



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 1 of 10

SECTION 1

CHEMICAL PRODUCT AND IDENTIFICATION

USG Interiors
550 West Adams Street
Chicago, Illinois 60661-3637
A Subsidiary of USG Corporation

Product Safety: 1 (800) 507-8899
www.usg.com
Version Date: January 1, 2011
Version: 8

PRODUCT(S) RADAR™

**CHEMICAL FAMILY /
GENERAL CATEGORY** Ceiling Tiles

SYNONYMS Water Felted Mineral Fiber Ceiling Panel

MANUFACTURED AT 850 N. Broadway, Greenville, MS 38701 and/or 35 Arch St., Cloquet, MN 55720

SECTION 2

HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

⚠WARNING!

This product is not expected to produce any unusual hazards during normal use. Exposure to high dust levels may irritate the skin, eyes, nose, throat, or upper respiratory tract. Man-made mineral fibres have been classified by the European Union as irritating to skin (R:38).

POTENTIAL HEALTH EFFECTS (See Section 11 for more information)

ACUTE :

Inhalation	Exposure to dust generated during the handling or cutting, especially with power tools, of the product may cause irritate eyes, skin, nose, throat, and upper respiratory tract. Persons subjected to large amounts of this dust will be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician.
Eyes	Dust and/or direct contact can cause mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician.
Skin	Direct contact with the skin can cause temporary irritation and itchiness. Rubbing of this product against the skin can result in abrasions. If irritation persists, consult a physician.
Ingestion	This product is not intended to be eaten. Unlikely to occur, but if ingested may cause temporary irritation to the gastrointestinal tract, especially the throat and stomach.

CHRONIC:

Inhalation	Panels do not release respirable dust in their installed state and therefore do not present any known health hazards when installed and properly maintained. Slag wool fiber has been classified as "not classifiable as to its carcinogenicity to humans" (Group 3) by the International Agency for Research on Cancer (IARC). (See Section 11) Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration. FIRECODE® products may contain silica. Prolonged and repeated exposures to airborne respirable crystalline silica can cause lung cancer. Smoking in combination with silica exposures increases the
------------	---



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 2 of 10

	risk of cancer. The concentration of respirable crystalline silica measured in airborne dust samples was below the detection limit using NIOSH Method 7500 in industrial hygiene testing of workers installing USG Acoustical Ceiling Panels for an 8 hour work day.
Eyes	None known.
Skin	None known.
Ingestion	None known.

TARGET ORGANS: Eyes, skin and respiratory system.**PRIMARY ROUTES OF ENTRY:** Inhalation, eyes and skin contact.

CARCINOGENICITY CLASSIFICATION OF INGREDIENT(S) All substances listed are associated with the nature of the raw materials used in the manufacture of this product and are not independent components of the product formulation. All substances, if present, are at levels well below regulatory limits. See Section 11: Toxicology Information for detailed information.

MATERIAL	IARC	NTP	ACGIH	CAL- 65
Slag Wool Fiber	3	2	A3	Not Listed
Crystalline silica	1	1	A2	Listed

IARC - International Agency for Research on Cancer: 1- Carcinogenic to humans; 2A – Probably carcinogenic to humans; 2B – Possibly carcinogenic to humans; 3 - Not classifiable as a carcinogen; 4 – Probably not a carcinogen

NTP – National Toxicology Program (Health and Human Services Dept., Public Health Service, NIH/NIEHS): 1- Known to be carcinogen; 2- Anticipated to be carcinogens

ACGIH – American Conference of Governmental Industrial Hygienists: A1 – Confirmed human carcinogen; A2 – Suspected human carcinogen; A3 – Animal carcinogen; A4 - Not classifiable as a carcinogen; A5 – Not suspected as a human carcinogen

CAL-65 – California Proposition 65 “Chemicals known to the State of California to Cause Cancer”

Respirable crystalline silica: IARC: Group 1 carcinogen, NTP: Known human carcinogen. The weight percent of crystalline silica given represents total quartz and not the respirable fraction. The weight percent of respirable silica has not been measured in this product.

