Material Safety Sheet in accordance with 91/155 EEC

Company:	Grodan BV		
Trade name:	Growth substrate based on mineral wool	**Product name:**	Grodan
Revised on:	12/9/2005 11:55 AM	**Replaces issue:**	18.08.03

1 Identification: Grodan Stonewool Delta Gro-Blocks

713050
713055
713060
713065
713070
713075
713080
713085

1.1 Product:

Growth substrate material based on stone wool, high-alumina, low-silica (HT) wool.

1.2 Company address:

Grodan BV
P.O. Box 1160
6040 KD Roermond
The Netherlands
Tel +31 475 35 30 10
Fax +31 475 35 37 16
E-mail: **info@grodan.nl**

1.3 If further information is required, please call or fax Grodan BV
Tel +31 475 35 30 10. Fax +31 475 35 37 16.

2 Information on ingredients:

Inert vitreous silicate mineral wool bonded with a thermosetting phenolic resin which has been urea extended.

	CAS-No.	Contents	R- phrases
Synthetic vitreous (silicate) fibers	28 7922-11-6 HT stone wool	95-100%	Irritating to skin (R:38)

3 Hazards identification:

3.1 Mineral fibres:

The mineral fibres has been classified (by the EU) as irritating (transient mechanical) to skin.
High dust levels may irritate the throat and eyes.

4 First-aid measures:

4.1 Skin:

If irritation occurs, do not rub or scratch. Wash off under running water prior to washing with mild soap and water.

4.2 Eyes:

If irritation occurs, do not rub the eyes. Flush eyes with water and consult a physician if irritation persists.

Company:	Grodan BV		
Trade name:	Growth substrate based on mineral wool	**Product name:**	Grodan
Revised on:	12/9/2005 11:55 AM	**Replaces issue:**	18.08.03

5. Fire-fighting measures:

The products are non-combustible and do not pose a fire hazard. However packaging material may burn.

5.1 Suitable extinguishing media:

Water, foam, carbon dioxide or dry powder.

5.2 Extinguishing media which must not be used for safety reasons:

None.

5.3 Combustion products:

Carbon dioxide, carbon monoxide and trace gasses.

5.4 Special protective equipment for fire-fighters:

Observe normal fire fighting procedure.

6 Accidental release measures:

6.1 In case of spillage:

Remove mechanically. No special measures required.

7 Handling and storage:

7.1 Handling:

- *Use sharp tools when cutting plant holes*
- *If using mechanical cutting equipment, a dust extractor should be used*
- *Open boxes of blocks in a ventilated area*
- *When filling containers or mixers with other products misting and dust extraction are recommended*
- *To reduce dust wet floor before sweeping up*
- *Place off cuts and any unused stone wool in bags*

7.2 Storage:

– *Store material to protect against adverse weather conditions including precipitation.*

8. Exposure controls/personal protection:

Local regulations may apply.

8.1. Respiratory protection:

With *heavy dust development and in confined spaces, use disposable facemasks complying with EN149 FFP1 or FFP2 (e.g. 3M model 8710 or any similar NIOSH approved dust mask.*

8.2. Hand protection:

Wear suitable gloves.

8.3 Eye protection:

With heavy dust development, wear safety goggles.

8.4 Skin protection:

Wear loose fitting work clothes. After work rinse hands and unprotected skin with cold water and then wash with soap and warm water. If working in a very dusty environment it is advisable to shower and change clothes.

Company:	Grodan BV		
Trade name:	Growth substrate based on mineral wool	**Product name:**	Grodan
Revised on:	12/9/2005 11:55 AM	**Replaces issue:**	18.08.03

9.	**Physical and chemical properties:**	
9.1	Appearance:	*solid, grey-green*
9.1.1	Odour:	*n.a.*
9.1.2	pH (at 1000g/H_2O, 25°C)	*7-8 (DIN 54275)*
9.1.3	Boiling point:	*n.a.*
9.1.4	Melting point:	above *1000°C , Binder degradation start at 200-300 °C*
9.1.5	Flash point:)	
9.1.6	Flammability:)	
9.1.7	Autoflammability:)	*reaction to fire: Euroclass A1*
9.1.8	Explosive properties:)	
9.1.9	Explosive properties:	*n.a.*
9.1.10	Oxidising properties:	*n.a.*
9.1.11	Vapour pressure:	*n.a.*
9.1.12	Fibre density:	approx. 2.6 g/cm^3
9.1.13	Solubility:	*n.a.*
9.1.14	Partition coefficient:	*n.a.*
9.1.15	Other data:	*n.a.*
10	**Stability and reactivity:**	
10.1	Stability	*stable*
10.2	Reactivity	*not reactive*
10.3	Thermal decomposition products	*n.a.*

