



Material Safety Data Sheet

Material Name: High Temperature Mineral Wool Insulation

MSDS No.: 15-MSD- 20888-01-D

*** Section 1 - Chemical Product and Company Identification ***

Product Name(s): High Temperature Pipe Insulation (1200 Premolded, BWT, Thermaloc), High Temperature Industrial Board, High Temperature Flexible Batt, High Temperature Metal Mesh Blanket, High Temperature Tank and Pipe Fabrication Board, High Temperature Fabrication Board, High Temperature Marine (Board, Flex, F11OC), Bulk Wool

Owens Corning
One Owens Corning Parkway, World Headquarters
Attn. Product Stewardship
Toledo, OH 43659, USA

Emergency Contacts:

Emergencies ONLY (after 5pm ET and weekends): 1-419-248-5330,
CHEMTREC (24 hours everyday): 1-800-424-9300,
CANUTEC (Canada - 24 hours everyday): 1-613-996-6666.

Health and Technical Contacts:

Health Issues Information (8am-5pm ET): 1-419-248-8234,
Technical Product Information (8am-5pm ET): 1-800-GET-PINK.

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent by Wt.
65997-17-3	Mineral Wool	95
25104-55-6	Urea, polymer with formaldehyde and phenol	2-5
8012-95-1	Lubricating oil	< 2
50-00-0	Formaldehyde	<0.1

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Nuisance particulates, Rock wool.

Component Information/Information on Non-Hazardous Components

No additional information available.

*** Section 3 - Hazards Identification ***

Appearance and Odor: Solid, greenish/yellow color.

Emergency Overview

Acrid smoke may be generated in a fire. Exposure to dust may be irritating to eyes, nose, and throat.

Potential Health Effects

Inhalation:

Mineral wool is a possible cancer hazard. Use of these products has not been shown to cause cancer in humans. Mineral wool caused cancer in animals through unnatural routes of exposure (surgical implantation), but has not produced significant cancer by inhalation. See Section 11 of MSDS for additional toxicological data.



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Skin Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the skin.

Eye Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the eyes.

Ingestion:

Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Medical Conditions Aggravated by Exposure:

Chronic respiratory or skin conditions may temporarily worsen from exposure to this products.

*** Section 4 - First Aid Measures ***

Inhalation:

If inhaled, remove the affected person to fresh air. If irritation persists get medical attention.

Skin Contact:

For skin contact, wash with mild soap and running water. Use a wash cloth to help remove fibers. To avoid further irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into the skin. If irritation persists get medical attention.

Never use compressed air to remove fibers from the skin.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

Ingestion:

Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that partial or complete intestinal obstruction does not occur. Do not induce vomiting unless directed to do so by medical personnel.

*** Section 5 - Fire Fighting Measures ***

Flash Point: None

Flash Point Method: Not applicable

Upper Flammability Limit: Not applicable

Lower Flammability Limit: Not applicable

Flammability Classification: Non-flammable

Extinguishing Media:

Use any extinguishing media appropriate for the surrounding fires.

Unusual Fire & Explosion Hazards:

May release acid smoke in a sustained fire. The organic binder will emit toxic fumes and smoke when oxidized and ventilation is recommended on initial equipment startup.

Fire-Fighting Instructions:

Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.

Hazardous Combustion Products:

Primary combustion products are carbon monoxide, carbon dioxide, ammonia, and water. Other undetermined compounds could be released in small quantities.



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*** Section 6 - Accidental Release Measures ***

Containment Procedures:

This material will settle out of the air. If concentrated on land, it can then be scooped up for disposal as a non-hazardous waste. This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne; however, the material is non-hazardous in water.

Clean-Up Procedures:

Scoop up material and put into a suitable container for disposal as a non-hazardous waste.

Response Procedures:

Isolate area. Keep unnecessary personnel away.

Special Procedures:

None.

*** Section 7 - Handling and Storage ***

Handling Procedures:

No special procedures are required for this material.

Keep product in its packaging, as long as practicable to minimize potential dust generation. Keep work areas clean. Avoid unnecessary handling of scrap materials by placing them in waste disposal containers and equipment, kept as to close working areas as possible, to prevent release of fibers and dust.

