

Section 1 - Chemical Product and Company Identification

Product Name Fiber Glass Wool Insulation, Acrylic Binder

CAS# 65997-17-3

Generic Name Fiber Glass Wool Product

Formula Mixture

Chemical Name: Mixture

Hazard Label FGW-01

Manufacturer Information

Johns Manville
 Performance Materials Division
 P.O. Box 5108
 Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F

Internet Address: <http://www.jm.com>

Emergency: 800-424-9300 (Chemtrec, In English)

Trade Names:

Flex-Glas® XG;

Range-Glas® XG;

Whispertone® Tackboard XG

Microlite® XG;

Spin-Glas® WH XG;

Section 2 - Composition / Information on Ingredients

CAS #	Component	Percent
65997-17-3	Fiber Glass Wool	50-98
Not Available	Continuous filament glass mat facing (CAS # 65997-17-3)	0-40*
Proprietary	Acrylic thermoset resin	2-18
Not Available	Facings, FSK	0-7**
1309-64-4	Antimony trioxide	>0.1**

Additional Component Information

* Component of Whispertone® product only.

** Component of Flex-Glas® XG only.

***Facing and Antimony Trioxide in Microlite XG only. Note: Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

Fiber diameters = 15.5 - 25.0 microns

Section 3 - Hazards Identification

Emergency Overview

APPEARANCE AND ODOR: White or white with black specks, fibrous glass blanket with facing. No significant odor.

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion--remove individual to fresh air.

Potential Health Effects

Summary

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. Getting dust or fibers on the skin, or in the eyes may cause itching, rash, or redness. Additional health and safety information is provided in Section 11 of this material safety data sheet.

Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposures.

Skin

Temporary irritation (itching) or redness may occur.

Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Eyes

Temporary irritation (itching) or redness may occur.

Ears

Temporary irritation (itching) or redness may occur.

Primary Routes of Entry (Exposure)

Inhalation (breathing dust), skin, and eye contact.

Target Organs

Nose (nasal passages), throat, lungs, skin, eyes.

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Section 4 - First Aid Measures

First Aid: Inhalation

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

First Aid: Skin

Wash gently with soap and water to remove dust. Wash hands before eating or using the restroom.

First Aid: Ingestion

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.

First Aid: Eyes

Do not rub or scratch your eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

First Aid: Ears

Wash exposed skin with soap and water. If irritation develops in the inner ear, seek medical attention.

First Aid: 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

Flash Point: Not applicable

Upper Flammable Limit (UFL): Not applicable

Auto Ignition: Not determined

Rate of Burning: Not determined

General Fire Hazards

There is no potential for spontaneous fire or explosion.

Extinguishing Media

Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Equipment/Instructions

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Method Used: Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not determined

Section 6 - Accidental Release Measures

Containment Procedures

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

Clean-Up Procedures

Avoid the generation of dusts during clean-up.

Section 7 - Handling and Storage

Handling Procedures

Use protective equipment as described in Section 8 of this material safety data sheet when handling uncontained material.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from moisture.

Section 8 - Exposure Controls / Personal Protection

Exposure Guidelines

A: General Product Information

Glass wool fiber, OSHA voluntary Health and Safety Partnership Program (HSPP): 1 f/cc TWA for fibers longer than 5 µm with a diameter less than 3 µm.

B: Component Exposure Limits

Fiber Glass Wool (65997-17-3)

ACGIH: 1 fiber/cm³ TWA (respirable fibers, length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination); 5 mg/m³ TWA (inhalable fraction)

Continuous filament glass mat facing (CAS # 65997-17-3) (Not Available)

ACGIH: 1 fiber/cm³ TWA (respirable fibers, length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination); 5 mg/m³ TWA (inhalable fraction)

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Safety glasses with sideshields are recommended to keep dust out of the eyes.

Personal Protective Equipment: Ears

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear, if necessary.

Personal Protective Equipment: Skin

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation caused by fiber glass.

Personal Protective Equipment: Respiratory

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher. Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

Personal Protective Equipment: General

Wear a cap, a loose-fitting, long-sleeved shirt and long pants to protect skin from irritation. Exposed skin areas should be washed with soap and warm water after handling or working with fiber glass. Clothing should be washed separately from other clothes, and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

Section 9 - Physical & Chemical Properties

<p>Appearance: White or white with black specks, fibrous glass blanket.</p> <p>Physical State: Solid</p> <p>Vapor Pressure: Not applicable</p> <p>Boiling Point: Not determined</p> <p>Solubility (H₂O): Nil</p> <p>Freezing Point: Not applicable</p> <p>Percent Volatile: 0</p>	<p>Odor: No significant odor</p> <p>pH: Not applicable</p> <p>Vapor Density: Not applicable</p> <p>Melting Point: >704°C/1300°F</p> <p>Specific Gravity: Variable</p> <p>Evaporation Rate: Not applicable</p> <p>VOC: Not applicable</p>
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Section 10 - Chemical Stability & Reactivity Information**Chemical Stability**

This is a stable material. This product is not reactive.

