BCTC 倍测检测

安 全 技 术 说 明 书(MSDS)

Material Safety Data Sheet

报 告 编 号: Report No:	BCTC2312339310B
委 托 单 位: Applicant	深圳市三力电源科技有公司 Shenzhen Power Kingdom Co., Ltd.
产 品 名 称: Product Name:	密封铅酸蓄电池 SEALED LEAD-ACID BATTERY
产 品 型 号: Product Type:	PS7-12(12V7AH)
签 发 时 间: Issued Date:	2023-12-27(生效日期: 2024-01-01)
编 制: Prepared By:	George How
批 准: Approved By:	Andre Yu

深圳市倍测检测有限公司
Shenzhen BCTC Testing Co., Ltd.

这份材料安全数据表是根据客户提供的信息编辑，其内容和格式按客户要求来修订。
* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request.

第一部分-化学品及企业标识
Section 1-Chemical Product and Company Identification

产品名称 Product Name	密封铅酸蓄电池 SEALED LEAD-ACID BATTERY
型号 Model	PS7-12(12V7AH)
商标 Trade Mark	POWER KINGDOM
额定参数 Ratings	12V, 7Ah
重量 Weight	大约 2Kg About 2Kg
制造商 Manufacturer	河南豫光金铅集团铅盐有限责任公司 Henan Yuguang Gold&Lead Group Lead Salt Co.,Ltd.
制造商地址 Manufacturer Address	河南省济源市济水大街东段680号 East 680, Jishui Streen, Jiyuan City, Henan
应急电话 Emergency Telephone	+86-391-6600301
传真 Fax	/

第二部分-成分信息
Section 2- Composition Information

化学成分 Chemical Composition	CAS号 CAS No.	含量(%) Weight (%)	商业机密 Trade Secret
铅和氧化铅 Lead and lead oxide	7439-92-1	61.97	*
电解溶液 Electrolytic solution	7664-93-9	23.88	*
玻璃纤维分离器 Glass fibre separator	65997-17-3	3	*
ABS塑料 ABS	9003-56-9	11.15	*

“ * ”准确的百分比(浓度)的构成已经作为商业机密。
“ * ” The exact percentage (concentration) of composition has been withheld as a trade secret.

第三部分-危险性概述
Section 3- Hazards Identification

紧急情况概述 Emergency overview:	不适用 N/A
GHS分类 Classification according to GHS	不属于GHS危险物品 Not a dangerous substance according to GHS
标签元素 Label elements:	
危险标签图 Hazard pictogram(s)	不适用 No available

提示语 **Signal word**	不适用 No available
危险声明 **Hazard statement(s)**	不适用 No available
预防声明 **Precautionary statement(s):**	
预防 **Prevention**	不适用 No available
反应 **Response**	不适用 No available
处理 **Disposal**	不适用 No available
环境危害 **Environmental hazards:**	无相关信息 No relevant information
重要症状 **Important symptoms:**	见第11部分更多信息 See section 11 for more information
第四部分-急救措施 **Section 4- First Aid Measures**	
眼睛接触 **Eye contact**	万一接触，立即用大量的清水冲洗至少15分钟，翻起上下眼脸，直到化学的残留物消失为止，迅速就医。 Flush eyes with plenty of water for least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
皮肤接触 **Skin contact**	万一接触，用大量的水冲洗至少15分钟，同时除去污染的衣物和鞋子，迅速就医。 Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
吸入 **Inhalation**	立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。 Remove from exposure and move to fresh air immediately. Use oxygen if available.
摄入 **Ingestion**	饮用两杯牛奶或水，如果当事人仍然清晰可以采取催吐的方法，并且立即就医。 Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.
第五部分-消防措施 **Section 5- Fire Fighting Measures**	
燃点 **Flash Point**	不适用 N/A
自燃温度 **Auto-Ignition Temperature**	不适用 N/A
灭火介质 **Extinguishing Media**	水，二氧化碳 H_2O, CO_2
特殊灭火程序 **Special Fire-Fighting Procedures**	自给式呼吸器 Self-contained breathing apparatus
异常火灾或爆炸 **Unusual Fire and Explosion Hazards**	当电芯暴露于过热的环境中时，安全阀可能会打开 Cell may vent when subjected to excessive heat-exposing battery contents
燃烧产生的危险物品 **Hazardous Combustion Products**	二氧化碳、酸、氢气和氧气。 Carbon dioxide, acid, hydrogen and oxygen.
第六部分-泄露应急处理 **Section 6- Accidental Release Measures**	

个人预防措施、保护设备和应急程序:
如果电池被泄露，让人员离开该区域直到烟雾消散。提供最大限度的通风，清除有害气体。首选的反应就是离开这个地区并消散气体，避免皮肤和眼睛接触或吸入气体。用吸收剂清除溢出的液体然后焚烧。如果电池泄漏发生时,液体可以用砂、泥土或其他惰性物质来吸收，污染区域应该保持通风。

Personal precautions, protective equipment and emergency procedures:
If the battery 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 and allow the vapors to dissipate, Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed by using sand, earth or other inert substance and contaminated area should be ventilated meantime.

环境预防措施:
不允许产品到达排水系统或任何水源。
如果渗透进排水系统或任何水源，通知相应的部门。
不允许进入下水道/表面或地下水。

Environment precautions:
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

抑制和清理材料的方法:
如果电池外壳被拆除，少量电解液可能会泄漏。收集所有材料放进一个塑料容器。根据当地的法律法规来处置，避免可溶物质进入大地、下水道或水源。

Methods and material for containment and cleaning up:
If battery 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.

