Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the New Zealand, Hazardous Substances (Safety Data Sheets) Notice 2017.

SECTION 1: Identification

1.1. Product identifier
PAPR with TR-332 High Capacity Battery

Product Identification Numbers
AT-0194-9474-2 UU-0063-8628-6 XA-0100-3777-9

1.2. Recommended use and restrictions on use

Recommended use
Battery for PAPR

For Industrial or Professional use only

1.3. Supplier's details
Address: 3M New Zealand Ltd, 94 Apollo Drive, Rosedale 0632, Auckland
Telephone: (09) 477 4040
E Mail: innovation@nz.mmm.com
Website: 3m.co.nz

1.4. Emergency telephone number
24 hr Medical Emergency, National Poisons Centre, 0800 764 766 (0800 POISON)

SECTION 2: Hazard identification

Not classified as hazardous in accordance with the relevant criteria of the HSNO Act 1996 and the Hazardous Substances (Hazard Classification) Notice 2020. This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.
Refer to Section 14 of this Safety Data Sheet for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Not classified as hazardous.

2.2. Label elements
SIGNAL WORD
Not applicable.

Symbols:
Not applicable.

PRECAUTIONARY STATEMENTS

Prevention
P280E Wear protective gloves.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	% by Weight
Acrylonitrile-Butadiene -Styrene Copolymers	None	45 - 65
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	30 - 40
Diethyl Carbonate	105-58-8	1 - 5
Dimethyl Carbonate	616-38-6	1 - 5
Ethylene Carbonate	96-49-1	1 - 5
Lithium Hexafluorophosphate	21324-40-3	1 - 5
Propylene Carbonate	108-32-7	0.1 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
No need for first aid is anticipated. If symptoms develop, remove the affected person to fresh air. Get medical attention.

Skin contact
If exposed, wash with soap and water. If signs/symptoms develop, get medical attention.

Eye contact
If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.

If swallowed
Do not induce vomiting. Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
No critical symptoms or effects. See Section 11.1, information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a carbon dioxide extinguisher to extinguish. Battery may burn without external flame when damaged.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.

Toxic vapour, gas, particulate.	During combustion.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

5.4. Hazchem code: Not applicable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Not applicable.

6.2. Environmental precautions
Not applicable.

6.3. Methods and material for containment and cleaning up
Not applicable.

SECTION 7: Handling and storage

Refer to Section 15 - Controls for more information

7.1. Precautions for safe handling
This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising agents.

7.3. Certified handler

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

8.2. Exposure controls

8.2.1. Engineering controls
Not applicable.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Eye protection not required.

Skin/hand protection
No chemical protective gloves are required.

Respiratory protection

Respiratory protection is not required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Battery
Colour	Black
Odour	Odourless
Odour threshold	*Not applicable.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	No flash point
Evaporation rate	*Not applicable.*
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*Not applicable.*
Vapor Density and/or Relative Vapor Density	*Not applicable.*
Density	*No data available.*
Relative density	*No data available.*
Water solubility	*Not applicable.*
Solubility- non-water	*Not applicable.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*Not applicable.*
Viscosity/Kinematic Viscosity	*Not applicable.*
Volatile organic compounds (VOC)	*Not applicable.*
Percent volatile	*Not applicable.*
VOC less H2O & exempt solvents	*Not applicable.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable. Stable to 130 ºC

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat.

10.5 Incompatible materials
Strong oxidising agents.
Reducing agents.
Strong acids.
Strong bases.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to Section 5.2 for hazardous decomposition products during combustion.

Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
No health effects are expected.

Skin contact
No health effects are expected.

Eye contact
No health effects are expected.

Ingestion
No health effects are expected.

