Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Headlap Roofing Granules, Rainbow - 0114C (Corona, CA)

Product Identification Numbers
98-0111-1483-6
7010352338

1.2. Recommended use and restrictions on use

Recommended use
Industrial use
Restrictions on use

For industrial/occupational use only. Not for consumer sale or use. This product must be used in compliance with applicable health and safety regulations and standards.

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.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves and if needed, respiratory protection (see SDS Section 8).

Response:
IF exposed or concerned: Get medical attention.
Get medical attention if you feel unwell.

Storage:
Store locked up.

Disposal:
Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

25% of the mixture consists of ingredients of unknown acute oral toxicity.
25% 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	34 - 70
Quartz Silica	14808-60-7	21 - 35
Mica-Group Minerals	12001-26-2	< 15
Illite	12173-60-3	< 15
Ceramic	66402-68-4	< 8
Chlorite-Group Minerals	1318-59-8	< 5
Ilmenite	12168-52-4	< 5
Magnetite	1309-38-2	< 5
Amphibole-Group Minerals (Non-Asbestiform)	1318-09-8	< 5
Titanium Dioxide	13463-67-7	< 4.3
Chromium-Containing Pigments	Trade Secret* 3M Unique ID: 282927	< 1.8
C.I. Pigment Brown 24	68186-90-3	< 1.1
C.I. Pigment Blue 28	1345-16-0	< 0.7
C.I. Pigment Brown 29	12737-27-8	< 0.6

Mixed metal oxide	Trade Secret*	< 0.5
Chromium(III) Oxide (Cr2O3)	1308-38-9	< 0.4
Oil	64741-96-4	< 0.4
Carbon Black	1333-86-4	< 0.3

*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
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. 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.

6.2. Environmental precautions
Avoid release to the environment.

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. The manufacturer 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 METAL AND INSOLUBLE SALTS (AS CR)	12737-27-8	OSHA	TWA(as Cr):1 mg/m3	
CHROMIUM(II) COMPOUNDS (AS CR)	12737-27-8	OSHA	TWA(as Cr):0.5 mg/m3	
CHROMIUM(III) COMPOUNDS (AS CR)	12737-27-8	OSHA	TWA(as Cr):0.5 mg/m3	
Trivalent chromium insoluble inorganic compounds, as Cr (III), inhalable fraction	12737-27-8	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3	A4: Not class. as human carcin
CHROMIUM METAL AND INSOLUBLE SALTS (AS CR)	1308-38-9	OSHA	TWA(as Cr):1 mg/m3	
CHROMIUM(II) COMPOUNDS (AS CR)	1308-38-9	OSHA	TWA(as Cr):0.5 mg/m3	
CHROMIUM(III) COMPOUNDS (AS CR)	1308-38-9	OSHA	TWA(as Cr):0.5 mg/m3	
Trivalent chromium insoluble inorganic compounds, as Cr (III),	1308-38-9	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3	A4: Not class. as human carcin

inhalable fraction				
Carbon Black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcin.
Carbon Black	1333-86-4	OSHA	TWA:3.5 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	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.)	
Silica, crystalline, respirable fraction	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
OIL MIST (MINERAL)	64741-96-4	OSHA	TWA(as mist):5 mg/m3	
Antimony and compounds, as Sb	68186-90-3	ACGIH	TWA(as Sb):0.5 mg/m3	
CHROMIUM METAL AND INSOLUBLE SALTS (AS CR)	68186-90-3	OSHA	TWA(as Cr):1 mg/m3	
CHROMIUM(III) COMPOUNDS (AS CR)	68186-90-3	OSHA	TWA(as Cr):0.5 mg/m3	
Trivalent chromium insoluble inorganic compounds, as Cr (III), inhalable fraction	68186-90-3	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3	A4: Not class. as human carcin
Chromium-Containing Pigments	Trade Secret	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 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.