第七部分-操作处置和储存
Section 7- Handling and Storage

操作处置 **Handling**	禁止打开、毁坏或焚烧电池，因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。 禁止将电池短路、过充、强制放电或扔入火中。 禁止挤压或刺穿电池，或将电池浸入溶液中。 The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.
储存 **Storage**	禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。 禁止将电池接触加热设备，或将电池长时间直接暴露在阳光中。 Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他要注意的防范措施 **Other Precautions**	拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。 禁止短接或将电池正负极错误的安装在设备中。 The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.
第八部分-接触控制和个体防护 **Section 8- Exposure Controls/Personal Protection**	
设计控制 **Engineering Controls**	设计局部排气通风或其它设计来控制粉尘、雾、烟雾和气体。 Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
个人防护装备 **Personal Protective Equipment**	呼吸防护:在正常情况下不需要。 皮肤和身体防护：在正常情况下不需要,如果处理一个裂开的或泄漏的电池需要穿戴适当的防护服和手套。 手保护：如果处理一个裂开的或泄漏的电池需要戴适当手套。 眼睛保护：在正常情况下不需要，如果处理一个裂开的或泄漏的电池需要戴上安全眼镜。 Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. Hand protection: Wear suitable gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
其它防护装备 **Other Protective Equipment**	在工作区域应该有一个立即可以使用的安全淋浴和喷水洗眼器。 Have a safety shower and eye wash fountain readily available in the immediate work area.
卫生措施 **Hygiene Measures**	在工作区域不得进食，饮水或吸烟。 Do not eat, drink, or smoke in work area. Maintain good housekeeping.
第九部分-物理和化学特性 **Section 9- Physical and Chemical Properties**	
形态 **Form**	固体 Solid
颜色 **Color**	黑色 Black
气味 **Odour**	不适用 No available
酸碱度 **pH**	不适用 No available
熔点/凝固点 **Melting point/freezing point**	不适用 No available
沸点、沸点范围: **Boiling Point and Boiling range**	不适用 No available
易燃度 **Flash Point**	不适用 No available
自燃或爆炸的上、下极限 **Upper/lower flammability or explosive limits**	不适用 No available

蒸汽压 **Vapor Pressure**	不适用 No available
蒸汽密度 **Vapor Density**	不适用 No available
相对密度 **Relative density**	不适用 No available
水溶性 **Solubility in Water**	不适用 No available
自燃温度 **Auto-ignition temperature**	不适用 No available
分解温度 **Decomposition temperature**	不适用 No available
蒸发速率 **Evaporation rate**	不适用 No available
易燃性(土壤、天然气) **Flammability (soil, gas)**	不适用 No available
粘性 **Viscosity**	不适用 No available
第十部分 稳定性和反应活性 **Section 10- Stability and reactivity**	
稳定性 **Stability**	产品在第七部分所诉的条件下稳定 The product is stable under conditions described Section 7
应避免的条件 **Conditions to Avoid**	加热 70°C 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路，长时间暴露在潮湿的条件下。 Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
不兼容的材料 **Incompatible Materials**	氧化剂，酸，碱。 Oxidizing agents, acid, base.
危险分解物 **Hazardous Decomposition Products**	硫酸雾、金属氧化物、氢气和氧气。 Sulfuric acid mist, metal oxides, hydrogen and oxygen.
危险反应的可能性 **Possibility of Hazardous Reaction**	不适用 Not Available
第十一部分-毒理学资料 **Section 11 – Toxicological Information**	
刺激 **Irritation**	如果电芯的外壳受到机械、热或电的滥用到达一定程度，会发生刺激的风险。如果发生这种情况，可能会刺激皮肤、眼睛和呼吸道。 Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
致过敏 **Sensitization**	不适用 Not Available
影响神经系统 **Neurological Effects**	不适用 Not Available
致畸 **Teratogenicity**	不适用 Not Available

再生毒性 **Reproductive Toxicity**	不适用 Not Available
诱变(遗传效应) **Mutagenicity (Genetic Effects)**	不适用 Not Available
附带材料毒理性 **Toxicologically Synergistic Materials**	不适用 Not Available
第十二部分-生态学资料 Section 12- Ecological Information	
生态毒性 **Ecological Toxicity**	不适用 Not Available
在土壤中的流动性 **Mobility in soil**	不适用 Not Available
持久性和分解性 **Persistence and Degradability**	不适用 Not Available
生物聚积 **Bioaccumulation potential**	不适用 Not Available
其他不利影响 **Other Adverse Effects**	不适用 Not Available
第十三部分-废弃处置 Section 13- Disposal Considerations	
产品废弃处理建议 **Product disposal recommendation**	遵守当地、州和联邦法律和法规。 Observe local, state and federal laws and regulations.
包装处理建议 **Packaging disposal recommendation**	废弃处理必须根据当地法规 Disposal must be made according to official regulations
第十四部分-运输信息 Section 14 – Transport Information	
运输标签 **Label for conveyance**	不适用 N/A
UN编号 **UN Number**	--
运输风险类别 **Transport hazard class(es)**	--
包装等级 **Packing group**	不适用 N/A
海洋污染物 **Marine pollutant**	无污染 No
联合国运输专用名称 **UN Proper shipping name**	蓄电池，湿的，密封的蓄电池 BATTERIES, WET, NONSPILLABLE, electric storage

该货物应视为非限制货物，并且必须符合包装要求IATA第65版DGR手册的特殊规定A67的指令872或IMDG CODE的特殊规定238的指令（第41-22号修正案）或《关于国际公路危险货物运输的欧洲协定》（ADR 2019第I卷）
在空运或海运的货运单上应包含“Not Restricted”及特殊规定条款号。
运输方式：空运，海运，铁路，公路。

Transport information:

This goods shall be considered Not Restricted Goods and need to be complied with the requirements of Packing Instruction 872 of special provision A67 of 65th DGR Manual of IATA or special provision 238 of IMDG CODE (Amdt. 41-22) or European Agreement Concerning the International Carriage of Dangerous Goods by Road(ADR 2019 Volume I)

The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air or Sea Waybill.
Transport Fashion: By air, by sea, by railway, by road.

