Material Safety Data Sheet

Mineral Wool Insulation

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

PRODUCT GENERIC NAME	:	ROCK WOOL, SLAG WOOL, MINERAL COTON, MINERAL WOOL, SILICATE COTTON
PRODUCT USE	:	Commercial, Industrial and Residential Insulation
PRODUCT DESCRIPTON	:	**KM MW (MINERAL WOOL)** **Non-Combustible, Acoustic, Thermal Insulation**
PRODUCT FORM	:	Board [Slab], Blanket [Roll]
TRADE NAME / SYNONYMS	:	ROCK WOOL, SLAG WOOL, MINERAL COTON, SILICATE COTTON
SUPPLIER	:	Two Nine Six O Trading Pte Ltd 21, Tuas West Ave, Singapore 638 435
TELEPHONE / FAX NUMBER	:	(65) 6267 1300 / (65) 66264 2960

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	%
Mineral Fiber	RN 65997-17-3	94 - 99
Cured Urea Extended Phenol / Formaldehyde Binder	25104-55-6	1 - 6

3. HAZARD IDENTIFICATION

- APPEARANCE & ODOR : Light yellow or grey board or batt
- NFPA RATING [0 ~ 1] : HEALTH = 1; FIRE = 0; REACTIVITY = 0
- EC CLASSIFICATION : No Classification Assigned
- EMERGENCY OVERVIEW : Acrid smoke may be generated in a fire.
  Exposure to dust may be irritating to the eyes, nose and throat.
- EYE CONTACT : Dusts and fibers may cause temporary mechanical irritation (itching) or redness to the eyes.
- SKIN CONTACT : Dusts and fibers may cause temporary mechanical irritation (itching) or redness to the skin.
- INHALATION : Temporary mechanical irritation of the upper respiratory tract (scratchy throat, coughing, congestion) may result from exposures to dust and fibers in excess of applicable exposure limits.
- INGESTION : Ingestion of this product is unlikely and not intended under normal conditions of use.
  Ingestion of this product may cause gastrointestinal irritation.
- Existing Medical Conditions: Pre- existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers.

4. FIRST-AID MEASURES

INHALATION

- If irritation occurs, remove the affected person to fresh air. Drink water, and blow nose, to clear dusts and fibers from throat and nose. If irritation persists, consult a physician.

SKIN CONTACT

- If irritation occurs, do not rub or scratch. Rinse under running water prior to washing with mild soap and water. Use a washcloth to help remove fibers. If irritation persists, consult a physician.

EYE CONTACT

- If irritation occurs, flush eyes with plenty of water for at least 15 minutes. Do not rub the eyes. Consult a physician if irritation persists.

INGESTION

- Ingestion of this product is unlikely and not intended under normal conditions of use. If it does occur, rinse mouth with plenty of water to help remove dust and fibers, and drink plenty of water to help reduce potential gastrointestinal irritation. Do not induce vomiting unless directed to do so by a physician.

5. FIRE FIGHTING MEASURE

The products are Non- Combustible and do not pose a fire hazard. However, packaging material may burn.

EXTINGUISHING MEDIA:

- Carbon dioxide, foam or dry chemical powder type recommended.

COMBUSTION PRODUCTS:

- Carbon dioxide, carbon monoxide and trace gases

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE- FIGHTERSL

- Observe normal fire-fighting procedures.

FIRE AND EXPLOSION HAZARDS:

- Not considered flammable nor combustible

FLASH POINT:	None	**FLASH POINT METHOD USED:**	Not Applicable
UPPER FLAMMABLE LIMIT (UFL):	Not Applicable	**LOWER FLAMMABLE LIMIT (LFL):**	Not Applicable
AUTOIGNITION:	Not Applicable	**EXPLOSIVE PROPERTIES:**	Not Applicable

6. ACCIDENTAL RELEASE MEASURES

PERSON RELATED PRECAUTIONARY MEASURES:

- Avoid substance contact with eyes. Avoid inhale airborne particulate.
- Ensure supply of fresh air in enclosed rooms.
- Use personal protective equipment, e.g. respirators, eye protection, gloves and safety shoes.

CONTAINMENT PROCEDURES:

- Pick up large pieces and scoop up dusts and fibers after they have settled out of air. These materials may disperse and settle along the bottom of waterways and ponds. It cannot easily be removed once it is waterborne, but is considered non- hazardous in water.