Avoid inhaling dusts or vapors produced during thermal processing. Avoid eye and excessive skin contact. Use only with adequate ventilation. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Special care must be taken to avoid buildup of dusts.

Storage Procedures:

No special procedures are required for this material.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines:

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

ACGIH and OSHA exposure limit lists have been checked for those components with CAS registry numbers.

Mineral Wool (65997-17-3)

ACGIH: 1 f/cc TWA (for fibers longer than 5 um with a diameter less than 3 um); (Listed under "Synthetic vitreous fibers") (related to Slag wool fibers)
10 mg/m³ TWA (inhalable particulate); 3 mg/m³ TWA (respirable particulate) (These values are for particulate matter containing no asbestos and <1% crystalline silica) (related to Particulates not otherwise classified (PNOC))

OSHA: 1 fiber/cc (respirable) TWA (a) (See Note Below) (related to Glass wool fiber)



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Lubricating oil (8012-95-1)

ACGIH: 5 mg/m³ TWA (as an oil mist)
(10 mg/m³) STEL (as an oil mist)
OSHA: 5 mg/m³ TWA

Formaldehyde (50-00-0)

ACGIH: C 0.3 ppm
OSHA: 0.75 ppm TWA PEL; 2 ppm STEL; 0.5 ppm TWA action level; Irritant and potential cancer hazard (29 CFR 1910.1048)

Notes: (a) Voluntary PEL established by NAIMA and OSHA per the Health and Safety Partnership Program (HSPP) agreement for Synthetic Vitreous Fibers (SVF). Prior to the HSPP agreement, the OSHA 8 hr- TWA PELs for Particulates Not Otherwise Regulated (PNOR) of 15 mg/m³ (total particulate) and 5 mg/m³ (respirable particulate) applied to airborne glass wool fibers and dusts. These PELs were based on gravimetric measurements of airborne particulates including glass dusts and fibers.

NAIMA = North American Insulation Manufacturers Association

Ventilation:

General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations using power tools.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:

Respiratory Protection: When the temperature of the surface being insulated exceeds 400°F (194°C) or during initial system startup, the binder in these products may undergo various degrees of decomposition depending on the temperature of the application. The need for respiratory protection will vary according to the airborne concentration of the decomposition products released and accumulated in the area. If the insulation must be installed on hot surfaces above 400°F (194°C), a full face respirator approved for protection against organic vapors should be used. In areas with good general and/or local exhaust ventilation where exposures are controlled below the formaldehyde PEL or STEL, respiratory protection is normally not needed.

Mineral wool: Use a 3M Model 8210 (formerly 8710) (3M Model 9900 in high humidity environments) or equivalent under the following conditions: 1) in any confined or poorly ventilated space, 2) fabrication involving power tools, or 3) any dusty environment.

Formaldehyde: In some applications these products may release concentrations of formaldehyde equal to or greater than 0.1 ppm, but less than 0.5 ppm. Airborne concentrations should be assessed to determine the appropriate type of respiratory protection to be used. When in doubt, use supplied air respiratory protection.

Skin Protection:

Normal work clothing (long sleeved shirts and long pants) is recommended. Use impervious gloves. Skin irritation is known to occur chiefly at the pressure points such as around the neck, wrists, waist and between the fingers.

Eyes/Face Protective Equipment:

Wear safety glasses or goggles.



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*** Section 9 - Physical & Chemical Properties ***

Appearance:	Fibrous	Odor:	Organic
Physical State:	Solid	pH:	Not applicable
Vapor Pressure (mm Hg @ 20 C):	Not applicable	Vapor Density (Air=1):	Not applicable
Boiling Point:	Not applicable	Solubility (H2O):	Insoluble
Specific Gravity (Water=1):	Not applicable	Freezing Point:	Not applicable
Evaporation Rate (n-Butyl Acetate=1):	Not applicable	Viscosity:	Not applicable

*** Section 10 - Chemical Stability & Reactivity Information ***

Stability:

This is a stable material.

Conditions to Avoid:

None expected.

Incompatible Materials:

None expected.

Hazardous Decomposition Products:

Primary combustion products are carbon monoxide, carbon dioxide, ammonia, and water. Other undetermined compounds could be released in small quantities.

Hazardous Polymerization:

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity:

A: General Product Information

Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. Higher exposures may cause difficulty breathing, congestion, and chest tightness.