POTENTIAL ENVIRONMENTAL EFFECTS: This product has no known adverse effect on ecology. (See Section 12 for more information)

SECTION 3

COMPOSITION, INFORMATION ON INGREDIENTS

MATERIAL	WT%	CAS #
Slag Wool Fiber	10-75	65997-17-3
Expanded Perlite	5-75	93763-70-3
Cellulose	1-25	9004-34-6
Starch	5-15	9005-25-8
Kaolin	0-15	1332-58-7
Calcium Sulfate Dihydrate	0-80	10101-41-4
Limestone	<2	1317-65-3
Or Dolomite		16389-88-1
Crystalline Silica	<5	14808-60-7^
Vinyl Acetate Polymer*	<2	9003-20-7
Or Ethylene Vinyl Acetate Polymer		24937-78-8
May be available with foil-backing:		[]
Aluminum Foil (as Aluminum and Cmpds)	0-2	7429-90-5



All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory and the Canadian Domestic Substances List (DSL).

This material is slag wool. Other generic terms that are used or have been used to classify this material include mineral wool, man made mineral fiber (MMMF), and man made vitreous fiber (MMVF). A more recent generic term that has appeared in the literature to describe these glassy materials is synthetic vitreous fiber (SVF). ^The weight percent for silica represents total quartz and not the respirable fraction. *This polymer is a uniquely formulated formaldehyde-free binder.

SECTION 4 FIRST AID MEASURES

FIRST AID PROCEDURES

Inhalation	Remove to fresh air. Leave the area of exposure and remain away until coughing and other symptoms subside. Other measures are usually not necessary, however if conditions warrant, contact physician.
Eyes	In case of contact, do not rub or scratch your eyes. To prevent mechanical irritation, flush thoroughly with water for 15 minutes. If irritation persists, consult physician.
Skin	A commercially available skin cream or lotion may be helpful to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing. Wash with mild soap and water. If irritation persists, consult physician.
Ingestion	This product is not intended to be ingested or eaten. If gastric disturbance occurs, call physician.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Pre-existing skin diseases such as, but not limited to, rashes and dermatitis.

NOTES TO PHYSICIAN: This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed at the control of symptoms and the clinical condition.

SECTION 5 FIRE FIGHTING MEASURES

General Fire Hazards	None known		
Extinguishing Media	Water or use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures	Wear appropriate personal protective equipment. See section 8.		
Unusual Fire/ Explosion Hazards	None known		
Hazardous Combustion Products	Organic material in panels can produce oxides of carbon. None known		
Flash Point	Not Determined	Auto Ignition	Not Applicable
Method Used	Not Applicable	Flammability Classification	Not Applicable
Upper Flammable Limit (UFL)	Not Applicable		
Lower Flammable Limit (LFL)	Not Applicable	Rate of Burning	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES



CONTAINMENT: No special precautions.

CLEAN-UP: Use normal clean up procedures. No special precautions.

DISPOSAL: Follow all local, state, provincial and federal regulations. Never discharge large releases directly into sewers or surface waters.

SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid dust contact with eyes and skin. Wear the appropriate eye and skin protection against dust (See Section 8). Minimize dust generation and accumulation. Avoid breathing dust. Wear the appropriate respiratory protection against dust in poorly ventilated areas and if TLV is exceeded (see Sections 2 and 8). Use good safety and industrial hygiene practices.

Follow traditional building practices; such as management of water away from the interior of the structure to avoid the growth of mold, mildew and fungus. Remove from the jobsite any building products suspected of being exposed to sustained moisture and considered conducive to mold growth.

