

1. Identification of Substance & Company

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|-----------------------------|--|--|
| Product | VIBLOCK CONCRETE MASONRY | |
| Product name | Viblock Masonry Blocks, Viblock Paving, Segmental Retaining Wall, Viblock Veneers, Villa Veneer | |
| HSNO approval | This product is a manufactured article and does not require HSNO approval. However the following SDS is relevant for fine dust created whilst working with the Masonry | |
| Approval description | HSR002545, Construction Products (Toxic [6.7A]) Group Standard 2006 | |
| UN number | not regulated | |
| Proper Shipping Name | not regulated | |
| Packaging group | not regulated | |
| Hazchem code | not regulated | |
| Uses | Masonry products | |
| Company Details | | |
| Company | VIBLOCK LIMITED | |
| Address | 11 Matipo St, Riccarton Christchurch (03) 343 0394 www.viblock.co.nz | McPherson Rd, Earnscleugh Alexandra (03) 449 3140 |
| Telephone | | |
| Website | | |

Emergency Telephone Number: 0800-764 766

2. Hazard Identification

Approval

MASONRY PRODUCTS are manufactured articles. Dust created when using these products has been approved under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002545, Construction Products (Toxic [6.7A]) Group Standard 2006), and is classified as follows:

| Classes | Hazard Statements |
|---------|--|
| 6.3A | Causes skin irritation. |
| 8.3A | Causes serious eye damage. |
| 6.7A | May cause cancer |
| 6.9A | Causes damage to organs through prolonged or repeated exposure |
| 9.1D | Harmful to aquatic life. |

SYMBOLS

DANGER



Other Classifications

There are no other Classifications that are known to apply.

Precautionary Statements

Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Wear protective gloves/eye protection/face protection.
Avoid breathing dust.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.

Further precautionary statements can be found in Section 4 – First Aid.

3. Composition / Information on Ingredients

| Component | CAS/ Identification | Concentration |
|---|---------------------|---------------|
| cement | 65997-15-1 | 10-50% |
| aggregates (may contain traces of crystalline silica) | mixture | 10-80% |
| sand (may contain traces of crystalline silica) | NA | 10-80% |
| metal oxides | mixture | 1-10% |

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed, burned or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service). If exposed or concerned: get medical advice.

Recommended first aid facilities Ready access to running water is recommended. Accessible eyewash is recommended.

Exposure

Swallowed IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Contact a doctor if you feel unwell.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Immediately call a POISON CENTER or doctor.

Skin contact IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Inhaled IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. If experiencing respiratory symptoms: Immediately call a POISON CENTER or doctor/physician.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards: There are no specific risks for fire/explosion for this chemical. It is non-combustible.
Suitable extinguishing substances: Not applicable.

Unsuitable extinguishing substances: Unknown.

Products of combustion: Product does not burn. Dust may form irritating atmosphere. Contaminated water will be strongly alkaline. Product may decompose in a fire and produce toxic or corrosive fumes.
Protective equipment: Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.

Hazchem code: 1T (recommended)

6. Accidental Release Measures

Containment There is no legal requirement for the secondary containment of Masonry products (manufactured article). In all cases design storage to prevent discharge to stormwater.
Emergency procedures In the event of spillage of a large quantity of dust generated from Masonry products, alert the fire brigade to location and give brief description of hazard.
 Stop the source of the leak, if safe to do so.
 Wear protective equipment to prevent skin, eye and respiratory exposure.
 Clear area of any unprotected personnel.

Clean-up method Contain spill and prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).
 Collect product avoiding any dust formation, and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Disposal Sweep and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.

Precautions

The dust may form irritating atmosphere. Contaminated water will be strongly alkaline. Do not allow contaminated water to enter the environment.
Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation.

7. Storage & Handling

Storage

Generally masonry products are stacked on pallets and stored in a cool dry place. Avoid storage of harmful substances with food.

Handling

Avoid contact with incompatible substances as listed in Section 10.
During the manual handling of products please lift carefully - corners are sharp. Minimise dust generation and accumulation. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of masonry dust.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by the NZ Department of Labour for this product. There is a general limit of 10mg/m³ for dusts and mists when limits have not otherwise been established.

| NZ Workplace Exposure Stds (2016) | Ingredient | WES-TWA | WES-STEL |
|-----------------------------------|-------------------------------------|---|--------------------------------------|
| | cement (nuisance dust) | 10mg/m ³ | data unavailable |
| | aggregates – see crystalline silica | | |
| | sand – see crystalline silica | | |
| | crystalline silica | 0.2mg/m ³ (quartz, respirable dust) 0.1mg/m ³ (cristobalite, respirable dust)" | data unavailable data unavailable |

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes



Protect eyes with goggles, safety glasses or full face mask if sanding/grinding/cutting or drilling masonry products. Avoid wearing contact lenses.

Skin



Avoid repeated or prolonged skin contact. Wear overalls, waterproof boots and impervious alkali-resistant gloves (e.g., nitrile, PVC, rubber, neoprene). Tuck overalls inside boots and seal with duct tape to reduce risk of masonry dust entering boots.



Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. Take special care to ensure that cuts/abrasions or irritated skin are not exposed to this product.



It is important that skin is also covered when masonry dust is created (e.g., sanding, grinding, crushing or cutting masonry). The dust may also irritate and/or damage the skin.

Respiratory



To prevent irritation a well fitted dust mask should be used (this is not recommended when exposure is close to the WES). A fine particulate half or full face respirator with an effective seal is recommended when airborne concentrations approach the WES (section 8). If sanding, grinding, crushing or cutting masonry, it is possible that the crystalline silica dust WES will be exceeded hence a respirator will be required.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

| | |
|---|--|
| Appearance | masonry product in various colours |
| Odour | none |
| pH | >11 |
| Vapour pressure | NA |
| Viscosity | NA |
| Boiling point | NA |
| Volatile materials | NA |
| Freezing / melting point | NA |
| Solubility | insoluble in hardened state, slightly soluble in wet state to form alkaline solution (pH >12) |
| Specific gravity / density | 1600 – 2000 kg/m ³ |
| Flash point | NA |
| Danger of explosion | NA |
| Auto-ignition temperature | NA |
| Upper & lower flammable limits | NA |
| Corrosiveness | Dust generated from masonry products may be corrosive to eye, may be corrosive to skin if left on skin for a long time |

10. Stability & Reactivity

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|---|---|
| Stability | This product is unlikely to react or decompose under normal storage conditions. This product will not undergo polymerisation reactions. Keep dry until used. |
| Conditions to be avoided | Containers should be kept closed in order to avoid contamination. |
| Incompatible groups | Strong acids, ammonium salts, and aluminum metal. |
| Substance Specific Incompatibility | Concrete dissolves in hydrofluoric acid producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, chlorine, trifluorides, and oxygen difluoride. |
| Hazardous decomposition products | Does not readily decompose. Respirable dust particles may be generated when concrete is sawed, drilled, sanded or grinded. |
| Hazardous reactions | Will not polymerise |

11. Toxicological Information
Summary

Masonry dust or wet masonry dust is known to harm the skin and eyes. There are also links between exposure to masonry dust (e.g., construction) and increased rates of silicosis.

IF ON SKIN: dry masonry dust is irritating to the skin. Wet masonry dust may cause burns to the skin if left on skin for prolonged periods.

IF IN EYES: masonry dust may cause burns and permanent damage to eyes.

IF INHALED: dusts may be irritating. See chronic toxicity.

CHRONIC TOXICITY: repeated or prolonged exposure to masonry dust (e.g., construction) may increase the rates of silicosis.

Supporting Data

| | | |
|----------------|---|---|
| Acute | Oral | The estimated LD ₅₀ (oral, rat) for the mixture is > 5,000 mg/kg. Ingestion of this product may cause gastrointestinal irritation. |
| | Dermal | The estimated LD ₅₀ (dermal, rat) for the mixture is > 5,000 mg/kg. |
| | Inhaled | The estimated LC ₅₀ (inhalation, rat) for the mixture is >5 mg/L (dust mist). Short term (acute) silicosis (see "systemic" below) can also occur with one-off exposures to extremely high levels of fine crystalline silica dust. Other short term effects include irritation, choking and difficulty breathing. |
| | Eye | Contact with masonry dust can cause effects ranging from irritation to serious eye damage/burns and blindness. The pH of the mixture is >12. Note: the level of irritation/damage is dependent on the quantity of the dust, the pH, and the length of time exposed. E.g., if dust is washed out of the eye immediately, effects will be minor. However, if dust or wet dust is left in contact with the eye, serious damage/blindness could result. |
| | Skin | Contact with wet masonry dust can cause skin irritation, severe chemical burns (third degree). Brief exposure to the skin (i.e., washed off immediately) will result in irritation. However, if the concrete or dust is left on the skin for an extended time (e.g., if inside boots or absorbed through overalls), burns to the skin are possible. Thickening of the skin and/or rash is also possible. |
| Chronic | Sensitisation | No ingredient present at concentrations >0.1% is considered to be sensitizing. |
| | Mutagenicity | No ingredient present at concentrations > 0.1% is considered a mutagen. |
| | Carcinogenicity | This mixture does contain crystalline silica. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC Group 1). The mixture triggers 6.7A classification (confirmed carcinogen). The carcinogenicity of silica is related to long term (e.g., 10 years) inhalation of very fine particulate (e.g., from sand blasting or dry cutting of concrete). Carcinogenicity of silica appears linked to development of silicosis (see systematic below) followed by complications and, eventually lung cancer |
| | Reproductive / Developmental | No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation. |
| | Systemic | The mixture is considered to be a target organ toxicant, because of the presence of crystalline silica at greater than 1%. Crystalline silica triggers 6.9A classification if it is in the form of a fine respirable dust in an occupational (chronic exposure) setting. This is due to the development of acute silicosis which can occur following exposure to extremely high levels of fine silica dust. Silicosis is a type of pneumoconiosis – a disease of the lung that causes inflammation, scar tissue, lesions and fibrosis in the lung (alveolar). Symptoms include shortness of breath, cough, fever, loss of appetite and cyanosis (bluish skin). Silicosis can occur following prolonged exposure (e.g., 10 years) to relatively high levels of fine crystalline silica dust. |
| | Aggravation of existing conditions | Persons with existing lung conditions may be at a higher risk of further adverse health effects (as above). Smokers have an increased risk of lung cancer and silicosis. |