第十五部分 法规信息
Section 15- Regulatory information

法律信息
Law information
《危险物品规则》
《Dangerous Goods Regulations》
《对危险货物运输的有关规定的建议》
《Recommendation on the Transport of Dangerous Goods Model Regulations》
《国际海运危险货物规则》
《International Maritime Dangerous Goods》
《危险品安全运输技术指令》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《危险货物分类和品名编号》
《Classification and code of dangerous Goods》
《职业安全卫生法》
《Occupational Safety and Health Act》(OSHA)
《有毒物质控制法》
《Toxic Substance Control Act》(TSCA)
《消费产品安全法》
《Consumer Product Safety Act》(CPSA)
《联邦环境污染控制法》
《Federal Environmental Pollution Control Act》(FEPCA)
《石油污染控制法》
《The Oil Pollution Act》(OPA)
《超级基金修正案和再授权法案III(302/311/312/313)》
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》(SARA)
《资源保护及恢复法案》
《Resource Conservation and Recovery Act》(RCRA)
《安全饮用水法》
《Safety Drinking Water Act》(CWA)
《加州65提案》
《California Proposition 65》
《美国联邦法规》
《Code of Federal Regulations》(CFR)
根据所有联邦、州和地方法律。
In according with all Federal, State and local laws.

第十六部分-其它信息
Section 16- Other Information

上面的信息被认为是准确代表了目前最好的信息提供给我们。然而,飞机没有对商品性能保证或任何其他保证,包括明示或暗示,对这类信息的使用我们不承担责任。用户应作出自己的调查，以确定是否适合其特定用途的信息。虽然在此处所包含的数据的准备已经采取了合理的预防措施,这是仅为你提供的信息、考虑和调查。这个化学品安全技术说明书为本产品提供了安全操作指南和使用指南，它并不能对所有可能发生的情况提供建议，因此，您特殊使用该产品应先进行评估，以确定是否需要额外的预防措施。

The information above is believed to be accurate and represents the best information currently available to us. However, concorde makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

备注(Remark)：

主型号(Main model): PS7-12(12V7AH)，系列型号(series model): 4V4AH, 4V4.5AH, 4V10AH, 6V1.2AH, 6V1.3AH, 6V2.8AH, 6V3.2AH, 6V3.3AH, 6V4AH, 6V4.5AH, 6V5AH, 6V6AH, 6V7AH, 6V7.5AH, 6V8AH, 6V10AH, 6V12AH, 6V14AH, 12V0.8AH, 12V1.2AH, 12V1.3AH, 12V1.5AH, 12V1.8AH, 12V2AH, 12V2.2AH, 12V2.3AH, 12V2.4AH, 12V2.6AH, 12V2.7AH, 12V2.8AH, 12V2.9AH, 12V3AH, 12V3.2AH, 12V3.3AH, 12V1.4AH, 12V3.8AH, 12V4AH, 12V4.2AH, 12V4.5AH, 12V5AH, 12V5.5AH, 12V6AH, 12V6.5AH, 12V7.2AH, 12V7.5AH, 12V8AH, 12V8.5AH, 12V9AH, 12V10AH, 12V12AH, 12V13AH, 12V14AH, 12V15AH, 12V17AH, 12V18AH, 12V18.5AH, 12V20AH, 12V22AH, 12V24AH, 12V25AH, 12V26AH, 12v28AH, 6V65AH, 6V100AH, 6V150AH, 6V180AH, 6V200AH, 12V33AH, 12V35AH, 12V38AH, 12V40AH, 12V42AH, 12V45AH, 12V50AH, 12V55AH, 12V53AH, 12V65AH, 12V70AH, 12V75AH, 12V80AH, 12V90AH, 12V100AH, 12V110AH, 12V120AH, 12V134AH, 12V150AH, 12V160AH, 12V170AH, 12V180AH, 12V200AH, 12V230AH, 12V250AH, 12V260AH, 2V100AH, 2V150AH, 2V200AH, 2V300AH, 2V350AH, 2V400AH, 2V450AH, 2V500AH, 2V600AH, 2V800AH, 2V1000AH, 2V1200AH, 2V1500AH, 2V2000AH, 2V3000AH, 12V60AH, 12V105AH, 12V125AH, 12V175AH, 12V95AH, 24V3.5AH, 24V4AH, 24V5AH, 24V8AH, 24V14AH, 24V24AH, 24V18AH, 12V8.2AH

声　明
STATEMENT

1. 本次检测所用的测量设备的量值均可以溯源到国家计量标准。
The equipment lists are traceable to the national reference standards.
2. 检测报告未经本实验室书面批准，不得部分复制。
The test report can not be partially copied unless prior written approval is issued from our lab.
3. 报告未加盖“检测专用章”无效。
The test report is invalid without stamp of laboratory.
4. 报告无检测、批准人员签字无效。
The test report is invalid without signature of person(s) testing and authorizing.
5. 本次检测的结果仅对所检测样品有效。
The test process and test result is only related to the Unit Under Test.
6. 样品的相关信息由委托单位提供，实验室不对其真实性负责。
Sample information is provided by the customer and the laboratory is not responsible for its authenticity.
7. 无CMA标志的报告，仅供科研、教学、企业产品研发及内部质量控制目的用。
Reports without CMA mark are only used for scientific research, teaching, enterprise product development and internal quality control purposes.
8. 本实验室的质量体系符合ISO/IEC17025标准的要求。
The quality system of our laboratory is in accordance with ISO/IEC17025.
9. 如对本报告有异议，可在收到报告后15 天内向本单位申诉，逾期不予受理。
If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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※※※※※ 结束 ※※※※※
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SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE MANUFACTURER/SUPPLIER

