



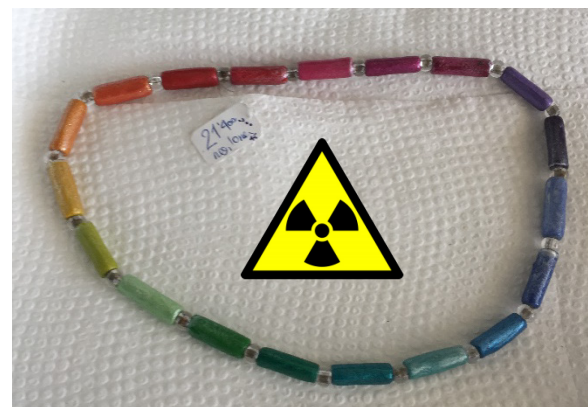
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Negative Ion jewelleries



and Naturally Occurring Radioactive Material NORM

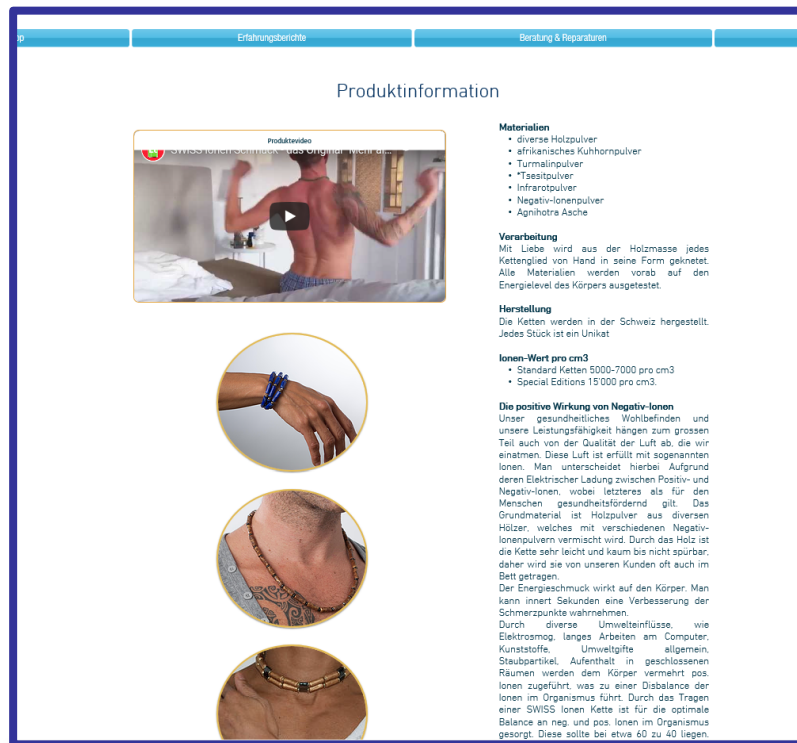
Nicolas Stritt, 06.06.2019





Swiss negative ions jewellery

- Internet advertising from the company



Esoteric jewelleryes
good for health
wristband
necklace

.....



History

- High dose rate measured on a box at the German custom in Frankfurt airport: 60 $\mu\text{Sv/h}$
- The final destination of the packaging is intended to Switzerland
- Swiss custom informed the FOPH and gave some information about website which make advertisement for negative ion jewellerys
- Coordination of the investigation with the German regulatory body





History

- The person was interviewed from the German and Swiss Police
- The person confessed that she had confectioned some jewellerys with identical powder coming from china (Alibaba, order through the internet)
- FOPH went on site and discovered several items containing high concentration of radioactivity (NORM) in powder and in jewellerys
- FOPH put four 35 liters containers aside with high concentration of radioactivity and disposed them of according to the regulation in radiation protection





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Measurements

25 kg powder



The screenshot shows an Alibaba.com product listing for 'Negative ions powder/INF/CNAS certificate/325mesh negative'. The supplier is Lingshou County Zhongrun Minerals Co., Ltd., established in 1988. The product is shown in a photo with a digital scale displaying '8233'. The price is listed as US \$2.5-5 / Kilogram, with a minimum order of 1 Kilogram. The supply ability is 1000 Metric Ton/Metric Tons per Month, and the port is Xingang port. There are buttons for 'Contact Supplier' and 'Start Order'. The page also includes navigation links like 'Categories', 'Products', and 'Search', as well as a 'Subscribe to Trade Alert' button.