B: Component Analysis - LD50/LC50

Urea, polymer with formaldehyde and phenol (25104-55-6)

Oral LD50 Rat : 7 gm/kg

Oral LD50 Mouse : 7 gm/kg

Lubricating oil (8012-95-1)

Oral LD50 Mouse : 22 gm/kg



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Formaldehyde (50-00-0)

Inhalation LC50 Rat : 203 mg/m³
Inhalation LC50 Mouse : 454 mg/m³/4H
Oral LD50 Rat : 100 mg/kg
Oral LD50 Mouse : 42 mg/kg
Dermal LD50 Rabbit : 270 uL/kg

Carcinogenicity:

A: General Product Information

Mineral Wool: The International Agency for Research on Cancer (IARC) in June, 1987, classified mineral wool (rock/slag-wool) as "possibly carcinogenic to humans" (Group 2B). IARC's assessment said that there was "limited evidence for the carcinogenicity of rock/slag-wool in humans", "limited evidence for the carcinogenicity of rockwool in experimental animals" and "inadequate evidence for the carcinogenicity of slagwool in animals". The human data included large scale mortality studies of U.S. and European mineral wool factory workers.

Animal inhalation experiments in which laboratory animals were exposed to large quantities of mineral wool fibers have not resulted in a positive association between mineral wool and lung cancer. Malignant tumors were produced in animals when large doses of mineral wool were implanted surgically or injected into the chest or abdomen bypassing the animal's natural defense mechanisms.

In a large lifetime animal inhalation study, minimal fibrosis (i.e. lung scarring) has been observed late in the lives of animals exposed to high concentrations of rockwool. Exposures were hundreds to thousands of times higher than currently seen in manufacturing and end-use environments.

The most recent update of the U.S. study reporting on deaths through 1989 was reported in early 1996. For the mineral wool cohort, elevated risk of death from respiratory system cancer and nonmalignant respiratory disease was observed in some of the cohort subgroups but there was no consistent evidence of an association between those elevated risks and respirable mineral wool fibers. There were no deaths from mesothelioma during the latest follow-up period.

Formaldehyde: In March 1987 the International Agency for Research on Cancer (IARC) upgraded their overall evaluation of formaldehyde gas, based on evidence of carcinogenicity in humans, from a possible human carcinogen (Group 2B based on inadequate evidence in humans) to a probable human carcinogen (Group 2A based on limited evidence in humans). A number of new epidemiological studies on persons in a variety of occupations with potential exposure to formaldehyde were used in the evaluation. Cancers that occurred in excess in more than one study are: Hodgkin's disease, leukemia, and cancers of the buccal cavity and pharynx (particularly nasopharynx), lung, nose, prostate, bladder, brain, colon, skin and kidney.

Exposure to formaldehyde at concentrations in excess of 1 ppm may cause significant irritation of the eyes and upper respiratory tract. The irritation threshold appears to be about 0.3 ppm. Pulmonary sensitization, although rare, does occur in humans. Formaldehyde solutions can cause severe eye and moderate skin irritation. Repeated skin exposure to solutions of 2% or more formaldehyde has caused allergic skin reactions. Formaldehyde was found to be weakly active in a number of in vitro genotoxicity tests, but inactive in vivo. Formaldehyde did not cause birth defects in offspring of female mice who were exposed to concentrations up to 10 ppm. Lifetime inhalation of formaldehyde at concentrations above 5 ppm for 6 hours per day, caused nasal tumors in laboratory animals. Many epidemiological studies have failed to link cancer in humans with occupational exposure to formaldehyde.



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The American Conference of Governmental Industrial Hygienists (ACGIH) A2 designation, suspected human carcinogen, is based on cancer in experimental animals and conflicting or insufficient epidemiological studies of workers. The recommended ceiling TLV of 0.3 ppm for workplace air formaldehyde is based on evidence of irritation of occupational exposure to formaldehyde as well as human formaldehyde exposures in other settings.

B: Component Carcinogenicity

ACGIH, IARC, OSHA, and NTP carcinogen lists have been checked for those components with CAS registry numbers.

