

Positive Turn in REACH evaluation

The BAuA decided that the best way forward for beryllium would be the adoption of an EU OEL

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Progress towards revised Permissible Exposure Limits for beryllium

OSHA held a public hearing to revise its existing EL for an OEL in beryllium

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James Webb Space Telescope Beryllium-made secondary mirrors installed

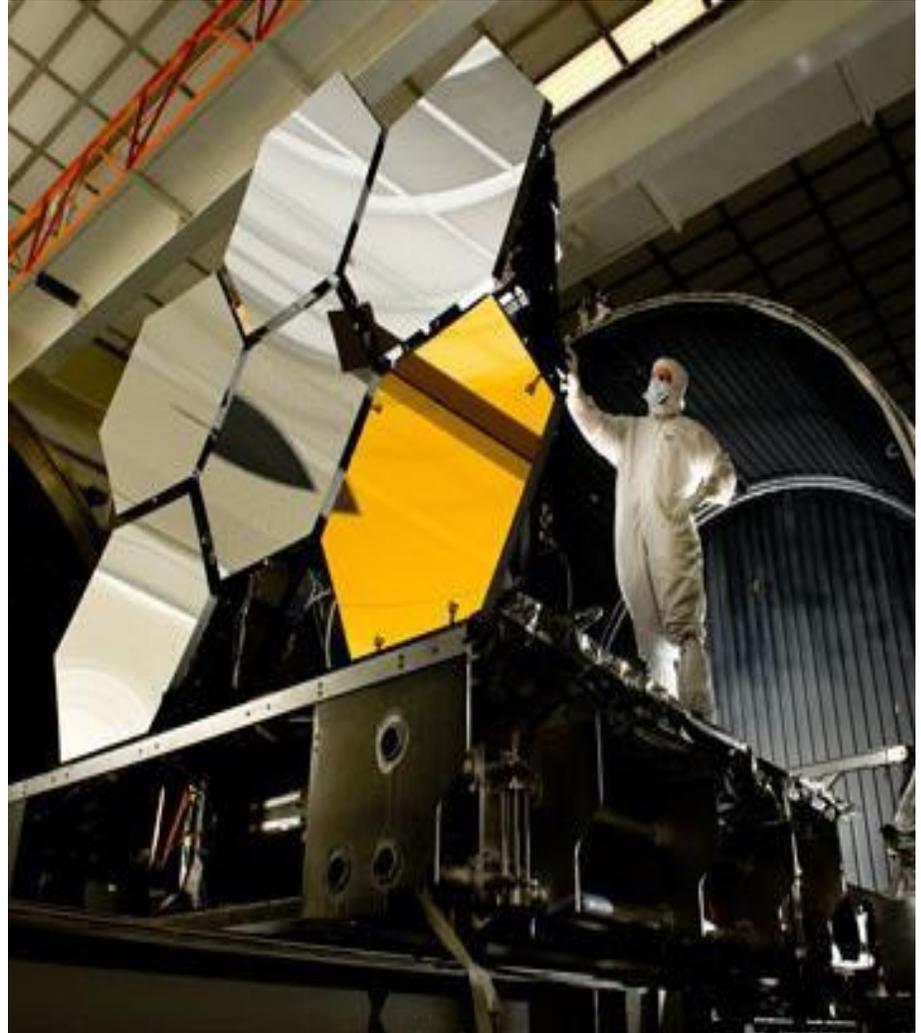
NASA engineers installed the secondary mirrors at the Goddard Space Flight Center on 3 March

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Critical Raw Materials Day

On 15 March the CRM Alliance members met with TNO and MEP Paul Rubig

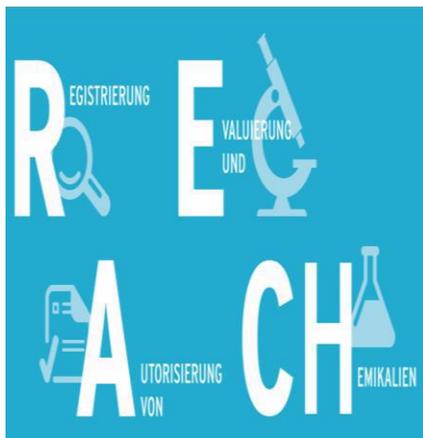
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Positive turn in REACH evaluation

Following a 2-year evaluation period, the German REACH competent authority BAuA (the German Institute of Occupational Health and Safety Authority) decided that the best way forward for beryllium would be the adoption of an European Occupational Exposure level. BeST welcomed the decision as a positive turn in the right direction.

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When impurities are asked for...

Purity is not always desirable, at least not for gemstones. Gemstones are valued for their beautiful colors and crystal forms. Light reflects off them in brilliant in the gemstone.

