: Solid Solide **Odor**odeur: No information available Aucune information disponible

Precautionary Statements-Prevention **Déclarations de précaution — prévention**	P261 Avoid breathing dust, fume, gas, mist, vapours, spray. P264 Wash skin and clothing thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing, eye protection, face protection. P261 éviter de respirer la poussière, les fumées, les gaz, les brumes, les vapeurs, les pulvérisations. P264 laver soigneusement la peau et les vêtements après manipulation. P270 ne pas manger, boire ou fumer lors de l'utilisation de ce produit. P271 utiliser uniquement à l'extérieur ou dans un endroit bien aéré. P273 éviter le rejet dans l'environnement. P280 porter des gants de protection, des vêtements de protection, une protection des yeux, une protection du visage.
Precautionary Statements-Response **Déclarations de précaution — réponse**	P301+P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty water. P321 Specific treatment (See additional emergency instructions).

	P333 + P313 If skin irritation or rash occurs: Get medical advice. P362 + P364 Take off contaminated clothing and wash it before reuse. P305+P351 +P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice. P304+ P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER, if you feel unwell. P391 Collect spillage. P301+P312 en cas d'ingestion: appelez un centre anti-poison si vous ne vous sentez pas bien. P330 rincer la bouche. P302+P352 si sur la peau: laver abondamment à l'eau. P321 traitement spécifique (voir les instructions d'urgence supplémentaires). P333 + P313 en cas d'irritation ou d'éruption cutanée: consulter un médecin. P362 + P364 enlever les vêtements contaminés et les laver avant de les réutiliser. P305+P351 +P338 si dans les yeux: rincer prudemment à l'eau pendant plusieurs minutes. Retirer les lentilles de contact, si elles sont présentes et faciles à faire. Continuer le rinçage. P337 + P313 si l'irritation oculaire persiste: consulter un médecin. P304+ P340 en cas d'inhalation: mettre la personne à l'air frais et la maintenir à l'aise pour respirer. P312 appelez un centre anti-poison si vous ne vous sentez pas bien. P391 recueillir les déversements.
Storage **stockage**	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P403+P233 stocker dans un endroit bien ventilé. Garder le récipient bien fermé. P405 magasin enfermé.
Disposal **Élimination**	P501 Send contents to approved waste treatment plants P501 envoyer le contenu aux usines de traitement des déchets agréées.
Other hazards **Autres dangers**	Physical and chemical hazards: See Section 10 Human health hazards: See Section 11 Environmental hazards: See Section 12 Dangers physiques et chimiques: voir la Section 10 Dangers pour la santé humaine: voir la Section 11 Dangers pour l'environnement: voir la Section 12

Section 3- Composition/Information On Ingredients
Section 3- Composition/ informations sur les ingrédients

Nom chimique	CAS Number	% en poids	Date de dépôt LCRMD et date de la dérogation accordée (s'il y a lieu)
Manganese dioxide	1313-13-9	40	--
1,2-Propanediolcyclic carbonate	7440-66-6	18	--

Potassium hydroxide	1310-58-3	10	--
Graphite	7782-42-5	4.5	--
Iron	7439-89-6	20	--
brass	12597-71-6	5	--
Zinc oxide	1314-13-2	2	--
Nickel	7440-02-0	0.5	--

“ * ” The exact percentage (concentration) of composition has been withheld as a trade secret.
"*" le pourcentage exact (concentration) de la composition a été retenu comme secret professionnel.

Section 4- First-aid Measures

Description of first aid measures

Description des mesures de premiers secours

After eye contact

Après le contact visuel

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention ifrritation persists.

Rincer abondamment les yeux à l’eau pendant plusieurs minutes tout en maintenant les paupières ouvertes. Obtenez des soins médicaux si votre ritation persiste.

