



Safety Data Sheet (SDS)

1. IDENTIFICATION

Issue Date: 06/01/2015, SDS # 001, Version #: 01

Product Name	Conventional Powersports Batteries supplied without acid pack
Synonyms	Battery Supplied Dry without Acid Pack
Product Use	Industrial / Commercial electrical storage batteries
Manufacturer / Supplier / Address	Yacht Battery Co., Ltd. 4F-5, No. 925, Sec. 4, Taiwan Blvd., Taichung, 40767 Taiwan, R.O.C. Yacht Technology (Vietnam), Co., Ltd. Lot_A9H_CN, Bau Bang Industrial Park, Bau Bang District, Binh Duong Province, Vietnam www.yacht-battery.com
Transportation Emergency Number	Infotrac (24-Hour Emergency Contact Number) 1-800-535-5053 (North America) 1-352-323-3500 (International)

NOTE: The Yacht battery is considered an article as defined by 29 CFR 1910.1200 (OSHA Hazard Communication Standard). The information contained in this SDS is supplied at the customer's request for information only.

2. GHS HAZARD(S) IDENTIFICATION

Health		Environmental	Physical
Acute Toxicity (Oral, dermal, inhalation)	Category 4	Aquatic Chronic 1 Aquatic Acute 1	Not Classified
Reproductive	Category 1A		
Carcinogenicity (lead)	Category 1B		
Carcinogenicity (arsenic)	Category 1A		
Specific target organ toxicity (repeated exposure)	Category 2		
Target Organ Toxicity	Category 2		

GHS Label Elements:

DANGER!	
<p style="text-align: center;"><u>Hazard Statements</u></p> <p>Health</p> <ul style="list-style-type: none"> • May damage fertility or the unborn child if ingested or inhaled. • May cause cancer if ingested or inhaled. • Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure. • Harmful if swallowed, inhaled, or in contact with skin. • May cause harm to breast-fed children. <p>Environmental</p> <ul style="list-style-type: none"> • Very toxic to aquatic life with long lasting effects. <p>Physical</p> <ul style="list-style-type: none"> • Obtain special instructions before use. • Do not handle until all safety precautions have been read and understood. 	<p style="text-align: center;"><u>Precautionary Statements</u></p> <p>Prevention</p> <ul style="list-style-type: none"> • Wash thoroughly after handling. • Wear protective gloves / protective clothing, eye protection / face protection. • Avoid breathing dust / fume / gas / mist / vapors / spray. • Use only outdoors or in a well-ventilated area. • Immediately call a Poison Center or doctor / physician. • Avoid contact during pregnancy / while nursing. <p>Response</p> <ul style="list-style-type: none"> • IF INGESTED: consult a physician immediately. • IF INHALED: remove person to fresh air and keep comfortable breathing. • IF ON CLOTHING OR SKIN: remove / take off all contaminated clothing and wash it before reuse. Rinse skin with water / shower.



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	Storage and Disposal <ul style="list-style-type: none"> • Store locked up, in a well-ventilated area. In accordance with local and national regulations. • Avoid release to the environment. • Collect spillage. • Dispose of contents / container in accordance with local / regional / national / international regulations. • Keep out of reach of children.
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3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical / Common Names)	CAS Number	% by Weight
Inorganic Lead / Lead Compounds	7439-92-1	88-95
Antimony	7440-36-0	<0.5
Tin	7440-31-5	<0.01
Arsenic	7440-38-2	<0.01
Calcium	7440-70-2	<0.01
Polypropylene	9003-07-0	3-10

Composition Comments: All concentrations are in percent by weight.

4. FIRST AID MEASURES

Note: Under normal conditions of battery use, internal components will not present a health hazard. The following information is provided for lead exposures that may occur during battery production or container breakage or under extreme heat conditions such as fire.

Inhalation	Remove from exposure, gargle, wash nose and lips; consult physician.
Skin contact	Wash immediately with soap and water.
Eye contact	Flush eyes with large amounts of water for at least 15 minutes. Seek immediate medical attention if eye irritation persists.
Ingestion	Consult physician immediately.