Mineral Wool (65997-17-3)

ACGIH: A3 - animal carcinogen (related to Rock wool fibers)

IARC: Monograph 43, 1988 (related to Rock wool) (Group 2B (possibly carcinogenic to humans))

Lubricating oil (8012-95-1)

IARC: Supplement 7, 1987; Monograph 33, 1984 (Group 3 (not classifiable))

Formaldehyde (50-00-0)

ACGIH: A2 - suspected human carcinogen

OSHA: 0.75 ppm TWA PEL; 2 ppm STEL; 0.5 ppm TWA action level; Irritant and potential cancer hazard (29 CFR 1910.1048)

NTP: Suspect Carcinogen (Possible Select Carcinogen)

IARC: Monograph 62, 1995 (Group 2A (probably carcinogenic to humans))

*** Section 12 - Ecological Information ***

Ecotoxicity:

A: General Product Information

No data available for this product. This material is not expected to cause harm to animals, plants or fish.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Formaldehyde (50-00-0)

LC50 (96 hr) fathead minnow:24.1 mg/L. Cond:Flow-through, 21.7 degrees C, pH 6.8, 50.8 mg/L CaCO3.;LC50 (96 hr) bluegill:0.10 mg/L. Cond:Flow-through.

Environmental Fate:

No data available for this product.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions:

A: General Product Information

Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

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.



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*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Not regulated for transport.
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Label(s): None
Additional Info.: None

TDG Information

Shipping Name: Not regulated for transport.
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Label(s): None
Additional Info.: None

Additional Transportation Regulations:

No additional information available.

*** Section 15 - Regulatory Information ***

US Federal Regulations:

A: General Product Information

No additional information available. Formaldehyde content is below the SARA 313 0.1% "de minimis concentration"

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).

Mineral Wool (65997-17-3)

CERCLA: Includes mineral fiber emissions from facilities manufacturing or processing glass rock or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less; Statutory RQ = 1 pound (.454 kg); no final RQ is being assigned to the generic or broad class (related to Fine mineral fibers)

Formaldehyde (50-00-0)

SARA 302: TPQ = 500 pounds; RQ = 100 pounds (does not meet toxicity criteria but because of high production volume and recognized toxicity is considered a chemical of concern)
CERCLA: final RQ = 100 pounds (45.4 kg)

SARA 311/312

Acute Health Hazard: Yes
Chronic Health Hazard: Yes
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactive Hazard: No



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C: Clean Air Act

The following components appear on the Clean Air Act-1990 Hazardous Air Pollutants List:

Component	CAS	CAA
Mineral Wool (related to Fine mineral fibers)	65997-17-3	Yes
Formaldehyde	50-00-0	Yes

State Regulations:

A: General Product Information

No additional information available.

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
Mineral Wool (related to Mineral wool fiber)	65997-17-3	Yes ¹	No	Yes ¹	Yes ¹	No	Yes ¹
Lubricating oil	8012-95-1	Yes	No	Yes	Yes	No	Yes
Formaldehyde	50-00-0	Yes	Yes	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.

Other Regulations:

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Mineral Wool	65997-17-3	Yes	Yes	Yes
Urea, polymer with formaldehyde and phenol	25104-55-6	Yes	Yes	No
Lubricating oil	8012-95-1	Yes	Yes	Yes
Formaldehyde	50-00-0	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

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

Component	CAS #	
Lubricating oil	8012-95-1	1% item 1224 (977)

WHMIS Status: Controlled

WHMIS Classification: D2A- Carcinogenicity
D2B- Irritation

*** Section 16 - Other Information ***

HMIS and NFPA Hazard Ratings:	Category	HMIS	NFPA
	Acute Health	1*	2
	Flammability	1	1
	Reactivity	0	0



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NFPA Unusual Hazards None

HMIS Personal Protection To be supplied by user depending upon use.

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend:

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; DSL = Canadian Domestic Substance List; EINECS = European Inventory of New and Existing Chemical Substances; WHMIS = Workplace Hazardous Materials Information System; CAA = Clean Air Act

Revision Summary:

This is a revised MSDS which replaces 15-MSD-20888-01-C with new formatting and clarified exposure limits. Read this information carefully

Get OC MSDS electronically via Internet: <http://owenscorning.mtcibs.com> or by calling 1-419-248-8234.

This is the end of MSDS # 15-MSD-20888-01-D