Additional information:
This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Diethyl Carbonate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Diethyl Carbonate	Inhalation-Vapor (4 hours)	Rat	LC50 > 25.8 mg/l
Diethyl Carbonate	Ingestion	Rat	LD50 > 4,876 mg/kg
Dimethyl Carbonate	Dermal		estimated to be > 5,000 mg/kg

Dimethyl Carbonate	Inhalation-Dust/Mist		estimated to be > 12.5 mg/l
Dimethyl Carbonate	Inhalation-Vapor		estimated to be > 50 mg/l
Dimethyl Carbonate	Ingestion		estimated to be > 5,000 mg/kg
Propylene Carbonate	Dermal	Rabbit	LD50 > 3,000 mg/kg
Propylene Carbonate	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Diethyl Carbonate	Rabbit	No significant irritation
Propylene Carbonate	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Diethyl Carbonate	Rabbit	No significant irritation
Propylene Carbonate	Rabbit	Severe irritant

Sensitisation:

Skin Sensitisation

Name	Species	Value
Diethyl Carbonate	Mouse	Not classified

Respiratory Sensitisation

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Diethyl Carbonate	In vivo	Not mutagenic
Diethyl Carbonate	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Diethyl Carbonate	Ingestion	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Diethyl Carbonate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Diethyl Carbonate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	40 days
Diethyl Carbonate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure
For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Diethyl Carbonate	Inhalation	heart | endocrine system | hematopoietic system | liver | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 19 mg/l	28 days
Diethyl Carbonate	Ingestion	endocrine system | hematopoietic system | eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	Fathead minnow	Analogous Compound	34 days	LC10	0.59 mg/l
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	Green algae	Analogous Compound	72 hours	ErC10	0.11 mg/l
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	Water flea	Analogous Compound	7 days	EC10	0.013 mg/l
Diethyl Carbonate	105-58-8	Activated sludge	Experimental	30 minutes	EC50	>10,000 mg/l
Diethyl Carbonate	105-58-8	Green algae	Experimental	72 hours	EC50	>100 mg/l
Diethyl Carbonate	105-58-8	Water flea	Experimental	48 hours	EC50	>100 mg/l
Diethyl Carbonate	105-58-8	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Diethyl Carbonate	105-58-8	Green algae	Experimental	72 hours	NOEC	100 mg/l
Dimethyl	616-38-6	Activated	Experimental	3 hours	EC50	>1,000 mg/l

Carbonate		sludge				
Dimethyl Carbonate	616-38-6	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Dimethyl Carbonate	616-38-6	Water flea	Experimental	48 hours	EC50	>100 mg/l
Dimethyl Carbonate	616-38-6	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Dimethyl Carbonate	616-38-6	Green algae	Experimental	72 hours	NOEC	100 mg/l
Dimethyl Carbonate	616-38-6	Water flea	Experimental	21 days	NOEC	25 mg/l
Ethylene Carbonate	96-49-1	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l
Ethylene Carbonate	96-49-1	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Ethylene Carbonate	96-49-1	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
Ethylene Carbonate	96-49-1	Water flea	Experimental	48 hours	LC50	5,900 mg/l
Ethylene Carbonate	96-49-1	Green algae	Experimental	72 hours	NOEC	100 mg/l
Lithium Hexafluorophosphate	21324-40-3	Rainbow trout	Estimated	96 hours	LC50	68 mg/l
Lithium Hexafluorophosphate	21324-40-3	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Lithium Hexafluorophosphate	21324-40-3	Green algae	Experimental	96 hours	EC50	>100 mg/l
Lithium Hexafluorophosphate	21324-40-3	Water flea	Experimental	48 hours	EC50	>100 mg/l
Lithium Hexafluorophosphate	21324-40-3	Fathead minnow	Estimated	22 days	NOEC	4.4 mg/l
Lithium Hexafluorophosphate	21324-40-3	Water flea	Estimated	21 days	NOEC	4.9 mg/l
Lithium Hexafluorophosphate	21324-40-3	Green algae	Experimental	96 hours	NOEC	22 mg/l
Propylene Carbonate	108-32-7	Activated sludge	Experimental	30 minutes	EC10	>=800 mg/l
Propylene Carbonate	108-32-7	Bacteria	Experimental	17 hours	EC50	>10,000 mg/l
Propylene Carbonate	108-32-7	Common Carp	Experimental	96 hours	LC50	>1,000 mg/l
Propylene Carbonate	108-32-7	Green algae	Experimental	72 hours	EC50	>900 mg/l
Propylene Carbonate	108-32-7	Water flea	Experimental	48 hours	EC50	>1,000 mg/l
Propylene Carbonate	108-32-7	Green algae	Experimental	72 hours	EC10	900 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Diethyl Carbonate	105-58-8	Experimental Biodegradation	27 days	BOD	75 %BOD/ThOD	OECD 301F - Manometric respirometry
Dimethyl Carbonate	616-38-6	Experimental Biodegradation	28 days	BOD	86 %BOD/ThOD	OECD 301C - MITI test (I)
Ethylene Carbonate	96-49-1	Experimental Biodegradation	29 days	CO2 evolution	92.7 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Lithium Hexafluorophosphate	21324-40-3	Experimental Hydrolysis		Half-life (t 1/2)	<1 minutes (t 1/2)	
Propylene Carbonate	108-32-7	Experimental Biodegradation	28 days	BOD	82 %BOD/ThOD	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Cobalt Lithium Oxide (LiCOO2)	12190-79-3	Analogous Compound BCF - Fish	63 days	Bioaccumulation factor	190	
Diethyl Carbonate	105-58-8	Estimated Bioconcentration		Bioaccumulation factor	9.8	
Dimethyl Carbonate	616-38-6	Experimental Bioconcentration		Log Kow	0.354	OECD 107 log Kow shke flsk mtd
Ethylene Carbonate	96-49-1	Experimental Bioconcentration		Log Kow	0.11	EC A.8 Partition Coefficient
Lithium Hexafluorophosphate	21324-40-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Propylene Carbonate	108-32-7	Experimental Bioconcentration		Log Kow	-0.41	