But gemstone color is due to very small impurities in the mineral. For example, the mineral known as corundum is colorless when pure. But a very small amount of chromium produces a bright red color. The corundum is now a ruby. A touch of iron or titanium produces shades of yellow, green, purple, pink, or blue that turn it into a sapphire.

Two gemstones are made primarily of beryl. They are emeralds and aquamarines. In emeralds, traces of chromium produce a brilliant green color. In aquamarines, iron is the impurity. It gives the beryl a beautiful blue color.

(Continued)

The alternative measures that BAuA could have proposed included Authorization or Restriction which could have had detrimental effects on industry.

Due to the thorough beryllium risk management options analysis (RMOA) by the BAuA, it is very unlikely that another Member State will propose anything else within REACH regarding beryllium, particularly because of all the scientific evidence and data submitted during the RMOA which led to the final decision by Germany. However, the beryllium Industry remains open to work with the authorities of any other Member State and to provide its knowledge and cooperation on matters related to the safe use of beryllium.

The current outcome of the REACH evaluation recognizes beryllium as an important substance with a unique and positive role in the European economy.

Beryllium is the substance of choice for many demanding technological applications and innovative technologies. It is extensively used in the production of cars, satellites, medical equipment, defense, airplanes, household appliances, etc. For this reason, the European Union has classified beryllium as a 'Critical Raw Material'

The BAuA has asked the beryllium Industry to voluntarily develop a **product stewardship initiative**.

Adoption of an EU-wide OEL may take some time to implement due to the technical procedures that involve industry partners, workers, Member States, and the European Parliament. Nevertheless, the industry will move forward with its product stewardship initiatives and work to help employers reduce workplace exposures to below 0.2 µg/m³ inhalable. This limit has already been adopted in Poland, Spain, and Ireland and has been formally proposed for adoption in the United States.

BeST believes that putting workers first by promoting best practices on the work floor is equally important as having an OEL itself.

These best practices could cover issues like installation of controls, cleaning of work areas and machines, cleaning and handling of worker clothes, ventilating, use of protective equipment and other work practice measures. BeST's Product Stewardship Program will be promoted in 2016 to ensure that best practices are communicated to both manufacturers and workers.

Industry agrees with the BAuA that that the primary health effect of concern is CBD. Therefore, efforts will continue to be focused on reducing workplace exposures.

The beryllium Industry has completed the largest and most comprehensive study on the potential for beryllium to cause cancer. It has also assessed the cancer risk among member states. The best scientific evidence, in conjunction with reports from member states, currently disagrees with the present classification of beryllium as a carcinogen element in some European legislation, and will continue to advocate for the correct classification of beryllium metal.

Progress towards revised Permissible Exposure Limits for beryllium

OSHA is proposing a new beryllium standard to replace the existing, outdated Permissible Exposure Limits (PELs) for beryllium exposure, which date back to 1971 and were based on research in the 1940's. The proposed standard is intended to reduce the risk of chronic beryllium disease (CBD), and lung cancer among beryllium-exposed workers and to provide consistent protection for all workers covered.

The need for a revised standard is supported by industry and labor: Materion Corporation, the primary producer of beryllium containing products, and the United Steelworkers (USW), an international labor union representing workers.

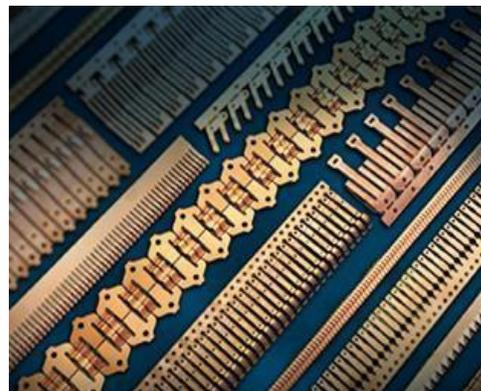
Many provisions of OSHA's proposed standard also appeared in a draft recommended standard for beryllium that was jointly developed by Materion and the USW and submitted for OSHA's consideration in 2012.

OSHA is proposing a new standard requiring employers to reduce worker exposure to beryllium. More specifically, OSHA proposes to lower the 8 hour time-weighted average (TWA) PEL for beryllium for general industry from the current standard of 2.0 micrograms of beryllium per cubic meter ($\mu\text{g}/\text{m}^3$) TWA to 0.2 $\mu\text{g}/\text{m}^3$ (CFC total particulate = 0.58 inhalable according the Fraunhofer study) TWA. OSHA also proposes to lower the acceptable ceiling concentration of 5.0 $\mu\text{g}/\text{m}^3$ to a short-term exposure limit (STEL) of 2.0 $\mu\text{g}/\text{m}^3$ as determined over 15 minutes.

