## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Fibrous batt, blanket, preformed pipe or board.

Name : Stone Wool Insulation

Product code : ENERWRAP®, ProRox®, SeaRox® (Formerly RHT® , TECHTON 1200 ® & STURDIROCK)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Use of the substance/preparation : Technical, industrial, and marine insulation

#### 1.2.2. Uses advised against

None known.

### 1.3. Details of the supplier of the safety data sheet

ROXUL INC.
8024 Esquesing Line
Milton, Ontario, Canada
L9T 6W3
www.roxul.com
Telephone: 1-800-265-6878 or +1-905-878-8474
Fax: +1-905-878-8077

### 1.4. Emergency telephone number

Telephone: 1-800-265-6878 or +1-905-878-8474 (9:00 am to 5:00 pm)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**WHMIS Classification**

Not controlled

**Classification according to 2012 29 CFR § 1910.1200 [OSHA GHS]**

Not classified

**Classification according to NMX-R-019-SCFI-2011 [Mexico GHS]**

Not classified

**Adverse physicochemical, human health and environmental effects**

This product may cause mechanical irritation to the eyes and skin. Temporary irritation of the upper respiratory tract (scratchy throat, coughing, congestion) may result from exposure to dusts and fibers in excess of applicable exposure limits. Pre-existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers. This product may cause allergy in sensitized individuals.

There is insufficient evidence that synthetic mineral fibers cause respiratory disease in humans. Results from animal experiments have led to conservative classifications of certain synthetic mineral fibers as possible human carcinogens. Specifically, glass wool insulation is not classifiable as to their carcinogenicity to humans.

### 2.2. Label elements

**Labelling according to WHMIS** : None

**Labelling according to 2012 29 CFR § 1910.1200 [OSHA GHS]**

Hazard pictograms (OSHA GHS) : None

Signal word (OSHA GHS) : None

Hazard statements (OSHA GHS) : None

Precautionary statements (OSHA GHS) : None

**Labelling according to NMX-R-019-SCFI-2011 [Mexico GHS]**

Hazard pictograms (Mexico GHS) : None
Signal word (Mexico GHS) : None
Hazard statements (Mexico GHS) : None
Precautionary statements (Mexico GHS) : None

### 2.3. Any hazards not otherwise classified

None known.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable.

### 3.2. Mixtures

| Name | Product Identifier (CASRN) | Weight % |
|---|---|---|
| Mineral wool fiber | 65997-17-3 | 97-99% |
| Phenol formaldehyde polymer | 9003-35-4 | <3% |

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after 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.

First-aid measures after skin contact : Rinse thoroughly under running water prior to washing with mild soap and water. Use a washcloth to help remove fibers. If irritation occurs, do not rub or scratch. If irritation persists, consult a physician.

First-aid measures after eye contact : If irritation occurs, hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Do not rub the eyes. Consult a physician if irritation persists.

First-aid measures after ingestion : Ingestion of this product is unlikely and not intended under normal conditions of use. DO NOT INDUCE VOMITING. Wash out mouth with water. Consult a physician if symptoms persist.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Temporary mechanical irritation of the upper respiratory tract (scratchy throat, coughing, congestion) may result from exposure to dusts and fibers in excess of applicable exposure limits. Pre-existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers.

Symptoms/injuries after skin contact : Dusts and fibers may cause irritation (itching) or redness to the skin. Pre-existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers.

Symptoms/injuries after eye contact : Dusts and fibers may cause irritation (itching) or redness to the eyes. Pre-existing chronic eye, skin and respiratory conditions may temporarily worsen due to exposure to dusts and fibers.

Symptoms/injuries after ingestion : Ingestion of this product is unlikely and not intended under normal conditions of use. Ingestion of this product may cause gastrointestinal irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media: : Water, foam, carbon dioxide, or dry powder

Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : This product is non-combustible and does not pose a fire hazard. However, packaging material may burn.

Reactivity : When mineral wool is heated above approximately 200°C (~392°F), binder components and decomposition gases are emitted from the binder, which can be detected by odor.