STORAGE: Warehouse storage should be in accordance with package directions. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities (see Section 10). Protect from weather and prevent exposure to sustained moisture. Protect product from physical damage.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

MATERIAL	WT%	TLV (mg/m ³)	PEL (mg/m ³)
Slag Wool Fiber	10-75	1 f/cc (R)	15 (T) / 5 (R)
Expanded Perlite	5-75	10	15 (T) / 5 (R)
Cellulose	1-25	10	15 (T) / 5 (R)
Starch	5-15	10	15 (T) / 5 (R)
Kaolin	0-15	2 (R)	15 (T) / 5 (R)
Calcium Sulfate Dihydrate	0-80	10	15 (T) / 5 (R)
Limestone	<2	10	15 (T) / 5 (R)
Or Dolomite		10	15 (T) / 5 (R)
Crystalline Silica	<5	0.025 (R)	0.1 (R)
Vinyl Acetate Polymer*	<2	(NE)	(NE)
Or Ethylene Vinyl Acetate Polymer		(NE)	(NE)
May be available with foil-backing:		[	]
Aluminum Foil (as Aluminum and Compds)	0-2	10	15 (T) / 5 (R)

(T)—Total; (R)—Respirable; (NE)—Not Established; (C)—Ceiling; (STEL)—Short-term exposure limit

(F)—Fume; (Du)—Dust; (M)—Mist

ppm—part per million; f/cc—fiber per cubic centimeter; mppcf—million particles per cubic foot

TWA is 1 f/cc [respirable fibers: length >5µm; aspect ratio greater or equal to 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination]. NIOSH recommended exposure level is 3 fibers/cc.



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 5 of 10

ENGINEERING CONTROLS: Provide ventilation sufficient to control airborne dust levels. If user operations generate airborne dust, use ventilation to keep dust concentrations below permissible exposure limits. Where general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to control dust levels below permissible exposure limits. If cutting or trimming with power tools, dust collectors and local ventilation should be used.

Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust by using an industrial vacuum cleaner with high efficiency filter or wetting down area with water. Never use compressed air and avoid dry sweeping.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved respirator equipped with particulate cartridges when dusty in poorly ventilated areas, and if TLV is exceeded. A respiratory program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. If engineering controls are not possible, wear a properly fitted NIOSH/MSHA-approved particulate respirator.

OTHER PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face	Wear eye protection, safety glasses or goggles, to avoid possible eye contact, especially when working overhead.
Skin	Gloves or protective clothing are usually not necessary but may be desirable in specific work situations. For brief contact, no precautions should be needed.
General	Selection of Personal Protective Equipment will depend on environmental working conditions and operations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White or colored surface; beige/gray core	Vapor Density (Air = 1)	Not Applicable
Odor	Low to no odor	Specific Gravity (H ₂ O = 1)	~2.9
Odor Threshold	Not Determined	Solubility in water (g/100g)	Very low
Physical State	Solid panel	Partition Coefficient	Not Applicable
pH @ 25 ° C	~9	Auto-ignition Temp	Not Determined
Melting Point	2200°F/ 1200°C (Slag wool)	Decomposition Temp	Not Determined
Freezing Point	Not Determined	Viscosity	Not Applicable
Boiling Point	Not Applicable	Particle Size	Not Applicable
Flash Point	Not Determined	Bulk Density	~250 - 400 kg/m3
Evaporation Rate (BuAc = 1)	Not Applicable	Molecular Weight	Mixture
Upper Flammable Limit (UFL)	Not Applicable	VOC Class*	Low-emitting
Lower Flammable Limit (LFL)	Not Applicable	VOC Content	Zero g/L
Vapor Pressure (mm Hg)	Not Applicable		

*Formaldehyde/VOC product emission classification.



SECTION 10
CHEMICAL STABILITY AND REACTIVITY

STABILITY	Stable.
CONDITIONS TO AVOID	Moisture and contact with incompatibles (see below). For non-ClimaPlus™ products, avoid high humidity.
INCOMPATIBILITY	None known.
HAZARDOUS POLYMERIZATION	None known.
HAZARDOUS DECOMPOSITION	The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis (burning) of the organics. These decomposition products may include carbon monoxide, carbon dioxide, and carbon particles. None known.

SECTION 11
TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: Direct contact with dust can cause eye and skin irritation (mechanical) and itchiness. Inhalation of dust can cause coughing and sneezing due to temporary irritation of nose and throat. None known.

