



MATERIAL SAFETY DATA SHEET

MARS™ ClimaPlus™

MSDS # 41-500-001

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SECTION 1

CHEMICAL PRODUCT AND IDENTIFICATION

PRODUCT: MARS™ ClimaPlus™

CHEMICAL FAMILY: Mixture of slag wool and fiber glass wool and minerals. Ceiling panels are products considered not to be dangerous chemicals or preparations.

Manufactured by
USG Interiors, Inc.
35 Arch St.
Cloquet, MN 55720-1599

SECTION 2

COMPOSITION, INFORMATION ON INGREDIENTS

MATERIAL	WT%	TLV (mg/m ³)	PEL (mg/m ³)	CAS NUMBER
Slag Wool Fiber ¹	>75	1 f/cc ¹	15(T)/5(R)	65997-17-3
Fiber Glass Wool (non-respirable) ²	<5	1 f/cc ²	15(T)/5(R)	
Acrylate Polymer	<5	(NE)	(NE)	Proprietary
Melamine Formaldehyde resin (cured)	<1	(NE)	(NE)	9003-08-1
Starch	1-2	10	15(T)/5(R)	9005-25-8
Vinyl Acetate Polymer	1-2	(NE)	(NE)	9003-20-7
Or Ethylene Vinyl Acetate Polymer	1-2	(NE)	(NE)	24937-78-8
Polyvinyl alcohol polymer	<1	(NE)	(NE)	9002-89-5
Formaldehyde	< 0.1 (trace)	0.3 ppm	0.75 ppm	50-00-0

(T) – Total (R) – Respirable (NE) – Not Established

^{1,2}ACGIH TWA is 1 f/cc (respirable fibers: length >5µm; aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination). NIOSH recommended exposure limit TWA 3 fibers/cm³ (fibers with diameter < or = 3.5 µm & length > or = 10 µm.) and TWA 5 mg/m³ (total). These materials are slag wool and fibrous glass. Other generic terms that are used or have been used to classify slag wool 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).

²As manufactured, continuous filament glass fibers are not respirable. Continuous filaments that are chopped, crushed, or severely mechanically processed during manufacture or use may contain very small amounts of respirable particulate [PEL = 5 mg/m³(R)].

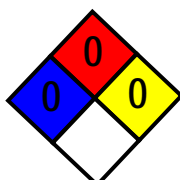
SECTION 3

HAZARD IDENTIFICATION

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings:

Health: 0
Fire: 0
Reactivity: 0



HIMS Ratings:

Health: *0
Fire: 0
Reactivity: 0

HEALTH	*	0
FLAMMABILITY		0
PHYSICAL HAZARD		0
PERSONAL PROTECTION	E	

0 = Minimal Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

Personal Protection: Use eye protection. Use gloves and NIOSH/MSHA-approved respiratory protection when required.

*Respirable crystalline silica can cause lung disease and/or cancer.



SECTION 3 HAZARD IDENTIFICATION (continued)

EMERGENCY OVERVIEW

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.

POTENTIAL HEALTH EFFECTS: The components of acoustical ceiling panels and tiles are bound in a cementitious matrix. When panels are cut or trimmed, especially with power tools, the resulting dust may cause transitory mechanical irritation to skin, eyes or respiratory tract.

ACUTE:

Eyes: Direct contact with eye can cause mechanical irritation. If burning, redness, itching, pain or other symptoms persist or develop, consult physician. Formaldehyde gas, which can cause severe eye irritation, may be released under conditions of high heat and humidity.

Skin: Mechanical action of slag wool and/or fiber glass wool can cause itchiness. Direct, prolonged or repeated contact with the skin may cause irritation. Rubbing of this product against the skin can result in abrasions. If irritation persists, consult a physician.