5. FIRE FIGHTING MEASURES

Extinguishing Media	Dry chemical, carbon dioxide, foam. Do not use water on live electrical circuits.
Unsuitable Extinguishing Media	Water
Special Fire Fighting Procedures	Use appropriate media for surrounding fire. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use full protective equipment (bunker gear) and self-contained breathing apparatus. Keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Unusual Fire and Explosion Hazard	Batteries generate flammable hydrogen gas during charging and may increase fire risk in poorly ventilated areas near sparks, excessive heat, or open flames.
Specific Hazards In Case Of Fire	Thermal shock may cause battery case to crack open. Containers may explode when heated.
Hazardous Combustion Products	Inorganic lead compound is not a combustible material, nor will it explode under conditions of normal use. Molten metals produce fume, vapor and / or dust that may be toxic and / or respiratory irritants.



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	To avoid risk of fire, keep sparks and other sources of ignition away from batteries, do not allow simultaneous metallic contact with positive and negative posts.
Additional Information	Fire-fighting water runoff and dilution water may be toxic and may cause adverse environmental impacts.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	No health effects are expected related to the normal use of this product. If the article is recycled, lead dust or particulate should be vacuumed (using HEPA filter) or wet swept; minimizing fugitive emissions. Do not use compressed air or dry sweep. For non-emergency personnel: Protective equipment: Wear chemical gloves For emergency responders: No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures. Personal protective equipment: Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.
Environmental Precautions	Prevent spilled material from entering sewers and waterways. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts.
Spill Containment & Cleanup Methods / Materials	Sweep or shovel spilled material and place in a dry, closed approved container for disposal or recycle. Dispose of any non-recyclable materials in accordance with local, state, provincial or federal regulations.

7. HANDLING AND STORAGE

Precautions For Safe Handling And Storage	<ul style="list-style-type: none"> • Batteries should be stored under roof for protection against adverse weather conditions. • Keep containers tightly closed when not in use. • If battery case is broken, avoid contact with internal components. • Do not handle / store near heat, sparks, or open flames. Keep in a cool, dry, well ventilated area. • Protect containers from physical damage to avoid leaks and spills. • Place cardboard between layers of stacked batteries to avoid damage and short circuits. • Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire. • Wear protective clothing when filling or handling batteries. • Follow manufacturer’s instructions for installation and service. • Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.
Other Precautions (e.g: Incompatibilities)	Keep away from reducing substances, strong oxidizers, extreme heat, and water. Wash hands after handling. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.



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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits (mg/m³)

Ingredients	CAS Number	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead, inorganic	7439-92-1	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Antimony	7440-36-0	0.5	0.5	0.5	0.5	0.5	0.5 (b,c)
Tin	7440-31-5	2	2	2	-	-	-
Copper	7440-50-8	1	1	1	1	1 (a)	0.1 (d)
Arsenic	7440-38-2	0.01	0.01	0.01	-	-	-
Polypropylene	9003-07-0	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.

NOTES:

- (a) As dust/mists
- (b) As inhalable aerosol
- (c) Based on OEL's of Austria, Belgium, Denmark, France, Netherlands, Switzerland, & UK
- (d) Based on OEL of Netherlands

- **OSHA:** Lead - US OSHA Specifically Regulated Substances (29 CFR 1910.1001 – 1050)
- **ACGIH:** US ACGIH Threshold Limit Values
- **NIOSH:** US NIOSH Pocket Guide to Chemical Hazards

Biological limit values

ACGIH: ACGIH Biological Exposure Indices

Ingredient	ACGIH	Determinant	Specimen
Lead	300 µg/l	Lead	Blood

Exposure Guidelines:

The OELs listed above are only applicable if the internal components of the battery cell are released. Follow standard monitoring procedures.

Engineering Controls / System Design Information	Store and handle in a dry, well ventilated area. Handle batteries cautiously. Ensure that vent caps are secure. Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Charge in areas with adequate ventilation.
Personal protective equipment (Pictograms)	
Hygiene Practices	Wash hands thoroughly before eating, drinking or smoking after handling batteries.
Ventilation	General dilution ventilation is acceptable.
Respiratory Protection	Not required for normal conditions of use. See also special fire-fighting procedures. In case of insufficient ventilation, wear suitable respiratory equipment.
Eye Protection	Wear protective glasses with side shields or goggles.
Skin Protection	Wear chemical resistant gloves as a standard procedure to prevent skin contact.
Other Protective Clothing Or Equipment	None required under normal use conditions.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Industrial / commercial lead acid battery, without electrolyte, Odorless
Odor Threshold	Not applicable
Physical State	Lead, solid
pH	Not applicable
Melting Point	Lead – 621.32 °F (327.4 °C) Not applicable unless individual components exposed.
Boiling Point	Lead – 3180 °F (1749 °C) Not applicable unless individual components exposed.
Flash Point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Upper / lower flammability or explosive limits	Not applicable
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Solubility	Lead and Lead dioxide are not soluble.
% Volatile by Weight	Not applicable unless individual components exposed.
Partition coefficient (n-octanol / water)	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable
Density	11.35 g/cm ³ Lead

