

Section 1 - Product and Company Identification

Hazard Label WARNING label

Company Information

Johns Manville Engineered Products Group
Filtration and Manufacturing Division
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Trade Names: Micro-Fiber® Felt Type 475; Micro-Strand® Fiber Glass Micro-Fibers Type 475 (Bulk, Felts, Mats, and Webs)

Section 2 - Hazards Identification

Emergency Overview

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

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 safety data sheet.

Inhalation

Temporary mechanical irritation may occur upon exposure to dust or fibers released from cutting this product.

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)

Eyes, skin, inhalation (breathing dust and fibers) and ingestion.

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 3 - Composition/Information on Ingredients

CAS #	Component	Percent
Not Available	Special Purpose Glass Fiber Respirable Size	100
1314-13-2	Zinc oxide (Glass component)	<6*
1304-28-5	Barium oxide (Glass component)	<6*

Component Information

* Component does not exist in a chemically free state in the product.

Average fiber diameter = 0.26 - 2.70 microns.

General Product Description

White fibrous glass in bulk or in the form of felts, mats, or webs.

Section 4 - First Aid Measures

First Aid: Inhalation

If dust is inhaled in excess of exposure limits referenced in section 8 of this safety data sheet, remove individual 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 and fibers. Alternatively, fibers can be removed from the skin by use of ordinary masking or wrapping tape. Should irritation persist, seek medical attention.

First Aid: Ingestion

Rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

First Aid: Eyes

Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water until irritation subsides. If irritation persists, seek medical attention.

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

Dust from the product may cause mechanical irritation of the eyes, skin, and upper respiratory tract. Treat symptomatically.

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. Inorganic glass fibers are naturally non-combustible and non-flammable.

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.

Section 6 - Accidental Release Measures

Clean-Up Procedures

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

Section 7 - Handling and Storage

Handling Procedures

Use protective equipment as described in Section 8 of this safety data sheet when handling uncontained material. Handle in accordance with good industrial hygiene and safety practices.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept clean, dry, and in original packaging.

Section 8 - Exposure Controls / Personal Protection

The Occupational Safety and Health Administration (OSHA) has not adopted specific occupational exposure standards for fiber glass. Fiber glass is treated as a nuisance dust and is regulated by OSHA as a particulate not otherwise regulated (total dust) shown in CFR 1910.1000 Table Z-3.

Respirable fraction 5 mg/m³

Total dust 15 mg/m³

JM has adopted the fiber glass industry voluntary Product Stewardship Program (PSP), formerly the NAIMA-OSHA Health and Safety Partnership Program (HSPP). Under the PSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA for fibers longer than 5 microns with a diameter less than 3 microns. This will help minimize potential irritation effects. The PSP also includes the PPE recommendations described below.

Zinc oxide (Glass component) (1314-13-2)

OSHA: 5 mg/m3 TWA (fume); 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
5 mg/m3 TWA (fume); 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
ACGIH: 2 mg/m3 TWA (respirable fraction)
10 mg/m3 STEL (respirable fraction)

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes/Face**

Safety glasses with side shields 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 protect against mechanical abrasion. See also Personal Protective Equipment: General, below.

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 referenced in Section 8 of this SDS. Wear a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (per 42 CFR 84) when dust or fiber concentrations exceed the applicable exposure limits. 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, milling or other processing to remove airborne dust and fibers.

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 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

Appearance: White fibrous glass in bulk or in the form of felts, mats, or webs.

Odor: No significant odor

Physical State: Solid

pH: Not applicable

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Boiling Point: Not determined

Melting Point: >704°C/1300°F

Solubility (H₂O): Nil

Specific Gravity: Variable

Freezing Point: Not applicable

Evaporation Rate: Not applicable

Viscosity: Not applicable

Percent Volatile: 0

VOC: Not applicable

Section 10 - Stability & Reactivity Information
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Stability

These products are not reactive.

Hazardous Decomposition

May form carbon dioxide and carbon monoxide.