After skin contact

Après contact avec la peau

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

Enlever les vêtements et les chaussures contaminés. Laver immédiatement avec de l’eau et du savon et rincer abondamment. Lavez les vêtements et les chaussures avant de les réutiliser. En cas d’irritation, consulter un médecin.

After inhalation

Après inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

Enlevez la victime à la zone fraîche. Administrer la respiration artificielle si la respiration est difficile. Consultez un médecin.

After swallowing

Après avoir avalé

Do not induce vomiting. Get medical attention.

Ne pas faire vomir. Obtenez des soins médicaux.

Personal protective equipment for first-aid responders: No data available.Most important symptoms/effects, acute and delayed: No data available.Indication of immediate medical attention and special treatment needed: Treat symptomatically.

Equipement de protection individuelle pour les secouristes: aucune donnée disponible. Symptômes/effets les plus importants, aigus et retardés: aucune donnée disponible. Indication d’une attention médicale immédiate et d’un traitement spécial nécessaire: traiter symptomatiquement.

Section 5- Fire-fighting measures

Section 5- mesures de lutte contre l’incendie

Suitable extinguishing media:

Médias d’extinction appropriés:

Use extinguishing agent suitable for local conditions and the surrounding environment. Such as dry powder, CO2.

Utiliser un agent extincteur adapté aux conditions locales et à l’environnement environnant. Comme la poudre sèche, CO2.

Unsuitable extinguishing media:

Milieux d'extinction inappropriés:

No data available.

Pas de données disponibles.

Specific Hazards arising from the chemical:

Risques spécifiques liés à la substance chimique:

Special hazards arising from the substance or mixtureBattery may burst and release hazardous decomposition products when exposed to a fire situation. Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot.

Les risques particuliers découlant de la substance ou de la batterie de mélange peuvent éclater et libérer des produits de décomposition dangereux en cas d'incendie. Certains peuvent brûler mais aucun ne s'enflamme facilement. Les contenants peuvent exploser lorsqu'ils sont chauffés. Certains peuvent être transportés chauds.

Specific protective actions for fire-fighters:

Actions de protection spécifiques pour les pompiers:

Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

Équipement de protection: porter un respirateur autonome. Portez une combinaison imperméable entièrement protectrice.

Section 6- Accidental Release Measures

Section 6- mesures de rejet accidentel

Personal precautions:

Précautions personnelles:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Portez un équipement de protection. Éloignez les personnes non protégées. Assurer une ventilation adéquate

Protective equipment:

Equipement de protection:

No data available.

Pas de données disponibles.

Emergency procedures:

Procédures d'urgence:

Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposalcontainer. Keep spilled material out of sewers, ditches and bodies of water.

Retirer les sources d'inflammation, évacuer la zone. Balayer en utilisant une méthode qui ne génère pas de poussière. Recueillir le plus de matières déversées possible et placer les matières déversées dans un contenant d'élimination approprié. Garder les déversements hors des égouts, des fossés et des plans d'eau.

Environmental precautions:

Précautions environnementales:

Do not allow material to be released to the environment without proper governmental permits.

Ne permettez pas que des matières soient rejetées dans l'environnement sans les permis gouvernementaux appropriés.

Methods and materials for containment and cleaning up:

Méthodes et matériaux de confinement et de nettoyage:

For all waste handing must refer to United Nations, National and Local Regulations for disposal.

Pour tout le traitement des déchets doit se référer aux Nations unies, réglementations nationales et locales pour l'élimination.

See Section 7 for information on safe handling.

Voir la Section 7 pour obtenir des renseignements sur la manipulation sécuritaire.

See Section 8 for information on personal protection equipment.

Voir la Section 8 pour obtenir des renseignements sur l'équipement de protection individuelle.

See Section 13 for disposal information.

Voir la Section 13 pour obtenir des renseignements sur l'aliénation.