Inhalation: Inhalation of dust can cause nose, throat, lungs, and upper respiratory tract irritation. Persons exposed to dust may be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Formaldehyde gas, which can cause severe respiratory irritation, may be released under conditions of high heat and humidity. Inhalation of formaldehyde may result in discomfort such as nausea, headache, or weakness; upper respiratory tract (nose and throat) irritation marked by mild burning sensation, sore and dry throats, and thirst; and temporary lung irritation effects with cough, discomfort, difficulty in breathing, and shortness of breath. In a few rare instances, respiratory tract sensitization (asthma) has been reported in individuals exposed to formaldehyde.

Ingestion: If ingested may cause temporary irritation to the gastrointestinal tract, especially the stomach.

CHRONIC:

Inhalation: Prolonged and repeated exposure to respirable fiber glass wool may result in lung disease and/or lung cancer (See Section 11). Respiratory exposure to formaldehyde may cause skin or respiratory sensitization (allergy).

Eyes: No known effects

Skin: No known effects. Skin exposure to formaldehyde may cause respiratory sensitization (allergy).

Ingestion: No known effects

SECTION 4
FIRST AID MEASURES

TARGET ORGANS: Skin, eyes, respiratory system,

Primary Routes of Entry: Physical contact (skin, eyes). Inhalation (upper respiratory tract)

FIRST AID PROCEDURES:

Eyes: In case of contact, do not rub or scratch your eyes. Dust particles may scratch the eye. Immediately flush thoroughly with water to remove particulate. If irritation persists, contact a medical professional.

Skin: Rinse with cool water and then wash with soap and warm water. 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. If irritation or other disorders persist, consult physician.

Inhalation: If exposed to excessive levels of dust, leave area of dust exposure and remain away until coughing and other symptoms subside. Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

Ingestion: This product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.



SECTION 4 FIRST AID MEASURES (continued)

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. Trace amounts (e.g., <0.1% composition by weight) of formaldehyde may aggravate the symptoms of the chemically sensitive.

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 toward removing the source of irritation with symptomatic treatment as necessary.

SECTION 5
FIRE FIGHTING MEASURES

General Fire Hazards:	Not expected to burn.		
Extinguishing Media:	Water or use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures:	Wear appropriate personal protective equipment (See section 8). Self contained breathing apparatus for fire conditions.		
Unusual Fire and Explosion Hazards:	None.		
Hazardous Combustion Products:	Formaldehyde, nitrogen oxides, amines, oxides of carbon, low molecular weight hydrocarbons, hydrogen chloride, phosgene and acetic acid.		
Flash Point:	None Known	Flash Point:	None Known
Method Used:	Not Applicable	Method Used:	Not Applicable
Upper Flammable Limit (UFL):	Not Applicable	Upper Flammable Limit (UFL):	Not Applicable
Lower Flammable Limit (LFL):	Not Applicable	Lower Flammable Limit (LFL):	Not Applicable

SECTION 6
ACCIDENTAL RELEASE MEASURES

CONTAINMENT:
Containment not necessary. Treat as inert material. Keep the spill dry and away from incompatibles (See Section 10). Wear appropriate personal protection (See Section 8).

CLEAN-UP:
Use normal clean up procedures. Pick up large pieces. Use gloves to avoid skin irritation. Vacuum dust, preferable with an industrial vacuum cleaner with high efficiency air filter. If sweeping is necessary, use dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean up. These procedures will help minimize potential exposures.

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



SECTION 7 HANDLING AND STORAGE (continued)

STORAGE:

Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities (see Section 10).
Protect product from physical damage.
Protect from weather and prevent exposure to sustained moisture.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Good general ventilation should be sufficient to control airborne dust levels.
If user operations generate airborne dust, use ventilation to keep exposure concentrations below permissible exposure limit of individual ingredients (See Section 2).
Where general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to control dust levels below permissible exposure limits (see Section 2).
Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust and fibers 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 an 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. Avoid prolonged and repeated breathing of dust.