### 5.3. Advice for firefighters

Protective equipment for firefighters : Do not enter fire are without proper protective equipment, including NIOSH-approved self-contained breathing apparatus (SCBA). Observe normal fire fighting procedures.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Pick up large pieces and scoop up dusts and fibers after they have settled out of air. Wear protective equipment (see Section 8 of this Safety Data Sheet).

#### 6.1.2. For emergency responders

| | | |
|---|---|---|
| Protective equipment | : | Ensure clean-up personnel wear appropriate personal protective equipment (see Section 8 of this Safety Data Sheet). |
| Emergency procedures | : | Isolate area. Evacuate non-essential personnel. Avoid inhalation of dusts. Avoid creating dust on clean-up of material. Responders and clean-up crews must be properly trained and must utilize appropriate personal protective equipments (see Section 8 of this Safety Data Sheet). If dry methods or compressed air are used to collect dust and fibers, all personnel in the area should wear OSHA-approved protective equipment (see Section 8 of this Safety Data Sheet). |

### 6.2. Environmental precautions

Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. These materials will 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.

### 6.3. Methods and material for containment and cleaning up

| | | |
|---|---|---|
| For containment | : | This material will settle out of air. If concentrated on land, it can be scooped up for disposal as non-hazardous waste. |
| Methods for cleaning up | : | Use OSHA-recommended work practices and protective equipment as described in Section 8 of this Safety Data Sheet. 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. |

### 6.4. Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for disposal considerations.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

| | | |
|---|---|---|
| Precautions for safe handling | : | Utilize OSHA-recommended work practices and protective equipment when fabricating, installing or removing the products (see Section 8 of this Safety Data Sheet). Unpack material at applicable site to avoid unnecessary handling of product. Keep work area 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. Avoid generating dusts. 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. |
| Hygiene measures | : | Handle in accordance with good industrial hygiene and safety practice. Wash with soap and water before eating, drinking, smoking, or using toilet facilities. Remove fibers from the work clothes, before leaving work to reduce potential skin irritation. If working in a very dusty environment, it is advisable to shower and change clothes. |

### 7.2. Conditions for safe storage, including any incompatibilities

| | | |
|---|---|---|
| Technical measures: | : | Ensure adequate ventilation. |
| Storage condition(s) | : | Keep material in original packaging until it is to be used. Store material to protect against adverse conditions including precipitation. |
| Incompatible materials | : | Hydrofluoric acid. |

### 7.3. Specific end use(s)

Commercial, industrial, residential, and marine insulation.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Follow all applicable exposure limits. Local regulations may apply. ROXUL 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 3µm). 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), of which ROXUL is a member. 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.

| Reference | Exposure | Legal or Recommended Exposure Limit |
|---|---|---|
| OSHA | Synthetic Vitreous Fibers, >5 µm length, <3 µm diameter | 1 f/cc TWA (recommended) |
| | Inert dust and particulates not otherwise regulated | 15 mg/m$^3$ TWA-PEL (total particulate)<br>5 mg/m$^3$ TWA-PEL (respirable particulate) |

| Reference | Exposure | Legal or Recommended Exposure Limit |
|---|---|---|
| ACGIH | Synthetic Vitreous Fibers, >5 µm length, <3 µm diameter | 1 f/cc TWA (threshold limit value- TLV) |
| | Particulates not otherwise classified, containing no asbestos and <1% crystalline silica | 10 mg/m$^3$ TWA-TLV (inhalable particulate)<br>3 mg/m$^3$ TWA-TLV (respirable particulate) |

### 8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation. Where feasible, general dilution ventilation or local exhaust ventilation should be used as necessary to maintain exposures below applicable exposure limits. Dust collection systems should be used in cutting or machining operations and may be needed when using power tools. Local exhaust ventilation may be required if the method of use produces dust levels which exceed applicable exposure limits. A washing facility/water for eye and skin cleaning purposes should be present.

In poorly ventilated areas when dusty conditions exist and/or dust levels exceed applicable exposure limits, wear a NIOSH certified dust respirator with an efficiency rating of N95 or higher,

Personal protective equipment : Gloves, safety glasses or goggles, protective clothing, respirator

Hand protection : Gloves.