1.1	**Product Identifier:**	**Valve Regulated Lead-Acid (VRLA) Industrial Battery**
	Classification:	Battery, wet, non-spillable, electric storage **(Mixture)** Substance classification: UN 2800
	Product Codes:	EN & ENL, NP, NPC, NPH, NPL, NPW, RE, REC, REW, SW, SWL, TEV, FXH, UXH, UXL, Yucel, YuVolt, YPC and YFT Series of Industrial VRLA Batteries
1.2	**Relevant Identified Uses Of The Product And Uses Advised Against**	*Relevant identified uses*: Standby: Telecoms; UPS; alarm and security systems; emergency lighting; utility switching Cyclic: Golf Trolleys, portable tools, portable lighting, wheelchairs, remote telemetry Energy storage: Photovoltaic energy systems (PVES); wind turbines
		Uses advised against: Automotive, commercial, and agricultural SLI applications *Reason why uses advised against:* High starting and ignition current demands beyond the design of internal and external current carrying components
1.3	**Details Of The Supplier Of The Safety Date Sheet**	**Supplier:** **GS Yuasa Battery Europe Ltd,** **Address**: Unit 22, Rassau Industrial Estate, Ebbw Vale, NP23 5SD United Kingdom **Contact:** **Mike TAYLOR (Product Manager)** Tel: (+44) 07733 302 242 e-mail: mike.taylor@yuasaeurope.com Language: English language only Available: Office hours only: 8am to 4pm (08:00 to 16:00)
	National Contacts:	France: Contact: GS Yuasa Battery France S.A. Tel: Christian RAYNAUD (Technical Manager) e-mail: (+33) 0474-95-90-95 Language: christian.raynaud@gs-yuasa.fr French & English
		Germany: Contact: GS Yuasa Battery Germany GmbH Tel: Thomas WALLRAFF (Manager Reserve & Renewable Energy &Technical) e-mail: (+49) 02151-82095-27 Language: Thomas.Wallraff@gs-yuasa.de German & English
		Iberia: Contact: GS Yuasa Battery Iberia S.A. Tel: Fernando GARCIA (Industrial Division Sales Manager) e-mail: (+34) 091 748 98 19 Language: fernando.garcia@gs-yuasa.es Spanish & English
		Italy: Contact: GS Yuasa Battery Italy Srl. Tel: Marco PETARLE (Technical) e-mail: (+39) 02-3800-91-08 Language: marco.petarle@gs-yuasa.it Italian & English
		UK: Contact: GS Yuasa Battery Sales UK Ltd. Tel: Matthew ELWICK (Technical Manager) e-mail (+44) 01793-833-560 Language: matthew.elwick@gs-yuasa.uk English language only
		Sweden: Contact: GS Yuasa Battery Nordic Tel: Michael KRAFTH (Country Manager) e-mail (+46) 36 47110 Language: michael.krafth@gs-yuasa.se English & Swedish
1.4	**Emergency telephone number:**	GS Yuasa Battery Manufacturing UK Ltd. Contact: **Mike TAYLOR (Product Manager)** Tel: **(+44) 07733 302 242** Opening Hours: Only available during office hours, 8am to 4pm (08:00 to 16:00) Language: English language only Available: Office hours only: 8am to 4pm (08:00 to 16:00)

SECTION 2: HAZARDS IDENTIFICATION – In the event of the internal battery components being exposed

2.1	Classification of the substance or mixture	
According to Regulation (EC) No. 1272/2008 (CLP) **Full text of H phrases – see section 16**	H302	Acute toxicity 4
	H314	Skin Corr.1A
	H315	Skin damage/irritation 1
	H318	Eye damage/irritation 1
	H360D	Reproductive toxicity 1A,1B
	H360Fd	Repr.1A
	H362	May harm breast fed children
	H372	STOT RE1
	H400	Aquatic Acute 1
	H410	Aquatic Chronic 1

Adverse physicochemical, human health and environmental effects
No additional information available

2.2 Label Elements
Labelling according to Regulation (EC) No. 1272/2008 (CLP)
Hazard Pictograms (CLP)

GHS05 GHS07 GHS08 GHS09

Signal Word (CLP) - **DANGER**

Hazard Statements (CLP)	H302	Harmful if swallowed
	H314	Causes severe skin burns and eye damage
	H315	Causes skin irritation
	H318	Causes serious eye damage
	H360D	May damage the unborn child
	H360Fd	May damage fertility. Suspected of damaging the unborn child
	H362	May cause harm to breast-fed children
	H372	Causes damage to organs through prolonged or repeated exposure
	H400	Very toxic to aquatic life
	H410	Very toxic to aquatic life with long lasting effects

Precautionary Statements (CLP)	P201	Obtain special instructions before use
	P202	Do not handle until all safety precautions have been read and understood
	P260	Do not breathe dust/fume/gas/mists/vapours/spray
	P264	Wash …. Thoroughly after handling
	P270	Do not eat, drink or smoke when using this product
	P273	Avoid release to the environment
	P280	Wear protective gloves/protective clothing/eye protection
	P303, 361, 353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
	P301, 330, 331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
	P304, 340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	P305, 351, 338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

2.3 Other Hazards

	VRLA Battery	**Mechanical**	VRLA Batteries can be heavy. Correct manual handling techniques and/or mechanical lifting aides (e.g. Fork Lift Truck) must be used.
		Electrical	VRLA Batteries can contain large amounts of electrical energy which can give very high discharge currents and severe electrical shock if the terminals are short circuited.
		Chemical	• The VRLA Battery presents no chemical hazards during the normal operation provided the recommendations for handling, storage, transport and usage are observed. • VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. • If the battery is broken and the internal components exposed, hazards may exist which require careful attention.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances present in the product

Components	**Classification according to Regulation (EC) No. 1272/2008 (ELP)[1]**	Substances	Approximate % ($^{w}/_{w}$) **Battery**	Chemical Symbol	CAS No.
Plate Grid		Metallic Lead	40 to 50	Pb	7439-92-1
		Calcium	< 0.1	Ca	7440-70-2
		Tin	< 1	Sn	7440-31-5
Active Materials	**H360 H372 H400 H410**	Lead Monoxide	< 0.1	PbO	1317-36-8
		Lead Dioxide (Lead IV Oxide)	15 to 25	PbO_2	1309-60-0
		Barium compound	< 2	Ba	7440-39-3
Battery Electrolyte	**H314**	Dilute Sulphuric Acid	10 to 20	H_2SO_4	7664-93-9
Case Material		**Standard Grade, UL94:HB** • ABS (Acrylonitrile-Butadiene-Styrene Copolymer)	5 to 10		9003-56-9
		Flame Retardant (FR) Grade, UL94:V0 • ABS (Acrylonitrile-Butadiene-Styrene Copolymer) • Brominated aromatic compound. • Antimony trioxide	5 to 10 < 1.2% < 0.3%		9003-56-9 79-94-7 1309-64-4
Separator Material		Absorbent Glass Matt (AGM) Separator (100% Borosilicate Glass Microfibre)	1 to 3		65997-17-3
Inorganic lead and battery electrolyte (Dilute Sulphuric Acid) are the main components of VRLA batteries. Other substances may be present but in small amounts dependant on battery type. Contact GS Yuasa Battery Manufacturing UK Ltd for further information.					

