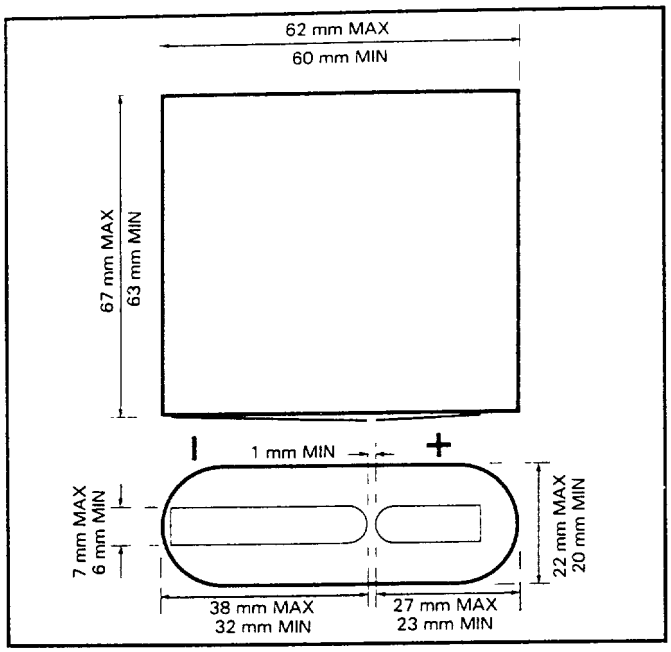
300-342. MN1203

DURACELL®

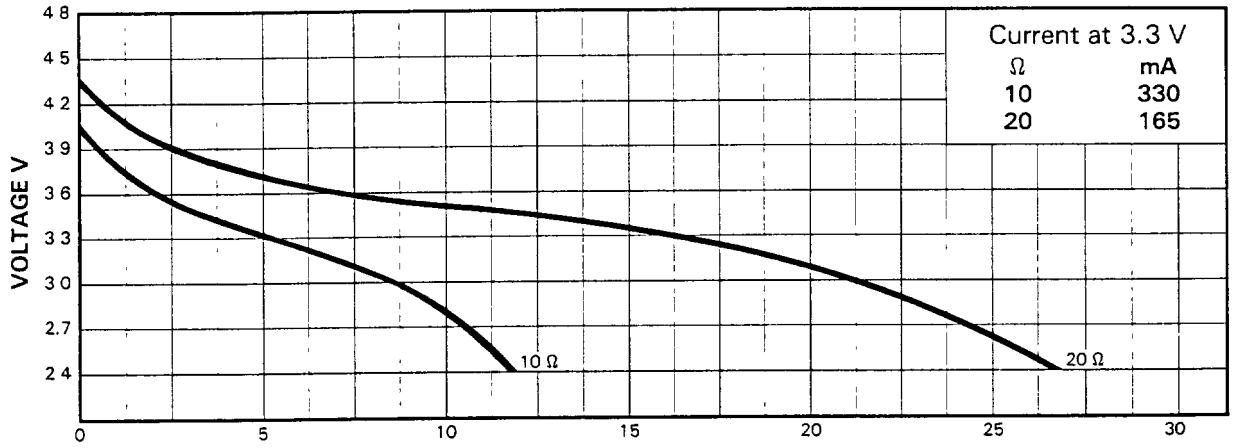
ALKALINE MANGANESE

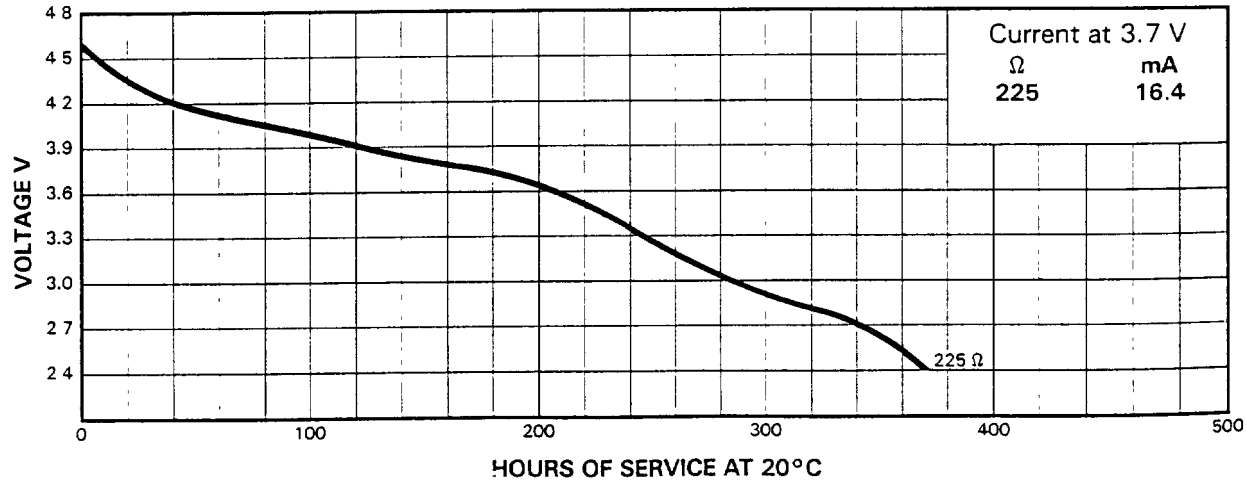


Specification:	
Nominal Voltage:	4.5 V
Nominal Capacity:	5.400 mAh
Life:	26 h on 20 Ω to 2.4 V at 20°C
Recomm. Load Range at 20°C:	2.2 Ω – 22 k Ω
Volume:	80 cm^3
Average Weight:	149 g
I.E.C. Designation:	3LR12

Mercury content less than 0 025% of total weight

Typical discharge characteristics





ISSUE: 6A

Farnell Order Code 249762, 249774, 249786, 249798, 249804, 249816, 249828
249830, 249841, 249853, 300317, 300329, 300251, 517770
300342, 300366, 300378, 300380, 207925, 207937, 207949

DURACELL®

Data Sheet No. CSH00213

Alkaline Manganese Dioxide Battery

Product Safety, Transportation and Disposal

PRODUCT SAFETY

PRECAUTIONS FOR HANDLING AND USE

DURACELL alkaline manganese cells and batteries will provide long, reliable and safe service when used correctly. To achieve optimum performance and trouble-free operation, the following precautions should be observed.

ALWAYS take care to fit batteries correctly, observing the 'plus' and 'minus' signs on the battery and appliance.

ALWAYS replace batteries in your equipment with the type and size of **DURACELL** battery specified by the manufacturer.

ALWAYS replace the whole set of batteries at one time.

ALWAYS remove dead batteries from equipment.

ALWAYS remove batteries from equipment you know you are not going to use for a long time.

ALWAYS keep batteries away from small children. If swallowed seek medical advice immediately and contact the **DURACELL** subsidiary in your country.

NEVER mix different types of batteries.

NEVER deliberately short-circuit batteries.

NEVER take apart, crush, puncture or mutilate alkaline manganese batteries.

NEVER dispose of cells or batteries in fires.

DURACELL®

Alkaline Manganese Dioxide Battery

Product Safety, Transportation and Disposal

PRECAUTIONS FOR STORAGE