CLEANUP PROCEDURES:

- Use OSHA- recommended work practices and protective equipment as described in Section 8 of this MSDS. Avoid generating airborne dusts and fibers during cleanup. Do not use compressed air. Vacuum dusts and fibers. Place material in an appropriate container for disposal as non- hazardous waste.

RESPONSE PROCEDURES:

- Isolate area. Keep unnecessary personnel away. If dry methods or compressed air are used to collect dusts and fibers, all personnel in the area should wear OSHA- approved protective equipment (Refer to Section 8 of MSDS).

7. HANDLING AND STORAGE

GENERAL PRECAUTIONS:

- Utilize OSHA- recommended work practices and protective equipment when using the products (Refer to Section 8 of MSDS).

HANDLING

- These products are stable under all conditions of storage.
- Unpack material at application site to avoid unnecessary handling of product.
- Keep work areas clean. Avoid unnecessary handling of scrap material and debris by placing such materials in suitable containers, which should be kept as close to the work area as possible.
- Ensure good ventilation. Local exhaust ventilation may be required if the method of use produces dust levels which exceed applicable exposure limits. (See Section 8 of MSDS)
- Avoid excessive eye and skin contact with dusts and fibers.
- Use recommended cleanup procedures to avoid buildup of dusts and fibers in the work area.

STORAGE

- Keep material in original packaging until it is to be used.
- Store material to protect against adverse conditions including precipitation.

8. EXPOSURE CONTROLS/PEROSNAL PROTECTION

EXPOSURE GUIDELINES:

General Product Information: Follow all applicable exposure limits. Local regulations may apply. *Two Nine Six O* recommends that users of the products adhere to the OSHA-recommended PEL of 1 f/cc TWA (fibers longer than 5 µm with diameters less than 3 µm). This recommended PEL, together with recommended work practices and personal protective equipment, were adopted in a Health and Safety Partnership Program (HSPP) agreement in 1999 between OSHA and the North American Insulation Manufacturers Association (NAIMA). Adherence to the OSHA-recommended PEL, work practices and protective equipment in the HSPP is expected to provide appropriate protection against all inhalation-related health risks that may be associated with exposures to mineral wool fibers (ACGIH 1997; NAIMA 1999; OSHA 1999; National Research Council 2000, IARC 2001), and to minimize eye and skin irritation**.**

Component Exposure Limits:

Source	Legal or Recommended Exposure Limit	Exposure
OSHA	1 f/cc TWA (recommended)	Synthetic Vitreous Fibers, > 5 µm length, < 3 µm diameter
ACGIH	1 f/cc TWA (threshold limit value – TLV)	Synthetic Vitreous Fibers, > 5 µm length, < 3 µm diameter
OSHA	15 mg/m^3 TWA-PEL (total particulate) 5 mg/m^3 TWA-PEL (respirable particulate)	Inert dust and particulates not otherwise regulated
ACGIH	10 mg/m^3 TWA-TLV (inhalable particulate) 3 mg/m^3 TWA-TLV (respirable particulate)	Particulates not otherwise classified, containing no asbestos and <1% crystalline silica

ENGINEERING CONTROL MEASURES

- Provide sufficient ventilation or exhaust ventilation should be used as necessary to maintain exposures below applicable exposure limits. Dust collection system should be used in cutting or machining operations and may be needed when using power tools.
- Ensure eyewash stations are close to the workstation location.

PERSONAL PROTECTION MEASURES

- Respiratory Protection : Wear appropriate respirators when ventilation is inadequate.
- Hand Protection : Use of rubber type gloves is recommended.
- Eye Protection : Use of safety glasses or goggles with side shields is recommended.
- Skin/Body Protection : Long sleeve clothing; cotton or synthetic clothing is normally suitable.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Grey, light yellow fibrous batt or board
- Physical State : Solid
- Physical Form : Amorphous Fibers
- Odor : May have slight resin odor
- Odor Threshold : Not Available
- Specific gravity (Water=1) : 2.65
- pH : Not Applicable
- Boiling point : Not Applicable
- Melting point : Approximately 2150 °F (1177 °C)
- Auto-ignition temperature : Not Applicable
- Explosive limits (in air) : Not Applicable
- Vapour density (101.3kPa/air=1) : Not Applicable
- Solubility in water : Insoluble

10. STABILITY AND REACTIVITY

STABILITY

- These products are stable under all conditions of storage.