12. Ecological Data

Summary

Masonry dusts are considered to be harmful in the environment when in a soluble form. This is primarily due to the high pH of the product. Lime contained in the cement dissolves in water to produce a highly alkaline solution.

Supporting Data

| | |
|------------------------------------|--|
| Aquatic | Water contaminated with this product is alkaline and should not be allowed to enter the environment. |
| Bioaccumulation | not readily biodegradable |
| Degradability | No data |
| Soil | No evidence of soil toxicity. |
| Terrestrial vertebrate | No evidence of toxicity towards terrestrial vertebrates |
| Terrestrial invertebrate | No evidence of toxicity towards terrestrial invertebrates. |
| Biocidal | no data |
| Environmental effect levels | No EELs are available for this mixture or ingredients |

13. Disposal Considerations

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|-------------------------------|---|
| Restrictions | Local council and resource consent conditions may apply, including requirements of trade waste consents. |
| Disposal method | Disposal of this product must comply with the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. May be buried in approved land disposal facility in accordance with local regulations. |
| Contaminated packaging | There are no product-specific restrictions however, local council and resource consent conditions may apply, including requirements of trade waste consents. |

14. Transport Information

There are no specific restrictions for this product (not a dangerous good).

| | | | |
|---------------------|---------------|------------------------------|---------------|
| UN number: | not regulated | Proper shipping name: | not regulated |
| Class(es) | NA | Packing group: | NA |
| Precautions: | NA | Hazchem code: | NA |

15. Regulatory Information

This product is a manufactured article and does not require HSNO approval. The dust created from masonry products is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002545, Construction Products (Toxic [6.7A]) Group Standard 2006.

Specific Workplace Controls (as per HSNO approval referenced to Controls Matrix)

Key workplace requirements for the dust are:

| | |
|---------------------------------|---|
| SDS | To be available within 10 minutes in workplaces storing any quantity. |
| Labelling | No removal of labels and/or decanting of product into other containers can occur. |
| Emergency plan | Required if > 1000kg is stored. |
| Approved handler | Approved handlers are NOT required if this product is used in the construction industry (exempted requirement under construction group standard). |
| Tracking | Not required. |
| Bunding & secondary containment | Required if > 1000kg is stored. |
| Signage | Required if > 1000kg is stored. |
| Location test certificate | Not required. |
| Flammable zone | Not required. |
| Fire extinguisher | Not required. |

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

16. Other Information

Abbreviations

| | |
|------------------------|--|
| Approval Code | Approval HSR002545, Construction Products (Toxic [6.7A]) Group Standard 2006 Controls, EPA. www.epa.govt.nz |
| CAS Number | Unique Chemical Abstracts Service Registry Number |
| Ceiling | Ceiling Exposure Value: The maximum airborne concentration of a biological or chemical agent to which a worker may be exposed at any time. |
| Controls Matrix | List of default controls linking regulation numbers to Matrix code (e.g. T1, I16). |
| EC₅₀ | Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species) |
| EPA | Environmental Protection Authority (New Zealand) |
| HAZCHEM Code | Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters |
| HSNO | Hazardous Substances and New Organisms (Act and Regulations) |
| IARC | International Agency for Research on Cancer |
| LEL | Lower Explosive Limit |
| LD₅₀ | Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats). |
| LC₅₀ | Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats) |
| MSDS (SDS) | Material Safety Data Sheet (or Safety Data Sheet) |
| PES | Prescribed Exposure Standard means a WES or a biological exposure standard that is prescribed in a regulation, a safe work instrument or an approval under HSNO (including group standards). |
| STEL | Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded |
| TWA | Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours) |
| UEL | Upper Explosive Limit |
| UN Number | United Nations Number |
| WES | Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone. |

References

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|------------------------------|---|
| Data | Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID) http://www.epa.govt.nz/hs/compliance/chemicals.html , for specific chemicals. |
| EPA Transfer Gazettes | Classifications and controls assigned for specific ingredients (consolidated gazette, 2004) |
| Controls Matrix | Part of the EPA New Zealand User Guide to the HSNO Control Regulations |
| WES 2013 | The NZ Workplace Exposure Standards Effective from 2013, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz . |
| Other References: | Suppliers SDS |

Review

| Date | Reason for review |
|-----------|--------------------------|
| June 2017 | Not applicable – new SDS |

Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely HSNO classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: +64 9 940 30 80.