OTHER PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face: Wear eye protection (safety glasses with side shields or goggles) to avoid particulate irritation of the eye.
Skin: Gloves or protective clothing are usually not necessary but may be desirable in specific work situations. Wear tight fitting goggles and gloves when dusty conditions exist. Wear long-sleeved, loose fitting clothing at the neck and wrists and minimize skin contact. Wash work clothing separately from other clothing. Rinse washer thoroughly after use. Barrier creams may be applied to face, neck, wrist and hands when skin is exposed to help prevent drying of skin.

General: Selection of Personal Protective Equipment will depend on environmental working conditions and operations.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White or colored panel and core	Odor	Low to no odor
Physical State	Solid	pH @ 25 ° C	~ 8 - 10
Vapor Pressure	Not Applicable	Vapor Density (Air = 1):	Not Applicable
Boiling Point	Not Applicable	Vapor Pressure (mm Hg)	Not Applicable
Freezing Point	Not Applicable	Evaporation Rate (BuAc = 1)	Not Applicable
Melting Point	1200°C (slag wool)	Percent Volatile	0
Softening Point	700°C (slag wool)	Particle Size	Variable
Solubility (H₂O)	Low	Molecular Weight	Not Applicable
Viscosity	Not Applicable	Bulk Density	250 - 400 kg/m ³
Specific Gravity (H₂O = 1)	2.32 – 2.96		



SECTION 10
CHEMICAL STABILITY AND REACTIVITY

STABILITY:	Stable in dry environments.
CONDITIONS TO AVOID:	High humidity, moisture, contact with incompatibles.
INCOMPATIBILITY:	Acids
HAZARDOUS POLYMERIZATION:	Will not occur.

SECTION 11
TOXICOLOGICAL INFORMATION

ACUTE DATA:

Fiber Glass (65997-17-3)

Oral LD50 rat: Not determined.
Dermal LD50 rat: Not Determined
Skin Irritation: Mechanical irritant.
Eye Irritation: Mechanical irritant.

Formaldehyde (50-00-0)

Inhalation LC₅₀ rat: 203 mg/m³
Inhalation LC₅₀ mouse: 454 mg/ m³ / 4 hrs
Oral LD₅₀ rat: 100 mg/kg
Oral LD₅₀ mouse: 42 mg/kg
Dermal LD₅₀ rabbit: 270 µL/kg

CHRONIC:

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.

Fiber glass wool: In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease. This was a **reversal** of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass.

The NTP has not yet reviewed the IARC reclassification or the most current fiber glass health research. At this time the NTP continues to classify respirable glass wool fiber based on the earlier animal injection studies.

The American Conference of Governmental Industrial Hygienist (ACGIH) has established an A4 classification, "not classifiable as a human carcinogen", for respirable continuous filament glass fibers. This was based on inadequate data in terms of its carcinogenicity in humans and or animals.

Continuous filament glass fibers are not within the scope of Directive 67/548/EEC per the 97/69/EC. Continuous filaments and mats made from these fibers are exonerated since their diameters are >6 microns (Nota R).

Continuous filaments that are chopped, crushed, or severely mechanically processed during manufacture or use may contain very small amounts of respirable particulate [OSHA PEL = 5 mg/m³(R)].

Formaldehyde: Formaldehyde gas has been related to the development of nasal tumors in some experimental animals. Evidence for this development in humans has never been found. Formaldehyde is classified as a probable human carcinogen (Group 2A) by the International Agency for Research on Cancer (IARC). Long time exposure to formaldehyde can cause skin or respiratory sensitization. Formaldehyde did not cause birth defects in offspring of female mice exposed to concentrations up to 10 ppm.



SECTION 12
ECOLOGICAL INFORMATION

This product is not expected to have an adverse effect on the ecology.

Formaldehyde (50-00-0)

Flathead minnow LC₅₀: 24.1 mg/L, 96 hr; Cond: flow-through, 21.7 °C, pH 6.8, 50.8 mg/L CaCO₃

Bluegill LC₅₀: 0.1 mg/L, 96 hr; Cond: flow-through

Water flea EC₅₀: 20 mg/L, 96 hr

Photobacterium phosphoreum EC₅₀: 3.00 – 10.2 mg/L, 30 min; Microtox test

SECTION 13
DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261).