CONDITIONS TO AVOID

- DO NOT expose to water or rain.

HAZARDOUS DECOMPOSTION PRODUCTS

- Primary combustion products of the cured urea extended phenolic formaldehyde binder, when heated above 390 ^{o}F (200 ^{o}C), are carbon monoxide, carbon dioxide, ammonia, water and trace amounts of formaldehyde. Other undetermined compounds could be released in trace quantities. Emission usually only occurs during the first heating. The released gases may be irritating to the eyes, nose and throat during initial heat-up. Use appropriate respirators (air supplied) particularly in tightly confined or poorly ventilated areas during initial heat-up.

POLYMERIZATION

- Will not polymerize.

INCOMPATIBLE MATERIALS:

- Hydrofluoric acid
- None others expected.

11. TOXICOLOGICAL INFORMATION

There are no data available on the product itself.

ACUTE TOXICITY:

Inhalation: May cause irritation to mucous membranes of the upper respiratory tract (nose and throat).
Skin contact: Prolonged contact may cause skin irritation (itching and redness).
Eye contact: Prolonged contact may cause eye irritation.
Ingestion: No adverse effects expected, however large amounts may cause nausea and vomiting.

The itching and possible inflammation are a mechanical reaction to dust and coarse fibers (of more than about 5 µm in diameter), and are not damaging in the way chemical irritants may be. They generally abate within a short time after the end of exposure. When products are handled continually, the skin itching generally diminishes.

CHRONIC TOXICITY:

In October 2001 the International Agency for Research on Cancer (IARC) concluded its re-evaluation of the carcinogenic risk of mineral wool fibers. The result was a reclassification of the fibers from Group 2B (possibly carcinogenic to humans) to Group 3 (not classifiable as to the carcinogenicity to humans). Epidemiological studies published during the 15 years prior to the 2001 IARC review provide no evidence of increased risk of cancer from occupational exposure during manufacture or use of mineral wool fiber.

EVALUATIONS OF POTENTIAL CARCINOGENICITY:

Source	Classification	Description
IARC	Group 3	Not Classifiable as a Human Carcinogen
ACGIH	Group A3	Confirmed Animal Carcinogen with Unknown Relevance to Humans.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

There are no data available on the product itself.

The products are stable, are not expected to cause harm to animals, plants or fish, and have no other known adverse environmental effects.

ENVIRONMENTAL FATE:

No data available for the products.

13. DISPOSAL CONSIDERATIONS

U.S. EPA Waste Number and Descriptions:

- **General Information:** The products as supplied are not expected to be a characteristic hazardous waste under RCRA if discarded.
- **EPA Waste Numbers:** No EPA waste numbers are applicable for their product's components.

Disposal Instructions: Product is not considered a hazardous waste. Dispose of waste material according to Federal, State, Provincial, and Local environmental regulations.

14. TRANSPORT INFORMATION

No Classification assigned.

LAND TRANSPORT

Not classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

SEA TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

AIR TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

Toxic Substances Control Act (TSCA):

All components in the product are listed, as required, on the US EPA TSCA inventory, or are not required to be listed.

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).

Clean Air Act:

- Mineral wool fibers appear on the Clean Air Act – 1990 Hazardous Air Pollution List.

State and Local Regulations:

State, Provincial, and Local regulations not identified in this Material Safety Data Sheet may apply.

WHMIS:

The products have been classified in accordance with the hazard criteria of the Controlled Product Regulations.

WHMIS IDL:

- No components are listed on the IDL.

WHMIS Classifications:

- No components are classified as controlled products.
- This material is classified Group 3 (not classifiable as to carcinogenicity to humans).

16. OTHER INFORMATION

Information about "Health and Safety of Rock and Slag Wool," can be obtained from the North American Insulation Manufacturer Association
(NAIMA), 44 Canal Center Plaza, Suite 310, Alexandra, VA. 22314, USA. Home page: http://www.naima.org

Acronyms used in the MSDS:

ACGIH	:	American Conference of Government Industrial Hygienists.
CAS	:	Chemical Abstract Service.
CERCLA	:	Comprehensive Environmental Response Compensation and Liability Act.
DOT	:	Department of Transport.
IARC	:	International Agency for Research on Cancer.
MSDS	:	Material Safety Data Sheet.
NAIMA	:	North American Insulation Manufacturer's Association.
NIOSH	:	National Institute for Occupational Safety and Health.

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