SECTION 4: FIRST AID MEASURES FOR ACUTE EXPOSURE

This information is of relevance only if the VRLA Battery has suffered damage, is broken and persons have direct contact with the internal components.

4.1 Description of first aid measures

Components		**Action**
Plate Grids and Active materials	Inhalation:	Remove the person from exposure to fresh air. Seek advice from a medical doctor
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. Seek advice from a medical doctor
	Skin Contact:	Wash off with plenty of water and soap to prevent accidental ingestion or inhalation Seek medical advice if pain or rash does not reduce
	Eye Contact:	**Immediately** irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
	Self-protection for the first aider	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. In case of inhalation, a face mask or respirator may be required.
Battery Electrolyte		**SPEED IS ESSENTIAL - OBTAIN IMMEDIATE MEDICAL ATTENTION.**
	Inhalation:	Remove the person from exposure to fresh air. If the person continues to feel unwell seek advice from a medical doctor.
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting.

			If the person continues to feel unwell seek advice from a medical doctor.
		Skin Contact:	Drench with large quantities of water. Remove contaminated clothing and place in water to dilute the acid Continue to wash the affected area for at least 10 minutes. Seek advice from a medical doctor
		Eye Contact:	**SPEED IS ESSENTIAL - OBTAIN IMMEDIATE MEDICAL ATTENTION** **Immediately** irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. In case of inhalation, a face mask or respirator may be required.
	Case Material	Inhalation:	Material can burn in a fire with toxic smoke and decomposition products. Upon inhalation of decomposition products, keep patient calm, remove to fresh air, and seek advice from a medical doctor. If a large quantity is inhaled take the person to hospital. **Note to physician**: Treat according to symptoms (decontamination, vital functions), no known specific antidote.
		Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
		Skin Contact:	Areas affected by molten material should be quickly placed under cold running water and a sterile protective dressing applied. Seek advice from a medical doctor.
		Eye Contact:	May cause irritation or injury due to mechanical action and traces of Battery Electrolyte. **Immediately** irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and disposable gloves are required. In case of inhalation, a face mask or respirator may be required.
	Separator Material	Inhalation:	Remove patient from exposure to fresh air. If irritation persists, seek advice from a medical doctor
		Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
		Skin Contact:	After contact with skin, wash immediately with plenty of soap and water. If irritation persists, seek advice from a medical doctor
		Eye Contact:	May cause irritation or injury due to mechanical action and traces of Battery Electrolyte. **Immediately** irrigate with eyewash solution or clean water for at least 10 minutes, holding the eyelids apart. Then take the person to hospital without further delay
		Self-protection for the first aider	Eye protection (safety glasses or face shield), and disposable gloves are required. In case of inhalation, a face mask or respirator may be required.

SECTION 5: FIRE-FIGHTING AND EXPLOSION HAZARD MEASURES

5	**VRLA Battery**	General Information: Explosion Hazard 	• VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. • Batteries in use will be part of an electrical circuit and must be isolated from the power source before attempting to put out a fire. Switch the power **OFF** before disconnecting the batteries from the power source. • Damaged batteries may expose negative plates, grey in colour, which may ignite if allowed to dry out. These plates may be wetted down with water after the battery has been removed from all electrical circuits.
5.1		Suitable Extinguisher types:	CO_2; Dry Powder are recommended for electrical fires
		Unsuitable Extinguisher types	Water extinguishers must never be used to put out an electrical fire.
5.2		Hazardous combustion & decomposition products:	Carbon monoxide, Sulphur Dioxide, Sulphur Trioxide, Lead fume and vapour, toxic fumes from decomposition of battery case materials.
5.3		Advice for fire-fighters	Full face visor or safety goggles; Respiratory equipment or self-contained breathing apparatus (SCBA); Full acid resistant protective clothing must be worn in fire-fighting conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

6	**Components**		
	VRLA Battery		VRLA batteries are designed to be safe to handle and not to leak battery electrolyte under normal conditions. In case of accidental damage heavy-duty gloves are required to pick-up the battery to protect against unseen electrolyte leakage
	Plate Grids and Active Materials	Personal Precautions:	Eye protection (safety glasses or face shield), and heavy-duty gloves are required. If the material is wet, a face mask or respirator is not required If the material is dry, a face mask or respirator is required
		Clean-up Methods:	Large, solid pieces may be picked up and bagged for recycling. Never use a brush to sweep up debris; it may create Lead-dust in the air. Wet clean the spill area to remove all traces of debris. Battery debris and cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Environmental Precautions:	Do not allow material to enter a watercourse. Exposed Lead materials must be placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
	Battery Electrolyte:	Personal Precautions:	Ensure suitable, acid resistant personal protective clothing (including heavy-duty gloves, safety glasses and respiratory protection) is worn during removal and clean-up of spillages.
		Clean-up Methods: Small spillages:	Neutralise and absorb the spillage using soda ash, sodium bicarbonate (available from supermarkets), sodium carbonate or calcium carbonate powder. Wet clean the spill area to remove all traces of debris. Battery debris and cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Large spillages:	Large amounts of electrolyte spillage are unlikely with VRLA batteries since the electrolyte is fully absorbed in the active materials and separator. Bund the spillage area using dry sand, earth, sawdust or other inert material. Neutralise the electrolyte using soda ash, sodium bicarbonate (available from supermarkets), sodium carbonate or calcium carbonate powder. Wet clean the spill area to remove all traces of debris and electrolyte. Cleaning materials must be collected and placed in an inert sealed container (e.g. self-seal plastic bag or bucket) for disposal, see Section 13.
		Environmental Precautions:	Battery electrolyte must not be allowed to enter any drains or sewage system or water course.
	Case Material:	Clean-up Methods:	Assume battery case material is contaminated and proceed as for **Plate Grids and Active Materials** above.
	Separator Material:	Clean-up Methods:	Assume battery case material is contaminated and proceed as for **Plate Grids and Active Materials** above.

