GEOSCIENCES FOR
A SUSTAINABLE FUTURE
Torino 19-21 September 2022

Session S22. Naturally Occurring Asbestos (NOA): hazard identification, assessment and mitigation

Globalization and asbestos. The issue of the flow of asbestos-contaminated raw materials in the free world market

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The global scenario (the chrysotile global issue)

Current Asbestos Bans

compiled by Laurie Kazan-Allen

(Revised July 14, 2022)

National Asbestos Bans:[1]

Algeria	Czech Republic*	Iran	Malta*	Serbia
Argentina	Denmark	Iraq	Mauritius	Seychelles[3]
Australia	Djibouti	Ireland	Monaco	Slovakia*
Austria	Egypt	Israel	Mozambique	Slovenia
Bahrain	Estonia	Italy	Netherlands	South Africa
Belgium	Finland	Japan	New Caledonia	Spain
Brazil	France	Jordan[2]	New Zealand[4]	Sweden
Brunei	Gabon	Korea (South)	Norway	Switzerland
Bulgaria	Germany	Kuwait	Oman	Taiwan[5]
Canada	Gibraltar	Latvia	Poland	Turkey
Chile	Greece*	Liechtenstein	Portugal*	United Kingdom
Colombia	Honduras	Lithuania*	Qatar	Uruguay
Croatia	Hungary*	Luxembourg	Romania	
Cyprus*	Iceland	Macedonia	Saudi Arabia	

- IARC classified all the six asbestos species as “carcinogens for humans”. Nevertheless, the toxicity potential of chrysotile is assumed to be lower than that of amphibole asbestos species and **65% of the countries in the world still allow a “safe use” of chrysotile**.
- A globally harmonized system is lacking mainly due to disagreements regarding the use of chrysotile and concentration limits of asbestos fibres in general.

The governing body of the **Rotterdam Convention** for Hazardous Chemicals has not yet managed to reach consensus for listing Chrysotile in Annex III and thus compel producers to label chrysotile.

The legislative framework in Italy (and its exceptions…)

Legge 27 marzo 1992, n. 257 - Norme relative alla cessa
(*pubblicata sul Suppl. Ord. alla Gazzetta Ufficiale n. 87 d*

Capo I - Disposizioni Generali

Art. 1 - *Finalità*

…omissis…

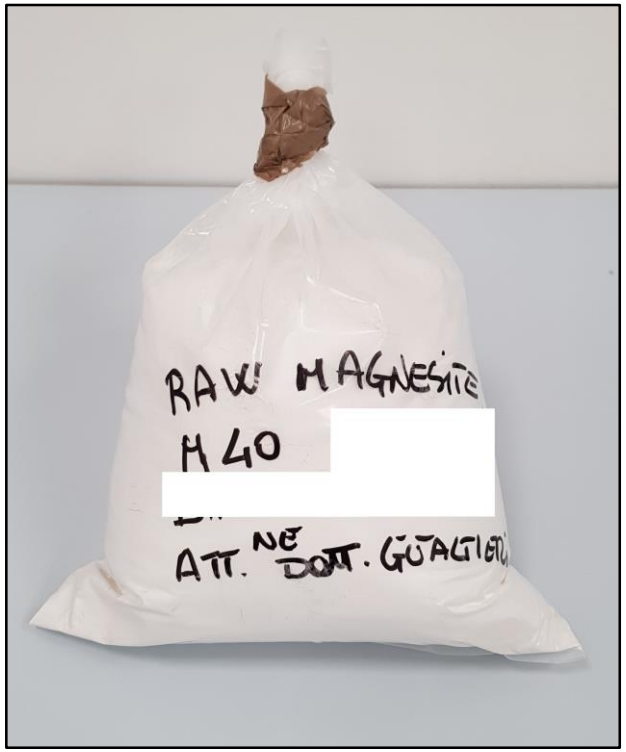
2. Sono vietate l'estrazione, l'importazione, l'esportazione, la comr
prodotti di amianto o di prodotti contenenti amianto.

