



Product Name : RIDGID Rechargeable Lithium Ion Batteries, RB-18XX

SAFETY DATA SHEET

Section 1 – Product & Company Identification

Product Name: RIDGID Rechargeable Lithium-Ion Batteries, RB-18XX

Product Catalog No.: 56513 56518

Product Model No.: RB-1825 RB-1850

Number of Cells: 5 10

Product Specifications: Product Specifications and SDS information depends upon the type of cell used in the particular RB-18XX battery. Each RB-18XX battery is marked with the type of cell used in that particular battery. See Figure 1 for location of the cell type on the battery label. Use the chart to determine the appropriate Part of SDS based on the cell type.

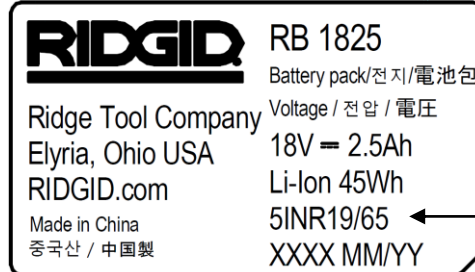


Figure 1: Battery Rating Label

Battery Designation	SDS	Page Numbers
ICR19/66	Part A	3-16
INR19/65	Part B	17-43

Recommended Use: RIDGID Tools Using RB-18XX Batteries

Restrictions on Use: Industrial use only



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Company Information:

<u>North America</u> Ridge Tool Company 400 Clark Street Elyria, Ohio 44035-6001 1-800-519-3456 (8:00 am – 5:00 pm EST, M-F) Emergency Telephone call 9-1-1 or local emergency number www.RIDGID.com	<u>Australia</u> Ridge Tool Australia 127 Metrolink Circuit Campbellfield, VIC 3061 1-800-743-443 (8:30 am – 5:00 pm AEST, M-F) Emergency Telephone call 000 or local emergency number www.RIDGID.com.au
<u>Europe</u> Ridge Tool NV Schurhovenveld 4820 3800 Sint-Truiden, Belgium +32 (0) 11 598 600 (8:00 am – 5:00 pm, M-F) Emergency Telephone call +32 (0) 11 598 600 or local emergency number www.RIDGID.eu	

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Product Name : RIDGID Rechargeable Lithium Ion Batteries, RB-18XX

Part A : Battery Designation : ICR19/66

Part A : SDS for batteries with Battery Designation : ICR19/66

Section 1A – Product Identification

Product Name:

RIDGID Rechargeable Lithium Ion Batteries, RB-18XX

Specifications:

Catalog Number	56513	56518
Model Number	RB-1825	RB-1850
Battery Designation	5 ICR19/66	10 ICR19/66
Cell Model	5 / LG ICR18650HE4	10 / LG ICR18650HE4
Rated Voltage	18 V d.c.	18 V d.c.
Nominal Voltage	18 V d.c.	18 V d.c.
Rated Capacity	2500 mAh	5000 mAh
Rated Energy	45 Wh	90 Wh

Section 2A – Hazards Identification

Emergency Overview	May explode in a fire, which could release hydrogen fluoride gas. Use extinguishing media suitable for materials burning in fire.
Primary routes of entry	Skin contact : NO Skin absorption: NO Eye contact : NO Inhalation : NO Ingestion : NO



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Symptoms of exposure	Skin contact No effect under routine handling and use. Skin absorption No effect under routine handling and use. Eye contact No effect under routine handling and use. Inhalation No effect under routine handling and use. Reported as carcinogen. Not applicable
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Section 3A – Composition / Information On Ingredients

Mixture			
	Hazardous Ingredients	%	CAS Number
	Aluminum Foil	2-10	7429-90-5
	Metal Oxide (proprietary)	20-50	-
	Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
	Copper Foil	2-10	7440-50-8
	Carbon (proprietary)	10-30	7440-44-0
	Electrolyte (proprietary)	10-20	-
	Stainless steel, Nickel and inert materials	Remainder	N/A

* For Catalog# 56513 –

Equivalent Lithium content: 1.95g, Electric Power Capacity: 45 Wh.

