

Quarterly **NEWS
LETTER**

SUMMER ISSUE 2018

BeST

Beryllium Science & Technology Association



Dear Valued Readers,

**Welcome to the summer edition 2018
of the Quarterly Newsletter.**

As you may know, BeST represents the suppliers of Beryllium in the EU market, as well as traders and industries who rely on the unique properties of beryllium to design for miniaturisation, energy conservation, greater reliability and longer product life.

We aim to promote sound policies, regulations, science and actions related to the use of beryllium and to serve as an expert resource for the international community on the benefits and criticality of beryllium applications.

Our mission is to provide the best available scientific information related to Beryllium, and to ensure that its benefits to society in critical applications are realised and embraced and maintained by industry, governmental authorities and the general public. It is also the objective of BeST to promote good practices in the workplace, in order to protect workers handling beryllium containing materials.

BeST has developed a specific Product Stewardship Program, Be Responsible, accessible at www.berylliumafety.eu.

Kind regards,

Prof Dr. Andreas Köster, Chairman of BeST



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European Parliament looks at worker protection

The European regulator is currently discussing the levels of hazardous substances to which workers can be exposed without risk. Proposals are made covering several substances, including Beryllium. It looks that there is a risk of politicians setting a level that is out of line with the safe levels set by other world economies and that will be technically and economically unrealistic.

As already reported in BeST's Spring Quarterly Newsletter, the European Commission has published a proposal to include Beryllium, among other substances, in the scope of the European Carcinogens and Mutagens Directive (CMD), which aims at establishing maximum exposure levels of workers to hazardous substances on the work floor.

The European Commission proposes an Occupational Exposure Level (OEL) for Beryllium of 600 ng/m³ – Inhalable Fraction - average 8-hour working day, with a transitional period of five years to be subsequently lowered to 200 ng/m³ – inhalable fraction.

Member of the European Parliament (MEP) Laura Agea, appointed to prepare the opinion of the European Parliament on this proposal, has recently published her draft report and has included an amendment to extend the transitional period for Beryllium from five to

to seven years in order to allow industry to develop the necessary technology to comply with such a low OEL.

BeST does not agree with the proposed OEL and will continue to advocate in favour of an OEL of 600 ng/m³ as the appropriate final OEL, which is protective of workers, technically and economically feasible, and consistent with the other regions outside EU such as the US and Japan.

The BeST position paper on a EU Beryllium OEL can be found on the BeST website [here](#).

The BeST detailed comments on the EC OEL proposal can be found on the BeST website [here](#).

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No need to restrict Beryllium in electrical and electronic equipment

- says industry -

In a recurring review of legislation on the use of substances in electric and electronic equipment, the EU is considering a number of substances including Beryllium. The importance of Beryllium for today's high tech products is just one of the reasons why industry believes that beryllium-containing materials should not be restricted.

Earlier this year, the European Commission has commissioned the OEKO Institut, a German research institute, to assess the need to restrict the use of certain substances in electrical and electronic equipment (EEE). The conclusions of the study will feed into the European Commission's future proposal to include new substances in the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

The Oeko Institut has recently launched its first stakeholder consultation to obtain information on seven substances, including Beryllium, identified as possible candidates for restriction under RoHS. The consultation closed on 15 June 2018.

From its side, BeST published a detailed paper outlining its objections against the inclusion of Beryllium and its compounds in the list of substances shortlisted for inclusion. According to the industry association, Beryllium and its compounds should not be assessed for the following reasons:

- 1.** Beryllium has already been assessed several times in the past and has never been qualified for restriction
- 2.** Beryllium is essential in electrical and electronic equipment (EEE)
- 3.** Beryllium has no health risk to consumers and no environmental impact
- 4.** Production and recycling processes are effectively controlled under the harmonized EU Occupational Exposure Limit (currently being adopted)
- 5.** A restriction of Beryllium would have negative impact on businesses

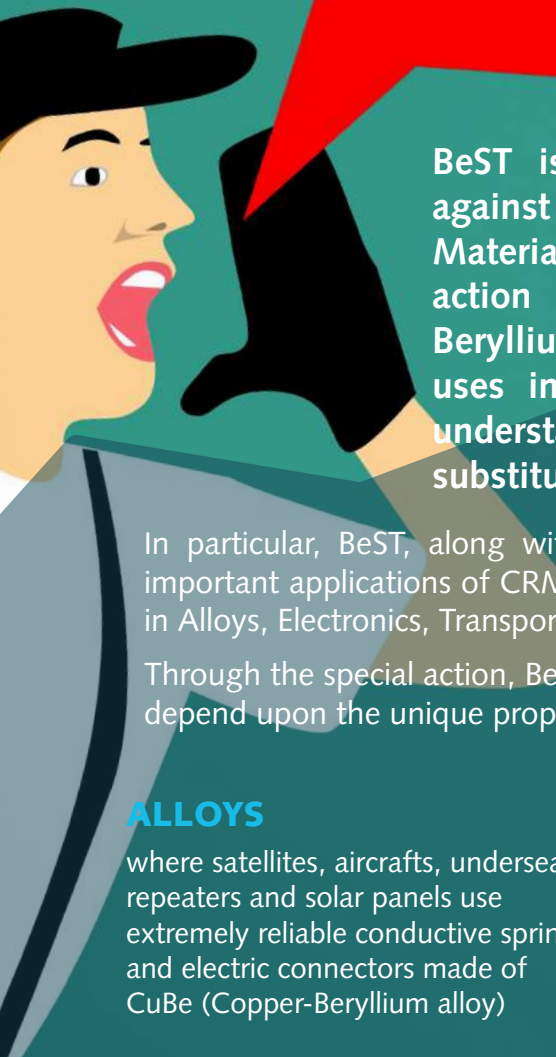
The BeST position paper on RoHS can be found on the BeST website [here](#).