	Uranium decay chain kBq/kg Uncertainty 1.2%			Thorium decay chain kBq/kg uncertainty 2%		
Nuclid	Ra-226	Bi-214	Pb-214	Ac-228	Pb-212	Tl-208
A kBq/kg	130	104	98	600	500	500
Amount LL	13'000	10	1	60	50	50



Measurements of the necklace

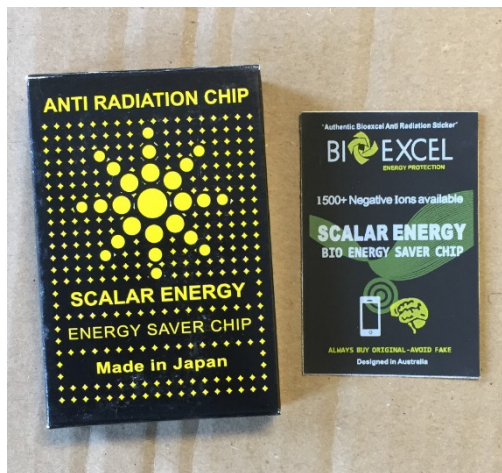


- Pro necklace
in contact
- Dose rate H^*_{10} : up to 6 $\mu\text{Sv/h}$
 - Dose rate $H^*_{0.07}$: up to 32 $\mu\text{Sv/h}$
 - Como: count rate Alpha: up to 120 CPS (UDG 0.1)
 - Como: count rate Beta/Gamma: up to 1200 CPS (UDG 10)
 - Ra-226: up to 55 kBq/kg Uranium decay chain (LLN 1 kBq/kg)
 - Ac-228: up to 350 kBq/kg Thorium decay chain (LLN 1 kBq/kg)
-
- Limit of 50 mSv/y for the population for the skin will be exceeded by wearing the jewelleries 8h per day over during a year



Other items found on site

Anti radiation chip



$\alpha = 4$ cps
 $\beta/\gamma = 100$ cps
Dose rate = $0.3 \mu\text{Sv/h}$

Wristband



$\alpha = 0.2$ cps
 $\beta/\gamma = 35$ cps

Necklace



$\alpha = 3$ cps
 $\beta/\gamma = 65$ cps

All objects were radioactive with the presence of alpha



Negative Ions value versus dose rate

COM-3010PRO The negative ion measuring instrument for ores

The weak radiation generated from a natural ore or ceramics reacts to the molecule in the air, and an anion is made. A natural ore and ceramics are measured by a sensor, and it converts into the number of anions with the microcomputer of internal organs, and displays. Please use it as management of a product besides the cloth produced commercially using a natural ore and ceramics, bedding, clothing, wall material, and accessories, and a measuring instrument for sales promotion.