* For Catalog# 56518 –

Equivalent Lithium content: 3.9g, Electric Power Capacity: 90 Wh.



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Section 4A – First Aid Measures

General information

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.

Undamaged, closed cells do not represent a danger to the health.

After inhalation	Ensure of fresh air. Consult a physician.
After contact with skin	In case of contact with skin wash off immediately with plenty of water. Consult a physician.
After contact with eyes	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.
After ingestion	Drink plenty of water. Call a physician immediately.

Section 5A – Fire Fighting Measures

5A.1 Extinguishing media	<ul style="list-style-type: none">– When the scale of the fire is small, use a HFC (hydrofluorocarbon) clean-agent fire extinguisher or alcohol resistant foam fire extinguishers. (In case of battery overheating, wear protective gear and immerse heated battery in water)– In case of large fire, use large amount of water to extinguish.
5A.2 Special hazards arising from the substance or mixture	<ul style="list-style-type: none">– Flammable gas leaks before ignition and then the product ignites.
5A.3 Advice for firefighters	<ul style="list-style-type: none">– The ignited battery has a high temperature, so there is a risk of additional ignition even if the fire is extinguished at early stage. Sprinkle a large amount of water until the battery temperature drops to normal temperature.– If the battery is ignited in multi-stacked condition, multi-stack should be disassembled and then extinguished so that heat is not transferred between



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	<p>batteries</p> <ul style="list-style-type: none">– In the event of a battery fire, cool it by spraying water directly on the battery.– When handling an overheated battery, wear heat-resistant protective equipment.
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Section 6A – Accidental Release Measures

6A.1 Personal precautions, protective equipment and emergency procedures	<p>For non-emergency personnel</p> <p>Protective equipment : Use personal protective equipment, see Section 8</p> <p>Emergency procedures :</p> <ul style="list-style-type: none">– In case of cell damage, possible release of dangerous substances and a flammable gas mixture.– Eliminate all ignition sources.– Please note that materials and conditions to avoid.– Battery may emit electrolyte if charging or discharging rates exceed manufacturer's recommendations or if pack has been breached.– Move battery to well ventilated area to prevent gas accumulation. <p>For emergency responders</p> <ul style="list-style-type: none">– Eliminate all ignition sources.– Please note that materials and conditions to avoid.– Move battery to well ventilated area to prevent gas accumulation.
6A.2 Environmental precautions	<ul style="list-style-type: none">– Avoid release to the environment.– Prevent entry into waterways, sewers, basements or confined areas.
6A.3 Methods and material for containment and	<p>For containment : Not available</p> <p>For cleaning up :</p>



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cleaning up	<ul style="list-style-type: none">– Cover with Dry earth, DRY sand or other non-combustible material and put on the plastic sheet to minimize spreading or contact with rain.– Move battery to well ventilated area to prevent gas accumulation.– Dispose in accordance with applicable local, state and federal regulations. Other information: Not available
6A.4 Reference to other sections	<ul style="list-style-type: none">– See also sections 8 and 13 of the Safety Data Sheet.

Section 7A – Handling And Storage

7A.1 Precautions for safe handling	<ul style="list-style-type: none">– In case of cell damage, possible release of dangerous substances and a flammable gas mixture.– The battery stores electrical energy and is capable of rapid energy discharge.– Battery cell contents are under pressure.– Handle battery carefully to avoid puncturing case or electrically shorting terminals.
7A.2 Conditions for safe storage, including any incompatibilities	Technical measures and storage conditions : Not available Packaging materials : Not available Requirements for storage rooms and vessels : <ul style="list-style-type: none">– Storage at room temperature (approx. 20°C) at approx. 40% of the nominal capacity– Keep in closed original container.
7A.3 Specific end use(s)	Recommendations : Not available Industrial sector specific solutions : Not available



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Section 8A – Exposure Controls / Personal Protection

8A.1 Control parameters

Occupational Exposure limits

8A.2 Exposure controls

8A.2.1 Appropriate engineering controls :

Substance/mixture related measures to prevent exposure during identified uses:

- Avoid charging batteries in areas where hydrogen gas accumulate.
- Use local exhaust ventilation to maintain concentrations of hydrogen below the Lower Explosive collect and transport flammable gases in ventilation systems.
- Insure proper ventilation is present and electrolyte mist and vapours.