Section 7- Handling and Storage

Section 7- manutention et entreposage

Precautions for safe handling:

Précautions pour une manipulation sûre:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

Évitez de court-circuiter la batterie. Évitez les dommages mécaniques de la batterie. Ne pas ouvrir ou démonter. Les piles peuvent exploser ou causer des brûlures si elles sont démontées, écrasées ou exposées au feu ou à des températures élevées. Ne pas raccourcir ou installer avec une polarité incorrecte. Évitez tout contact personnel, y compris l'inhalation. Portez des vêtements de protection en cas de risque d'exposition. Utilisation dans un endroit bien ventilé. Prévenir la concentration dans les creux et les puisards.

Conditions for safe storage, including any incompatibilities:

Conditions de stockage en toute sécurité, y compris les incompatibilités éventuelles:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

Conserver dans un endroit frais, sec et bien ventilé. Tenir à l'écart de la chaleur, en évitant la longue période de lumière du soleil.

Section 8- Exposure Controls/Personal Protection

Section 8- contrôle de l'exposition/Protection individuelle

Control parameters

(a) Paramètres de contrôle

CAS No.	ACGIH	NIOSH	OSHA
1313-13-9	N/A	N/A	N/A
7440-66-6	N/A	N/A	N/A
7439-89-6	N/A	N/A	N/A
1310-58-3	TLV-Peak 2mg/m3	REL-Peak 2mg/m3	N/A
12597-71-6	N/A	N/A	N/A
1314-13-2	N/A	N/A	N/A
7440-02-0	N/A	N/A	N/A
7782-42-5	N/A	N/A	PEL-TWA 2mg/m3

Appropriate engineering controls:

Contrôles techniques appropriés:

The usual precautionary measures for handling chemicals should be followed.

Les mesures de précaution habituelles pour la manipulation des produits chimiques doivent être suivies.

Keep away from foodstuffs, beverages and feed.

Conserver à l'écart des aliments, des boissons et des aliments pour animaux.

Remove all soiled and contaminated clothing immediately.

Enlever immédiatement tous les vêtements souillés et contaminés.

Wash hands before breaks and at the end of work.

Se laver les mains avant les pauses et à la fin du travail.

Personal Protective Equipment:

Equipement de protection individuelle:

Respiratory protection:

Protection respiratoire:

Wear suitable protective mask. For a large large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

Portez un masque de protection approprié. Pour un grand nombre de fuites de batterie, portez des vêtements de protection chimique, y compris des appareils respiratoires autonomes.

Hand Protection:

Protection des mains:

Wear appropriate protective gloves to reduce skin contact. Eye Protection: Wear safety goggles or eye protection combined with respiratory protection.

Portez des gants de protection appropriés pour réduire le contact avec la peau. Protection des yeux: porter des lunettes de sécurité ou une Protection des yeux combinée à une Protection respiratoire.

Eye Protection:

Protection des yeux:

Wear safety goggles or eye protection combined with respiratory protection.

Portez des lunettes de sécurité ou une protection oculaire combinée à une protection respiratoire.

Skin and Body Protection:

Protection de la peau et du corps:

Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

Environnement de travail requis, portez des vêtements de protection appropriés pour minimiser le contact avec la peau. Le type d'équipement de protection doit être fonction de la concentration et de la teneur de certaines substances dangereuses sur le lieu de travail.

Section 9- Physical and Chemical Properties

Section 9 — propriétés physiques et chimiques

Physical State État physique	Cylindrical. **Cylindrique.**
Color La couleur	Silver and blue. **Argent et bleu.**
Odor Odeur	No available **Non disponible**
pH Le pH	No available **Non disponible**
Melting point/freezing point Point de fusion/point de congélation	No available **Non disponible**
Boiling Point and Boiling range Point d'ébullition et plage d'ébullition	No available **Non disponible**
Flash Point Point d'éclair	No available **Non disponible**
Flammability Inflammabilité	No available **Non disponible**
Solubility Solubilité	No available **Non disponible**