Five kinds of measurement modes

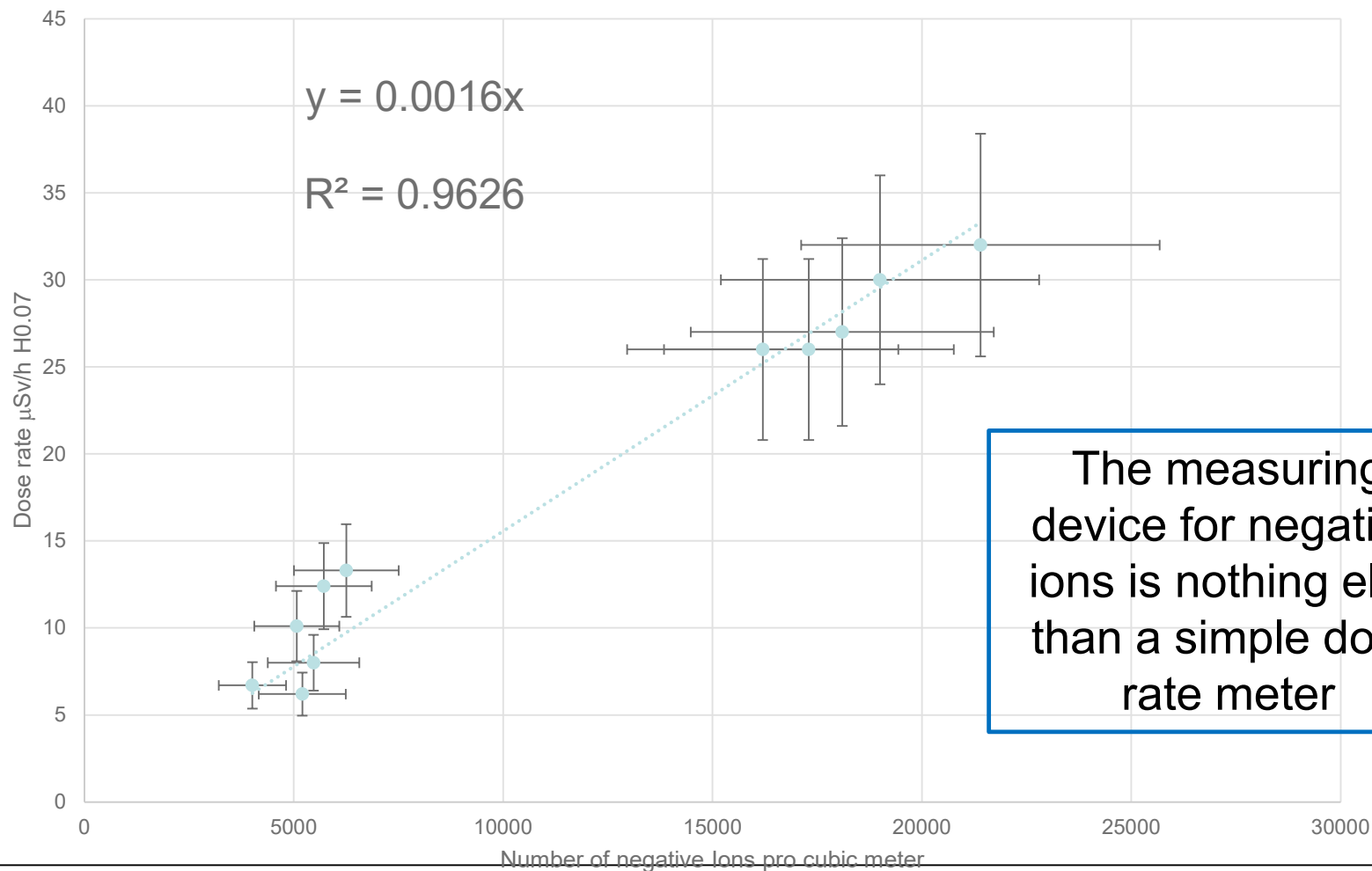
- | | |
|------------------------------------|---|
| 1. Standard Measurement Mode | : 20-second measurement |
| 2. Speed Measurement Mode | : 10-second measurement |
| 3. Automatic Measurement Mode | : Exact measured value |
| 4. Moving Average Measurement Mode | : Somewhat exact measured value |
| 5 Investigation Mode | : Investigation of the source of a signal |





Number of negative Ions versus dose rate at the surface H0.07

Measurements with a does rate device (FOPH)



Measurements with ions device (company)



Actions performed by regulatory body

- asked for the list of customers
- send 250 letters with a reply envelop and asked the customer to sent the jewelleries back to the FOPH
- Customer could send the radioactive items for free and the FOPH will take in charge the cost and the elimination of the material as NORM material
- Roughly 80% send it back
- Lot of phone calls and information's given
- Media echo in several newspaper, but not huge impact





Counteroffensive of the company

- Owner of the company started a counteroffensive on YouTube



- Saying that this jewelleries and objects are good for the health and are harmless
- Saying that the limit of 50 mSv/y for the population for the skin is ridiculous, too restrictive and wrong
- Accused the FOPH to give false information



The arbitrariness
limit of the
FOPH



Next steps from the regulatory body

- We are dealing with non authorised manipulation of radioactive substances and NORM
 - illegal Import
 - illegal admixture of radioactivity in jewelleries (Art. 25 RPO)
 - illegal sale of radioactive products
- Federal police made some investigations and was involved during the confiscation of the materials
- Case was send to the Attorney General for further investigation and to check if the person had knowledge of the presence of radioactivity when the order was made and to chech if the admixture of radioactivity was performed on purpose
- When the attorney case will be closed, the FOPH will go again on site to check for the presence of radioactivity and NORM



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Case not closed until now

Thank you for your attention

**any
questions**