Hazardous Decomposition

Although fiber glass itself is not combustible, the following decomposition products may be released during burning of the insulation binder: carbon monoxide, carbon dioxide, carbon particles, and small hydrocarbons.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information**Acute Toxicity****A: General Product Information**

Dust from this product is a mechanical irritant, which means that it may cause temporary irritation or scratchiness of the throat, and/or itching of the eyes and skin.

B: Component Analysis - LD50/LC50**Antimony trioxide (1309-64-4)**

Oral LD50 Rat: >34600 mg/kg

Carcinogenicity**A: General Product Information**

No additional information available.

B: Component Carcinogenicity**Fiber Glass Wool (65997-17-3)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Group 3 - Not Classifiable (IARC Monograph 81, 2002, listed under Man-made mineral fibres; Monograph 43, 1988)

Continuous filament glass mat facing (CAS # 65997-17-3) (Not Available)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Group 3 - Not Classifiable - IARC Monograph 81, 2002, listed under Man-made mineral fibres; Monograph 43, 1988)

Antimony trioxide (1309-64-4)

ACGIH: A2 - Suspected Human Carcinogen (production)

IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47, 1989)

Chronic Toxicity

Fiber Glass Wool: In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 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 is 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. NTP and ACGIH have not yet reviewed the IARC reclassification or the most current fiber glass health research; at this time, both agencies continue to classify glass wool based on the earlier animal injection studies.

Section 12 - Ecological Information**Ecotoxicity****A: General Product Information**

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity**Antimony trioxide (1309-64-4)**

96 Hr LC50 Pimephales promelas: 833.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 530 mg/L; 96 Hr LC50 Brachydanio rerio: >1000 mg/L [static]

72 Hr EC50 Selenastrum capricornutum: 67 mg/L

7 Hr EC50 Pseudomonas putida: >3.5 mg/L

48 Hr EC50 Daphnia magna: >1000 mg/L

Section 13 - Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

Comply with state and local regulations for disposal. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the EPA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 - Transportation Information

Shipping Name: This product is not classified as a hazardous material for transport.

Section 15 - Regulatory Information

US Federal Regulations

A: General Product Information

SARA 311/312: This product is not classified as hazardous under SARA 311/312.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Antimony trioxide (1309-64-4)

CERCLA: 1000 lb final RQ; 454 kg final RQ

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Fiber Glass Wool	65997-17-3	No	No	No	Yes	No	No
Antimony trioxide	1309-64-4	Yes	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.

Fiber Glass Wool (related to Mineral Wool Fiber) CAS# 65997-17-3

Antimony trioxide CAS# 1309-64-4

Other Regulatory Information

A: General Product Information

No additional information available.

B: TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Fiber Glass Wool	65997-17-3	Yes	Yes	Yes
Antimony trioxide	1309-64-4	Yes	Yes	Yes

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Section 16 - Other Information

Other Information

Prepared for:

Material Name: Specialty Insulations (Acrylic Resin)

**Material Safety Data
Sheet ID: 1201**

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Performance Materials
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Denver, CO USA 80217-5108

Prepared by:
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The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Date	MSDS #	Reason
05/28/03	1201-1.0000	New Formaldehyde-free products; new MSDS.
07/01/03	1201-1.0001	Sect. 10: delete hydrogen cyanide; not a product of decomposition or burning.
11/04/03	1201-1.0002	Section 2, added Facing and Antimony for Microlite. Sections 8, 11, 15 updated for Antimony.
04/28/04	1201-1.0003	Section 1, edited Flex-Glas trademark. Regulatory update. Minor edits.
06/13/05	1201-1.0004	Addition of fiber diameter range for all products listed. Minor edits throughout.
06/29/06	1201-1.0005	Addition of Spin-Glas WH XG to trade names; Removal of Whisperstone Wallboard - obsolete product; Removal of formaldehyde free from material name.