…omissis…

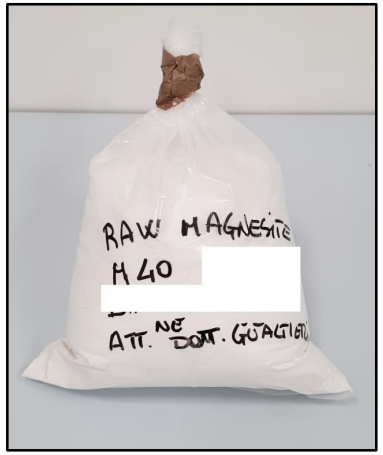
Art. 2 - *Definizioni*
1. Ai fini della presente legge si intendono per:
a) amianto: i silicati fibrosi di cui all'articolo 23 del decreto legislat

…omissis…

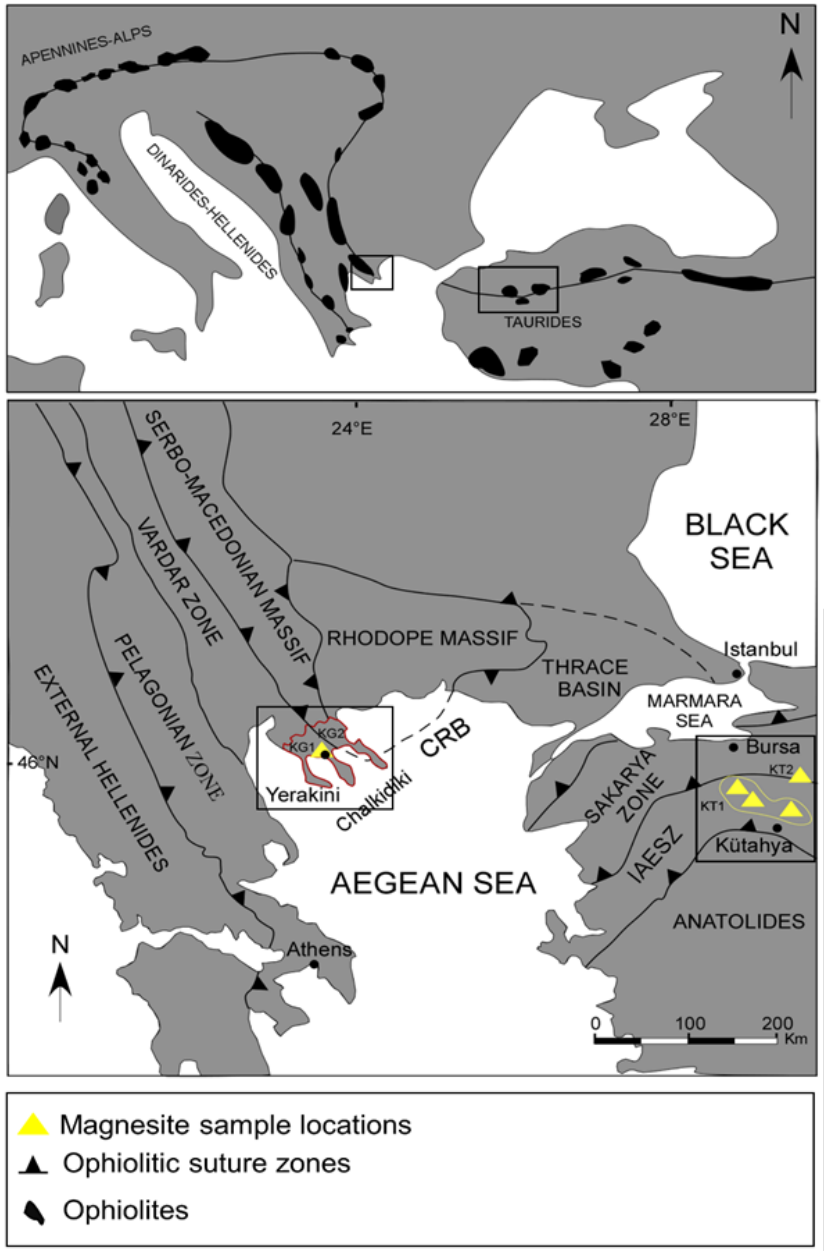
Why Italy imports out-of-law ACMs?



The case of magnesite



A widespread raw material used in several industrial applications: insulation and coatings, inorganic additive in ceramic inks, pigments and cements, as MgO source, production of traditional ceramics and many more.



Magnesite occurrence:

(i) sedimentary (**Veitsch type**)

