

1. PRODUCT IDENTIFICATION

Product Name	Battery – Dry - Charged
Other Names	Not Applicable
Use	Dry battery - requires addition of sulphuric acid solution before use in Automotive, Industrial Standby Power and Motive Power.
Supplier Name and Address	Century Yuasa Batteries 259 Church St, Onehunga, Auckland 1643
Telephone	0800 93 93 93
Emergency (24 Hours)	(02) 7468 6673
Relevant identified uses	Starting, lighting, ignition for car, truck, etc

2. HAZARDS IDENTIFICATION

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms (HSNO) legislation. Not regulated as Dangerous Goods for transport purposes.

Signal Word **DANGER**

GHS Classification Oxidizing Solid Category 3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Eye Irritation Category 2, Reproductive Toxicity Category 1A, STOT - SE (Resp. Irr.) Category 3*, STOT - RE Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
*LIMITED EVIDENCE

HSNO Classification 6.1D (inhalation), 6.1C (oral), 6.8A, 6.9B, 9.1 (fish, crustacean, algal), 9.3C

GHS Label Elements



Harmful



Health Hazard



Environment

IN THE EVENT OF THE INTERNAL BATTERY COMPONENTS BEING EXPOSED

Hazard Statements	H302 Harmful if swallowed	H373 May cause damage to organs through prolonged or repeated exposure
	H319 Causes serious eye irritation	H400 Very toxic to aquatic life
	H360 May damage fertility or the unborn child	H410 Very toxic to aquatic life with long lasting effects

IN THE EVENT OF EXPOSURE TO INTERNAL COMPONENTS

Precautionary Statements	Prevention	Response
	P101 If medical advice is needed, have product container or label at hand.	P308+P313 IF exposed or concerned: Get medical advice/attention.
	P102 Keep out of reach of children	P330 Rinse mouth.
	P103 Read label before use.	P391 Collect spillage
	P201 Obtain special instructions before use.	P337+P313 IF eye irritation persists: Get medical advice/attention.
	P260 Do not breathe dust / fume / gas / mist / vapours / spray.	P301+P312 IF SWALLOWED: Call a poison center/ doctor/ physician/ first aider, if you feel unwell
	P270 Do not eat, drink or smoke when using this product.	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
	P271 Use only outdoors or in a well-ventilated area.	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P273 Avoid release to the environment	Disposal
	P280 Wear protective gloves / protective clothing / eye protection / face protection	P501 Dispose of contents, container to authorised chemical landfill or if organic, to high temperature incineration
	Storage	
	P403+P233 Store in a well-ventilated place. Keep container tightly closed.	
	P405 Store locked up	

3. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient	Identification	Content % weight
Lead (Pb)	CAS 7439-92-1	30 - 45%
Lead Dioxide (PbO ₂)	CAS 1309-60-0	30 - 45%
Lead monoxide (PbO)	CAS 1309-60-0	3 - 5%
Inert material:- polypropylene, polyethylene	CAS 9003-07-0 CAS 9002-88-4	8%

4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

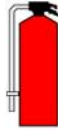
- Eye contact** If this product comes in contact with the eyes:
-) Wash out immediately with fresh running water.
 -) Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 -) Seek medical attention without delay; if pain persists or recurs seek medical attention.
 -) Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
- Skin contact** If skin contact occurs:
-) Immediately remove all contaminated clothing, including footwear.
 -) Flush skin and hair with running water (and soap if available).
 -) Seek medical attention in event of irritation.
- Inhalation** If fumes or combustion products are inhaled:
-) Remove from contaminated area.
 -) Lay patient down. Keep warm and rested.
 -) Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
 -) Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
 -) Transport to hospital, or doctor.
- Ingestion** **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
-) For advice, contact a Poisons Information Centre or a doctor.
 -) Urgent hospital treatment is likely to be needed.
 -) In the meantime, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
 -) If the services of a medical officer or medical doctor are readily available, the patient should be placed in his / her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
 -) If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.
 -) Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
 -) INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
 -) NOTE: Wear a protective glove when inducing vomiting by mechanical means.