Structural measures to prevent exposure:

- Avoid charging batteries in areas where hydrogen gas accumulate.
- Use local exhaust ventilation to maintain concentrations of hydrogen below the Lower Explosive collect and transport flammable gases in ventilation systems.
- Insure proper ventilation is present and electrolyte mist and vapours.

Organisational measures to prevent exposure: Not available

Technical measures to prevent exposure:

- Insure proper ventilation is present and electrolyte mist and vapours.

8A.2.2 Individual protection measures, such as personal protective equipment :

Eye and face protection

- Wear ANSI approved safety glasses with side shield during normal use.
- Wear NIOSH approved face shield with safety

	<p>glasses and H.V protection during intentional disassembly.</p> <p>Skin protection</p> <p>Hand protection</p> <ul style="list-style-type: none"> – Wear nitrile butyl rubber, neoprene, or PVC glove during battery component disassembly. – Discard contaminated work clothing after one work day. <p>Other skin protection</p> <ul style="list-style-type: none"> – Wear protective clothing during battery component disassembly. – Discard contaminated work clothing after one work day. <p>Respiratory protection :</p> <ul style="list-style-type: none"> – None required during normal use. – Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary. – In lack of oxygen(< 19.5%), wear the supplied-air respirator or self contained oxygen breathing apparatus. – In case exposed to particulate material, the respiratory protective equipments as follow are recommended; facepiece filtering respirator or air-purifying respirator, high-efficiency particulate air(HEPA) filter media or respirator equipped with powered fan, filter media of use (dust, mist, fume)
<p>8A.3 Environmental exposure controls</p>	<p>Substance/mixture related measures to prevent exposure: Not available</p> <p>Instruction measures to prevent exposure: Not available</p> <p>Organisational measures to prevent exposure: Not available</p> <p>Technical measures to prevent exposure: Not available</p>



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Section 9A – Physical And Chemical Properties

Information on basic physical and chemical properties	
Appearance	Description : Solid Color : Not available Odor : Odorless Odor threshold : Not available pH : Not available Melting point/freezing point : Not available Initial boiling point and boiling range : Not available Flash point : Not available Evaporation rate : Not available Flammability (solid, gas) : Not available Upper/lower flammability or explosive limits : Not available Vapor pressure : Not available Solubility (ies) : insoluble. Vapor density : Not available Relative density : Not available Partition coefficient: n-octanol/water : Not available Auto ignition temperature : Not available Decomposition temperature : Not available Viscosity : Not available Explosive properties : Not available Oxidizing properties : Not available Molecular weight : Not available
9A.2 Other information	Not available



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Section 10A – Stability And Reactivity

10A.1 Reactivity	<ul style="list-style-type: none">– Stable at ambient temperature.
10A.2 Chemical stability	<ul style="list-style-type: none">– There is no hazard when the measures for handling and storage are followed.– Stable under normal temperatures and pressures.
10A.3 Possibility of hazardous reactions	<ul style="list-style-type: none">– Will not occur under normal conditions.– In case of cell damage, possible release of dangerous substances and a flammable gas mixture.– Containers may explode when heated. - Fire may produce irritating and/or toxic gases. - Some liquids produce vapors that may cause dizziness or suffocation. - Inhalation of material may be harmful.
10A.4 Conditions to avoid	<ul style="list-style-type: none">– Keep away from heat/sparks/open flames/hot surfaces. No smoking.– Friction, heat, sparks or flames– Dusts or shavings from borings, turnings, cuttings, etc.– Do not exceed manufacturer's recommendation for charging or use battery for an application for which it was not specifically designed.– Do not electrically short.
10A.5 Incompatible materials	<ul style="list-style-type: none">– Avoid contact with acids and oxidizers.– Keep away from any possible contact with water, because of violent reaction and possible flash fire.– Handle under inert gas. Protect from moisture.– Combustibles, reducing agents
10A.6 Hazardous decomposition products	<ul style="list-style-type: none">– None under normal conditions.– Corrosive and/or toxic fume– Material may produce irritating and highly toxic gases from decomposition by heat and combustion during burning.