10. STABILITY AND REACTIVITY

Reactivity	This product is non-reactive under normal conditions or use, storage, and transport.
Stability	This product is stable under normal conditions at ambient temperature.
Conditions to Avoid	Sparks and other sources of ignition; high temperature; over charging.
Incompatibility (materials to avoid)	Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.
Hazardous Decomposition Products	Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Lead	Inhalation LD50	Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
	Oral LD50	Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)

ROUTES AND METHODS OF ENTRY

Inhalation	Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.
Skin Contact	Not absorbed through the skin.
Eye Contact	May cause eye irritation.
Ingestion	Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

EXPOSURE IS NOT EXPECTED FOR PRODUCT UNDER NORMAL CONDITIONS OF USE.



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SIGNS AND SYMPTOMS OF OVEREXPOSURE

Acute Effects	Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.
Chronic Effects	Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

EXPOSURE IS NOT EXPECTED FOR PRODUCT UNDER NORMAL CONDITIONS OF USE.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

ADDITIONAL HEALTH DATA

All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion. Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the work site. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment. Children and pregnant women must be protected from lead exposure. Persons with kidney disease may be at increased risk of kidney failure.

The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

Toxicological Data

Constituents	Lead (CAS 7439-92-1)			
Species	Rat	Human		
Test Results	1050 µg/kg	155 mg/kg		
Method	TDLo [Acute oral toxicity]	LDLo [Acute oral toxicity]		
Constituents	Antimony (CAS 7440-36-0)			
Species	Rat	Human	Rat	
Effect dose / Concentration	100 mg/kg	13.5 mg/m ³	50 mg/m ³	
Method	LD50 [Acute oral toxicity]	LCLo [Acute inhalative toxicity (dust/mist)]	TCLo [Tumorigen/Carcinogen]	
Constituents	Arsenic (CAS 7440-38-2)			
Species	Rat	Rat	Human	Rat
Effect dose / Concentration	763 mg/kg	5 mg/kg	0.211 mg/L	605 µg/kg
Method	LD50 [Acute oral toxicity]	LDLo [Acute oral toxicity]	Oral [Mutagen]	TDLo [Reproductive]
Respiratory Sensitization	Not Classified			
Skin Sensitization	Not a skin sensitizer			
Germ Cell Mutagenicity	No data available			



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CARCINOGENICITY

Under normal handling and storage conditions, the exposure to carcinogenic components is not expected. Risk of adverse effects occurs only if the cell is mechanically, thermally, or electrically abused to the point of compromising the enclosure.

- **Lead Compounds:**

Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Carcinogenic Effects			
	CAS Number	IARC	NTP
Lead	7439-92-1	Group 2B-Possibly carcinogenic to humans.	Reasonably anticipated to be human carcinogen

- **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050 / 1200)**

Not listed.

Reproductive toxicity	May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	<u>Lead</u> : May cause damage to organs (blood, central nervous system) through prolonged or repeated exposure.
Aspiration hazard	Not classified.

12. ECOLOGICAL INFORMATION

- **Environmental Fate**

Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

- **Ecotoxicity**

Very toxic to aquatic life with long lasting effects. However, no ecological impacts expected under normal use conditions.