Note: If appropriate refer to 8 and 13

SECTION 7: HANDLING AND STORAGE

7.1	**Component:**		
	VRLA Battery	Precautions For Safe Handling:	Only trained operators should be allowed to handle VRLA batteries.
			PPE: No specialist protective clothing or equipment is required, except that for handling heavy weights.
			Hygiene: There are no specialist requirements beyond good, standard workplace practices,
			Mechanical lifting aides: (e.g. FLT and pallet trucks) will be required to move pallets of batteries. Weight approximately 1 tonne
			Mechanical handling aides: (e.g. trucks and lifters) will be required to handle individual batteries over 25 kg in weight.
			General Safety Considerations: Do not drop batteries: dents and deformation of the case may be an indication of internal damage to the battery. Cracks will allow electrolyte to escape. Do not place VRLA Batteries lid-to-lid so that terminals will short-circuit.
7.2		Conditions For Safe Storage, Including Any Incompatibilities:	Store VRLA Batteries in a cool, well-ventilated area with a solid, impervious surface, and adequate containment in the event of accidental acid spillage.
			Store under a roof and protect against direct sunlight and adverse weather conditions including rain, snow and other sources of water.
			Storage of large quantities of VRLA batteries may require approval from local environmental protection agency and/or local water authorities.

			Pallets of VRLA Batteries are heavy. Store at ground level or in lower levels of storage systems (e.g. racking).
			Take special care in dry conditions to avoid the risk of electrostatic discharges.
			Protect against physical damage and exposure to organic solvents and other incompatible materials.
			Do not store VRLA batteries close to sources of heat, naked flames and sparks.
			Store batteries in their original packaging wherever possible. When batteries are removed from their original packaging (e.g. for transportation of small quantities), ensure new packaging protects the batteries from damage and the risk of short-circuit of the terminals.
		End-of-Life (EC WEEE Regulations)	Ensure batteries are removed from equipment at the end of life and are collected for recycling by an approved contractor.
7.3		Specific End Uses: Installation:	1. Refer to EN IEC 62485-1, Safety requirements for secondary batteries and battery installations. General safety information 2. Refer to EN IEC 62485-2, Safety requirements for secondary batteries and battery installations. Stationary batteries

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

	Components		
8.1	**VRLA Battery**	Control Parameters:	There are no special control parameters for the handling, storage, installation of VRLA Batteries.
			VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approximately 4% to 76%. Never install VLRA Batteries in a gas-tight enclosure during storage, transport or usage.
8.2		Exposure Control:	There are no special exposure controls for the handling, storage, installation or use of VRLA Batteries.
8.3		Personal Protection:	When there is no evidence of damage or visible traces of liquid (electrolyte) or solid deposits on the batteries they may be handled safely without extra personal protective equipment. Ensure electrical insulation equipment is used when installing batteries. (e.g. insulated mats and covers; insulated tools) Remove ALL metallic objects from the person when working with VRLA Batteries: e.g. Jewellery (rings, watches, bracelets, necklaces), pens, torches, etc. Where there are signs of damage or liquid (electrolyte) or solid deposits, rubber gloves and acid resistant clothing must be worn when handling the batteries and affected packaging to protect against the effects of any electrolyte that may be present. If it is suspected that free electrolyte is present, then safety glasses must be worn, and if large amounts are present, chemical goggles or face shield should be used.
		UL CAUTIONARY STATEMENT:	"Warning: Risk of fire, explosion, or burns. Do not disassemble; heat above 50°C; or incinerate".

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

	Components	
9.1	**VRLA Battery**	• The main components are listed in **SECTION 2** above. • The undamaged product is a manufactured article in an inert plastic (ABS) case, which will burn if subjected to high temperatures or sources of ignition. Some battery types are made with Flame Retardant ABS cases, see technical specification. These batteries carry the suffix 'FR' after the battery type; e.g. NP24-12IFR

The information below refers to the physical and chemical properties of the main VRLA Battery components and substances. This information is published for reference only.

	Plate Grids and Active materials:	Appearance		Safety-related data	
		Form	Solid	*Solidification point*	327 °C
		Colour	Grey or brown	*Boiling point*	1740 °C
		Odour	Odourless	*Solubility in water*	Very low (0.15mg/l)
				Solubility in acid or alkaline solutions	Yes, dependant on the strength of solution.
				Density (at 20°C)	11.35 g/cm^3
				Vapour pressure (at 20°C)	Undetectable
	Battery Electrolyte:				
		Form	Liquid	*Solidification point*	-35 to -60 °C
		Colour	Colourless	*Boiling point*	Approx. 108 to 114 °C
		Odour	Odourless	*Solubility in water*	Complete
				Density (at 20°C)	Variable up to 1.350 g/cm^3
				Vapour pressure (at 20°C)	10-20 mmHg

	Case Material:	Appearance		Safety-related data	
		Form	Solid	*Softening point*	> 100 °C (DIN 53460)
		Colour	Grey or black	*Flash Point*	>330 °C
		Odour	Slight Odour	*Solubility in water*	Insoluble
				Solubility in other solvents	Soluble in polar solvents, aromatic solvents, chlorinated hydrocarbons.
				Density (at 20°C)	1.07-1.4 g/cm^3 (DIN 53479)
				Vapour pressure (at 20°C)	Undetectable
	Separator Material:				
		Form	Fibrous material	*Solidification point*	820°C
		Colour	White	*Boiling point*	>2500°C
		Odour	Odourless	*Solubility in water*	Insoluble
				Density (at 20°C)	2.23g/cm^3
				Vapour pressure (at 20°C)	Undetectable

SECTION 10: STABILITY AND REACTIVITY

	Components		
10.1	**VRLA Battery**	Stability:	Within the operational temperature range -20 to +50 °C the undamaged product is stable.
10.4	**Plate Grids and Active materials:**	Materials & Conditions to Avoid:	Powdered Lead reacts violently with fused ammonium nitrate and sodium acetylide. Reacts violently when in contact with chlorine trifluoride.
10.3	**Battery Electrolyte:**	Possibility of Hazardous Reactions	• Dilution of the higher concentrated grades with water may liberate excessive heat. • Highly reactive with metals and organic materials. • On contact with metals, may generate hydrogen which forms explosive mixtures with air. • Destroys organic materials such as cardboard, wood, textiles, etc. • Vigorous reaction with sodium hydroxide and alkalis.
10.6		Hazardous Decomposition Product(s):	• Sulphur oxides
10.1	**Case Material:**	Materials & Conditions to Avoid:	• To avoid thermal decomposition, do not overheat. • Starts to decompose at temperatures >275ºC.
			• Powerful oxidising agents.
10.6		Hazardous decomposition products:	• Monomers, other degradation products, traces of hydrogen cyanide.
10.1	**Separator Material:**	Stability:	• Stable material.
10.4		Materials & Conditions to Avoid:	• Incompatible with Hydrofluoric acid and concentrated Sodium Hydroxide.
10.6		Hazardous decomposition products:	• No hazardous polymerisation expected.