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	– Irritating and/or toxic gases
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Section 11A – Toxicological Information

This is a product that fulfills a certain function in solid state with specific shape without discharging any chemical substance in its use and has no obligation to write (M)SDS. Since this document contains the precautions for safe handling related to its materials or chemical substances consisting of this product, please note that these overall information is irrelevant to this product.

11A.1 Sensitization	No
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11A.2 Teratogenicity	No
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11A.3 Reproductive toxicity	No
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11A.4 Acute toxicity	No
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If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

Section 12A – Ecological Information

This is a product that fulfills a certain function in solid state with specific shape without discharging any chemical substance in its use and has no obligation to write (M)SDS. Since this document contains the precautions for safe handling related to its materials or chemical substances consisting of this product, please note that these overall information is irrelevant to this product.

12A.1 Results of PBT and vPvB assessment :	Not available
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12A.2 Other adverse effects:	Not available
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Section 13A – Disposal Consideration

Waste treatment methods	
Product/Packaging disposal	Consider the required attentions in accordance with waste treatment management regulation.
Waste codes / Waste designation according to LoW (2015)	16-06-05
Waste treatment relevant information	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Sewage disposal relevant information	Not available
Other disposal recommendations	Not available

Section 14A – Transportation Information

<p>Only Lithium battery during transport:</p> <p>The product has passed the test items of UN Model Regulations, Manual of test and Criteria Section 38.3 and UN Model Regulations, SP188, 1.2m drop test. The total net weight of the Lithium batteries is less than 10 kg.</p>	
IATA DGR (62 nd Edition):	<p>Proper Shipping Name: Lithium Ion batteries</p> <p>UN Number: UN3480</p> <p>Hazard Class:9</p> <p>The product shall meet the General Requirements and Section IB of Packaging Instruction 965.</p> <p>According to 3.9.2.6.1(g) of IATA DGR(61thEdition), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.</p>



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IMO IMDG Code: (2018 Edition)	<p>The product is not restricted to the other provisions of IMO IMDG Code according to special provision 188.</p> <p>According to 2.9.4.7 of IMDG Code(2018 Edition), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.</p>
<p>Lithium battery contained in the equipment during transport:</p> <p>The product has passed the test items of UN Model Regulations, Manual of test and Criteria Section 38.3.The total net weight of the lithium batteries is less than 5kg.</p>	
IATA DGR (62 nd Edition):	<p>The product shall meet the General Requirements and Section II of Packaging Instruction 967.</p> <p>According to 3.9.2.6.1(g) of IATA DGR(62nd Edition), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.</p>
IMO IMDG Code: (2018 Edition)	<p>The product is not restricted to the other provisions of IMO IMDG Code according to special provision 188.</p> <p>According to 2.9.4.7 of IMDG Code(2018 Edition), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.</p>



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Section 15A – Regulatory Information

Safety, health and environmental regulation/legislation specific for the substance or mixture

EU regulations	Authorisations and/or restrictions on use: Authorisations: Not regulated Restrictions on use: <ul style="list-style-type: none">– Nickel : Regulated Other EU regulations: EU SVHC list
Regulatory information EU	Labelling Hazardous components which must be listed on the label As an article the product does not need to be labelled in accordance with EC directives or respective national laws. EU regulatory information 1999/13/EC (VOC): 0%
Foreign Regulatory Information	External information : U.S.A management information (OSHA Regulation) : Not regulated U.S.A management information (CERCLA Regulation) : <ul style="list-style-type: none">– Copper : 5,000 lb– ethyl acetate : 5,000 lb– Nickel : 100 lb U.S.A management information (EPCRA 302 Regulation) : Not regulated U.S.A management information (EPCRA 304 Regulation) : Not regulated U.S.A management information (EPCRA 313



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	<p>Regulation) :</p> <ul style="list-style-type: none">– Copper : Regulated– Aluminium : Regulated– Nickel : Regulated– lithium carbonate : Regulated– Cobalt, Co : Regulated <p>Substance of Roterdame Protocol : Not regulated</p> <p>Substance of Stockholme Protocol :</p> <ul style="list-style-type: none">– lithium hexafluorophosphate(1-) : Regulated <p>Substance of Montreal Protocol : Not regulated</p>
15A.2 Chemical safety assessment :	<ul style="list-style-type: none">– No chemical safety assessment has been carried out for this product by the supplier.