Gloves made from the following material(s) are recommended: Chemical Protective glove of any material type

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

Physical state	Solid
Specific Physical Form:	Granules
Color	Multicolor
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	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	*No Data Available*
Relative Vapor Density	*No Data Available*
Relative Density	2.55 - 2.7 [*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*
Kinematic Viscosity	*No Data Available*
Molecular weight	*No Data Available*

Particle Characteristics	
Primary particle dia-median	18 - 61 nm (*Carbon Black*)
Shape of Primary particle	Other (see details) (*Carbon Black*)
Specific surface area	21 - 1,200 m2/g (*Carbon Black*)

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.	

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.

Ingredient	CAS No.	Class Description	Regulation
Silica, Crystalline (Respirable Size)	14808-60-7	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
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-Group Minerals	Dermal		LD50 estimated to be > 5,000 mg/kg
Chlorite-Group Minerals	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
Chromium-Containing Pigments	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.14 mg/l
Chromium-Containing Pigments	Ingestion	Rat	LD50 > 2,000 mg/kg
Chromium-Containing Pigments	Dermal	similar health hazards	LD50 estimated to be > 5,000 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
C.I. Pigment Blue 28	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
C.I. Pigment Blue 28	Ingestion	Rat	LD50 > 10,000 mg/kg
C.I. Pigment Blue 28	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 5.06 mg/l
C.I. Pigment Brown 29	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.01 mg/l
C.I. Pigment Brown 29	Ingestion	Rat	LD50 > 5,000 mg/kg
C.I. Pigment Brown 29	Dermal	similar health	LD50 estimated to be > 5,000 mg/kg

		hazards	
Chromium(III) Oxide (Cr2O3)	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Chromium(III) Oxide (Cr2O3)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.41 mg/l
Chromium(III) Oxide (Cr2O3)	Ingestion	Rat	LD50 > 5,000 mg/kg
Oil	Dermal	Rabbit	LD50 > 5,000 mg/kg
Oil	Inhalation-Dust/Mist (4 weeks)	Rat	LC50 > 5.53
Oil	Ingestion	Rat	LD50 > 5,000 mg/kg
Carbon Black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon Black	Ingestion	Rat	LD50 > 8,000 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-Group Minerals	Professional judgement	No significant irritation
Magnetite	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Chromium-Containing Pigments	Rabbit	No significant irritation
C.I. Pigment Brown 24	Rabbit	Minimal irritation
C.I. Pigment Blue 28	Rabbit	No significant irritation
C.I. Pigment Brown 29	In vitro data	No significant irritation
Chromium(III) Oxide (Cr2O3)	Rabbit	No significant irritation
Oil	Rabbit	Minimal irritation
Carbon Black	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Ceramic	Rabbit	Mild irritant
Chlorite-Group Minerals	Professional judgement	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Chromium-Containing Pigments	Rabbit	Moderate irritant
C.I. Pigment Brown 24	Rabbit	No significant irritation
C.I. Pigment Blue 28	In vitro data	No significant irritation
C.I. Pigment Brown 29	Rabbit	No significant irritation
Chromium(III) Oxide (Cr2O3)	Rabbit	No significant irritation
Oil	Rabbit	No significant irritation
Carbon Black	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Titanium Dioxide	Human and animal	Not classified
Chromium-Containing Pigments	Mouse	Not classified
C.I. Pigment Brown 24	Mouse	Not classified
C.I. Pigment Blue 28	similar compounds	Not classified
C.I. Pigment Brown 29	Mouse	Not classified
Chromium(III) Oxide (Cr2O3)	similar compounds	Not classified
Oil	Guinea pig	Not classified

Respiratory Sensitization

Name	Species	Value
C.I. Pigment Blue 28	Professional judgement	Not classified

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
C.I. Pigment Blue 28	In Vitro	Not mutagenic
Chromium(III) Oxide (Cr2O3)	In vivo	Not mutagenic
Chromium(III) Oxide (Cr2O3)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Oil	In vivo	Not mutagenic
Oil	In Vitro	Some positive data exist, but the data are not sufficient for classification
Carbon Black	In Vitro	Not mutagenic
Carbon Black	In vivo	Some positive data exist, but the data are not sufficient for classification