Waste Numbers: Formaldehyde (50-00-0) RCRA: waste number U122

SECTION 14
TRANSPORT INFORMATION

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

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%	302	304	313	CERCLA	CAA Sec. 112	RCRA Code
Slag Wool Fiber	>75	NL	NL	NL	NL	NL	NL
Fiber Glass Wool (non-respirable)	<5	NL	NL	NL	NL	NL	NL
Acrylate Polymer	<5	NL	NL	NL	NL	NL	NL
Melamine Formaldehyde resin (cured)	<1	NL	NL	NL	NL	NL	NL
Starch	1-2	NL	NL	NL	NL	NL	NL
Vinyl Acetate Polymer	1-2	NL	NL	NL	NL	NL	NL
Or Ethylene Vinyl Acetate Polymer	1-2	NL	NL	NL	NL	NL	NL
Polyvinyl alcohol polymer	<1	NL	NL	NL	NL	NL	NL
Formaldehyde	< 0.1 (trace)	500	100	X	100	15,000	U122

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



SECTION 15 REGULATORY INFORMATION (continued)

CANADIAN REGULATIONS

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

MATERIAL	WT%	IDL Item #	WHMIS Classification:
Slag Wool Fiber	>75	Not Listed	D2A
Fiber Glass Wool (non-respirable)	<5	768	D2A
Acrylate Polymer	<5	Not Listed	Not Listed
Melamine Formaldehyde resin (cured)	<1	Not Listed	Not Listed
Starch	1-2	Not Listed	Not Listed
Vinyl Acetate Polymer	1-2	Not Listed	Not Listed
Or Ethylene Vinyl Acetate Polymer	1-2	Not Listed	Not Listed
Polyvinyl alcohol polymer	<1	Not Listed	Not Listed
Formaldehyde	< 0.1 (trace)	781	A, B1, D1A

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

WHMIS Classification: Workplace Hazardous Material Information System

CARCINOGENICITY CLASSIFICATION OF INGREDIENT(S)

See Section 11 : Toxicology Information for detailed information

MATERIAL	IARC	NTP	ACGIH	CAL- 65
Slag Wool Fiber	3	2	A3	Not Listed
Fiber Glass Wool	3	2	A3	Not Listed
Formaldehyde	2A	2	A2	Listed

In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease. This was a **reversal** of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass. The NTP has not yet reviewed the IARC reclassification or the most current fiber glass health research. At this time the NTP continues to classify respirable glass wool fiber based on the earlier animal injection studies.

IARC – International Agency for Research on Cancer (World Health Organization)

- 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”



SECTION 15 REGULATORY INFORMATION (continued)

EC Classification: This product contains mineral wool [Man made vitreous (silicate) fibres].

Danger Symbol: X, Irritant

Risk Phrases: Irritating to skin (R:38)

Safety Phrases: Wear Suitable protective clothing and gloves (S36/37).

The mineral wool in this product is exonerated from classification as a carcinogen according to Note Q in EU Commission Directive 97/69/EC.

Continuous filament glass fibers are not within the scope of Directive 67/548/EEC per the 97/69/EC. Continuous filaments and mats made from these fibers are exonerated since their diameters are >6 microns (Nota R).

SECTION 16
OTHER INFORMATION

ΔWARNING!

Dust exposure can cause temporary eye, skin, and respiratory tract irritation. Avoid creating dust and install in well ventilated area. Cut and trim with 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 dust collection system. Use NIOSH/MSHA-approved dust respirator. Avoid dust contact with eyes and skin. Wear eye protection and long-sleeve, loose fitting clothing closed at the neck and wrists. Wash work clothing separately from other clothing. Rinse washer thoroughly.

Key/Legend

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

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SECTION 16 OTHER INFORMATION (continued)

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