



Safety Data Sheet

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Document Group: 39-2545-0
Issue Date: 02/27/23

Version Number: 3.00
Supersedes Date: 04/20/21

SECTION 1: Identification

1.1. Product identifier

3M™ Cool Roofing Granules, Dark Gray - 7281C, 7281CB (Corona, CA)

Product Identification Numbers

98-0701-4430-2, 98-0701-4431-0
7100168876, 7100166653

1.2. Recommended use and restrictions on use

Recommended use

Industrial use

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Mineral Products
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Carcinogenicity: Category 1A.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Health Hazard |

Pictograms

**Hazard Statements**

May cause cancer.

Causes damage to organs through prolonged or repeated exposure:
respiratory system |

Precautionary Statements**Prevention:**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.

Response:

IF exposed or concerned: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

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

23% of the mixture consists of ingredients of unknown acute oral toxicity.

23% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|--|-------------------|------------------------|
| Feldspar-Group Minerals | 68476-25-5 | 35 - 70 Trade Secret * |
| Quartz Silica | 14808-60-7 | 20 - 40 Trade Secret * |
| Illite | 12173-60-3 | < 15 Trade Secret * |
| Mica-Group Minerals | 12001-26-2 | < 15 Trade Secret * |
| Ceramic | 66402-68-4 | 3 - 7 Trade Secret * |
| Amphibole-Group Minerals (Non-Asbestiform) | 1318-09-8 | < 5 Trade Secret * |
| Chlorite (Mineral) | 1318-59-8 | < 5 Trade Secret * |
| Ilmenite | 12168-52-4 | < 5 Trade Secret * |
| Magnetite | 1309-38-2 | < 5 Trade Secret * |
| Titanium Dioxide | 13463-67-7 | 1 - 5 Trade Secret * |
| Chromium-Containing Pigments | Trade Secret* | 0.1 - 1 Trade Secret * |
| C.I. Pigment Brown 24 | 68186-90-3 | < 0.1 Trade Secret * |
| C.I. Pigment Brown 29 | 12737-27-8 | < 0.1 Trade Secret * |

*The specific chemical identity and/or exact percentage (concentration) of this composition 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:

Rinse mouth. If you feel unwell, get medical attention.

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

Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not breathe dust/fume/gas/mist/vapors/spray. Granules are not respirable. Dust generated during handling may contain respirable material. 3M does not recommend material handling methods that could damage the coating or base mineral. In

particular, roofing granules should not be conveyed pneumatically, via screw conveyors, or used as a sand blasting media. These uses can cause coating and base mineral attrition which may lead to increased levels of dust generation. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Use personal protective equipment (gloves, respirators, etc.) as required. 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. Do not handle until all safety precautions have been read and understood.

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 |
|-----------------------------|------------|--------|---|---|
| Mica-Group Minerals | 12001-26-2 | ACGIH | TWA(respirable fraction):0.1 mg/m3 | |
| Mica-Group Minerals | 12001-26-2 | OSHA | TWA:20 millions of particles/cu. ft. | |
| CHROMIUM (II) COMPOUNDS | 12737-27-8 | OSHA | TWA(as Cr):0.5 mg/m3 | |
| CHROMIUM (III) COMPOUNDS | 12737-27-8 | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 mg/m3 | A4: Not class. as human carcin |
| CHROMIUM (III) COMPOUNDS | 12737-27-8 | OSHA | TWA(as Cr):0.5 mg/m3 | |
| Chromium(3+), soluble salts | 12737-27-8 | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3 | A4: Not class. as human carcin, Dermal/Respiratory Sensitizer |
| Chromium, insoluble salts | 12737-27-8 | OSHA | TWA(as Cr):1 mg/m3 | |
| Titanium Dioxide | 13463-67-7 | ACGIH | TWA(Respirable nanoscale particles):0.2 mg/m3;TWA(Respirable finescale particles):2.5 mg/m3 | A3: Confirmed animal carcin. |
| Titanium Dioxide | 13463-67-7 | OSHA | TWA(as total dust):15 mg/m3 | |
| Quartz Silica | 14808-60-7 | ACGIH | TWA(respirable fraction):0.025 mg/m3 | A2: Suspected human carcin. |
| Quartz Silica | 14808-60-7 | OSHA | TWA Table Z-1(respirable):0.05 mg/m3;TWA Table Z-3(respirable):0.1 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.) | |
| ANTIMONY COMPOUNDS | 68186-90-3 | ACGIH | TWA(as Sb):0.5 mg/m3 | |
| ANTIMONY COMPOUNDS | 68186-90-3 | OSHA | TWA(as Sb):0.5 mg/m3 | |
| CHROMIUM (III) COMPOUNDS | 68186-90-3 | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 | A4: Not class. as human carcin |

