Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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SECTION 1: Identification

1.1. Product identifier
3M™ Abrasive Products, Cubitron™ 3 Roloc™ Fibre Discs 1187C

1.2. Recommended use and restrictions on use

Recommended use
Abrasive Product, For industrial/occupational use only. Not for consumer sale or use.

1.3. Supplier's details
Address: 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
This product is not classified as hazardous per GHS criteria as implemented by Singapore Standard SS586: 2022.

2.2. Label elements
SIGNAL WORD
Not applicable.

Symbols
Not applicable

Pictograms
Not applicable

2.3. Other hazards
None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Fibre Backing	Mixture	35 - 75
Cured resin	Mixture	1 - 25
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	5 - 20
Inoganic Fluoride 1	13775-53-6	5 - 15
Inorganic Fluoride 2	14075-53-7	1 - 15
Attachment Button	Mixture	< 10
Filler	1317-65-3	1 - 5
Titanium dioxide	13463-67-7	< 0.3

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

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

Eye contact
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, 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
Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products

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

5.3. Special protective actions for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

6.2. Environmental precautions
Avoid release to the environment.

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid inhalation of thermal decomposition products. For industrial/occupational use only. Not for consumer sale or use. Avoid breathing of dust created by sanding, grinding or machining. Damaged product can break apart during use and cause serious injury to face or eyes. Check product for damage such as cracks or nicks prior to use. Replace if damaged. Always wear eye and face protection when working at sanding or grinding operations or when near such operations. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Solids can generate static electricity charges when transferred and in mixing operations sufficient to be an ignition source. Evaluate the need for precautions, such as grounding and bonding, low energy transfer of material (e.g. low speed, short distance), or inert atmospheres.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Filler	1317-65-3	Singapore PELs	TWA(8 hours):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	1317-65-3	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	1317-65-3	ACGIH	TWA(respirable particles):3 mg/m3	
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Singapore PELs	TWA(8 hours):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	1344-28-1	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	1344-28-1	ACGIH	TWA(respirable particles):3 mg/m3	
Titanium dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale	A3: Confirmed animal

			particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3	carcin.
Titanium dioxide	13463-67-7	Singapore PELs	TWA(8 hours):10 mg/m3	
Aluminium, soluable salts	13775-53-6	Singapore PELs	TWA(as Al)(8 hours):2 mg/m3	
Fluorides	13775-53-6	ACGIH	TWA(as F):2.5 mg/m3	A4: Not class. as human carcin
Fluorides	13775-53-6	Singapore PELs	TWA(as F)(8 hours):2.5 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Provide appropriate local exhaust ventilation for sanding, grinding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

To minimise the risk of injury to face and eyes, always wear eye and face protection when working at sanding or grinding operations or when near such operations. Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.

Skin/hand protection
Wear appropriate gloves to minimise risk of injury to skin from contact with dust or physical abrasion from grinding or sanding.

Respiratory protection

Assess exposure concentrations of all materials involved in the work process. Consider material being abraded when determining the appropriate respiratory protection. Select and use appropriate respirators to prevent inhalation overexposure.
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use a positive pressure supplied-air respirator.
Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.

Color	Purple
Odor	Slight Resinous
Odour threshold	*Not applicable.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	*Not applicable.*
Evaporation rate	*Not applicable.*
Flammability	Not applicable.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*Not applicable.*
Relative Vapor Density	*Not applicable.*
Density	*Not applicable.*
Relative density	*Not applicable.*
Water solubility	*Not applicable.*
Solubility- non-water	*Not applicable.*
Partition coefficient: n-octanol/water	*Not applicable.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*Not applicable.*
Kinematic Viscosity	*Not applicable.*
Volatile organic compounds (VOC)	*Not applicable.*
Percent volatile	*Not applicable.*
VOC less H2O & exempt solvents	*Not applicable.*
Molecular weight	*Not applicable.*

Particle Characteristics	*Not applicable.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
None known.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

Substance	Condition
Hydrogen Fluoride	At elevated temperatures.

Refer to section 5.2 for hazardous decomposition products during combustion.

Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

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
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Dust from grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact
Mechanical skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Eye contact
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion. Dust created by grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion
No health effects are expected.

Additional information:
This document covers only the product. For complete assessment, when determining the degree of hazard, the material being abraded must also be considered. This product contains titanium dioxide. Cancer of the lungs has been observed in rats that inhaled high levels of titanium dioxide. No exposure to inhaled titanium dioxide is expected during the normal handling and use of this product. Titanium dioxide was not detected when air sampling was conducted during simulated use of similar products containing titanium dioxide. Therefore, the health effects associated with titanium dioxide are not expected during the normal use of this product.