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Section 16 – Other Information

Prepared by: Ridge Tool Company

Operating Standard. 6-424, Rev. E

Engineering Change. **ECN000737**

Issue Date: October 13, 2021

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Product safety data sheet for prepared in accordance with Regulation (EU) 2015/830 (REACH), Annex II, and OSHA 29 CFR 1910.1200

Abbreviations and acronyms

ACGIH = American Conference of Government Industrial Hygienists

CLP = Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008

CAS No. = Chemical Abstracts Service number

DMEL = Derived Minimal Effect Levels

DNEL = Derived No Effect Level

EC Number = EINECS and ELINCS Number (see also EINECS and ELINCS)

EU = European Union

IARC = International Agency for Research on Cancer

ISHL = Industrial Safety & Health Law

NIOSH = National Institute for Occupational Safety & Health

NTP = National Toxicology Program

OSHA = European Agency for Safety and Health at work

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC(s) = Predicted No Effect Concentration(s)

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 453/2010

STP = Sewage Treatment Plant

SVHC = Substances of Very High Concern

vPvB = Very Persistent and Very Bioaccumulative

UN = United Nations

MARPOL = International Convention for the Prevention of Pollution from Ships (IMO)

IBC = Intermediate Bulk Container

CERCLA = Comprehensive Environmental Response, Compensation & Liability Act (US)

EPCRA = Emergency Planning and Community Right-to-

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	<p>Know Act (US)</p> <p>EINECS = European Inventory of Existing Commercial chemical Substances</p> <p>ELINCS = European List of Notified Chemical Substances</p>
Key literature reference and sources for data :	<p>U.S. National library of Medicine (NLM) Hazardous Substances Data Bank (HSDB)</p> <p>LookChem; http://www.lookchem.com/</p> <p>IUCLID: http://ecb.jrc.ec.europa.eu/IUCLID-DataSheets/7631905.pdf</p> <p>CHRIP(Cheical Risk Information Platform)</p> <p>EPISUITE v4.11; http://www.epa.gov/opt/exposure/pubs/episuitedi.html</p> <p>The Chemical Database -The Department of Chemistry at the University of Akron; http://ull.chemistry.uakron.edu/erd/</p> <p>ECOTOX: http://cfpub.epa.gov/ecotox/</p> <p>International Chemical Safety Cards (ICSC): http://www.nihs.go.jp/ICSC/</p> <p>National Chemical Information System (http://ncis.nier.go.kr)</p> <p>Korea Dangerous Material Inventory Management System (http://hazmat.nema.go.kr)</p> <p>REACH information on registered substances; https://echa.europa.eu/information-on-chemicals/registered-substances</p> <p>EU CLP; https://echa.europa.eu/information-on-chemicals/cl-inventorydatabase</p> <p>NIOSH Pocket Guide; http://www.cdc.gov/niosh/npg/npgdcas.html</p> <p>IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; http://monographs.iarc.fr</p> <p>National Toxicology Program; http://ntp.niehs.nih.gov/results/dbsearch/</p> <p>TOMES-LOLI®;</p>



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	http://www.rightanswerknowledge.com/loginRA.asp UN Recommendations on the transport of dangerous goods 17 th American Conference of Governmental Industrial Hygienists TLVs and BEIs.
Classification and procedure used to derive the classification for mixtures according to Regulation(EC) 1272/2008(CLP) :	Not classified
Relevant H-statements:	Not applicable
Training advice :	Do not handle until all safety precautions have been read and understood.
Further information :	Data of sections 4 to 8, as well as 10 to 12, do not necessarily refer to the use and the regular handling of the product (in this sense consult package leaflet and expert information), but to release of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations. "(n.a. = not applicable; n.d. = not determined)" The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.