| | | | mg/m3 | |
|------------------------------|--------------|-------|--|---|
| CHROMIUM (III) COMPOUNDS | 68186-90-3 | OSHA | TWA(as Cr):0.5 mg/m3 | |
| Chromium(3+), soluble salts | 68186-90-3 | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3 | A4: Not class. as human carcin, Dermal/Respiratory Sensitizer |
| Chromium, insoluble salts | 68186-90-3 | OSHA | TWA(as Cr):1 mg/m3 | |
| Chromium-Containing Pigments | Trade Secret | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3 | A4: Not class. as human carcin, Dermal/Respiratory Sensitizer |
| Chromium-Containing Pigments | Trade Secret | ACGIH | TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 mg/m3 | A4: Not class. as human carcin |
| Chromium-Containing Pigments | Trade Secret | OSHA | TWA(as Cr):0.5 mg/m3 | |
| Chromium-Containing Pigments | Trade Secret | OSHA | TWA(as Cr):1 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Provide local exhaust ventilation at transfer points. 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/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended: Polymer laminate

When only incidental contact is anticipated, alternative glove material(s) may be used. If contact with the glove does occur, remove immediately and replace with a set of new gloves. For incidental contact, gloves made of the following material(s) may be used:Nitrile Rubber

Respiratory protection

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:

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

Appearance

Physical state

Solid

Color

Gray

Specific Physical Form:

Granules

Odor

Oily

Odor threshold

No Data Available

pH

No Data Available

Melting point

No Data Available

Boiling Point

No Data Available

Flash Point

No flash point

Evaporation rate

No Data Available

Flammability (solid, gas)

Not Classified

Flammable Limits(LEL)

No Data Available

Flammable Limits(UEL)

No Data Available

Vapor Pressure

No Data Available

Vapor Density

No Data Available

Specific Gravity

2.55 - 2.70 [Ref Std: WATER=1]

Solubility In Water

No Data Available

Solubility- non-water

No Data Available

Partition coefficient: n-octanol/ water

No Data Available

Autoignition temperature

No Data Available

Decomposition temperature

No Data Available

Viscosity

No Data Available

Molecular weight

No Data Available

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

None known.

Condition**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:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

May be harmful in contact with skin.

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.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:**Prolonged or repeated exposure may cause target organ effects:**

Silicosis: Signs/symptoms may include breathlessness, weakness, chest pain, persistent cough, increased amounts of sputum, and heart disease.

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

| <u>Ingredient</u> | <u>CAS No.</u> | <u>Class Description</u> | <u>Regulation</u> |
|---|-----------------------|---------------------------------|---|
| Silica, Crystalline (Respirable Size) | 14808-60-7 | Known To Be Human Carcinogen. | National Toxicology Program Carcinogens |
| Silica dust, crystalline, in the form of quartz or cristobalite | 14808-60-7 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| Titanium dioxide | 13463-67-7 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |