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods
In accordance with the Hazardous Substances (Disposal) Notice 2017 and the relevant criteria of the HSNO Act 1996.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty and clean product containers may be disposed as non-hazardous waste. Consult your specific regulations and service providers to determine available options and requirements. Dispose of waste product in a permitted industrial waste facility. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

Packaging (that may or may not contain any residual substance) may be lawfully disposed of by householders or other consumers through public or commercial waste collection services.

SECTION 14: Transport Information

New Zealand Land Transport Rule: Dangerous Goods - Road/Rail Transport
UN No.: UN3481
Proper Shipping Name: LITHIUM ION BATTERIES PACKED WITH EQUIPMENT.
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: Not applicable.
Special Instructions: Not restricted, as per Special Provision 188, lithium ion batteries or cells packed with equipment.
Hazchem Code: Not applicable.
IERG: Not applicable.

International Air Transport Association (IATA) - Air Transport
UN No.: UN3481
Proper Shipping Name: LITHIUM ION BATTERIES PACKED WITH EQUIPMENT.
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: Not applicable.
Special Instructions: Lithium Ion Batteries in Compliance with Section II of PI 967. Cargo Aircraft only.

International Maritime Dangerous Goods Code (IMDG) - Marine Transport
UN No.: UN3481
Proper Shipping Name: LITHIUM ION BATTERIES PACKED WITH EQUIPMENT.
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: Not applicable.
Marine Pollutant:
Special Instructions: Not restricted, as per Special Provision 188, lithium ion batteries or cells packed with equipment.

SECTION 15: Regulatory information

HSNO Approval number	Not applicable
Group standard name	Not applicable
HSNO Hazard classification	Refer to Section 2: Hazard identification

NZ Inventory of Chemicals (NZIoC) Status
This product is an article as defined by HSNO regulations, and is exempt from NZIoC listing requirements.

Controls in accordance with The Health and Safety at Work Act 2015, Health and Safety at Work (Hazardous Substances) Regulations 2017 and the HSNO Act 1996, Hazardous Substances (Hazardous Property Controls) Notice 2017
Certified handler
Location Compliance Certificate
Hazardous atmosphere zone

Fire extinguishers
Emergency response plan
Secondary containment
Tracking
Warning signage

SECTION 16: Other information

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Initial issue.

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Key to abbreviations and acronyms
GHS refers to the Globally Harmonised System of Classification and Labelling of Chemicals, 7th revised edition of 2017
HSNO means Hazardous Substances and New Organisms Act 1996

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