



Safety Data Sheet

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| Document group: | 42-7499-9 | Version number: | 1.02 |
| Issue Date: | 2025/10/31 | Supersedes Date: | 2025/05/28 |

This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier

3M™ Abrasive Products, Cubitron™ 3 Cut-Off Wheels

1.2. Recommended use and restrictions on use

Intended Use

Abrasive Product

Specific Use

For industrial/occupational use only. Not for consumer sale or use.

Restrictions on use

Not applicable

1.3. Supplier's details

| | |
|-------------------|--|
| Company: | 3M Canada Company |
| Division: | Abrasive Systems Division |
| Address: | 1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1 |
| Telephone: | (800) 364-3577 |
| Website: | www.3M.ca |

1.4. Emergency telephone number

Medical Emergency Telephone: 1-800-3M HELPS / 1800 364 3577

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Not classified according to the Canadian Hazardous Products Regulation.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable

Pictograms

Not applicable

2.3. Other hazards

None known.

46% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | C.A.S. No. | % by Wt | Common Name |
|---|-------------------|----------------|--------------------------------------|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | 1344-28-1 | 40 - 70 | Aluminum oxide (non-fibrous) |
| Cured Resin | Mixture | 10 - 20 | Not Applicable |
| Inorganic Fluoride | 60304-36-1 | 10 - 20 | Aluminum potassium fluoride |
| Fiberglass Mesh Scrims | Mixture | 4 - 18 | Not Applicable |
| Filler | 13983-17-0 | 1 - 5 | Wollastonite (Ca(SiO ₃)) |
| Metal Reinforced Steel Bushing | Mixture | 0.5 - 5 | Not Applicable |
| Paper Label | Mixture | 0.1 - 2 | Not Applicable |
| Titanium Dioxide | 13463-67-7 | 0 - 0.43 | Titanium oxide (TiO ₂) |
| Aluminum Cobalt Oxide | 12672-27-4 | 0 - 0.2 | No Data Available |

Paper Label is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

Cured Resin is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

Fiberglass Mesh Scrims is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

Metal Reinforced Steel Bushing is a non-hazardous material according to WHMIS criteria. Specific information has been withheld as a trade secret.

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

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Unsuitable extinguishing media

None Determined

5.3. Special hazards arising from the substance or mixture

Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products

| <u>Substance</u> | <u>Condition</u> |
|-------------------|-------------------|
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |
| Hydrogen Fluoride | During Combustion |

5.4. Special protection 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

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. Observe precautions from other sections.

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

Do not breathe thermal decomposition products. Avoid breathing of dust created by cutting, sanding, grinding or machining. For industrial or professional use only. Not for consumer sale or use. 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. Combustible dust may form by action of this product on another material (substrate). Dust generated from the substrate during use of this product may be explosive if in sufficient concentration with an ignition source. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions.

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 | C.A.S. No. | Agency | Limit type | Additional Comments |
|---|------------|--------|--|---------------------|
| Aluminum metal and insoluble compounds, respirable fraction | 12672-27-4 | ACGIH | TWA(respirable fraction):1 mg/m ³ | |
| Aluminum metal and insoluble compounds, respirable fraction | 1344-28-1 | ACGIH | TWA(respirable fraction):1 mg/m ³ | |
| Titanium Dioxide | 13463-67-7 | ACGIH | TWA(Respirable nanoscale particles):0.2 mg/m ³ ;TWA(Respirable finescale particles):2.5 mg/m ³ | |
| Filler | 13983-17-0 | ACGIH | TWA(inhalable fraction):1 mg/m ³ | |
| Fluorides, as F | 60304-36-1 | ACGIH | TWA(as F):2.5 mg/m ³ | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

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. 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. Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

8.2.2. Personal protective equipment (PPE)

Eye/face protection

To minimize 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 minimize 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 |
| Colour | Black |
| Odour | Slight Resinous |
| Odour threshold | <i>Not Applicable</i> |
| pH | <i>Not Applicable</i> |
| Melting point/Freezing point | <i>Not Applicable</i> |
| Boiling point | <i>Not Applicable</i> |
| Flash Point | <i>Not Applicable</i> |
| Evaporation rate | <i>Not Applicable</i> |
| Flammability | Not Applicable |
| Flammable Limits(LEL) | <i>Not Applicable</i> |
| Flammable Limits(UEL) | <i>Not Applicable</i> |
| Vapour Pressure | <i>Not Applicable</i> |
| Relative Vapour Density | <i>Not Applicable</i> |
| Density | <i>Not Applicable</i> |
| Relative density | <i>Not Applicable</i> |
| Water solubility | <i>Not Applicable</i> |
| Solubility- non-water | <i>Not Applicable</i> |
| Partition coefficient: n-octanol/ water | <i>Not Applicable</i> |
| Autoignition temperature | <i>Not Applicable</i> |
| Decomposition temperature | <i>Not Applicable</i> |
| Kinematic Viscosity | <i>Not Applicable</i> |
| Volatile Organic Compounds | <i>No Data Available</i> |
| Percent volatile | <i>Not Applicable</i> |
| VOC Less H ₂ O & Exempt Solvents | <i>No Data Available</i> |
| Molecular weight | <i>No Data Available</i> |

| | |
|--------------------------|-----------------------|
| Particle Characteristics | <i>Not Applicable</i> |
|--------------------------|-----------------------|

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 polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products**Substance****Condition**

None known.

