SAFETY DATA SHEET

Section 1 – Product & Company Identification

Product Name:
RIDGID Rechargeable Lithium Ion Batteries, RB-1225R (United States)

Product Catalog No.: 55183

P/N Cells: 3 / INR18650-25++(3INR19/65)

Rated Voltage: 10.8 V d.c.

Rated Capacity: 2500 mAh

Rated Energy: 27 Wh

Type: Rechargeable

Recommended Use:
RIDGID Tools Using RB-1200 Series Batteries

Restrictions on Use:
Industrial use only

Company Information:

North America	Australia
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	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

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Section 2 – Hazards Identification

Route(s) of Entry	There is no hazard when the measures for handling and storage are followed.
Signs and Symptoms of Exposure	In case of cell damage, possible release of dangerous substances and a flammable gas mixture. OSHA Hazard Communication: This material is not considered hazardous by the OSHA Hazard Communication Standard 29CFR 1910.1200. Carcinogenicity (NTP): Not listed Carcinogenicity (IARC): Not listed Carcinogenicity (OSHA): Not listed
Special hazards for human health and environment	There is no hazard when the measures for handling and storage are followed. In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

Section 3 – Composition / Information On Ingredients

Hazardous components

CAS-No.	Chemical name	Quantity
1307-96-6	Cobalt oxide	< 30 %
1313-13-9	Manganese dioxide	< 30 %
1313-99-1	Nickel oxide	< 30 %
7440-44-0	Carbon	< 30 %
	Electrolyte (*)	< 20 %
24937-79-9	Polyvinylidene fluoride (PVdF)	< 10 %
7429-90-5	Aluminium foil	2 - 10 %
7440-50-8	Copper foil	2 - 10 %

	Aluminium and inert materials	5 - 10 %
Full text of each relevant R phrase can be found in section 16.		
Further Information	For information purposes: (*) Main ingredients: Lithium hexafluorophosphate, organic carbonates Because of the cell structure the dangerous ingredients will not be exposed if used properly. During charge process a lithium graphite intercalation phase is formed. Mercury content: Hg < 0.1mg/kg Cadmium content: Cd < 1mg/kg Lead content: Pb< 10mg/kg	

Section 4 – 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 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	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.
After ingestion	Drink plenty of water. Call a physician immediately.

Section 5 – Fire Fighting Measures

Suitable extinguishing media	Use dry chemical extinguishers.
Special hazards arising from the chemical	May form hydrofluoric acid if electrolyte comes into contact with water. In case of fire, the formation of the following flue gases cannot be excluded: Hydrogen fluoride (HF), Carbon monoxide and carbon dioxide.
Protective equipment and precautions for fire fighters	Wear self-contained breathing apparatus and protective suit.

Additional information

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent. Cell is not flammable but internal organic material will burn if the cell is incinerated.

Section 6 – Accidental Release Measures

Personal precautions	Use personal protective clothing. Avoid contact with skin, eyes and clothing. Avoid breathing fume and gas.
Environmental precautions	Do not discharge into the drains/surface waters/groundwater. Methods for cleaning up/taking up. Take up mechanically and send for disposal.

Section 7 – Handling And Storage

Handling Advice on safe handling	Avoid short circuiting the cell. Avoid mechanical damage of the cell. Do not open or disassemble. Advice on protection against fire and explosion. Keep away from open flames, hot surfaces and sources of ignition.
Storage Requirements for storage rooms and vessel	Storage at room temperature (approx. 20°C) at approx. 20~60% of the nominal capacity (OCV approx. 3.6 - 3.9 V/cell). Keep in closed original container.

Section 8 – Exposure Controls / Personal Protection

Ingredient	Risk Codes	Safety Description	Hazard	Exposure Controls/Personal Protection
Cobalt oxide	R22, R43, R50/53	S24, S37, S60, S61	Xn (Harmful) N (Dangerous for the environment)	0.1 mg/m^3 (TWA)
Manganese (VI) oxide	R20/22	S25	Xn (Harmful)	**Airborne Exposure Limits:** - OSHA Permissible Exposure Limit (PEL): 5 mg/m3 Ceiling for manganese compounds as Mn - ACGIH Threshold Limit Value (TLV): 0.2 mg/m3 (TWA) for manganese, elemental and inorganic compounds as Mn
Nickel oxide	R43, R49, R53	S45, S53, S61	T (Toxic)	**Airborne Exposure Limits:** For Nickel, Metal and Insoluble Compounds, as Ni:

				- OSHA Permissible Exposure Limits (PEL) - 1 mg/m3 (TWA). For Nickel, Elemental / Metal: - ACGIH Threshold Limit Value (TLV) - 1.5 mg/m3 (TWA), A5 - Not suspected as a human carcinogen. For Nickel, Insoluble Compounds, as Ni: - ACGIH Threshold Limit Value (TLV) - 0.2 mg/m3 (TWA), A1 - Confirmed human carcinogen
Carbon	R36/37/38, R36/37, R20, R10	S22, S24/25	F (Highly Flammable) Xn (Harmful) Xi (Irritant)	**Airborne Exposure Limits:** - OSHA Permissible Exposure Limits (PELs): activated carbon (graphite, synthetic): Total particulate = 15 mg/m3
Aluminium foil	R17, R15, R36/38, R10, R67, R65, R62, R51/53, R48/20, R38, R11	S7/8, S43, S26, S62, S61, S36/37, S33, S29, S16, S9	F (Highly Flammable) Xn (Harmful) Xi (Irritant)	**Airborne Exposure Limits:** -OSHA Permissible Exposure Limit (PEL): 15 mg/m3 (TWA) total dust and 5 mg/m3 (TWA) respirable fraction for Aluminum metal as Al -ACGIH Threshold Limit Value (TLV): 10 mg/m3 (TWA) Aluminum metal dusts
Copper foil	R11, R36, R37, R38	S5, S26, S16, S61, S36/37	F (Highly Flammable) N (Dangerous for the environment) Xn (Harmful) Xi (Irritant)	Copper Dust and Mists, as Cu: - OSHA Permissible Exposure Limit (PEL) - 1 mg/m3 (TWA) - ACGIH Threshold Limit Value (TLV) - 1 mg/m3 (TWA)