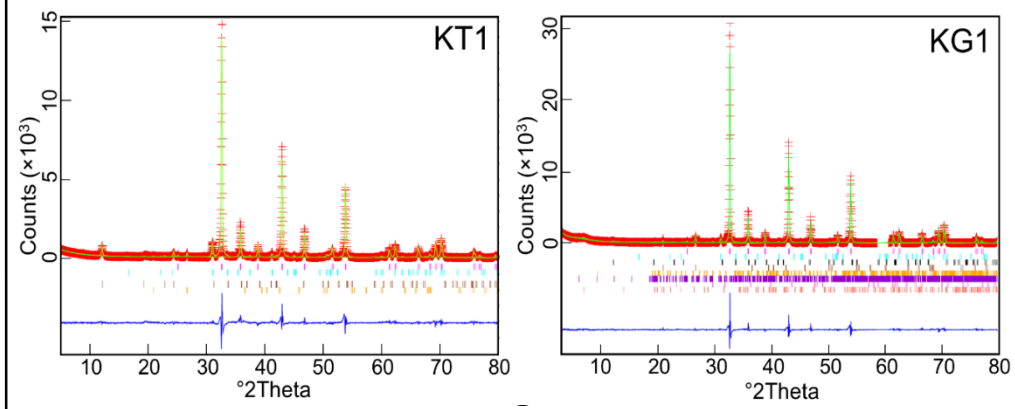
(ii) in ultramafic magmatic rocks (**Kraubath type**)

(iii) sedimentary associated to ultramafics (**Bela Stena type**)

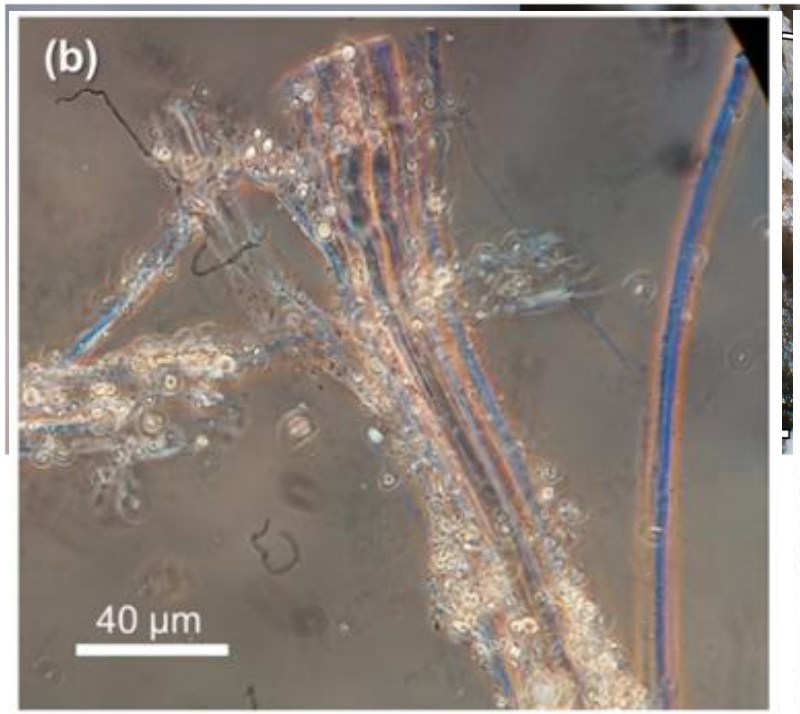
(iv) in metamorphosed ultramafics (**Greiner type**)