In addition, BeST submitted detail comments, also endorsed by ESIA (The European Semiconductor Industry Association), to the above-mentioned RoHS consultation.

Please see BeST's comments on the BeST website [here](#).

Overall, a total of 18 contributions were submitted concerning Beryllium and its compounds (highest number of contributions), the majority of which underlining the fundamental importance of Beryllium in its important applications and the absence of any other material able to guarantee the same performances.

Campaign to promote and not substitute critical raw materials



BeST is currently participating in the Special Action against Substitution, coordinated by the Critical Raw Materials Alliance (CRM Alliance). The aim of the special action is to highlight the important applications of Beryllium and of other CRMs, the need to protect their uses in important applications and promote a better understanding of the complex process associated with the substitution of these materials.

In particular, BeST, along with the CRM Alliance, has taken action to highlight the important applications of CRMs in various key sectors of the European economy such as in Alloys, Electronics, Transport, Defence, Aerospace, and Medical Devices.

Through the special action, BeST has highlighted those important applications which fully depend upon the unique properties of Beryllium:

ALLOYS

where satellites, aircrafts, undersea repeaters and solar panels use extremely reliable conductive springs and electric connectors made of CuBe (Copper-Beryllium alloy)

MEDICAL DEVICES

where pure Beryllium is essential in high-resolution imaging technology because it is highly transparent to X-rays

ELECTRONICS

where Beryllium containing components are used due to their unique combination of excellent mechanical properties and electrical and thermal conductivity

DEFENCE & AEROSPACE

where Beryllium is used due to its low weight and high rigidity

TRANSPORT

where Copper - Beryllium connectors are used to increase fuel efficiency and for life safety applications and where beryllium is an indispensable additive to produce and recycle light weight alloys

There is a growing understanding in society that materials play a key role in technological development. Governments should acknowledge this and promote the use of critical raw materials rather than spending resources on finding substitutes.

U.S. OSHA and industry reach beryllium settlement

The Occupational Safety and Health Administration (U.S. OSHA) has issued a final rule to prevent chronic beryllium disease and lung cancer in workers by limiting their exposure to beryllium and its compounds at the workplace. The rule contains standards for general industry, construction, and shipyards.

U.S. OSHA and the Beryllium industry have recently reached a settlement agreement regarding changes to U.S. OSHA's Beryllium standard for the general industry. The changes focus on clarifications of ancillary requirements dealing mostly with regulated work areas, hygiene (cleaning of workers and equipment) and medical management while the permissible exposure limit (PEL) will remain the same, as will the requirements for engineering controls which will not come into effect until 2020.

This agreement only addresses the General Industry Standard and has no effect on the construction and maritime beryllium standards which were enforced on 11 May 2018 after the removal of the ancillary provisions.

Commenting on the settlement, industry representatives underlined the importance of legal certainty and the high standard of health protection for US workers.



BeST notes that the new US OEL is in line with its recommendation based on the protection of workers and technical and economic feasibility. U.S. OSHA has adopted an OEL of 200 ng/m³ in thoracic (or total) fraction, which is equivalent to 600 ng/m³ in inhalable fraction used in Europe.

NASA successfully tests next-generation space reactor

A large space shuttle, identified as Atlantis, is shown in a vertical orientation against a light blue sky. The shuttle is white with orange and black external tank and boosters. The name 'Atlantis' and the United States flag are visible on the side of the orbiter. The shuttle is positioned in the background, partially obscured by the main text.

NASA and the U.S. Department of Energy's National Nuclear Security Administration (NNSA) have announced that the next-generation Kilopower Reactor Using Stirling Technology (KRUSTY) nuclear reactor has passed its initial demonstration tests. Beryllium plays an important part in this development.

The importance of nuclear energy in space is generally well known given that almost every space mission depends completely on nuclear sources. However, the shortage in plutonium stocks has pushed scientists and engineers to search for alternative materials and solutions.

To meet the challenges, NASA is developing its Kilopower system, which is a 10-kilowatt reactor that can run for a decade before refuelling. To avoid the plutonium shortage, it uses a solid-cast uranium 235 reactor core 6 inches in diameter surrounded by a beryllium oxide reflector. A mechanism at one end removes and inserts a single rod of boron carbide that starts and stops the reactor, while the reflector catches escaping neutrons and bounces them back into the core, improving the efficiency of the self-regulating fission reaction.

The Kilopower experiment was carried out at the Nevada National Security Site from November 2017 until March 2018. The Nevada tests were intended to both demonstrate that the reactor works and that it is safe under abnormal circumstances. The final test was a 28-hour, full-power mission simulation that included reactor startup, ramp to full power, steady operation, and shutdown.

At present, the project is still largely conceptual, but it is hoped that the success of the demonstration will lead to its substantial progressing as the next-generation space reactor.



BeST HELLO welcomes CBL Ceramics

The Beryllium Science and Technology Association is happy to welcome CBL Ceramics LTD as new associate member.

With the addition of CBL Ceramics LTD, a manufacturer of advanced ceramics specializing in beryllium oxide ceramics, BeST has a total of three full members and three associate members gathering all the main players of the Beryllium industry and actively cooperating to protect all workers handling beryllium-containing materials.