CHRONIC EFFECTS / CARCINOGENICITY:

Slag Wool Fiber: Large morbidity and mortality studies of both European and North American mineral wool manufacturing workers have been conducted. These studies have found no significant association of non-malignant (i.e. fibrosis) or malignant (i.e., lung cancer or mesothelioma) lung disease and exposures to slag wool fibers and have not established a causal relationship between exposure and malignant diseases.

In 2001, the International Agency for Research on Cancer (IARC) assigned slag wool fiber to the Group 3 category ["not classifiable as to carcinogenicity to humans"].

The synthetic mineral fiber used in this product is exonerated from classification as a carcinogen in accordance with Note Q in the EU Commission Directive 97/69/EC.

Industrial hygiene testing on workers installing acoustical ceiling panels for an 8 hour work day showed that the average respirable fiber exposure was 0.12 f/cc per NIOSH Method 7400-B.

Crystalline Silica: Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. The weight percent of respirable crystalline silica may not have been measured in this product. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. Smoking in combination with silica exposures increases the risk of cancer. The risk of developing silicosis is dependent upon the exposure intensity and duration.

In June, 1997, IARC classified crystalline silica (quartz and cristobalite) as a human carcinogen. In making the overall evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.

IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).

The concentration of respirable crystalline silica measured in airborne dust samples was below the detection limit using NIOSH Method 7500 in industrial hygiene testing of workers installing USG Acoustical Ceiling Panels for an 8 hour work day.



SECTION 12
ECOLOGICAL INFORMATION

ENVIRONMENTAL TOXICITY: This product has no known adverse effect on ecology.

Ecotoxicity value	Not determined.
--------------------------	-----------------

SECTION 13
DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Certain ceiling tile products may be recycled. If unable to recycle with the USG Ceilings Recycling Program, dispose of material in accordance with federal, state, and local regulations. Never discharge directly into sewers or surface waters. Consult with environmental regulatory agencies for guidance on acceptable disposal practices.

SECTION 14
TRANSPORT INFORMATION

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

Shipping Name	Same as product name.
----------------------	-----------------------

Hazard Class	Not classified.
---------------------	-----------------

UN/NA #	None. Not classified.
----------------	-----------------------

Packing Group	None.
----------------------	-------

Label (s) Required	Not applicable.
---------------------------	-----------------

GGVSec/MDG-Code	Not classified.
------------------------	-----------------

ICAO/IATA-DGR	Not applicable.
----------------------	-----------------

RID/ADR	None.
----------------	-------

ADNR	None.
-------------	-------

SECTION 15
REGULATORY INFORMATION

UNITED STATES REGULATIONS

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

MATERIAL

WT%

3
0
2

3
0
4

3
1
3

CERCLA

**CAA
Sec. 112**

**RCRA
Code**



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 8 of 10

Slag Wool Fiber	10-75	NL	NL	NL	NL	NL	NL
Expanded Perlite	5-75	NL	NL	NL	NL	NL	NL
Cellulose	1-25	NL	NL	NL	NL	NL	NL
Starch	5-15	NL	NL	NL	NL	NL	NL
Kaolin	0-15	NL	NL	NL	NL	NL	NL
Calcium Sulfate Dihydrate	0-80	NL	NL	NL	NL	NL	NL
Limestone	<2	NL	NL	NL	NL	NL	NL
Or Dolomite		NL	NL	NL	NL	NL	NL
Crystalline Silica	<5	NL	NL	NL	NL	NL	NL
Vinyl Acetate Polymer*	<2	NL	NL	NL	NL	NL	NL
Or Ethylene Vinyl Acetate Polymer		NL	NL	NL	NL	NL	NL
May be available with foil-backing:		[					]
Aluminum Foil (as Aluminum and Cmpds)	0-2	NL	NL	X	NL	NL	NL

Key: NL = Not Listed

SARA Title III Section 302 (EPCRA) Extremely Hazardous Substances: Threshold Planning Quantity (TPQ)

SARA Title III Section 304 (EPCRA) Extremely Hazardous Substances: Reportable Quantity (RQ)

SARA Title III Section 313 (EPCRA) Toxic Chemicals: X= Subject to reporting under section 313

CERCLA Hazardous Substances: Reportable Quantity (RQ)

CAA Section 112 (r) Regulated Chemicals for Accidental Release Prevention: Threshold Quantities(TQ)

RCRA Hazardous Waste: RCRA hazardous waste code

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of Controlled Product regulations and the MSDS contains all the information required by the Controlled Products Regulations. All ingredients of this product are included in the Canadian Domestic Substances List (DSL).