Company:	Grodan BV		
Trade name:	Growth substrate based on mineral wool	**Product name:**	Grodan
Revised on:	12/9/2005 11:55 AM	**Replaces issue:**	18.08.03

11. Toxicological information:

11.1 Coarse fibres

Coarse fibres can cause itching of the skin, foreign body reaction in the upper respiratory system (mucous membranes), and in the eyes. The itching and possible inflammation is a transient mechanical reaction to the coarse fibres (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.

11.2 Respirable fibres

Animal studies

If fibres are very durable (biopersistent) and present in high concentrations they may lead to disease. This product has been tested in long-term carcinogenicity studies [inhalation and intraperitoneal injection (i.p.)] with no significant increase in lung tumours or abdominal tumours. Short-term biopersistent (inhalation and intra-tracheal injection) studies have shown that the fibres disappear very rapidly from the lung.
In October 2001, the International Agency for Research on Cancer (IARC) evaluated that there is inadequate evidence in experimental animals for this product (high-alumina low-silica (HT) wool).

Experiences in humans (Epidemiological Studie

Large morbidity and mortality studies of both European and North American mineral wool [rock (stone) and slag wool] manufacturing workers have been conducted with the traditional mineral wools. The studies have found no significant evidence of non-malignant lung disease (e.g. fibrosis).

In October 2001, IARC classified rock (stone) wool as Group 3, "not classifiable as to its carcinogenicity to humans". The 2001 decision was based on the latest epidemiological studies and animal inhalation studies that show no relation between inhalation exposure and the development of tumors.

This product has not been subject to epidemiological studies but consists of the less bio persistent fibres (low-silica, high-alumina (HT) wool), which will disappear even faster from the lung than the rock (stone) wool fibres.

12. Ecological information:

Stable product with no known adverse environmental effects.

13. Disposal consideration:

The product can typically be disposed of in an ordinary landfill (local regulations may apply). If you are unsure of the regulations, contact your local Public Health Department or the local office of the Environmental Protection Agency (EPA). Packing material being poly ethylene can be supplied for recycling to PE manufacturers.

14. Transport information:

No special precautions.

Company:	Grodan BV		
Trade name:	Growth substrate based on mineral wool	**Product name:**	Grodan
Revised on:	12/9/2005 11:55 AM	**Replaces issue:**	18.08.03

15. Regulatory information:

15.1 U.S. Regulations:

Toxic Substances Control Act (TSCA) - All components in this product are listed, as required, on the US EPA TSCA inventory.

15.2 Europe – European Community (EC) Classification:

The product contains Mineral Fibres [Man-made vitreous (silicate) fibres] that are exonerated from classification as a carcinogen according to Note Q in EU Commission Directive 97/69/EC, and classified as irritating to skin.

Germany:

This product is exonerated from classification as a carcinogen according to the German Hazardous Substances Ordinance Annex V Nr. 71 as of 1 October 2000.

15.3 Exposure Limits

Recommended Maximum Exposure Limit (MEL) 1 fibre/ml (respirable) and/or 5 mg/m^3 (respirable dust), 8 hour Time Weighted Average (TWA).

16. Further information:

16.1 Health Aspects:

Safety in the Use of Mineral and Synthetic Fibers, Occupational Safety and Health Series. International Labor Office (ILO).

North America:

Information about "Health and Safety Research on Rock- and Slag-wool" can be obtained at the North American Insulation Manufacturers Association (NAIMA, 44 Canal Center Plaza, Suite 310, Alexandria, VA 22314, USA). Home-page: http://www.naima.org

16.2 Good Working Practices:

See leaflet: "Recommendations for working with Grodan®".

16.3 References:

IARC (International Agency for Research on Cancer, an institution of the WHO), Monographs on the Evaluation of Cancer Risks to Humans (Oct. 2001)
Directive 97/69/EEC and Directive 67/548/EEC