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 | Dermal | | No data available; calculated ATE >2,000 - =5,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE >2,000 - =5,000 mg/kg |
| Feldspar-Group Minerals | Dermal | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Feldspar-Group Minerals | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Quartz Silica | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Quartz Silica | Ingestion | | LD50 estimated to be > 5,000 mg/kg |
| Mica-Group Minerals | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Mica-Group Minerals | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Ceramic | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Ceramic | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Chlorite (Mineral) | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Chlorite (Mineral) | Ingestion | | LD50 estimated to be > 5,000 mg/kg |
| Magnetite | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Magnetite | Ingestion | Rat | LD50 > 10,000 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 |
| C.I. Pigment Brown 24 | Dermal | Professional judgement | LD50 estimated to be > 5,000 mg/kg |
| C.I. Pigment Brown 24 | Ingestion | Rat | LD50 > 10,000 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|-------------------------|------------------------|---------------------------|
| Feldspar-Group Minerals | Professional judgement | No significant irritation |
| Quartz Silica | Professional judgement | No significant irritation |
| Ceramic | Rabbit | No significant irritation |
| Chlorite (Mineral) | Professional judgement | No significant irritation |
| Magnetite | Rabbit | No significant irritation |
| Titanium Dioxide | Rabbit | No significant irritation |
| C.I. Pigment Brown 24 | Rabbit | Minimal irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|-----------------------|------------------------|---------------------------|
| Ceramic | Rabbit | Mild irritant |
| Chlorite (Mineral) | Professional judgement | No significant irritation |
| Titanium Dioxide | Rabbit | No significant irritation |
| C.I. Pigment Brown 24 | Rabbit | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|-----------------------|------------------|----------------|
| Titanium Dioxide | Human and animal | Not classified |
| C.I. Pigment Brown 24 | Mouse | Not classified |

Respiratory Sensitization

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

Germ Cell Mutagenicity

| Name | Route | Value |
|-----------------------|----------|--|
| Quartz Silica | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Quartz Silica | In vivo | Some positive data exist, but the data are not sufficient for classification |
| Ceramic | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Magnetite | In Vitro | Not mutagenic |
| Titanium Dioxide | In Vitro | Not mutagenic |
| Titanium Dioxide | In vivo | Not mutagenic |
| C.I. Pigment Brown 24 | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|------------------|------------|-------------------------|--|
| Quartz Silica | Inhalation | Human and animal | Carcinogenic |
| Ceramic | Inhalation | Multiple animal species | Some positive data exist, but the data are not sufficient for classification |
| Titanium Dioxide | Ingestion | Multiple animal species | Not carcinogenic |
| Titanium Dioxide | Inhalation | Rat | Carcinogenic |

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

| Name | Route | Value | Species | Test Result | Exposure Duration |
|-----------------------|-----------|--------------------------------|---------|-----------------------|-------------------|
| C.I. Pigment Brown 24 | 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 |
|---------------------|------------|--------------------|--|-------------------------|---------------------|-----------------------|
| Quartz Silica | Inhalation | silicosis | Causes damage to organs through prolonged or repeated exposure | Human | NOAEL Not available | occupational exposure |
| Mica-Group Minerals | Inhalation | pneumoconiosis | Causes damage to organs through prolonged or repeated exposure | Human | NOAEL Not available | occupational exposure |
| Ceramic | Inhalation | pulmonary fibrosis | Not classified | Multiple animal species | NOAEL not available | |
| Ceramic | Inhalation | respiratory system | Not classified | Human | NOAEL not available | occupational exposure |

| | | | | | | |
|-----------------------|------------|---|--|-------|---------------------|-----------------------|
| Magnetite | Inhalation | pneumoconiosis | 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 |
| C.I. Pigment Brown 24 | Ingestion | heart endocrine system gastrointestinal tract bone, teeth, nails, and/or hair hematopoietic system liver immune system muscles nervous system eyes kidney and/or bladder respiratory system vascular system | Not classified | Rat | NOAEL 500 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**Ecotoxicological information**

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

Chemical fate information

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

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.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. US Federal Regulations**

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:**Physical Hazards**

Not applicable

Health Hazards

Carcinogenicity

Specific target organ toxicity (single or repeated exposure)

15.2. State Regulations

Contact 3M for more information.

California Proposition 65**Ingredient****C.A.S. No.****Listing**

Silica, crystalline (airborne particles of respirable size)

None

Carcinogen

Cobalt metal powder

None

Carcinogen

CHROMIUM (HEXAVALENT COMPOUNDS)

None

Carcinogen

Nickel (metallic)

7440-02-0

Carcinogen

Lead

7439-92-1

Female reproductive toxin

Lead

7439-92-1

Male reproductive toxin

Lead

7439-92-1

Developmental Toxin

Titanium dioxide (airborne, unbound particles of respirable size)

13463-67-7

Carcinogen

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information**NFPA Hazard Classification****Health:** 1 **Flammability:** 0 **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.

Document Group: 39-2545-0**Version Number:** 3.00**Issue Date:** 02/27/23**Supersedes Date:** 04/20/21

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