This is the end of MSDS # 1201



Johns Manville

Air Handling Systems

Flex-Glas® PC

Formaldehyde-free™ Flexible Duct Insulation

Description

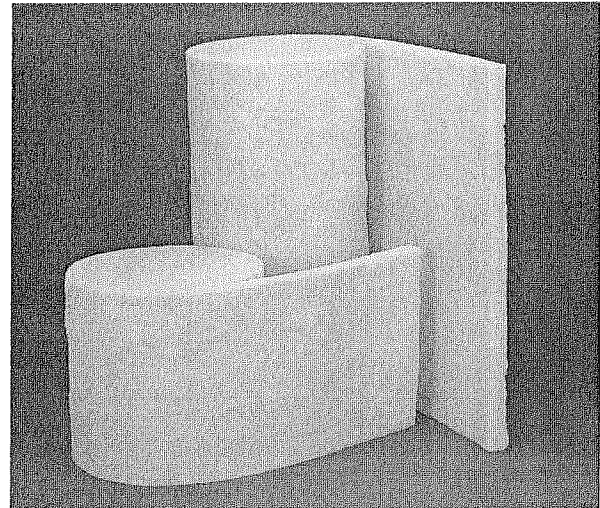
Flex-Glas PC Formaldehyde-free™ insulation is a white, light-weight, highly resilient, blanket-type thermal material. The insulation blanket is manufactured from rotary-process fiber glass bonded with a special thermosetting acrylic resin. Flex-Glas PC provides excellent acoustical and thermal performance.

Uses

Flex-Glas PC is designed for use in the manufacture of insulated flexible ducts for HVAC applications.

General Properties

Operating temperature (max.) - ASTM C 411	250°F (121°C)
Water vapor sorption - ASTM C 1104	<5% by weight
Corrosivity with steel - ASTM C 665	Does not accelerate
Fungi resistance - ASTM C 1338	Does not breed or promote



Standard Thicknesses and Packaging

Type	R-Value	Thickness		Length	
		in	mm	ft	m
100	4.2	1¼	32	175	53
130	6.0	2	51	150	46
135	8.0	2½	64	100	31

Note: Custom-sized widths are available between 19" (483 mm) and 96" (2438 mm). Contact your Regional Sales Office for availability.

Surface Burning Characteristics

Flex-Glas PC meets the Surface Burning Characteristics and Limited Combustibility of the following standards:

Standard/Test Method

- ASTM E 84
- UL 723
- NFPA 90A and 90B
- UL Guide No. 40 U8.3. Card R3711
- CAN/ULC S102-1188

Maximum Flame Spread Index	25
Maximum Smoke Developed Index	50

The Underwriters Laboratories recognized component label is printed on the Flex-Glas PC packaging.

Installed Thickness and Thermal Performance (ASTM C 518)

Type	Minimum Installed Thickness		R-Value (hr•ft²•°F)/Btu	m²•°C/W	k*	
	in	mm			Btu•in/(hr•ft²•°F)	W/m•°C
100	1½	29	4.2	0.74	0.27	0.039
130	1½	41	6.0	1.06	0.27	0.039
135	2¼	57	8.0	1.41	0.28	0.041

* Conductivity at 75°F (24°C) mean temperature at minimum installed thickness.

Green Building Certifications

Recycled Content	SCS Certified
LEED® Credits	See JM.com/buildgreen,
LEED®-NC	JM LEED® Credit Guide (HIG-1231)



Flex-Glas PC contains 20% post-consumer recycled glass.

JM Formaldehyde-free™ Fiber Glass Insulation

JM Formaldehyde-free™ fiber glass insulation offers superior thermal and acoustical performance—and it improves indoor air quality, because it's made without formaldehyde. Why is that important? Because the U.S. Environmental Protection Agency (U.S. EPA) recommends limiting exposure to formaldehyde as much as possible, and the California Air Resources Board, a division of the California EPA, recommends that builders and architects use building materials and insulation made without formaldehyde.

Flex-Glas® PC

Formaldehyde-free™ Flexible Duct Insulation

Limitation of Liability

Although Flex-Glas PC displays the UL-recognized component label for air ducts, UL 181 specifies performance requirements for the insulation component as well as the entire duct assembly. JM Flex-Glas PC meets the fiber glass insulation properties per UL 181, but this DOES NOT guarantee the performance requirements for the entire duct assembly.



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AHS-426 1-09 (New)

North American Sales Offices, Insulation Systems

Eastern Region
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Defiance, OH 43512
(800) 334-2399
Fax: (419) 784-7866

Western Region & Canada
P.O. Box 5108
Denver, CO 80217
(800) 368-4431
Fax: (303) 978-4661

The physical and chemical properties of Flex-Glas® PC Formaldehyde-free™ Flexible Duct Insulation listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to assure current information. **All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy, and information on other Johns Manville thermal insulations and systems, call (800) 654-3103.**

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