MATERIAL	WT%	IDL Item #	WHMIS Classification
Slag Wool Fiber	10-75	Not Listed	Not Listed
Expanded Perlite	5-75	Not Listed	D2A
Cellulose	1-25	Not Listed	Not Listed
Starch	5-15	Not Listed	Not Listed
Kaolin	0-15	Not Listed	D2A
Calcium Sulfate Dihydrate	0-80	Not Listed	Not Listed
Limestone	<2	Not Listed	D2A
Or Dolomite		Not Listed	Not Listed
Crystalline Silica	<5	1406	D2A
Vinyl Acetate Polymer*	<2	Not Listed	Not Listed
Or Ethylene Vinyl Acetate Polymer		Not Listed	Not Listed
May be available with foil-backing:		[	]
Aluminum Foil (as Aluminum and Cmpds)	0-2	47	Not Listed

IDL Item#: Canadian Hazardous Products Act – Ingredient Disclosure List Item #

WHMIS Classification: Workplace Hazardous Material Information System

Risk and Safety Phrases defined by European Union Directive 67/548/EEC (Annex III and IV)

R-Phrase(s): R36/37/38

S-Phrase(s): None known.

SECTION 16

OTHER INFORMATION



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 9 of 10

Label Information

Δ WARNING!

Dust can cause irritation to eyes, skin and respiratory tract. Cut and trim with a razor knife or hand saw to minimize dust levels. Using power tools for cutting will generate high dust levels. Power tools must be equipped with a dust collection system. Wear eye, skin and respiratory protection as necessary per working conditions. If eye contact occurs flush with water for 15 minutes. FIRECODE® products may contain silica. Prolonged and repeated exposures to airborne respirable crystalline silica can cause lung cancer. Smoking in combination with silica exposures increases the risk of cancer. Do not ingest. If ingested, call physician. Product safety information: 800-507-8899 or usg.com. Customer Service: 800 USG-4-YOU (800 874-4968). KEEP OUT OF REACH OF CHILDREN.

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings:			HMIS Ratings:		<table><tr><td>HEALTH</td><td>*</td><td>1</td></tr><tr><td>FLAMMABILITY</td><td></td><td>0</td></tr><tr><td>PHYSICAL HAZARD</td><td></td><td>0</td></tr><tr><td>PERSONAL PROTECTION</td><td></td><td>E</td></tr></table>	HEALTH	*	1	FLAMMABILITY		0	PHYSICAL HAZARD		0	PERSONAL PROTECTION		E	0 = Minimal Hazard
HEALTH	*		1															
FLAMMABILITY			0															
PHYSICAL HAZARD			0															
PERSONAL PROTECTION		E																
Health:	1	Health:	1	1 = Slight Hazard														
Fire:	0	Fire:	0	2 = Moderate Hazard														
Reactivity:	0	Reactivity:	0	3 = Serious Hazard														
						4 = Severe Hazard												

E – Safety glasses, gloves and dust respirator; * - Contains silica

Key/Legend

ANSI	American National Standards Institute
ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CAS	Chemical Abstracts Service (Registry Number)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
DSL	Canadian Domestic Substances List
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning & Community Right-to-know Act
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSHA	Mine Safety and Health Administration
NDSL	Canadian Non-Domestic Substances List
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
PPE	Personal Protection Equipment
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
UN/NA#	United Nations/North America number
WHMIS	Workplace Hazardous Material Information System



MATERIAL SAFETY DATA SHEET

RADAR™

MSDS #41-200-049

Page 10 of 10

Prepared by:
Product Safety
USG Corporation
550 West Adams Street
Chicago, IL 60661-3637

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his/her own particular use.

END