Lower and upper explosion limit/flammability limit Limite inférieure et supérieure d'explosion/limite d'inflammabilité	No available Non disponible
Auto-ignition temperature: Température d'auto-allumage:	No available Non disponible
Decomposition temperature: Température de décomposition:	No available Non disponible
Kinematic viscosity: Viscosité cinématique:	No available Non disponible
Partition coefficient:n-octanol/water (log value): Coefficient de partage :n-octanol/ eau (valeur log):	No available Non disponible
Vapour pressure: Pression de vapeur:	No available Non disponible
Density and/or relative density: Densité et/ou densité relative:	No available Non disponible
Relative vapour density: Densité de vapeur Relative:	No available Non disponible
Particle characteristics: Caractéristiques des particules:	No available Non disponible
Other information:Voltage Autres informations: tension	1.5V
Electric capacity Capacité électrique	3020mAh

Section 10- Stability and reactivity

Section 10- stabilité et réactivité

Reactivity Réactivité	No data available. Pas de données disponibles.
Chemical stability Stabilité chimique	Stable. Stable.
Possibility of Hazardous Reactions Possibilité de réactions dangereuses	No data available.. Pas de données disponibles.
Hazardous Polymerization Polymérisation dangereuse	Hazardous polymerization does not occur. Il n'y a pas de polymérisation dangereuse.
Conditions to avoid Conditions à éviter	Flames, sparks, and other sources of ignition, incompatible materials. Flammes, étincelles et autres sources d'inflammation, matières incompatibles.
Incompatible materials Matériaux incompatibles	Oxidizing agents, acid base. Agents oxydants, base acide.
Hazardous Decomposition Products Produits de décomposition dangereux	Carbon monoxide, carbon dioxide. Monoxyde de carbone, dioxyde de carbone.

Section 11 – Toxicological Information

Section 11 - informations toxicologiques

Acute Toxicity:Toxicité aiguë:

CAS No.	LC50/LD50
1313-13-9	No data available. Pas de données disponibles.
7440-66-6	LD50 Rat (oral): >2000mg/kg DI50 Rat (par voie orale): >2000mg/kg

7439-89-6	No data available. Pas de données disponibles.
1310-58-3	LD50 Rat (oral): 284mg/kg DI50 pour le Rat (par voie orale): 284mg/kg
7782-42-5	No data available. Pas de données disponibles.
12597-71-6	No data available. Pas de données disponibles.
1314-13-2	No data available. Pas de données disponibles.
7440-02-0	No data available. Pas de données disponibles.
Skin corrosion/irritation: **Corrosion /irritation de la peau:**	No data available. Pas de données disponibles.
Serious eye damage/irritation: **Lésions oculaires graves /irritation:**	No data available. Pas de données disponibles.
Respiratory or Skin sensitization: **Sensibilisation respiratoire ou cutanée:**	No data available. Pas de données disponibles.
Germ Cell mutagenicity: **Mutagénicité des cellules germinales:**	No data available. Pas de données disponibles.
Carcinogenicity: **Carcinogénicité:**	No data available. Pas de données disponibles.
Reproductive toxicity: **Toxicité pour la reproduction:**	No data available. Pas de données disponibles.
Specific target organ toxicity-Single exposure: **Toxicité spécifique de l'organe cible — exposition unique:**	No data available. Pas de données disponibles.
Specific target organ toxicity-Repeated exposure: **Toxicité spécifique de l'organe cible — exposition répétée:**	No data available. Pas de données disponibles.
Respiratory or Skin sensitization: **Sensibilisation respiratoire ou cutanée:**	No data available. Pas de données disponibles.
Information on the likely routes of exposure: **Informations sur les voies d'exposition probables:.**	No data available. Pas de données disponibles.
Eye: **Oeil:**	No data available. Pas de données disponibles.
Skin: **Skin:**	No data available. Pas de données disponibles.
Ingestion: **Ingestion:**	No data available. Pas de données disponibles.
Inhalation **Inhalation**	No data available. Pas de données disponibles.
Aspiration Hazard **Risque d'aspiration**	No data available. Pas de données disponibles.