SECTION 11: TOXICOLOGICAL INFORMATION

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

	Components		
11	**VRLA Battery**		• This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment. • Exposure limits may vary according to national law and regulations.
11.1	**Plate Grids: Metallic Lead, Lead alloys.**	Acute Toxicity 	• Toxic by ingestion or inhalation • Chronic poison • Lead is a poison that affects virtually every system in the body • Symptoms include fatigue, headaches, constipation, aching bones and muscles, gastrointestinal tract disturbances and reduced appetite • Blood Lead levels of 80 µg/dl and above have been associated with both acute and chronic effects of Lead poisoning
	Active materials: Lead dioxide.	Acute Toxicity 	• Toxic by ingestion or inhalation • Chronic poison • Chronic exposure to Lead compounds may lead to a build-up of Lead in the body, giving rise to a variety of health problems, including anaemia, kidney and liver damage, impaired eyesight, memory loss and CNS[2] damage

[2] CNS = Central Nervous System

	Battery Electrolyte:	Corrosive 	Corrosive, the more concentrated solutions can cause serious burns to the mouth, eyes and skin Harmful by ingestion and through skin contact
		Inhalation: 	Mist is a severe irritant to the respiratory tract. Fluid build-up on the lung (pulmonary oedema) may occur up to 48 hours after exposure and could prove fatal
		Ingestion: 	Will immediately cause severe corrosion of and damage to the gastrointestinal tract
11.1	**Battery Electrolyte:**	Skin Contact: 	Causes severe chemical burns
		Eye Contact: 	Risk of serious damage to eyes. Causes severe burns. May cause prolonged or permanent damage or even total loss of sight. Mist will cause irritation
	Case Material:		According to information available the product is not harmful to health provided it is correctly handled and processed according to the given recommendations.
	Separator Material:		Based on animal implantation and epidemiologic studies glass microfibers are thought to have some limited carcinogenic potential and as such are designated as Group 2B materials (IARC, US). The material should be treated as a category 3 carcinogen (Europe). Limited evidence of carcinogenic effect.

SECTION 12: ECOLOGICAL INFORMATION

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

	Components		
12.1	**VRLA Battery**		This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment.
12.2	**Plate Grids and Active materials:**	Metallic Lead, Lead alloys and Lead dioxide. 	Chemical and physical treatment is required for the elimination of Lead from water. Waste water containing Lead must not be disposed of in an untreated condition.
		Ecotoxicity:  H Phrase H400 &410	• Lead metal in massive form is not classified as hazardous to the aquatic environment, due to its low solubility and rapid removal from the water column. Inorganic lead compounds are considered to be acutely toxic in the environment and also to present a long-term hazard to aquatic organisms.

		Effect in the aquatic environment: 	• Toxicity for fish: 96 h LC 50 > 100 mg/l • Toxicity for daphnia: 48 h EC 50 > 100 mg/l • Toxicity for alga: 72 h IC 50 > 10 mg/l
12.3	**Battery Electrolyte:**	Ecotoxicity: 	• In order to avoid damage to the sewerage system, the acid has to be neutralised by means of soda ash, sodium bicarbonate or sodium carbonate before disposal. • Ecological damage is possible by change of pH. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. • The electrolyte may also contain components of Lead that can be toxic to aquatic environments.
		Persistence and Degradation:	Remains indefinitely in the environment as sulphate.
12.4	**Case Material:**	Elimination information:	No data available: insoluble in water
		Behaviour and environmental fate:	Due to the consistency of the product, and its insolubility in water, it will apparently not be bio-available.
12.5	**Separator Material:**		No data available: insoluble in water Not thought to pose any risk to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

	Components		
13.1	**VRLA Battery**	Europe:	• Spent (used) VRLA Batteries are subject to the requirements of the Batteries Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators. Spent (used) VRLA Batteries MUST be sent for recycling through an authorised contractor at the end-of-life. • The WEEE Directive 2002/96/EC (Waste Electrical and Electronic Equipment) applies. Spent (used) VRLA Batteries MUST be removed from electrical and electronic equipment at the end-of-life.
		Worldwide:	• VRLA batteries contain inorganic Lead compounds and Sulphuric Acid which are damaging to the environment. • Spent (used) batteries must be disposed of in an environmentally friendly manner in accordance with local national laws and regulations.
			• VRLA batteries must not be dismantled, burnt or incinerated as a means of disposal. • At the end of life VRLA batteries may still be electrically 'live' and contain a large amount of electrical energy. The same care and attention to safe handling should be taken as when handling new batteries. Particular care must be taken to avoid short-circuiting the battery terminals.
13.2	**Plate Grids and Active materials:**	Europe Worldwide	• Metallic Lead and active materials (Lead Oxides) must be recycled. • Disposal must be carried out in accordance with the European Hazardous Waste Directive 2008/98/EC
13.3	**Battery Electrolyte:**	Europe	• Disposal must be carried out in accordance with the European Hazardous Waste Directive 2008/98/EC on the protection of the environment through criminal law
		Worldwide	• Disposal should be in accordance with local, state or national legislation.
		General	• Battery electrolyte is dilute Sulphuric Acid, the strength of which depends on the state of charge of the batteries. It must be neutralised before disposal. See SECTION 6 for clean-up and disposal advice.
13.3	**Case Material:**		• Do not dispose of this product into sewers, any ocean or water course in order to prevent marine animals and birds from ingesting. • Recycling is encouraged. • Disposal by controlled incineration or source landfill in accordance with local national laws and regulations may be acceptable.
13.4	**Separator Material:**		• Constitutes a special waste by virtue of hazardous substance content. • Dispose of via approved landfill site. Disposal by controlled source landfill in accordance with local national laws and regulations may be acceptable.