MEDICAL ATTENTION AND SPECIAL TREATMENT Indication of any immediate medical attention and special treatment needed

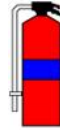
- Treat symptomatically.**
-) Gastric acids solubilise lead and its salts and lead absorption occurs in the small bowel.
 -) Particles of less than 1 um diameter are substantially absorbed by the alveoli following inhalation.
 -) Lead is distributed to the red blood cells and has a half-life of 35 days. It is subsequently redistributed to soft tissue & bone-stores or eliminated. The kidney accounts for 75% of daily lead loss; integumentary and alimentary losses account for the remainder.
 -) Neurasthenic symptoms are the most common symptoms of intoxication. Lead toxicity produces a classic motor neuropathy. Acute encephalopathy appears infrequently in adults. Diazepam is the best drug for seizures.
 -) Whole-blood lead is the best measure of recent exposure; free erythrocyte protoporphyrin (FEP) provides the best screening for chronic exposure. Obvious clinical symptoms occur in adults when whole-blood lead exceeds 80 ug/dL.
 -) British anti-lewisite is an effective antidote and enhances faecal and urinary excretion of lead. The onset of action of BAL is about 30 minutes and most of the chelated metal complex is excreted in 4-6 hours, primarily in the bile. Adverse reaction appears in up to 50% of patients given BAL in doses exceeding 5 mg/kg. CaNa₂EDTA has also been used alone or in concert with BAL as an antidote. D-penicillamine is the usual oral agent for mobilisation of bone lead; its use in the treatment of lead poisoning remains investigational. 2,3-dimercapto-1-propanesulphonic acid (DMPS) and dimercaptosuccinic acid (DMSA) are water soluble analogues of BAL and their effectiveness is undergoing review. As a rule, stop BAL if lead decreases below 50 ug/dL; stop; CaNa₂EDTA if blood lead decreases below 40 ug/dL or urinary lead drops below 2 mg/24hrs..

5. FIRE FIGHTING MEASURES

Recommended Extinguishing Media



Water spray or fog.



Foam



Dry chemical powder.



Carbon dioxide.



BCF\ Vaporising Liquid
(Where regulations permit).



Extinguishing Media Incompatibilities

-) There is no restriction on the type of extinguisher which may be used.
-) Use extinguishing media suitable for surrounding area.

Specific Hazards Hazardous Decomposition

-) Non-combustible.
-) Not considered a significant fire risk, however containers may burn.
-) Decomposition may produce toxic fumes of metal oxides which May emit poisonous fumes. May emit corrosive fumes.

Fire Incompatibility

-) None known.

Fire Fighting, Special Protective Equipment & Precautions

-) Alert Fire Brigade and tell them location and nature of hazard.
-) Prevent, by any means available, spillage from entering drains or water course.
-) Wear breathing apparatus plus protective gloves in the event of a fire.
-) Use fire fighting procedures suitable for surrounding area.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

-) Avoid contact with skin and eyes.

Environmental Precautions

-) Prevent, by any means available, spillage from entering drains or water course.

Methods and materials for containment and cleaning up

-) With a clean shovel, transfer spilled material into clean-labelled containers for disposal.
-) Wash area down with excess water.
-) Prevent from entering drains, sewers, streams or other bodies of water. If contamination of sewers or waterways has occurred, advise the local emergency services

Protective Equipment

-) Personal Protective Equipment advice is contained in Section 8 of the SDS.

Emergency Procedures

Minor Spills

-) Check regularly for spills and leaks.
-) Clean up all spills immediately.
-) Avoid breathing vapours and contact with skin and eyes.