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

Zinc oxide (Glass component) (1314-13-2)
Oral LD50 Rat: >5000 mg/kg

Component Carcinogenicity

Special Purpose Glass Fiber Respirable Size

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
NTP: Reasonably Anticipated To Be A Human Carcinogen (respirable size) (Possible Select Carcinogen)
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 81 [2002] (such as E-glass and 475 glass fibres listed under Man-made vitreous fibres))

Chronic Toxicity

There is sufficient evidence in experimental animals for the carcinogenicity of special purpose glass fibers including E-glass and '475' glass fibers. Many intraperitoneal studies of special-purpose glass fibers have been conducted, most of which have examined the tumorigenic potential of two compositions of special-purpose glass fibers (E-glass and '475' fibers) after injection or surgical implantation of fibers at high doses (approximately 109 fibers) into the peritoneal cavity of rats. All of these studies reported an increase in peritoneal tumors. (IARC VOL: 81 (2002)).

Per the Toxicological Profile for Synthetic Vitreous Fibers by the Agency for Toxic Substances and Disease Registry (ATSDR), the International Agency for the Research on Cancer (IARC 2002) concluded that special purpose glass fibers (E-glass and 475 glass fibers) not used as insulating materials were classified as Group 2B, possibly carcinogenic to humans, because of their relatively high biopersistence.

The U.S. Department of Health and Human Services, National Toxicology Program (NTP 1998, 2000, 2002) classified glass wool (respirable size) as reasonably anticipated to be a human carcinogen, based on sufficient evidence of carcinogenicity in animals. This assessment was originally prepared in 1993-1994 for the 7th Report on Carcinogens (NTP 1994), but has not been updated since then in the 8th, 9th, or 10th Reports on Carcinogens (NTP 1998, 2000, 2002).

Section 12 - Ecological Information

Ecotoxicity

A: General Product Information

Not expected to be dangerous to the environment.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Section 13 - Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

This product is not expected to be a hazardous waste when it is disposed of according to the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations. Product characterization after use is recommended to ensure proper disposal under federal and/or state requirements.

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 - Transport Information

International Transport Regulations

These products are not classified as dangerous goods according to international transport regulations.

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).

Barium oxide (Glass component) (1304-28-5)

SARA 313: 1.0 % de minimis concentration (does not include Barium sulfate CAS 7727-43-7, Chemical Category N040)

State Regulations**A: General Product Information**

The glass fibers in this product are not known to be regulated.
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
Zinc oxide (Glass component)	1314-13-2	Yes	No	Yes	Yes	Yes	Yes
Barium oxide (Glass component) (related to Barium compounds)	1304-28-5	No	No	No	No	Yes	Yes ¹

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.

Component	CAS #
Special Purpose Glass Fiber Respirable Size	Not Available

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.

International Regulations**A: General Product Information**

These products are considered articles under both U.S. and international product regulations and as such, these products do not require registration or notification on the various country-specific inventories.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Special Purpose Glass Fiber Respirable Size	Not Available	1 % (related to Fibrous glass)
Zinc oxide (Glass component)	1314-13-2	1 %

WHMIS Classification

Controlled Product Classification: D2A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Other Information

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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
10/13/00	1004-1.0000	New MSDS authoring system. Corrected CAS # for barium and zinc oxides (Sect. 2) to agree with new MSDS 1116 for 475 CF.
01/08/01	1004-1.0100	Minor regulatory update per LOLI.
1/09/02	1004-1.0101	Update Sections 1 and 11 to reflect IARC 2001 review of fiber glass.
06/06/02	1004-1.0200	Sect. 15: SARA 313 information for Zinc oxide inserted.
10/08/03	1004-1.0300	Minor edits. Entered RR# for special purpose glass fiber.
10/22/03	1004-1.0400	Update section 15 for zinc.
02/22/05	1004-1.0401	Minor regulatory update.
07/13/05	1004-1.0402	Updated Section 8 exposure; Updated Section 15 SARA, CERCLA, WHMIS, and State.
03/01/06	1004-1.0403	Updated composition in Section 2. Minor edits throughout.
09/18/06	1004-1.0404	Updated MSDS for TSCA article exemption.
10/21/08	1004-1.0405	Regulatory update. SDS updated to GHS format. Updated composition of glass to include zinc and barium.

End of Sheet 1004