Batteries should be stored at temperatures between 10°C and 25°C with relative humidity not exceeding 65%. To maximise shelf life, excessive temperature cycling and storage at temperatures greater than 25°C, or less than 10°C, should be avoided. Storage of alkaline manganese batteries at lower temperatures is possible, providing care is taken in returning the batteries to room temperature prior to use.

Store unused cells and batteries in their packaging and keep away from metal objects which may cause a short-circuit resulting in possible leakage, or in extreme cases an explosion.

CHARGING

Alkaline manganese cells and batteries are of the primary type and are NOT designed to be recharged. Attempts to recharge these batteries can lead to leakage and possibly an explosion.

No responsibility is accepted by **DURACELL** for injury or damage resulting from the cells having been recharged or otherwise abused.

HAZARDOUS INGREDIENTS

Where alkaline manganese batteries leak, due to misuse, or are taken apart, crushed or punctured, the internal materials will be exposed. The hazards of these materials, together with safety advice is given below.

Component	Appearance	Material
Anode	Silver grey paste	Zinc powder
Cathode	Black pellet	Manganese dioxide/graphite
Electrolyte	Clear liquid	Potassium hydroxide solution

DURACELL®

Alkaline Manganese Dioxide Battery

Product Safety, Transportation and Disposal

Hazards: All materials are CORROSIVE (due to the presence of potassium hydroxide solution) and may cause burns to eyes and skin. Additionally, manganese dioxide is HARMFUL by inhalation (when dry) and if swallowed.

Safety Advice: In case of contact with skin or eyes rinse immediately with plenty of water and seek medical advice.

IF PART OR WHOLE OF THE BATTERY IS SWALLOWED SEEK MEDICAL ADVICE IMMEDIATELY

Note: Alkaline manganese cells and batteries are not subject to EC requirements on the classification, packaging and labelling of dangerous substances or preparations (directives 67/548/EEC and 88/379/EEC as amended) or EC requirements on hazardous substance data sheets (directive 91/155/EEC as amended).