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
Ceramic Aluminum Oxide Mineral (non-fibrous)	Dermal		LD50 estimated to be > 5,000 mg/kg
Ceramic Aluminum Oxide Mineral (non-fibrous)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Ceramic Aluminum Oxide Mineral (non-fibrous)	Ingestion	Rat	LD50 > 5,000 mg/kg
Inoganic Fluoride 1	Dermal	Rabbit	LD50 > 2,100 mg/kg
Inoganic Fluoride 1	Inhalation-Dust/Mist (4 hours)	Rat	LC50 4.5 mg/l
Inoganic Fluoride 1	Ingestion	Rat	LD50 > 5,000 mg/kg

Inorganic Fluoride 2	Dermal		LD50 estimated to be > 5,000 mg/kg
Inorganic Fluoride 2	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
Inorganic Fluoride 2	Ingestion	Rat	LD50 5,854 mg/kg
Filler	Dermal	Rat	LD50 > 2,000 mg/kg
Filler	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Filler	Ingestion	Rat	LD50 6,450 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Ceramic Aluminum Oxide Mineral (non-fibrous)	Rabbit	No significant irritation
Inoganic Fluoride 1	Multiple animal species	No significant irritation
Inorganic Fluoride 2	Rabbit	No significant irritation
Filler	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Ceramic Aluminum Oxide Mineral (non-fibrous)	Rabbit	No significant irritation
Inoganic Fluoride 1	Rabbit	Mild irritant
Inorganic Fluoride 2	Rabbit	No significant irritation
Filler	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
Titanium dioxide	Human and animal	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
Ceramic Aluminum Oxide Mineral (non-fibrous)	In Vitro	Not mutagenic
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Ceramic Aluminum Oxide Mineral (non-fibrous)	Inhalation	Rat	Not carcinogenic
Titanium dioxide	Ingestion	Multiple animal	Not carcinogenic

		species	
Titanium dioxide	Inhalation	Rat	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Filler	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Filler	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Ceramic Aluminum Oxide Mineral (non-fibrous)	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Ceramic Aluminum Oxide Mineral (non-fibrous)	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
Inoganic Fluoride 1	Inhalation	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.0005 mg/l	5 months
Inoganic Fluoride 1	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.00021 mg/l	90 days
Inoganic Fluoride 1	Ingestion	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.58 mg/kg/day	14 weeks
Filler	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure

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

Acute aquatic hazard:
GHS Acute 3: Harmful to aquatic life.

Chronic aquatic hazard:
GHS Chronic 3: Harmful to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	N/A	Experimental	96 hours	LC50	>100 mg/l
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Green algae	Experimental	72 hours	EC50	>100 mg/l
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Water flea	Experimental	48 hours	LC50	>100 mg/l
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Green algae	Experimental	72 hours	NOEC	>100 mg/l
Inoganic Fluoride 1	13775-53-6	Green algae	Experimental	72 hours	ErC50	8.8 mg/l
Inoganic Fluoride 1	13775-53-6	Water flea	Experimental	48 hours	EC50	156 mg/l
Inoganic Fluoride 1	13775-53-6	Zebra Fish	Experimental	96 hours	LC50	99 mg/l
Inoganic Fluoride 1	13775-53-6	Green algae	Experimental	72 hours	NOEC	1 mg/l
Inoganic Fluoride 1	13775-53-6	Activated sludge	Experimental	3 hours	EC50	>160 mg/l
Inoganic Fluoride 1	13775-53-6	Honeybee	Experimental	1 days	LD50	2,245 ug/bee
Inorganic Fluoride 2	14075-53-7	Bacteria	Experimental	18 hours	EC50	550 mg/l
Inorganic Fluoride 2	14075-53-7	Golden Orfe	Experimental	96 hours	LC50	760 mg/l
Inorganic Fluoride 2	14075-53-7	Green algae	Experimental	72 hours	EC50	>100 mg/l
Inorganic Fluoride 2	14075-53-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Inorganic Fluoride 2	14075-53-7	Water flea	Estimated	21 days	NOEC	188 mg/l
Inorganic Fluoride 2	14075-53-7	Green algae	Experimental	72 hours	NOEC	100 mg/l
Filler	1317-65-3	Green algae	Estimated	72 hours	EC50	>100 mg/l
Filler	1317-65-3	Rainbow trout	Estimated	96 hours	LC50	>100 mg/l
Filler	1317-65-3	Water flea	Estimated	48 hours	EC50	>100 mg/l
Filler	1317-65-3	Green algae	Estimated	72 hours	EC10	>100 mg/l
Titanium dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Data not available-insufficient	N/A	N/A	N/A	N/A
Inoganic Fluoride 1	13775-53-6	Data not available-insufficient	N/A	N/A	N/A	N/A
Inorganic Fluoride 2	14075-53-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Filler	1317-65-3	Data not available-	N/A	N/A	N/A	N/A

		insufficient				
Titanium dioxide	13463-67-7	Data not available-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Ceramic Aluminum Oxide Mineral (non-fibrous)	1344-28-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Inoganic Fluoride 1	13775-53-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Inorganic Fluoride 2	14075-53-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Filler	1317-65-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation factor	9.6	

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.

The substrate that was abraded must be considered as a factor in the disposal method for this product. Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Combustion products will include HF. Facility must be capable of handling halogenated materials.

SECTION 14: Transport Information

International Regulations

UN No.: None assigned
UN Proper shipping name: None assigned

Transportation Class (IMO): None assigned
Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: None assigned
Marine pollutant: None assigned

SECTION 15: Regulatory information

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

Global inventory status

Contact 3M for more information.

This product may contain component(s) that are regulated by the following:
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.
Environmental Protection and Management (Hazardous Substances) Regulations: This product is subject to the requirements in the Regulations

SECTION 16: Other information

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 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.

3M Singapore SDSs are available at www.3m.com.sg