Section 12- Ecological Information

Section 12- renseignements écologiques

Ecological Toxicity **Toxicité écologique**	No information available. Aucune information disponible.
Persistence and Degradability **Persistance et dégradabilité**	No information available. Aucune information disponible.

Bioaccumulation **Bioaccumulation**	No information available. Aucune information disponible.
Mobility in Soil **Mobilité dans le sol**	No information available. Aucune information disponible.
Other adverse effects **Autres effets indésirables**	No information available. Aucune information disponible.

Section 13- Disposal Considerations
Section 13- considérations relatives à l'aliénation

Waste treatment methods **Méthodes de traitement des déchets**	
Disposal methods **Méthodes d'élimination**	Recommendation:Consult state, local or national regulations to ensure proper disposal. Recommandation: consulter les règlements des états, locaux ou nationaux pour assurer une élimination appropriée.
Uncleaned packaging **Emballage non nettoyé**	Recommendation: Disposal must be made according to official regulations. Recommandation: l'élimination doit être faite conformément à la réglementation officielle.

14 –Transport Information
Informations sur le Transport

UN or ID Number **UN ou numéro d'identification** **IATA, IMDG**	N/A
Proper Shipping Name/Description **Nom d'expédition approprié /Description** **IATA, IMDG**	N/A
Class or Div. (Sub Hazard) **Classe ou Div. (sous-risque)** **IATA, IMDG**	Not Subjected for transport of dangerous goods **Non soumis au transport de marchandises dangereuses**
Packing Group **Groupe d'emballage** **IATA, IMDG**	N/A
Hazard Label **Étiquette de danger** **IATA, IMDG**	N/A
Environmental hazardsMarine pollutant: **Risques pour l'environnementpolluant:**	No
Special precautions for user **Précautions particulières pour l'utilisateur**	No information available. **Aucune information disponible.**

Transport information: Alkaline Zinc-Manganese Battery LR6 is exempt from dangerous goods.

It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) DGR 65h, IATA Special Provisions A123,International Martine Dangerous Goods Regulations (IMDG) (41-22), IMDG Special Provisions 963,.

Informations de Transport: pile alcaline de zinc et manganèse LR6 est exempté de marchandises dangereuses.

Il est considéré comme des marchandises non dangereuses par l'organisation de l'aviation civile internationale (oaci), l'association du Transport aérien International (IATA) DGR 65h, IATA dispositions spéciales A123,Règlement International Martine sur les marchandises dangereuses (IMDG) (41-22), dispositions spéciales IMDG 963,.

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S.P.A123 This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2-List of Dangerous Goods. Examples of such batteries are: 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 disconnection of the battery and protection of exposed terminals); and(b) accidental activation

The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

S.P.A123 cette rubrique s'applique aux Batteries, au stockage électrique, qui ne figurent pas ailleurs dans la sous-section 4.2 — liste des marchandises dangereuses. Des exemples de ces piles sont les piles alcali-manganèse, zinc-carbone et nickel-cadmium. Toute batterie électrique ou tout dispositif, équipement ou véhicule alimenté par des piles présentant un risque d'échauffement dangereux doit être préparé pour le transport de manière à éviter: a) un court-circuit (par exemple, dans le cas des batteries, par l'isolation efficace des bornes exposées); Ou, dans le cas d'un équipement, par la déconnexion de la batterie et la protection des bornes exposées); Et (b) activation accidentelle

Les mots «sans restriction» et le numéro de la disposition spéciale doivent être inclus dans la description de la substance sur le connaissement aérien, comme l'exige l'article 8.2.6, lorsqu'un connaissement aérien est délivré.

Transport Fashion: Mode de Transport:	By air, by sea. par avion, par la mer.