Eye protection : Safety glasses or safety goggles with side shields.

Skin and Body protection : Appropriate protective clothing. Do not tape sleeves or pants at wrists or ankles.

Respiratory protection : In poorly ventilated areas when dusty conditions exists and/or dust levels exceed applicable exposure limits, wear a NIOSH certified dust respirator with an efficiency rating of N95 or higher. Use disposable face masks complying with NIOSH respirator standards, such as a 3M Model 8210 (or 8710) (3M Model 9900 in high humidity environments) or equivalent. 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. For exposures up to 50 times the established exposure limits, use a full-faced respirator, rated N99 or higher.

Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid

Color : Grey, green, brown

Odor : May have slight resin odor

Odor threshold : Not applicable

pH : Not applicable

Melting point : Approximately 2150°F (1177°C)

Solidification point : Data not available

Boiling point : Not applicable

Flash point : None

Relative evaporation rate (butylacetate=1) : Not applicable

Flammability (solid, gas) : Not applicable

Explosive limits : Not applicable

Vapour pressure : Not applicable

Relative vapour density at 20 °C : Not applicable

Relative density : Not applicable

Solubility : Insoluble in water

Log Pow : Not applicable

Log Kow : Not applicable

Self ignition temperature : Not applicable

Decomposition temperature : Not applicable

Viscosity, kinematic : Not applicable

Viscosity, dynamic : Not applicable

Explosive properties : Not applicable

Oxidising properties : Not applicable

VOC Content less than Not applicable

### 9.2. Other information

Upper flammable Limit : Not applicable

Lower Flammable Limit : Not applicable

Sensitivity to mechanical impact : No data available

Sensitivity to static discharge : No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This product is stable under the normal conditions of use.

### 10.2. Chemical stability

This product is stable under the normal conditions of use.

### 10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous polymerization is not known to occur.

### 10.4. Conditions to avoid

Avoid generation of dust.

### 10.5. Incompatible materials

This product reacts with hydrofluoric acid.

### 10.6. Hazardous decomposition products

Primary combustion products of the cured urea extended phenolic formaldehyde binder, when heated above 390°F (200°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.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Routes of Entry : Oral, dermal, inhalation, eye contact.

Acute toxicity : No product data available.

**Ingredient data:**

| Name | Product Identifier (CASRN) | Route & Species | Value ($LD_{50}$/$LC_{50}$) |
|---|---|---|---|
| Mineral wool fiber | 65997-17-3 | No data identified | No data identified |
| Phenol formaldehyde polymer | 9003-35-4 | Oral, rat | >5000 mg/kg |
| | | Dermal, rat | >2000 mg/kg |

Skin corrosion/irritation : Coarse fibers and dust from mineral wool products can cause irritation (itching, redness) of the skin. The itching and possible inflammation are a mechanical reaction to dust and coarse fibers (or more than about 5 µm in diameter) and are not damaging in the way chemical irritants may be. The symptoms generally abate within a short time after the end of exposure. When products are handled continually, the skin itching generally diminishes.

Serious eye damage/irritation : Coarse fibers and dust from mineral wool products can cause irritation (itching, redness) of the eyes. The itching and possible inflammation are a mechanical reaction to dust and coarse fibers (or more than about 5 µm in diameter) and are not damaging in the way chemical irritants may be. The symptoms generally abate within a short time after the end of exposure.

Respiratory or skin sensitisation : This product contains a component (phenol formaldehyde polymer) at ≥1% that may cause allergy in sensitized individuals.

Germ cell mutagenicity : This product is not known to contain any components at ≥0.1% that has been shown to cause mutagenicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a mutagen.

