Safety Data Sheet

Document group:	33-5841-3	**Version number:**	2.00
Issue Date:	13/03/2022	**Supersedes date:**	25/09/2019

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

Precautionary statements

Prevention:
P280E Wear protective gloves.

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
Acrylonitrile-Butadiene -Styrene Copolymers	mixture	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.

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
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.

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	*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.*

Nanoparticles
This material does not contain nanoparticles.

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. 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

Substance	Condition
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
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 (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 Carbonate	616-38-6	Activated sludge	Experimental	3 hours	EC50	>1,000 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	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l

Ethylene Carbonate	96-49-1	Crustecea 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	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 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	96-49-1	Experimental	29 days	CO2 evolution	92.7 % weight	OECD 301B - Modified

Carbonate		Biodegradation				sturm or CO2
Lithium Hexafluorophosphate	21324-40-3	Experimental Hydrolysis		Half-life (t 1/2)	<1 minutes (t 1/2)	Non-standard method
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 (LiCOO2)	12190-79-3	Analogous Compound BCF - Fathead Minnow	63 days	Bioaccumulation factor	190	
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	Non-standard method
Ethylene Carbonate	96-49-1	Experimental Bioconcentration		Log Kow	0.11	Non-standard method
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	Non-standard method

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 (including lithium ion polymer batteries)
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 (including lithium ion polymer batteries)
Class/Division: 9
Sub Risk: Not applicable.
Packing Group: Not applicable.
Special Instructions: Forbidden by this mode of transport

International Maritime Dangerous Goods Code (IMDG)- Marine Transport
UN No.: UN3480
Proper shipping name: LITHIUM ION BATTERIES (including lithium ion polymer batteries)
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:
Complete document review.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Safety Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.
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