



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier

TR-632 High-Capacity Battery

Product Identification Numbers

52-0000-5355-4

1.2. Recommended use and restrictions on use

Recommended use

Battery

For Industrial or Professional use only.

1.3. Supplier's details

Address: 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone: 136 136
E Mail: productinfo.au@mmm.com
Website: www.3m.com.au

1.4. Emergency telephone number

EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is NOT classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

This product is an article and is not regulated by the Model Work Health and Safety Regulations (2011) because, it is not classified as hazardous. When used as recommended or under ordinary conditions, it should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture

Not applicable.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

2.3. Other assigned/identified product hazards

None known.

2.4. Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
cobalt lithium oxide	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(1-)	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.

Skin contact

No need for first aid is anticipated.

Eye contact

No need for first aid is anticipated.

If swallowed

No need for first aid is anticipated.

4.2. Most important symptoms and effects, both acute and delayed

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

<u>Substance</u>	<u>Condition</u>
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.

Hazchem Code: 4W*

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

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.

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	<i>Not applicable.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	<i>Not applicable.</i>
Flash point	No flash point
Evaporation rate	<i>Not applicable.</i>
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Vapour pressure	<i>Not applicable.</i>
Vapour density	<i>Not applicable.</i>
Density	<i>No data available.</i>
Relative density	<i>No data available.</i>
Water solubility	<i>Not applicable.</i>
Solubility- non-water	<i>Not applicable.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	<i>Not applicable.</i>
Decomposition temperature	<i>Not applicable.</i>
Viscosity	<i>Not applicable.</i>
Volatile organic compounds (VOC)	<i>Not applicable.</i>
Percent volatile	<i>Not applicable.</i>
VOC less H2O & exempt solvents	<i>Not applicable.</i>

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 °C

10.3. Conditions to avoid

Heat.

10.4. Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.5 Incompatible materials

Strong oxidising agents.
 Reducing agents.
 Strong acids.
 Strong bases.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

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
Dimethyl Carbonate	Dermal		estimated to be > 5,000 mg/kg

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Dimethyl Carbonate	Inhalation-Dust/Mist		estimated to be > 12.5 mg/l
Dimethyl Carbonate	Inhalation-Vapour		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
Propylene Carbonate	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Propylene Carbonate	Rabbit	Severe irritant

Skin Sensitisation

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

Respiratory Sensitisation

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

Germ Cell Mutagenicity

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

Carcinogenicity

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

Reproductive Toxicity**Reproductive and/or Developmental Effects**

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

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

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

Aspiration Hazard

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

Exposure Levels

Refer Section 8.1 Control Parameters of this Safety Data Sheet.

Interactive Effects

Not determined.

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

Acute aquatic hazard:

Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
cobalt lithium oxide	12190-79-3		Data not available or insufficient for classification			
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 Carbonate	616-38-6	Green algae	Experimental	72 hours	EC50	>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	Crustacea other	Experimental	48 hours	LC50	5,900 mg/l
Ethylene Carbonate	96-49-1	Green Algae	Experimental	72 hours	EC50	>100 mg/l
Ethylene Carbonate	96-49-1	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
Ethylene Carbonate	96-49-1	Green Algae	Experimental	72 hours	NOEC	100 mg/l
lithium hexafluorophosphate(1-)	21324-40-3	Rainbow trout	Estimated	96 hours	LC50	68 mg/l
lithium hexafluorophosphate(1-)	21324-40-3	Green Algae	Experimental	96 hours	EC50	>100 mg/l
lithium hexafluorophosphate(1-)	21324-40-3	Water flea	Experimental	48 hours	EC50	>100 mg/l

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lithium hexafluorophosphate(1-)	21324-40-3	Fathead minnow	Estimated	22 days	NOEC	4.4 mg/l
lithium hexafluorophosphate(1-)	21324-40-3	Water flea	Estimated	21 days	NOEC	4.9 mg/l
lithium hexafluorophosphate(1-)	21324-40-3	Green Algae	Experimental	96 hours	NOEC	22 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	Effect Concentration 10%	>900 mg/l

12.2. Persistence and degradability

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

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
cobalt lithium oxide	12190-79-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Diethyl carbonate	105-58-8	Estimated Bioconcentration		Bioaccumulation factor	9.8	Estimated: Bioconcentration factor
Dimethyl Carbonate	616-38-6	Experimental Bioconcentration		Log Kow	0.354	Other methods
Ethylene Carbonate	96-49-1	Experimental Bioconcentration		Log Kow	0.11	Other methods

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lithium hexafluorophosphate(1-)	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	Other methods

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**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

SECTION 14: Transport Information**Australian Dangerous Goods Code (ADG) - Road/Rail Transport**

UN No.: UN3480

Proper shipping name: LITHIUM ION BATTERIES OR CELLS

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.

Hazchem Code: 4W

IERG: 26

International Air Transport Association (IATA) - Air Transport

UN No.: UN3480

Proper shipping name: LITHIUM ION BATTERIES OR CELLS

Class/Division: 9

Sub Risk: Not applicable.

Packing Group: Not applicable.

Special Instructions: Lithium ion batteries in compliance with Section II of PI 965, CAO, State of charge is 30% or less

International Maritime Dangerous Goods Code (IMDG)- Marine Transport

UN No.: UN3480

Proper shipping name: LITHIUM ION BATTERIES OR CELLS

Class/Division: 9

Sub Risk: Not applicable.

Packing Group: Not applicable.

Marine Pollutant: Not applicable.

Special Instructions: Not restricted, as per Special Provision 188, lithium ion batteries or cells.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory Status:

This product is defined as an article under the Industrial Chemicals (Notification and Assessment) Act 1989, as amended, and is exempt from inventory requirements under the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

Poison Schedule: This product is an article therefore the Standard for the Uniform Scheduling of Medicines and Poisons Schedule is not applicable.

SECTION 16: Other information

Revision information:

Initial issue.

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Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au