Section 15- Regulatory information
Article 15- renseignements réglementaires

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ ELINCS/ NLP
1313-13-9	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
7440-66-6	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
7439-89-6	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
1310-58-3	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
7782-42-5	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
12597-71-6	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
1314-13-2	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé
7440-02-0	Listed listé	Listed listé	Listed DSL listé DSL	Listed listé

Section 16- Additional Information
Section 16- renseignements supplémentaires

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Issue Department: Technical department Département thématique: département technique
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Notice to reader Avis au lecteur

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

À notre connaissance, les informations contenues dans le présent document sont exactes. Toutefois, ni le fournisseur mentionné ci-dessus ni aucune de ses filiales n'assume aucune responsabilité pour l'exactitude ou l'exhaustivité des informations contenues dans les présentes.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

La détermination finale de l'aptitude de tout matériau est de la seule responsabilité de l'utilisateur. Tous les matériaux peuvent présenter des dangers inconnus et doivent être utilisés avec prudence. Bien que certains dangers soient décrits ici, nous ne pouvons garantir que ce sont les seuls dangers qui existent.

Other Information: Autres informations:
CAS: (Chemical Abstracts Service); CAS: (Chemical Abstracts Service);

EC: (European Commission); Ce: (Commission européenne);
ACGIH: (American Conference of Governmental Industrial Hygienists); ACGIH (conférence américaine des hygiénistes industriels gouvernementaux);
NIOSH: (US National Institute for Occupational Safety and Health);OSHA: (US Occupational Safety and Health);NIOSH: (institut National américain pour la sécurité et la santé au travail);OSHA: (sécurité et santé au travail aux États-Unis);
TLV: (Threshold Limit Value) TLV: (valeur limite de seuil)
TWA: (Time Weighted Average); TWA: (moyenne pondérée dans le temps);
STEL: (Short Term Exposure Limit); STEL: (limite d'exposition à court terme);
PEL: (Permissible Exposure Level); PEL: (niveau d'exposition admissible);
REL: (Recommended Exposure Limit); REL: (limite d'exposition recommandée);
PC-STEL: (Permissible concentration-short time exposure limit); PC-STEL: (concentration admissible — limite d'exposition de courte durée);
PC-TWA: (Permissible concentration-time weighted average); PC-TWA: (moyenne pondérée concentration-temps admissible);
IARC: (International Agency for Research on Cancer);Circ (centre International de recherche sur le Cancer);
LC50: (Lethal concentration, 50 percent kill); Cl50: (concentration létale, 50% de décès);
LD50: (Lethal dose, 50 percent kill); Dl50: (dose létale, 50 pour cent de décès);
EC50: (Median effective concentration); Ce50: (concentration effective médiane);
BCF: (Bioconcentration Factor); FBC: (facteur de Bioconcentration);
BOD: (Biochemical oxygen demand); Dbo: (demande biochimique en oxygène);
IECSC: (Inventory of Existing Chemical Substances in China); Iceca (inventaire des Substances chimiques existantes en Chine);
NOEC: (No observed effect concentration);Cseo: (aucune concentration avec effet observé);
NTP: (US National Toxicology Program); NTP: (u.s. National Toxicology Program);
RTECS: (Registry of Toxic Effects of Chemical Substances); RTECS: (registre des effets toxiques des Substances chimiques);
TOC: (Total Organic Carbon); Cot: (carbone organique Total);
TSCA: (Toxic Substances Control Act of USA); TSCA: (Toxic Substances Control Act of USA);
DSL: (the Domestic Substances List of Canada); Lis: (liste intérieure des Substances du Canada);
NDSL: (the Non-domestic Substances List of Canada); Les: (la liste extérieure du Canada);
IATA: (International Air Transport Association); IATA: (Association du Transport aérien International);
IMDG: (International Maritime Dangerous Goods); IMDG: (marchandises dangereuses maritimes internationales);
TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations) ;TMD: (recommandations sur le règlement type sur le TRANSPORT des marchandises dangereuses)

********End of Safety Data Sheet********

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