



EUCEDB認證 - 生物可溶解性礦物纖維 (Bio-Solubility)

- ❑ 石棉在1970年即有醫學研究證明為肺癌致癌物，但台灣到2008年才開始禁用石棉。
- ❑ 岩棉(stone wool)雖然不含石棉(asbestos)，但仍會直接吸入肺部或經由皮膚進入人體再殘留在肺泡。
- ❑ 您知道你使用的岩棉會不會致癌嗎？
- ❑ 什麼又是生物可溶性纖維？
- ❑ 什麼是EUCEB認證？



岩棉會致癌嗎？

- ❖ 依據世界衛生組織(WHO)的癌症研究中心(IARC)在2002年對人造礦物纖維的報告(如下)
- ❖ 岩棉(Rock wool / stone wool)是屬第三類(Group 3), 有限的動物實驗資料證明不會增長腫瘤及具致癌性



WORLD HEALTH ORGANIZATION

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Volume 81 Man-made Vitreous Fibres

Summary of Data Reported and Evaluation

Man-made vitreous fibres

There is *limited evidence* in experimental animals for the carcinogenicity of insulation glass wool.

Last updated: 23 August 2002

There is *limited evidence* in experimental animals for the carcinogenicity of rock (stone) wool.

There is *limited evidence* in experimental animals for the carcinogenicity of slag wool.

岩棉會致癌嗎？

- ❖ 世界衛生組織(WHO)的癌症研究中心(IARC)的報告距今已經“17年”了!
- ❖ 該報告中提到了“biopersistent”生物持久性，許多研究指出愈具生物持久性的岩棉纖維愈會產生腫瘤!!

In several studies of intraperitoneal injection of high doses (approximately 10^9 fibres), rock (stone) wool induced a significant increase in mesothelioma incidence. The more biopersistent rock (stone) wool fibres produced a higher incidence of tumours than fibres with lower biopersistence.

- ❖ 新的岩棉發展是具較低生物持久性的X-607維維及HT纖維

Newly developed wools

Two newly developed, less biopersistent fibres (an alkaline earth silicate (X-607) wool and a high-alumina, low-silica (HT) wool) have been tested in well-designed, long-term inhalation studies in rats and produced no

礦棉纖維存在潛在致癌性

- ❖ 許多礦棉保溫材料是由纖維製成。雖然這些纖維足夠小，但是當被人體呼吸進入肺部時，由於一些礦棉纖維可以抵制人體肺液，難以被摧毀。這樣，這些纖維就會存留在肺部，引發炎症，最終導致癌症



生物可溶性(Bio-solubility)

- ❖ 人造的纖維可以較容易的被分解
- ❖ 人造的纖維進入人體內(肺部)，可以較快的排出體外解，並且不具生物持久性(bio-persistent)我們稱之為生物溶解性纖維。
- ❖ 研究指出不論在PH4.5或PH7.5下，HT纖維的溶解速率都超過傳統岩棉纖維(MMVF21)的“10倍以上”

Table 1

Fibre	Dissolution Rate (ng cm ⁻² h ⁻¹)	
	pH 7.5	pH 4.5
MMVF21	23 (16-30)	59 (41-77)
HT	59 (41-77)	620 (434-806)

The in-vitro dissolution rate at pH 4.5 of the HT fibres is approximately 10 times higher than that of traditional stone wool fibres. (Kamstrup et al, 2001)



誰來告訴你岩棉具有
生物可溶性！
健康&安全！

EUCEB 認證

- EUCEB(European Certification Board for Mineral Wool Products), 即歐洲礦棉產品認證委員會, 是一個歐洲岩棉礦棉行業自主倡議並執行的一個品質認證體系和機構, 為一獨立的非營利組織。
- 這個標準和機構主要負責和檢測任何致癌產品, 檢測合格給予生產和銷售的權力。
- EUCEB檢測符合歐盟規範(EC) No 1272/2008 中的Note Q。



Rockwool®的 EUCEB認證

ROCKWOOL®



BCCA

EUCEB CERTIFICATE

BCCA, independent Certification Body designated by the scheme owner EUCEB, declares that all requirements have been met to attest that the products to which the right to use the EUCEB Trademark is granted and that are manufactured by

Rockwool Malaysia Sdn Bhd - Malaysia
Lot 4, Solok Waja 1, Bukit Raja Industrial Estate, MY - 41050 Klang,
Selangor

in the plant situated at

Melaka

are made of fibres with a chemical composition that lies within the chemical range of the reference fibre

Mineral Wool RIF 46004-7

that has successfully been tested

**in accordance with Note Q of the Regulation (EC) No 1272/2008
of the European Parliament and of the Council as currently in force**

as given in report No 02G03014 of 07-01-2004.

This certificate is granted on the basis of the Implementation Rules TRA-BEUC-511
for EUCEB Certification of mineral wool products.

N° certificate BEUC-511-21614-432-21613 | Valid from 03-10-2018 until 03-10-2021

Issued in Brussels, on 03 October 2018.

ir. B. De Blaere,
General Manager

The validity of this certificate can be checked on the website www.bcca.be.
Further clarification regarding the scope of this certificate and the applicability
of the requirements may be obtained from the certified organisation.

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ROCKWOOL®

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安心的品牌!