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 labeling, 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:

Dust from cutting, 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 cutting, 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.

Carcinogenicity:

| <u>Ingredient</u> | <u>CAS No.</u> | <u>Class Description</u> | <u>Regulation</u> |
|--|-----------------------|---------------------------------|---|
| Cobalt and cobalt compounds that release cobalt ions in vivo | 12672-27-4 | Anticipated human carcinogen | National Toxicology Program Carcinogens |
| Titanium dioxide | 13463-67-7 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |

Additional Information:

This document covers only the 3M 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 / Aluminum Oxide Mineral Blend (non-fibrous) | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.3 mg/l |
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Inorganic Fluoride | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| Inorganic Fluoride | Inhalation-Dust/Mist (4 hours) | Rat | LC50 1.2 mg/l |
| Inorganic Fluoride | Ingestion | Rat | LD50 2,150 mg/kg |
| Filler | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Filler | Dermal | similar compounds | LD50 > 5,000 mg/kg |
| Filler | Inhalation-Dust/Mist (4 hours) | similar compounds | LC50 > 2.08 mg/l |
| 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 |
| Aluminum Cobalt Oxide | Dermal | Professional judgement | LD50 estimated to be > 5,000 mg/kg |
| Aluminum Cobalt Oxide | Ingestion | Rat | LD50 > 2,000 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---|-------------------|---------------------------|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | Rabbit | No significant irritation |
| Inorganic Fluoride | Rabbit | No significant irritation |
| Filler | similar compounds | No significant irritation |
| Titanium Dioxide | Rabbit | No significant irritation |
| Aluminum Cobalt Oxide | In vitro data | No significant irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|-------------------|---------------------------|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | Rabbit | No significant irritation |
| Inorganic Fluoride | Rabbit | Corrosive |
| Filler | similar compounds | Mild irritant |
| Titanium Dioxide | Rabbit | No significant irritation |
| Aluminum Cobalt Oxide | In vitro data | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|-----------------------|-------------------|----------------|
| Filler | Human | Not classified |
| Titanium Dioxide | Human and animal | Not classified |
| Aluminum Cobalt Oxide | similar compounds | Sensitizing |

Respiratory Sensitization

| Name | Species | Value |
|-----------------------|-------------------|-------------|
| Aluminum Cobalt Oxide | similar compounds | Sensitizing |

Germ Cell Mutagenicity

| Name | Route | Value |
|---|----------|--|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | In Vitro | Not mutagenic |
| Filler | In Vitro | Not mutagenic |
| Filler | In vivo | Not mutagenic |
| Titanium Dioxide | In Vitro | Not mutagenic |
| Titanium Dioxide | In vivo | Not mutagenic |
| Aluminum Cobalt Oxide | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Aluminum Cobalt Oxide | In vivo | Mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|---|------------|-------------------------|------------------|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (non-fibrous) | Inhalation | Rat | Not carcinogenic |
| Titanium Dioxide | Ingestion | Multiple animal species | Not carcinogenic |
| Titanium Dioxide | Inhalation | Rat | Carcinogenic |
| Aluminum Cobalt Oxide | Inhalation | similar compounds | Carcinogenic |

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

| Name | Route | Value | Species | Test result | Exposure Duration |
|-----------------------|------------|--------------------------------|-------------------------|-----------------------|----------------------|
| Inorganic Fluoride | Ingestion | Not classified for development | Mouse | NOAEL 100 mg/kg/day | during organogenesis |
| Filler | Ingestion | Not classified for development | Multiple animal species | NOAEL 1,600 mg/kg/day | during organogenesis |
| Aluminum Cobalt Oxide | Ingestion | Toxic to development | similar compounds | NOAEL 5 mg/kg/day | during gestation |
| Aluminum Cobalt Oxide | Ingestion | Toxic to male reproduction | similar compounds | NOAEL Not available | |
| Aluminum Cobalt Oxide | Inhalation | Toxic to male reproduction | similar compounds | NOAEL Not available | |

Lactation

| Name | Route | Species | Value |
|--------------------|-----------|---------|--|
| Inorganic Fluoride | Ingestion | Rat | Not classified for effects on or via lactation |

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 |
|---|------------|--|--|-------------------|-----------------------|-----------------------|
| Ceramic Aluminum Oxide / Aluminum Oxide Mineral Blend (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 / Aluminum Oxide Mineral Blend (non-fibrous) | Inhalation | pulmonary fibrosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Inorganic Fluoride | Inhalation | respiratory system | Causes damage to organs through prolonged or repeated exposure | Rat | LOAEL 0.003 mg/l | 28 days |
| Filler | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| Filler | Inhalation | pulmonary fibrosis | Not classified | Human and animal | NOAEL Not available | |
| Filler | Ingestion | liver kidney and/or bladder hematopoietic system | Not classified | Rat | NOAEL 2,500 mg/kg/day | 2 years |
| 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 |
| Aluminum Cobalt Oxide | Inhalation | respiratory system | Causes damage to organs through prolonged or repeated exposure | similar compounds | NOAEL Not available | 13 weeks |

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

No data available.

SECTION 13: Disposal considerations**13.1. Disposal methods**

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

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. 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. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for Canadian ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

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.

SECTION 16: Other information

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Health: 3 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. The manufacturer MAKES NO WARRANTIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF PERFORMANCE, COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. User is responsible for determining whether the product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M Canada SDSs are available at www.3M.ca