Major Spills

-) Clear area of personnel and move upwind.
-) Alert Fire Brigade and tell them location and nature of hazard.
-) Wear full body protective clothing with breathing apparatus.
-) Prevent, by any means available, spillage from entering drains or water course

7. HANDLING AND STORAGE

Safe Handling

-) Avoid all personal contact, including inhalation.
-) Wear protective clothing when risk of exposure occurs.
-) Use in a well-ventilated area.
-) When handling, DO NOT eat, drink or smoke.
-) Avoid physical damage to containers.
-) Always wash hands with soap and water after handling..

Conditions for Safe Storage Includes Incompatible

-) Store in original containers.
-) Keep containers securely sealed.
-) Store in a cool, dry, well-ventilated area.
-) Store away from incompatible materials and foodstuff containers.
-) Protect containers against physical damage and check regularly for leaks.

Suitable container for Battery contents

-) Battery is self-contained but it should be kept in a vertical position to prevent leakage of battery fluid
-) **DO NOT use aluminium or galvanised containers**
-) All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods.
-) Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore on the assignment to a particular division

Storage incompatibility contents of battery

Lead monoxide -

-) Is a strong oxidiser
-) Reacts explosively with 90% performic acid, rubidium acetylide

-) Reacts violently with strong oxidisers, boron, chlorine, fluorine, dichloromethylsilane, calcium sulfide, ethylene, hydrogen peroxide, hydrogen trisulfide (ignites) hydroxylamine (ignites), lithium carbide, metal acetylides, metal powders when heated (e.g., aluminium, boron, molybdenum, zirconium, sodium, titanium, silicon etc.), perchloric acid, red phosphorus, selenium oxychloride, sodium
-) Is incompatible with aluminium carbide, barium sulfide, silicon, sulphuryl chloride
-) Reacts violently with aluminium, sodium, zirconium, titanium, boron or silicon, when heated
-) Forms impact sensitive explosive mixtures with dichloromethylsilane
-) May attack plastics, coatings and chlorinated rubbers (e.g., Hypalon, Parlon, Rutile,) and fluorinated rubbers such as Viton
-) The state of subdivision may affect the results

✓ = May be stored together

ⓘ = May be stored together with specific precautions

✗ = Must not be stored together



✗

FLAMMABLES



✗

EXPLOSIVES



✓

ACUTE TOXIC



✗

OXIDISERS



✓

HARMFUL



✓

IRRITANT



✓

CORROSIVE

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

AUSTRALIAN EXPOSURE STANDARDS (Occupational Exposure Limits)

Ingredient	Material name	TWA	STEL
Lead (Pb)	Lead, inorganic dusts & fumes (as Pb)	0.05 mg/m3	Not Available
Lead monoxide (PbO)	Lead, inorganic dusts & fumes (as Pb)	0.05 mg/m3	Not Available

APPROPRIATE ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

-) Process controls which involve changing the way a job activity or process is done to reduce the risk.
-) Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

PERSONAL PROTECTION



Respirator Type

Not normally required; however if in contact with internal components:-

-) Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	E-AUS P2	-	E-PAPR-AUS / Class 1 P2
up to 50 x ES	-	E-AUS / Class 1 P2	-
up to 100 x ES	-	E-2 P2	E-PAPR-2 P2 ^

^ - Full-face
E = Sulfur dioxide(SO₂),



Eye Protection

-) Safety glasses with side shields.
-) Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.



Clothing

-) Overalls.



Footwear

-) Wear safety footwear or safety gumboots



Glove Type

-) Wear Elbow length chemical protective gloves, e.g. PVC.