OSHA already sought public comments and held a public hearing on the proposed rule revising the existing exposure limits for occupational exposure in general industry to beryllium and beryllium compounds, on March 21, 2016 in Washington, D.C. Several inputs were received from industry and labour stakeholders, small business representatives, experts and partner agencies.

Some worker safety and health advocates found that OSHA's proposed rule on beryllium is "a step in the right direction" but could be stronger. The Public Citizen's Congress Watch division called on OSHA to extend the rule also to construction and shipyard workers – many of whom are exposed to beryllium during abrasive blasting operations or open-air blasting. However, many of the advocates did not provide data to support their statements.

BeST hopes that OSHA, on the basis of the data provided to them, quickly issues a standard that protects workers and is feasible.



5 beryllium facts...

1. It is considered to be one of the lightest elements, in terms of weight yet one of the strongest
2. During the discovery of beryllium in the 1700s, it was first learned that the beryl mineral produced a sweet-smelling substance.
3. Before assuming the Greek name beryllos, beryllium was originally known from the Greek term glyka, which means sweet.
4. Beryllium is known to have a very high melting point.
5. With excellent thermal conductivity, beryllium is efficient at facilitating heat transfer. That is, beryllium works well at transferring heat from hot to cold surfaces.



James Webb on Space Telescope beryllium-made secondary mirrors successfully installed

The James Webb Space Telescope (JWST) has had its secondary mirror installed at the Goddard Space Flight Center of NASA on March 3. This is a major step towards the creation of the 'expected to be' premier space observatory of the next decade.

A collaboration among NASA, the European Space Agency, and the Canadian Space Agency is building the JWST [is a large infrared space telescope with a 6.5-meter primary mirror]. It will be launched on an Ariane 5 rocket from French Guiana in 2018 in aims of imaging the first galaxies formed and studying planets surrounding distant stars.

The equipment contains of a primary mirror of 18 separate segments unfolding and adjusting post-launch and made up of ultra-lightweight beryllium. JWST's largest component is a tennis court-sized, five-layer sunshield, attenuating the heat of the sun more than a million times. It has four cameras and spectrometers, that can record highly faint signals.

Now, since the telescope has an excessively large and final shape to fit into a rocket, engineers have targeted a design where it will unfold in origami fashion – a deployment that involves its mirrors.

According to NASA, the perfectly rounded secondary mirror garners support from three struts – nearly 25 feet in length, yet remain strong and lightweight – extending out of the primary mirror. These are hollow composite tubes that can withstand extreme space temperatures.

“The quality of the secondary mirror surface is so good that the final surface at cold temperatures does not deviate from the design by more than a few millionths of a millimeter - or about one ten-thousandth the diameter of a human hair,” says the space agency.

Beryllium makes up the secondary mirror just like all the separate segments, as it is stiff, lightweight, and stable at cryogenic temperatures. But since its bare form does not greatly reflect near-infrared light, each mirror was coated with gold to reflect infrared light, something that the Webb telescope cameras see.

The primary mirror, intended to gather faint light from the first and most distant galaxies, was completed when the last segment was installed Feb. 4 this year.

All the mirrors were constructed by Ball Aerospace & Technologies Corp., part of the main industrial partner Northrop Grumman. After launch, the Space Telescope Science Institute will operate JWST, which was formerly known as the Next Generation Space Telescope, but was renamed in 2002 after a former NASA administrator.

Source: [NASA](#)

For more information on the subject: [click here](#)

Critical Raw Materials Day

On 15 March 2016, during the CRM day, the CRM alliance met with, Dutch TNO, one of the lead consultants conducting the study on the review of the next list of critical raw materials.



During this day, the various stakeholders discussed CRMs, expressed their concerns and tried to ascertain what direction the TNO consultants were going with the review of the list of CRMs. In addition, the political priorities at EU level were presented and analyzed.

During the CRM day was Dr. Paul Rübige (MEP), a founding member of the MEP Interest Group on Critical Raw Materials, gave a short presentation. He emphasized the need to map and reserve areas in Europe for the extraction and production of CRMs and confirmed that CRMs will play a more important role at the political level.

Beryllium has been on the list of CRMs since the European Commission issued the first one in 2010. For this reason, BeST became a founding member of the CRM Alliance, which promotes the importance of critical materials for the EU and supports a critical materials policy. Members of the CRM Alliance are producers, traders and trade association dealing with one or more of the critical raw materials. The CRM Alliance will hold its next meeting in Brussels on 27th September. To find out more about the organization, please visit [this website](#).

Get the latest news on BeST online

The BeST website keeps you informed with a 'Latest news' section, where readers can follow the latest news and features on beryllium. The new section complements the wealth of information already on the site, on issues such as environment, health and safety.

<http://www.beryllium.eu>

BeST can also be found on Facebook. 'Like' the page and be notified when there are news from our association. Photos of events organised by BeST can also be found here.

<https://www.facebook.com/beryllium.science>

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