				Copper Fume: - OSHA Permissible Exposure Limit (PEL) - 0.1 mg/m3 (TWA) - ACGIH Threshold Limit Value (TLV) - 0.2 mg/m3 (TWA)
Polyvinylidene fluoride (PVdF)		S22, S24/25		
Additional advice on limit values	During normal charging and discharging there is no release of product.			
Occupational exposure controls	No specific precautions necessary.			
Protective and hygiene measures	When using do not eat, drink or smoke. Wash hands before breaks and after work.			
Respiratory protection	No specific precautions necessary.			
Hand protection	No specific precautions necessary.			
Eye protection	No specific precautions necessary.			
Skin protection	No specific precautions necessary.			

Section 9 – Physical And Chemical Properties

Information on basic physical and chemical properties	
Physical state	Solid
Form	Irregular
Colour	Various
Odour	Odourless
Voltage	10.8V d.c.

Capacitance	2500 mAh
Important health, safety and environmental information	
Test method	
pH value	N/A
Flash point	N/A
Lower explosion limits	N/A
Vapour pressure	N/A
Density	N/A
Water solubility	Insoluble
Auto-ignition temperature	N/A

Section 10 – Stability And Reactivity

Stability	Stable
Conditions to avoid	Keep away from open flames, hot surfaces and sources of ignition. Do not puncture, crush or incinerate.
Materials to avoid	None.
Hazardous decomposition products	In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide release.
Possibility of hazardous reactions	Will not occur
Additional information	Will not decompose if stored, handled and used as directed.

Section 11 – Toxicological Information

Empirical data on effects on humans	Upon normal use there will be no leaking and, hence, there will be no contact with toxic ingredients of the battery.

Section 12 – Ecological Information

Further information	Ecological injuries are not known or expected under normal use. Do not flush into surface water or sanitary sewer system.

Section 13 – Disposal Consideration

Advice on disposal	The battery is hazardous waste. It is not allowed to dispose it with common waste. If the battery is unusable, dispose it according to the applicable recycling regulations.
Contaminated packaging	Disposal in accordance with local regulations.
13.1 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 14 – Transportation Information

※If those lithium-ion batteries are packed with or contained in an equipment, then it is the responsibility of the shipper to ensure that the consignment are packed in compliance to the latest edition of the IATA Dangerous Goods Regulations section II of either Packing Instruction 966 or 967 in order for that consignment to be declared as NOT RESTRICTED (non- hazardous/non-Dangerous). If those lithium-ion batteries are packed with or contained in an equipment, UN No. is UN3481

14.1 UN Number : 3480

14.2 UN Proper shipping name : LITHIUM ION BATTERIES

14.3 Transport Hazard class : 9

14.4 Packing group : II

14.5 Special provisions : 188

14.6 Packing instructions : PI 965-IB

14.7 Environmental hazards : No

14.8 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not Available

14.9 IATA Transport : PI 965-Section IB

14.10 Package labels

Test results of the UN Recommendation on the Transport of Dangerous Goods			
Manual of Test and Criteria (38.3 Lithium battery)		**Test results**	**Remark**
No	Test item		
T1	Altitude Simulation	Pass	
T2	Thermal Test	Pass	
T3	Vibration	Pass	
T4	Shock	Pass	
T5	External Short Circuit	Pass	
T6	Impact	Pass	
T7	Overcharge	Pass	For pack and single cell battery only
T8	Forced Discharge	Pass	

Section 15 – Regulatory Information

U.S. Regulations	**National Inventory TSCA** All of the components are listed on the TSCA inventory. **SARA** To the best of our knowledge this product contains no toxic chemicals subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Reauthorization Act (SARA/EPCRA) and the requirements of 40 CFR Part 372. **Labelling** **Hazardous components which must be listed on the label** As an article the product does not need to be labeled in accordance with CFR including California Proposition 65 or respective national laws.
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% 1907/2006 (REACH): <0.1%
Product safety data sheet for batteries prepared in accordance with Regulation (EU) 2015/830 (REACH), Annex II, and OSHA 29 CFR 1910.1200	

Section 16 – Other Information

Prepared by:..... Ridge Tool Company

OPSTD 6-425

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EC Number 45089

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Last Revision Date: ..... NA

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Hazardous Materials Information Label (HMIS)	Health: 0 Flammability: 0 Physical Hazard: 0
NFPA Hazard Ratings	Health: 0 Flammability: 0 Reactivity: 0 Unique Hazard: 0
Full text of R-phrases referred to under sections 3 and 8	R10 Flammable. R20/22 Harmful by inhalation and if swallowed. R22 Harmful if swallowed. R34 Causes burns. R40 Limited evidence of a carcinogenic effect. R43 May cause sensitization by skin contact. R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation. R49 May cause cancer by inhalation. R50 Very toxic to aquatic organisms. R53 May cause long-term adverse effects in the aquatic environment.
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, 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.