Carcinogenicity : In October 2001, IARC completed a re-evaluation of respirable mineral wool fibers and classified them in Group 3 (not classifiable as to their carcinogenicity to humans). A summary of the most important scientific studies appears below:

Human data:

The possible carcinogenic effects of exposure to mineral wool fibers have been evaluated in a number of epidemiological (human) studies. Most of the research, including large long-term studies of mineral wool production workers in the U.S. and Europe, has been sponsored or supported by the North American and International thermal insulation industries, including ROXUL INC. Published reports of the early results of these studies identified significantly elevated rates of respiratory cancer in several subcohorts of the worker populations under evaluation (e.g., Simonato et al., 1987; Enterline et al., 1987). However, the studies had several methodological limitations, including failure to control for confounding exposures to other possible causes of the elevated cancer risk, including tobacco use and occupational exposures to recognized carcinogens such as asbestos. For these reasons, the authors of these reports did not interpret the results as establishing an association between exposure to mineral wool fibers and an increased risk of cancer. Several of these earlier reports formed part of the basis for IARC's previous classification of mineral wool fibers in Group 2B (possibly carcinogenic to humans) (IARC, 1987).

Follow-up studies, including case-control studies designed to exclude the contribution of confounding exposures to the cancer experience of the study populations, found no evidence that mineral wool fibers are associated with an increased cancer risk (Marsh et al., 1996; Wong et al., 1991; Kjaerheim et al., 2001). In announcing the new Group 3 classification for mineral wool fibers, IARC stated: "Epidemiologic studies published during the 15 years since the previous IARC Monographs review of these fibers in 1988 provide no evidence of increased risks of lung cancer or of mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials" (IARC, 2001).

Animal data:

Several studies of intraperitoneal injection of high doses of mineral wool fibers have produced significant increases in the incidence of mesothelioma (IARC, 2002). The intraperitoneal injection studies formed part of the basis for IARC's previous (IARC, 1987) Group 2B classification for mineral wool fibers. Leading scientists agree that intraperitoneal injection studies (i.e., surgical implantation or injection into the chest or abdomen) are the least relevant type of animal study for evaluating potential human risk for fiber exposures, because such studies bypass the animals' natural defense mechanisms and involve a type and pattern of exposure (implantation of a high dose early in life) that does not mimic human patterns of exposure (inhalation of much lower doses over a lifetime) (National Research Council, 2000).

A well-designed long-term inhalation study in rats exposed to mineral wool fibers found no significant increase in lung tumor incidence, and no mesotheliomas (IARC, 2002). Likewise, in two intratracheal instillation studies of mineral wool fibers, no significant increase in the incidence of lung tumors or mesotheliomas was found (IARC, 2002). Inhalation studies are regarded as the most relevant type of animal data for evaluating potential human risk and intratracheal instillation studies while less relevant, are considered valuable for the initial screening of fibrous compounds (National Research Council, 2000). Thus, evaluating all the available animal studies in conjunction with the human data, IARC's most recent review finds "inadequate evidence overall for any cancer risk" from mineral wool fibers (IARC, 2001).

| Source | Classification | Description |
|---|---|---|
| IARC | Group 3 | Insulation glass wool: Not classifiable as a human carcinogen. |
| ACGIH | Group A3 | Confirmed animal carcinogen with unknown relevance to humans. |
| OSHA | Not established | There is insufficient evidence that synthetic mineral fibers cause respiratory disease in humans. Results from animal experiments have led to conservative classifications of certain synthetic mineral fibers as possible human carcinogens. Specifically, insulation glass wool and continuous glass filament are not classifiable as to their carcinogenicity to humans. |
| NTP | Reasonably Anticipated To Be Human Carcinogens | Certain Glass Wool Fibers (Inhalable) |

Reproductive toxicity : This product is not known to contain any components at ≥0.1% that have been shown to cause reproductive toxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a reproductive toxin.

Teratogenicity/Embryotoxicity : This product is not known to contain any components at ≥0.1% that have been shown to cause teratogenicity and/or embryotoxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a teratogen/embryotoxin.

