

Machine Made Mineral Fibres (MMMMF)

Information Sheet

November 2010

There are several different types of machine made (synthetic) inorganic fibrous materials in use in workplaces (formerly referred to as Man Made Mineral Fibres). **Mineral wools** (glass wool, rock wool) are used in thermal and acoustic insulation of buildings and structural fire protection. **Ceramic fibres** are usually of smaller diameter than mineral wools and are used mainly in insulation boards and blankets of refractory products due to their high heat resistance property. These are used in furnace/incinerator insulation, e.g. RCF (refractory ceramic fibre). **Continuous glass filament** fibres are used to reinforce cement and plastic products. **Special purpose fibres** are also used infrequently in the construction industry.



Routes of Exposure

Inhalation is the main route of exposure. Fibres may also cause **skin or eye** irritation through contact in some individuals. For example, hand laying of mineral wool, blowing mineral fibre into roof spaces or cutting of ceramic products.

Occupational Exposure Limit

The Occupational Exposure Limit Value (OELV) for MMMF (excluding RCFs, which are considered to be more hazardous) is an airborne fibre limit of 1 fibre/ml of air or a gravimetric limit of 5mg/m³ (8 hour time weighted average), set down in the HSA Chemical Agents Code of Practice. The OELV for RCF is 5mg/m³ and these are suspected of being carcinogenic to humans.

Health Effects

There are several potential health effects associated with exposure to MMMFs, the main effect being irritation. Some examples are provided below:

- Respiratory system effects, such as development of asthma and bronchitis. Decreases in lung function can be caused by inhalation of MMMFs.
- Contact dermatitis, for example roof insulators working in the construction sector have the potential to develop contact dermatitis.
- Refractory Ceramic Fibres may have the potential to lead to the development of lung cancer.



Recommended Control Measures

- Seek to eliminate use of MMMF material through substitution with alternative non-fibrous material(s).
- Use dust suppression techniques such as the use of water sprays to control dust levels at source.
- Use engineering controls such as local exhaust ventilation to control exposure, e.g. in MMMF product manufacturing plants.
- Ensure safe systems of work are used and followed based on the risk assessment.
- Respiratory Protective Equipment (RPE) should have a P2 particulate filter fitted to a half or full face mask; disposable dust masks are not considered to be effective.
- Use safety goggles.
- Regular hand washing, with the application of moisturising cream afterwards to help prevent dermatitis development.

Health Advice

There are preventative measures that can be taken by the employee or the employer such as:

- ✓ Respiratory health screening for all relevant employees.
- ✓ It is important to seek medical advice if there are persistent symptoms and report these to your employer.
- ✓ Skin checks for symptoms of dermatitis.

Key Points

Always assume exposure is likely to occur and protect according to the level of risk identified from risk assessment.

- ✓ Prepare written risk assessments (required by law) highlighting the key hazards, risks and controls in place.
- ✓ Investigate the possibility of substitution with non-fibrous materials.
- ✓ Use dust suppression techniques during work.
- ✓ Use of engineering controls such as local exhaust ventilation to control exposure can be very effective.
- ✓ Use safe systems of work to reduce exposure based on the risk assessment.
- ✓ Use and store personal protective equipment according to instructions to reduce exposure.

Further information:

- The Health and Safety Authority's website www.hsa.ie (search for chemical agents).
- Contact the Health and Safety Authority at wcu@hsa.ie or LoCall **1890 289 389**.