TRANSPORTATION

There are no special restrictions on the international transportation of alkaline manganese batteries by land (ADR Agreement), rail (RID Regulations), sea (IMDG Code), or air (ICAO/IATA Regulations). For regulations applying to individual countries, the relevant regulatory authority should be consulted.

DISPOSAL

DISPOSAL PROCEDURES

DURACELL alkaline manganese cells and batteries contain less than the prescribed amounts of mercury, cadmium and lead, they are not subject to the provisions of the EC directive 91/157/EEC on batteries and accumulators containing certain dangerous substances. However, individual countries may also establish regulations that cover the disposal of waste batteries. These may be more stringent than EC requirements. Thus, local regulatory authorities should be contacted for their disposal guidelines.

In the absence of specific regulations or guidelines, the following is recommended for the disposal of **DURACELL** alkaline manganese cells and batteries.

1. Batteries in household use:
   Individual alkaline manganese cells and batteries can be disposed of with other domestic waste.

2. Bulk quantities:
   The recommended procedure for disposal of alkaline manganese cells and batteries is in a hazardous waste landfill. Local regulations, which may specify other methods for the disposal of these batteries supersede these recommendations. Waste management companies can provide assistance with disposal.

DURACELL®

Alkaline Manganese Dioxide Battery

Product Safety, Transportation and Disposal

COLLECTION AND HANDLING

Where necessary commercial or bulk quantities of spent alkaline manganese cells and batteries should be collected and transported under cover, in leak proof containers and in a manner to prevent compaction, mutilation, or any other physical abuse that would destroy their physical integrity. They should not be exposed to fire or high temperatures.
Caution: Cells and batteries which are not fully discharged may leak, vent or explode when subjected to short circuit or other forms of electrical abuse.

STORAGE

Separately collected spent alkaline manganese batteries should be stored in a well ventilated, covered area, preferably using relatively small heat-resistant plastic containers. Containers should not be hermetically sealed.

Note: Guidelines for the disposal of alkaline manganese cells and batteries are continually being revised. Contact your local DURACELL company for further information.

DURACELL®

Typical Chemical Composition

Typical chemical composition, of alkaline batteries, as a percentage of total battery weight:

Chemical \ *Size*	D	C	AA	AAA	N	LR43	LR44
Nominal Weight / g	141	67	22	11	8.3	1.5	1.9
Mercury	None Added					0.6	0.7
Cadmium	None Added						
Lead	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Zinc	18	17	16	15	11	8	9
Manganese Dioxide	43	40	37	35	27	26	28
Carbon	5	5	4	4	3	2.2	2.3
Potassium Hydroxide Solution	18	18	17	17	12	9.1	10
Nickel Plated Steel	10	14	17	19	18	28	26
Brass	0.3	0.6	2	5	6	0	0
Plastics	1	1	1	3	0.2	3	3

SEEK MEDICAL ADVICE IF PART OR WHOLE OF BATTERY IS SWALLOWED

DURACELL®

Typical Chemical Composition

Typical chemical composition, of alkaline batteries, as a percentage of total battery weight:

Chemical \ Size	LR54	9V	4.5V	MN11	MN21	MN154	MN918
Nominal Weight / g	1.2	45	149	4	7.3	16.3	1,270
Mercury	1.1	None Added		0.17	0.9	0.17	None Added
Cadmium	0.01	None Added					
Lead	0.003	<0.04	<0.04	0.003	0.003	<0.04	<0.04
Zinc	6	11	16	5.6	6.1	5.4	15
Manganese Dioxide	27	27	36	17.8	19.5	16.8	37
Carbon	2.1	3	4	1.7	1.9		4
Potassium Hydroxide Solution	7.4	12	16	1.2	1.3	4.5	8
Nickel Plated Steel	32	18	2	43.9	44.5	59	18
Brass	0	6	0	0	0	2.8	3
Plastics	3	0.2	2	3	2.8	8.9	4

SEEK MEDICAL ADVICE IF PART OR WHOLE OF BATTERY IS SWALLOWED

DURACELL®

Typical Chemical Composition

Typical chemical composition, of alkaline batteries, as a percentage of total battery weight:

Chemical \ *Size*	PC908	PC915	PC918	PC926	7K67
Nominal Weight / g	612	612	1 270	1,389	34
Mercury	None Added				
Cadmium	None Added				
Lead	<0.04	<0.04	<0.04	<0.04	<0.04
Zinc	15	15	15	15	15
Manganese Dioxide	37	37	37	37	37
Carbon	4	4	4	4	4
Potassium Hydroxide Solution	8	8	8	8	8
Nickel Plated Steel	18	18	18	18	18
Brass	3	3	3	3	3
Plastics	4	4	4	4	4

SEEK MEDICAL ADVICE IF PART OR WHOLE OF BATTERY IS SWALLOWED