

Safety Certificate

To Whom this may concern
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Safety Statement Rockwool/Grodan Fibres in Horticultural Stone Wool Substrates

Based on scientific risk-assessments by independent research institutes (e.g. the Fraunhofer Institute and the International Agency for Research on Cancer-IARC), European/international requirements, legislation and current state-of-the-art knowledge, we state that the fibres in Rockwool/Grodan stone wool substrates are not related to asbestos and pose no risks for the use or safety of human beings, plants and the environment in normal use.

General safety aspects of fibres

In general, when exposed to *airborne* fibres, these fibres may enter the human body through the lungs by inhalation¹. In the lungs, a defensive mechanism is triggered aiming to isolate and eliminate the “foreign elements” by removing, amongst others, the foreign elements by dissolving them. The health risk (which may lead to cancer) is dependant on the time the foreign elements stay within the lungs. This depends on the chemical composition of the fibre and the local physiological circumstances within the part of the lung where the foreign element is present. The smaller in diameter the fibre, the deeper it can penetrate into the lungs and the more possible damage it can do.

Asbestos fibres are from a natural origin and have the capability of breaking down into extremely tiny fibres. Rockwool fibers do not have this characteristic and maintain their original shape and do not split up into finer fibres.

Scientific investigations (e.g. the Fraunhofer Institute and the IARC) established that the residence time of Rockwool HT fibres present in the lungs is short; half-life time ≤ 40 days has been established for the Rockwool HT-fibres of Grodan. Based on this half-life time, which indicates the speed by which the fibres are cleared from the lungs, the Rockwool fibres are exonerated from any cancer classification by the authorities.

¹ When *stone wool fibers* are used appropriately and following user guidelines, the amount of *airborne* fibers is very low. Independent investigations show levels which are far below the maximum allowed Mac (maximum allowance concentration) values, even in production environments.

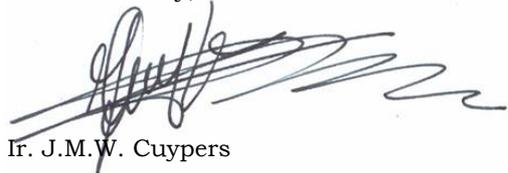
Safety classification of Rockwool/Grodan HT fibres

Rockwool/Grodan produce stone wool substrates only on the basis of HT-fibres, which are fully bio-soluble. This is regularly tested by independent research institutes. Moreover, the World Health Organisation and the European Union defined international legislation regarding cancer classification of fibres.

- Certification of the Fraunhofer Institute for Drug Research and Clinical Inhalation in Germany: this institute conducts bio-persistence studies after intratracheal installation of fibres. The Fraunhofer Institute is an independent and highly respected institute. It complies with EU-legislation regarding cancer classification of fibres and co-operates with the IARC. Rockwool/Grodan acquired the Fraunhofer certification in 1999 based on half-life time ≤ 40 days in accordance with Guideline 67/548/EWG Note Q (intratracheal instillation).
- Other research conducted by independent bodies: the IARC co-ordinates and conducts research on the causes of human cancer, the mechanisms of carcinogenesis, and develops scientific strategies for cancer control. Based on the evaluation made by IARC, using results from different studies (e.g. of RCC, the Fraunhofer Institute), it was concluded that the Rockwool (HT) fibres are exonerated from any cancer classification.
- EU legislation on man-made vitreous fibers (MMVF): Guideline 67/548/EWG Note Q. Our HT stone wool -fibre is a MMVF that fulfills European regulatory requirements for exoneration from any cancer classification by national or international bodies.

Based on the above information we state that our fibres are exonerated from any carcinogenic classifications. Our fibres are not related to asbestos and pose no risks for the use or safety of human beings, plants and the environment in normal use.

Yours sincerely,



Ir. J.M.W. Cuypers

Manager Research & Development Grodan Group

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