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
C.I. Pigment Blue 28	Inhalation	similar compounds	Some positive data exist, but the data are not sufficient for classification
Chromium(III) Oxide (Cr2O3)	Ingestion	Rat	Not carcinogenic

Oil	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon Black	Dermal	Mouse	Not carcinogenic
Carbon Black	Ingestion	Mouse	Not carcinogenic
Carbon Black	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
C.I. Pigment Brown 29	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Chromium(III) Oxide (Cr2O3)	Ingestion	Not classified for female reproduction	Rat	NOAEL 2,000 mg/kg/day	90 days
Chromium(III) Oxide (Cr2O3)	Ingestion	Not classified for male reproduction	Rat	NOAEL 2,000 mg/kg/day	90 days
Chromium(III) Oxide (Cr2O3)	Ingestion	Not classified for development	Rat	NOAEL 2,000 mg/kg/day	90 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Chromium-Containing Pigments	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Chromium(III) Oxide (Cr2O3)	Inhalation	respiratory system	Not classified	Rat	NOAEL 40 mg	

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 availble	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	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	endocrine system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	liver	Not classified	Rat	NOAEL 500 mg/kg/day	90 days

C.I. Pigment Brown 24	Ingestion	immune system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	muscles	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	nervous system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	eyes	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	respiratory system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 24	Ingestion	vascular system	Not classified	Rat	NOAEL 500 mg/kg/day	90 days
C.I. Pigment Brown 29	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	heart	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	skin	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	liver	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	immune system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	muscles	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	nervous system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Inhalation	vascular system	Not classified	Rat	NOAEL 0.01 mg/l	90 days
C.I. Pigment Brown 29	Ingestion	heart	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	immune system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	muscles	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

C.I. Pigment Brown 29	Ingestion	eyes	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
C.I. Pigment Brown 29	Ingestion	respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Chromium(III) Oxide (Cr2O3)	Inhalation	immune system	Not classified	Rat	NOAEL 44 mg/m3	90 days
Chromium(III) Oxide (Cr2O3)	Inhalation	respiratory system	Not classified	Rat	NOAEL 44 mg/m3	90 days
Chromium(III) Oxide (Cr2O3)	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 44 mg/m3	90 days
Chromium(III) Oxide (Cr2O3)	Inhalation	liver	Not classified	Rat	NOAEL 44 mg/m3	90 days
Chromium(III) Oxide (Cr2O3)	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 44 mg/m3	90 days
Oil	Dermal	skin	Not classified	Rabbit	NOAEL 5,000 mg/kg/day	3 weeks
Oil	Dermal	hematopoietic system	Not classified	Rabbit	NOAEL 5,000 mg/kg/day	3 weeks
Oil	Dermal	liver	Not classified	Rabbit	NOAEL 5,000 mg/kg/day	3 weeks
Oil	Dermal	kidney and/or bladder	Not classified	Rabbit	NOAEL 5,000 mg/kg/day	3 weeks
Carbon Black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value
Oil	Aspiration hazard

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)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Chromium-Containing Pigments	Trade Secret	< 1.8
C.I. Pigment Brown 24	68186-90-3	< 1.1
C.I. Pigment Brown 29	12737-27-8	< 0.6
Chromium(III) Oxide (Cr2O3)	1308-38-9	< 0.4

This material contains a chemical which requires export notification under TSCA Section 12[b]:

Ingredient (Category if applicable)	C.A.S. No	Regulation	Status
Mixed metal oxide	Trade Secret	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable

This material contains a chemical regulated by an EPA Significant New Use Rule (TSCA Section 5)

Ingredient (Category if applicable)	C.A.S. No	Reference
Mixed metal oxide	Trade Secret	40 CFR 721.10006

15.2. State Regulations

Contact 3M for more information.

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.

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