SECTION 14: TRANSPORT INFORMATION

	Components		
14.1	**VRLA Battery**	Land Transport (ADR) * 	Land Transport (ADR / RID) • UN Nº: UN2800 • Classification ADR / RID: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Packing Group ADR: not assigned • Tunnel code: E • ADR / RID: New and spent (used) batteries are exempt from all ADR / RID (special provision 598)
		Sea Transport (IMDG) * 	Sea transport (IMDG Code) • UN Nº: UN2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • EmS: F-A, S-B Non-Spillable batteries meet the requirements of Special Provision 238 parts 1 & 2; they are exempt from all IMDG codes and are not subject to special regulation for sea transport
		Air Transport (IATA) * 	Air Transport (IATA-DGR) • UN Nº: 2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Special Provision A48: Packaging test are not considered necessary • Special Provision A67: Yuasa's VRLA batteries meet the requirements of Packing Instruction 872. The battery has been prepared for transport so as to prevent: a) A short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with an insulating cover (made from ABS) which prevents contact with the terminals. c) Unintentional activation is thus prevented The words "NOT RESTRICTED" and the Special Provision (SP) number must be indicated on all shipping documents • Special Provision: A164: The battery has been prepared for transport so as to prevent: a) Short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with a cover (made from ABS) which prevents contact with the terminals c) Unintentional activation is thus prevented

SECTION 15: REGULATORY INFORMATION

	Components		
15.1	**VRLA Battery**	Required Markings:	
			Crossed-out wheeled bin indicating "**SEPARATE COLLECTION**" for all batteries and accumulators. Not to be disposed of with general domestic, commercial or industrial waste. Ref: The Batteries Directive 2006/66/EC
		Pb	The **Pb** symbol indicates the heavy metal content of the battery and enables the Lead-Acid battery to be sorted for recycling. Ref: The Batteries Directive 2006/66/EC.
			The International Recycling Symbol, required by law in many countries world-wide to facilitate the identification of secondary batteries and accumulators for recycling. Ref: IEC 61429 : 1995, Marking of secondary cells and batteries with the International Recycling Symbol ISO 7000-1135.
		EC Directives	Directive 2006/66/EC, on batteries and accumulators and waste batteries and accumulators Paragraph (Recital) 29 states: "Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment does not apply to batteries and accumulators used in electrical and electronic equipment." REACH Candidate List (SVHC) Contains the following substances from the list of candidate substances of REACH: Lead (EC 231-100-4, CAS 7439-92-1)

			Tetrabromobisphenol A (EC 201-236-9, CAS 79-94-7) only for FR (V0) models PIC Regulation (Prior Informed Consent) Substances subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals: lead dioxide (1309-60-0), lead sulphate (7446-14-2) POP Regulation (Persistent Organic Pollutants) Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants Ozone Regulation (1005/2009) Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer. Explosives Precursors Regulation (2019/1148) Contains substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors. ANNEX I RESTRICTED EXPLOSIVES PRECURSORS List of substances which shall not be made available to, or introduced, possessed or used by, members of the general public, whether on their own or in mixtures or substances that include those substances, unless the concentration is equal to or lower than the limit values set out in column 2, and for which suspicious transactions and significant disappearances and thefts are to be reported to the relevant national contact point within 24 hours.

SECTION 16: OTHER INFORMATION

	Components		
16 (a)	**Revision Information**	*Issue20 : 30/11/2023 Updated to Regulation (EU) 2020/878 14.1 Added shipping symbols	
16 (b)	**Abbreviations**	**Pb** – the chemical symbol for Lead **Ba** – the chemical symbol for Barium **Ca** – the chemical symbol for Calcium **Sn** – the chemical symbol for Tin **PbO_2** – the chemical formulae for Lead Dioxide **H_2SO_4** – the chemical formulae for Sulphuric Acid **VRLA** – **V**alve **R**egulated **L**ead-**A**cid battery	
16 (c)	**Key literature references and sources of data**	SDS documents from suppliers for components and raw materials	
16 (d)	**Full text of H phrases:**	H302	Harmful if swallowed
		H314	Causes severe skin burns and eye damage
		H315	Causes skin irritation
		H318	Causes serious eye damage
		H360D	May damage the unborn child
		H360Fd	May damage fertility. Suspected of damaging the unborn child
		H362	May cause harm to breast-fed children
		H372	Causes damage to organs through prolonged or repeated exposure
		H400	Very toxic to aquatic life
		H410	Very toxic to aquatic life with long lasting effects
16 (e)	**Training Advice**	• Only trained, competent personnel, who have received special instructions for the hazards and risks, should be allowed to handle VRLA Batteries. • See Section 7.1 for general advice	

16 (f)	**Further Information**	To ensure the safe use of VRLA Industrial Batteries supplied by GS **YUASA**, the following precautions must be observed: • Warning: Risk of fire, explosion, or burns. Do not disassemble, heat above 50°C, or incinerate. • Never short-circuit battery terminals, since sparks and arcs produced can injure personnel and are a fire and explosion hazard. • Batteries must always be charged on a voltage-regulated charging system with adequate ventilation provided to avoid the build-up of ignitable gases and to promote good heat dissipation. • Do not charge VRLA Batteries above + 50 ºC, discharge or store above + 60 ºC. • Under extreme conditions of charging equipment malfunction and/or battery failure, high voltage and high temperature conditions may occur causing the evolution of Hydrogen Sulphide (H_2S) gas, which is toxic. If detected by its odour of rotten eggs (at extremely low concentrations), switch off the charging equipment, evacuate all personnel from the area and ventilate well. Seek advice before attempting to re-start charging • **NEVER PLACE VRLA BATTERIES INSIDE SEALED OR GAS-TIGHT ENCLOSURES DURING OPERATION, TRANSPORT AND STORAGE** VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approximately 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product