Constituents	Inorganic Lead / Lead Compounds (CAS 7439-92-1)
Species	Rainbow trout, Donaldson trout (<i>Oncorhynchus mykiss</i>)
Test Results	1.17 mg/l, 96 hours
Aquatic	Fish LC50
Persistence and Degradability	No data available on biodegradation.
Bioaccumulative potential	Mobility of metallic lead between ecological compartments is low. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain. Most studies have included lead compounds, not solid inorganic lead.
Additional Information	No known effects on stratospheric ozone depletion Volatile organic compounds: 0% (by Volume) Water Endangering Class (WGK): NA



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13. DISPOSAL CONSIDERATIONS

Waste disposal method	Material should be recycled if possible. Lead-acid batteries are completely recyclable. Product can be recycled along with automotive (SLI) lead-acid batteries. Dispose waste and residues in accordance with applicable federal, state, and local regulations.
Hazardous waste code	D008: Lead
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or packaging may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

Ground – US-DOT / CAN-TDG / EU-ADR / APEC-ADR	Not regulated as a Hazardous Material, Dangerous Goods
Aircraft – ICAO-IATA	Not regulated as a Hazardous Material, Dangerous Goods
Vessel – IMO-IMDG	Not regulated as a Hazardous Material, Dangerous Goods

Additional Information

- Battery, Dry, not subject to Hazardous Material Requirements. Not regulated as a Hazardous Material therefore must not be marked with an identification number or hazardous label and is not subject to hazardous shipping paper requirements.
- Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin / destination / customs points as shipped.

15. REGULATORY INFORMATION

TSCA

TSCA Section 8b – Inventory Status

All chemicals comprising this product are listed on the TSCA Inventory.

TSCA Section 12b – Export Notification

If the finished product contains chemicals subject to TSCA Section 12b export notification, they are listed below:

Chemical	CAS Number
None	Not applicable

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Lead (CAS 7439-92-1)	Reproductive toxicity Central nervous system Kidney Blood Acute toxicity
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CERCLA Hazardous Substance List (40 CFR 302.4)

Lead (CAS 7439-92-1)	LISTED
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Superfund Amendment and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard – No Delayed Hazard – No Fire Hazard – No Pressure Hazard – No Reactivity Hazard – No
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Section 311 / 312 Hazard Categorization

EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if lead is present in quantities of 10,000 lbs. or more. For more information consult 40 CFR 370.10 and 40 CFR 370.40.

Section 313 EPCRA Toxic Substances

40 cfr section 372.38 (b) states: If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article.

Chemical Name	CAS Number	% by Weight
Lead	7439-92-1	88-95

Other Federal Regulations

Lead (CAS 7439-92-1)	Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
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- **Safe Drinking Water Act (SDWA)**
Not regulated

US State Regulations

Lead (CAS 7439-92-1)	US Massachusetts RTK – Substance List
	US New Jersey Worker and Community Right-to-know Act
	US Pennsylvania Worker and Community Right-to-know Law
	US Rhode Island RTK

• US California Proposition 65

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. **Wash hands after handling.**

* Battery companies not party to the 1999 consent judgment with Mateel Environmental Justice Foundation should include a Proposition 65 Warning that complies with the current version of Proposition 65.

• US California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Chemical Name	CAS Number	% by Weight
Lead	7439-92-1	88-95
Arsenic (as arsenic oxides)	7440-38-2	<0.01

International Inventories

Country(s) or Region	Inventory Name	On inventory (yes / no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

* A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).



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Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished product as distributed into commerce are included on the Domestic Substances List.

WHMIS Classifications

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Controlled Products Regulations.

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/-or Ont. Reg. 127/01:

Chemical Name	CAS Number	% by Weight
Lead	7439-92-1	88-95

European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

REACH: Contains more than 0.1% lead monoxide. Lead Monoxide (CAS: 1317-36-8) is listed as a substance of very high concern (SVHC) under EU REACH regulation annex XIV.

European Communities (EC) Hazard Classification according to directives 67/548/EEC and 1999/45/EC.

R-Phrases	S-Phrases
23/25	1/2, 20/21, S28

16. OTHER INFORMATION

Issue Date	06/01/2015
Revision Date	-
Version #	01
Further information	NFPA Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
NFPA ratings	

DISCLAIMER:

This Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. Information in the SDS was obtained from sources which we believe are reliable, but are beyond our direct supervision or control. We make no Warranty of Merchantability, Fitness for any particular purpose or any other Warranty, Expressed or Implied, with respect to such information and we assume no liability resulting from its use. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding use and disposal of this product. For additional information concerning Yacht Battery Co., Ltd. products or questions concerning the contents of this SDS please contact your Yacht representative.