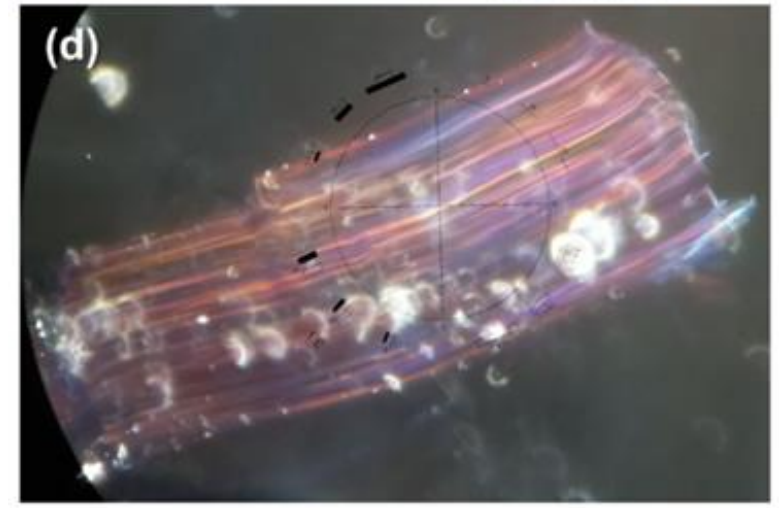
XRPD data

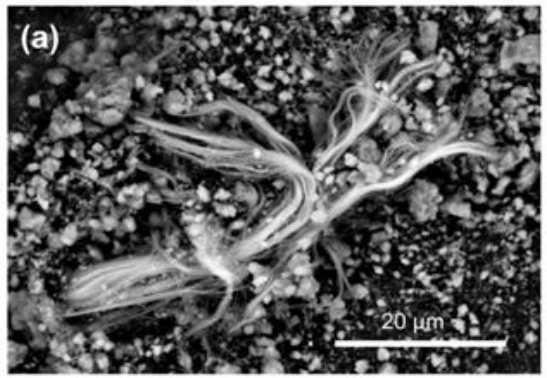
magnesite >90 wt%, serpentine <2 wt%

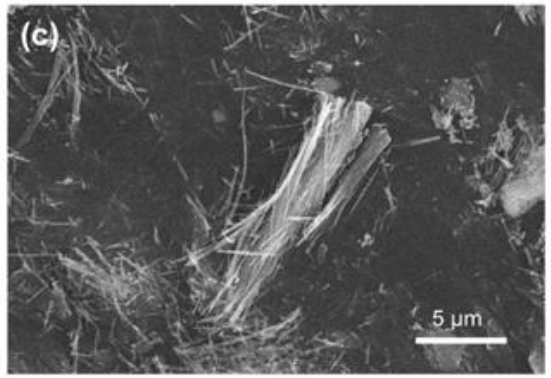


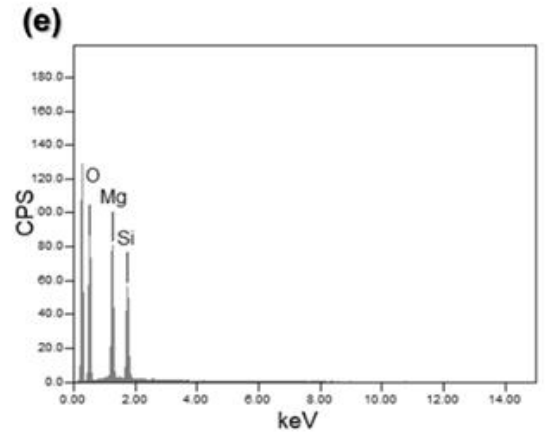
The case of magnesite

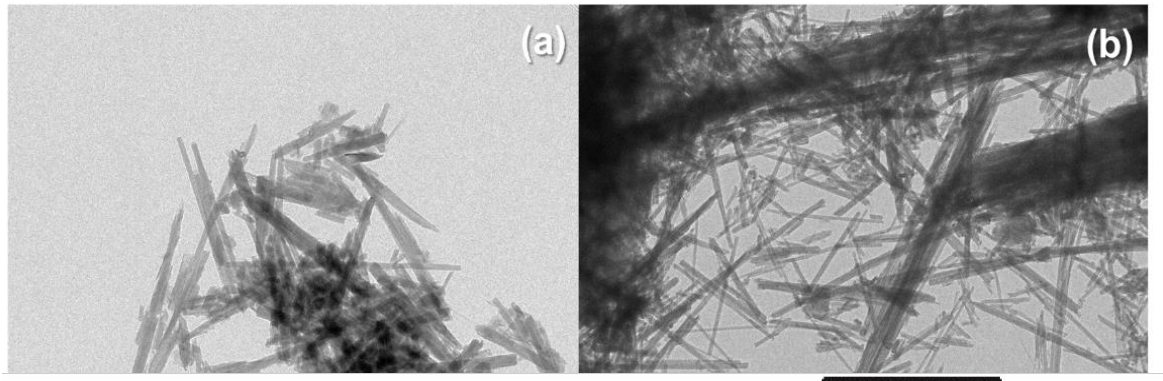












alfa solutions

ACCREDIA

LAB N° 0231 L

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Rapporto di prova n°: del 14/04/2022

Spett.

41049 SASSUOLO (MO)

Dati relativi al campione

Campione numero: 22LA06162
Ordine di accettazione numero: 22-005101
Descrizione campione: Campione MGC40TM - informazioni fornite dal cliente
Ricevuto il: 08/04/2022 - Campionamento a cura e responsabilità del cliente
Accettato il: 08/04/2022
Data inizio analisi: 13/04/2022 **Data fine analisi:** 14/04/2022

Risultati analitici

Parametro *Metodo*	U.M.	Risultato
PRESENZA - ASSENZA AMIANTO *DM 06/09/1994 SO GU n°288 10/12/1994 All 3 -*	/	**NON RILEVABILE**
* PRESENZA - ASSENZA AMIANTO (SEM) *M1799 Rev.0 2010 (SEM-EDS) -*	/	**PRESENTE**
AMIANTO (SEM) *DM 06/09/1994 SO GU n°288 10/12/1994 All 1B -*	mg/kg	**120**

The case of magnesite

- The Rotterdam Convention for Hazardous Chemicals does not list chrysotile in Annex III and compel producers to label chrysotile.