Other Protection

-) Eyewash unit.
-) Barrier cream.
-) Skin cleansing cream

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance) Automotive starting battery; does not mix with water.		
Odour	Not Available	Lower explosive limits	Not Applicable
Odour threshold	Not Available	Vapour pressure (kPa)	Not Applicable
pH	Not Applicable	Vapour density (Air = 1)	Not Applicable
Melting point/ freezing point (°C)	Not Applicable	Relative density (Water = 1)	Not Applicable
Initial boiling point and boiling	Not Available	Solubility in water (g,L)	Immiscible

range (°C)			
Flash point	Not Applicable	Partition coefficient: n-octanol/water	Not Available
Evaporation rate	Not Available	Auto-ignition temperature	Not Available
Flammability	Not Applicable	Decomposition temperature (°C)	>500-700 °C lead fumes given off
Upper explosive limits	Not Applicable	Viscosity	Not Available

10. STABILITY AND REACTIVITY

IF INTERNAL MATERIALS EXPOSED:- LEAD AND LEAD OXIDE

Reactivity	See section 7 <ul style="list-style-type: none">) Lead oxide:- is a strong oxidiser) Attacks some plastics, rubber and coatings 	Chemical stability	<ul style="list-style-type: none">) Product is considered stable) Hazardous polymerisation will not occur.) Unstable in the presence of incompatible materials.
Possibility of hazardous reactions	See section 5 & 7 <ul style="list-style-type: none">) Reacts violently with strong oxidisers,) Reacts violently with aluminium, sodium, zirconium, titanium, boron or silicon, when heated forms impact sensitive explosive mixtures with dichloromethylsilane 	Conditions to avoid	See section 7
Incompatible materials	See section 7 <ul style="list-style-type: none"> • Is incompatible with aluminium carbide, barium sulphide, silicon, sulphuryl chloride, hydrogen peroxide, chemical active metals, aluminium, combustible materials, lithium carbide, chlorinated rubber, chlorine, boron, hydrides, ethylene, fluorine, sulphides, acetylides and strong reducing agents. 	Hazardous decomposition products	See section 5 <ul style="list-style-type: none"> • Thermal decomposition may produce oxides of lead.

11. TOXICOLOGICAL INFORMATION

IF INTERNAL MATERIALS EXPOSED:- LEAD AND LEAD OXIDE

Inhaled	<ul style="list-style-type: none">) Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	<ul style="list-style-type: none">) Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Skin contact	<ul style="list-style-type: none">) The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures.) Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.) Open cuts, abraded or irritated skin should not be exposed to this material) Entry into the blood-stream, through for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected
Eye	<ul style="list-style-type: none">) Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic effects	<p><u>Lead:</u></p> <ul style="list-style-type: none">) Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure.) Ample evidence exists that developmental disorders are directly caused by human exposure to the material.) Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.) Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

-) Lead, in large amounts, can affect the blood, nervous system, heart, glands, immune system and digestive system. Anaemia may occur.
-) Lead can cross the placenta, and cause miscarriage, stillbirths and birth defects. Exposure before birth can cause mental retardation, behavioural disorders and infant death.
-) Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
-) Lead can accumulate in the skeleton for a very long time. endocrine system. Increased levels of lead result in increased brain damage, coma and death in extreme cases.
-) Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
-) Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.
-) Lead can cross the placenta, and cause miscarriage, stillbirths and birth defects. Exposure before birth can cause mental retardation, behavioural disorders and infant death.
-) Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
-) Ample evidence exists that developmental disorders are directly caused by human exposure to the material.
-) Lead can accumulate in the skeleton for a very long time.

Acute Toxicity	Skin Irritation/ Corrosion	Serious Eye Damage/ Irritation	Respiratory or Skin sensitisation	Mutagenicity	Carcinogenicity	Reproductivity	STOT - Single Exposure	STOT - Repeated Exposure	Aspiration Hazard
✓	ⓘ	ⓘ	ⓘ	ⓘ	ⓘ	✓	ⓘ	✓	ⓘ

✓ = Data required to make classification available ✗ = Data available but does not fill the criteria for classification
ⓘ = Data Not Available to make classification

12. ECOLOGICAL INFORMATION

Toxicity

-) DO NOT discharge into sewer or waterways.
-) Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
-) Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
-) Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Lead:

-) Environmental Fate: Lead is assessed as low hazard if it remains in its solid, massive, metallic form. Lead, in the form of alkyls, has been introduced to the environment primarily from leaded gasoline / petrol. These are converted to water-soluble lead compounds of high toxicity and availability to plants.
-) Atmospheric Fate: Lead is primarily an atmospheric pollutant that enters soil and water as fallout, a process determined by the physical form involved and particle size. Lead, in the form of alkyls, has been introduced to the environment primarily from leaded gasoline / petrol. Lead is absorbed by mammals / humans via vapors, contaminated dust, and fumes.
-) Terrestrial Fate: Soil - Lead alkyls easily leach from soil to contaminate water sources close to highways. Plants - Lead alkyls that have been converted to water soluble lead compounds have high toxicity / availability to plants.
-) Aquatic Fate: Lead that has entered the aquatic system is expected to be found in sediments.
-) Ecotoxicity: Soluble or insoluble lead may enter the environment and accumulate. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
-) Soluble or insoluble lead may enter the environment and accumulate.
-) Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
-) DO NOT discharge into sewer or waterways

Degradability

-) No Data available for all ingredients

Bio-accumulative Potential

-) No Data available for all ingredients

Mobility in Soil

-) No Data available for all ingredients

Other Adverse Effects

-) No Data available for all ingredients

13. DISPOSAL CONSIDERATIONS

Disposal of Contaminated Packaging

-) Recycle wherever possible.
-) Consult manufacturer for recycling options.
-) Consult State Land Waste Management Authority for disposal.

Environmental Regulations

-) Refer to section 15

14. TRANSPORT INFORMATION

REGULATED FOR TRANSPORT OF DANGEROUS GOODS ADG

UN Number	Not Applicable	
Proper Shipping Name	Not Applicable	
Transport Hazard Class	Not Applicable	Sub risk: Not Applicable
Packing group	Not Applicable	
Environmental Hazards	No relevant data	
Special Precautions	Special provisions	Not applicable
	Limited quantity	Not Applicable
Additional Information	Marine Pollutant: = Yes	
Hazchem Code	Not Applicable	



15. REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS, SPECIFIC FOR THE SUBSTANCE OR MIXTURE

This substance is to be managed using the conditions specified in the applicable Group Standard

HSR002504 Additives, Process Chemicals and Raw Materials (Toxic [6.1 + 6.7]) Group Standard 2006

HSR002508 Additives, Process Chemicals and Raw Materials (Toxic [6.1]) Group Standard 2006

Lead (7439-92-1) is found on the following regulatory lists "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "New Zealand Inventory of Chemicals (NZIoC), New Zealand Workplace Exposure Standards", New Zealand Hazardous and New Organisms (HSNO) Act – Classification of Chemicals"

Location Test Certificate Subject to Regulation 55 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations, a location test certificate is required when quantity greater than or equal to those indicated below are present

Hazard Class Not applicable

Quantity beyond which controls apply for closed containers Not applicable

Approved Handler Subject to Regulation 9 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations, the substance must be under the personal control of an Approved Handler when present in a quantity greater than or equal to those indicated below

Class of Substance
6.1D, 6.1C, 6.8A, 6.9B 9.1A, 9.3C Quantities - Any quantity

16. OTHER RELEVANT INFORMATION

Revision Information	Revision N°	Date	Description
	1	29/10/15	Initial SDS creation
	2	01/02/2017	Adjusted to lead dioxide; included Inert material
	3	11/09/19	Corrected "other information" error and added other names, Exposure Limits

Abbreviations	CAS #	Chemical Abstract Service Number – used to uniquely identify chemical compounds
	IARC	International Agency for Research on Cancer
	HSNO	HSNO Hazardous Substances and New Organisms ((HSNO) Act
	LC50	Lethal Concentration- toxicity of the surrounding medium that will kill half of the sample population of a specific test-animal in a specified period through exposure via inhalation (respiration)
	SDS	Safety Data Sheet- (SDS), previously called a Material Safety Data Sheet (MSDS),
	TGA	TGA Therapeutic Goods Administration