Specific target organ toxicity (single exposure) : Coarse fibers and dust from mineral wool products can cause temporary mechanical irritation in the upper respiratory tract (nose and throat). The itching and possible inflammation are a mechanical reaction to dust and coarse fibers (or more than about 5 µm in diameter) and are not damaging in the way chemical irritants may be. The symptoms generally abate within a short time after the end of exposure.

| | | |
|---|---|---|
| Specific target organ toxicity (repeated exposure) | : | This product is not known to contain any components at ≥1.0% that have been shown to cause chronic toxic effects. Therefore, based upon the available data and the known hazards of the components, contact with this product is not expected to cause chronic toxic effects. |
| Aspiration hazard | : | This product is not an aspiration hazard. |
| Potential Adverse human health effects and symptoms | : | Effects of exposure may include irritation of the skin, and of the mucous membranes in the eyes and in the upper respiratory tract (nose and throat). |
| Toxicologically Synergistic Materials | : | None known. |

## SECTION 12: Ecological information

### 12.1. Toxicity

No information available.

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

### 12.4. Mobility in soil

No information available.

### 12.5. Results of PBT and vPvB assessment

No information available.

### 12.6. Other adverse effects

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

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

| | | |
|---|---|---|
| Waste disposal recommendations | : | The products, as supplied, are not expected to be a characteristic hazardous waste under RCRA if discarded. Product is not considered a hazardous waste. Dispose of waste material according to Federal, State, Provincial and Local environmental regulations. Comply with relevant regulations with regards to disposal, recycling, treatment, transportation and storage of contents and containers. |

## SECTION 14: Transport information

No special precautions. This product is not considered to be a hazardous material for transport.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. National regulations

| | | |
|---|---|---|
| USA | : | This product has been classified in accordance with the 2012 hazard criteria of the OSHA's HCS and the SDS contains all the information required by the 29 CFR § 1910.1200. |
| Canada | : | 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.* |
| Mexico | : | This product has been classified in accordance with NMX-R-019-SCFI-2011. |

All compounds in this product are listed in the Canada Domestic Substances List (DSL) and the US Toxic Substances Control Act (TSCA) Chemical Substance Inventory (1985).

## SECTION 16: Other information

| | | |
|---|---|---|
| Date of Preparation | : | May 29, 2015 |

| | | |
|---|---|---|
| Sources of Key data | : | A complete copy of OSHA-recommended workplace practices and protective equipment when fabricating, installing or removing the products can be obtained from ROXUL INC. and is available on the OSHA website (http://www.osha.gov/SLTC/syntheticmineralfibers).<br>IARC Monograph Man-made Vitreous Fibres, press release October 2001<br>Safety in the Use of Mineral and Synthetic Fibers, Occupational Safety and Health Series, International Labor Office.<br>Information about "Health and Safety Research on Rock- and Slag-wool" can be obtained from the North American Insulation Manufacturers Association (NAIMA), 44 Canal Center Plaza, Suite 210, Alexandria, VA 22314, USA). Homepage: http://www.naima.org<br>Complete citations, or copies of all references cited in this SDS can be obtained from ROXUL INC. (See Section 1). |
| Abbreviations and acronyms | : | ACGIH – American Conference of Governmental Industrial Hygienists<br>bw – body weight<br>CASRN – Chemical Abstracts Service Registry Number<br>CFR – US Code of Federal Regulations<br>DSL – Canada Domestic Substances List<br>GHS – Globally Harmonized System<br>HCS – US Hazard Communication Standard<br>IARC – International Agency for Research on Cancer<br>$LD_{50}$ – Acute lethal dose causing 50% lethality in animals<br>(M)SDS – (Material) Safety Data Sheet<br>NAIMA – North American Insulation Manufacturers Association<br>NIOSH – National Institute of Occupational Safety and Health<br>NTP – National Toxicology Program<br>OSHA – Occupational Safety and Health Administration<br>PEL – Permissible Exposure Limit<br>SCBA – Self-Contained Breathing Apparatus<br>TLV – Threshold Limit Value<br>TSCA – US Toxic Substances Control Act<br>TWA – Time-Weighted Average<br>US – United States of America<br>WHMIS – Workplace Hazardous Material Information System |

Disclaimer: The information contained herein is based upon data considered to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data, the results to be obtained from the use thereof, or that any such use will not infringe upon any patent. This information is furnished as a guide only and upon the condition that the person receiving it shall make tests to determine the accuracy and suitability for his or her own purpose. No responsibility is assumed for injury or damage from the use of the products described herein.