- In the EU, the REACH compliance prohibits any intentional use of asbestos, but allows the presence of carcinogens (including asbestos) as contaminant in concentrations <0.1wt.% without obligation of labelling.

- Both the Rotterdam Convention and the REACH compliance are in contrast with more severe domestic laws of countries like Italy that apply zero tolerance for asbestos.

- Consequence of these legislative disagreements: ACMs may be unknowingly imported and used in countries that have banned all asbestos species.

  This situation can occur in the exploitation of certain minerals that may accidentally contain impurities of naturally occurring asbestos (NOA).

The case of magnesite

str.,
Athens, Greece
Tel: +30 (210) 72 40
72 27 631, Fax: +30
V.A.T. No EL 094004975

e-mail: info@
www.

25/2/2020

Dear Customer,

We hereby declare that our magnesite products do not contain asbestos fibers above any detectable limit.

Remaining at your disposal

Kind Regards,

QC Manager

Unaware of the presence of asbestos?

No REACH filter (outside EU)

⇓

No Rotterdam filter to export

⇓

Italian market

⇓

Aware of the presence of asbestos

Out of Italian law!

~~if chrysotile~~ <0.1wt.%

(within EU)

⇓

No Rotterdam filter to export

⇓

Italian market

⇓

Out of Italian law!

Why Italy imports out-of-law ACMs

Manufactured in a non EU chrysotile-producing country

⇓

No export filter

⇓

Italian market

⇓

Out of Italian law!

Manufactured in a non EU chrysotile-producing country unaware of the presence of amphibole asbestos

(out of law)

⇓

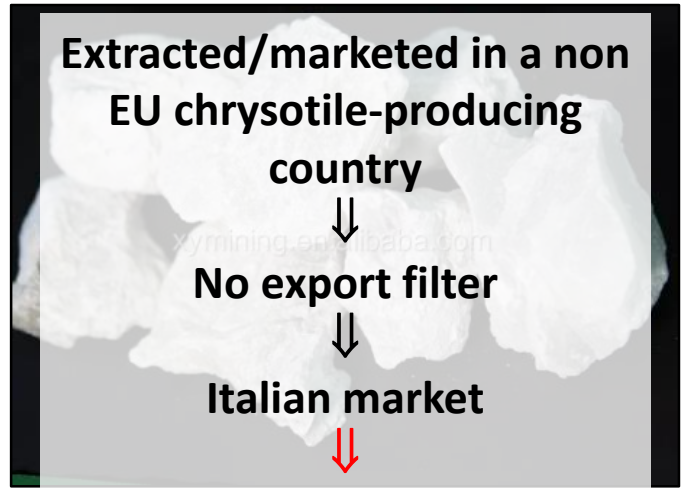
Unaware export and REACH filters breach

⇓

Italian market

⇓

Out of Italian law!



Extracted/marketed in a non EU chrysotile-producing country

⇓

No export filter

⇓

Italian market

⇓

Out of Italian law!

Extracted/marketed in a EU/non EU country

⇓

No REACH filter

⇓

No export filter

⇓

Italian market

⇓

Out of Italian law!

Possible solutions for natural raw materials?

- A harmonized standard analytical protocol: when imported, each raw material (and especially those of asbestos-compatible origin?), must be accompanied by a certification of absence of asbestos, assessed by high-resolution EM, that producers deliver. The importing company/national distributors can randomly cross-check the reliability of the certificates by validated specialized labs using high-resolution EM.

- Mining activity in asbestos-rich or supposedly asbestos-rich national deposits should be always carried out under severe monitoring and differential processing.

- The conflict between the European REACH compliance and the national laws must be resolved by making an exception for asbestos in the list of REACH carcinogens so that, compatible with the EM experimental detection limits, the raw materials should not contain asbestos.

- We call for the inclusion of chrysotile in the list of Rotterdam convention of Hazardous Chemicals.

There’s plenty of asbestos at the bottom

- Naturally occurring asbestos **(NOA) transforms from local to geographically widespread health hazard** when the fibres are present as impurity in industrial minerals that may freely circulate in the global market.

- We must continue the screening of commercial raw materials in search of asbestos for predictive purposes to avoid *ex post* discovering of the exposure of the population or workers through the observation of malignant mesothelioma morbidity peaks (e.g. fluoro-edenite case in Biancavilla!)

Key role/mission of geologists:

target possible asbestos-contaminated (commercial) natural raw materials

brucite

diopside

olivine

talc

vermiculite

wollastonite

Acknowledgments

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