Quarterly NEWS LETTER

WINTER ISSUE 2022

BeST

Beryllium Science & Technology Association

Dear Readers,

Welcome to the Winter edition 2022 of the BeST Quarterly Newsletter!

We are happy to start this new Year with all of you and we are extremely grateful for your constant support.

We look forward to working with all of you in this new year.

In this edition, BeST will provide an overview on the launch of NASA's James Webb Telescope, and the role played by beryllium in the construction and operation of its important components.

In addition, we will present an overview of the working programme of the three Member States (France, Czech Republic and Sweden) who will take turns in leading the Council of the European Union for the next year and a half and we will keep you updated on what's in store for the first six months of 2022.

Then, we will give you a short report on the French-language Webinar Working Safely with beryllium that BeST held on 30 November 2021 and share with you our Save the Dates for 2022.

Finally, keep an eye out for our newest Easy Guide Blast expected next month.

Kind Regards,

Prof Dr. Andreas Köster, Chairman of BeST

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NASA's James Webb Space Telescope launched on Christmas Eve

The James Webb Space Telescope (JWST), the successor to the famous Hubble telescope, was finally launched into space on 25 December 2021.

The telescope, which was supposed to operate in 2018, has been delayed for years due to a variety of causes including the pandemic and technological difficulties. Now, the much-awaited space telescope resulting from the collaboration between NASA, European Space Agency and the Canadian Space Agency is finally in space.

After its launch on the European Ariane-5 rocket, from the Kourou base in Guyana, France, JWST will take about a month to reach its destination orbiting the Sun, 1.5 million kilometres from Earth. At the so-called 'second Lagrange point' (L2) along the Earth-Sun axis, where the gravitational force exerted by the two celestial bodies perfectly counterbalances each other, the telescope will be able to remain undisturbed in a kind of cosmic equilibrium. It will take a few months for testing and commissioning.

The first spectacular images of the universe captured by the new JWST will not be seen for about 200 days after launch.

Expectations are high as the JWST aims at investigating the origins of the cosmos: if Hubble went as far as 400 million years after the Big Bang, JWST will push the horizon back almost to the first 100 million years. This will allow us to see the formation of the first galaxies and the birth of the first stars, and to observe outside the Solar System, looking for presence of key elements for life.

Beryllium played a decisive role in the construction and operation of the telescope. Due to its lightness, limited weight, excellent optical reflectivity and ability to retain its shape even at low temperatures, beryllium was used in the construction of JWST's primary, secondary and tertiary mirrors as well as in the focusing apparatus.

The beryllium used in the JWST mirrors is designated O-30 and comes in a fine powder form. The powder was crushed into a flat shape and placed in a stainless-steel canister. The resulting block of beryllium was split in half to form two mirror blanks measuring 1.3 meters across after the steel canister was removed. Each mirror blank yielded one mirror segment; the entire primary mirror is comprised of 18 hexagonal segments.

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Beryllium has a long history of being used by NASA.

Beryllium has a long history of being used by NASA. Engineers utilised it in the heat shield for the Project Mercury return capsule in the agency's early years. It was employed in shingles that protected parachute enclosures as part of Project Gemini. It was later utilised in space shuttles, the International Space Station, the Mars Spirit and Opportunity rovers, the Spitzer Space Telescope, the Hubble Telescope repair, and other missions.

It should be also added that beryllium containing products, in particular copper-beryllium alloys, have been used in the construction of the successive generations of Ariane rockets. Different EU Member States contribute to the Ariane project: France, Germany, Belgium, Spain, Netherlands, and Sweden.

The unmatching characteristics of beryllium make it the material of choice in outer space.

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Trio Council Presidency Programme published

On 10 December 2021, France, the Czech Republic, and Sweden published their Trio work programme for the Presidency of the Council of the European Union. The document covers a broad spectrum of topics that will be prioritised over the next 18 months, from 1 January 2022 until 30 June 2023.

The three Presidencies are committed to strengthening the single market and developing an assertive, comprehensive, and coordinated industrial policy to foster growth and innovation. The trio will explore ways to diversify current and future production and supply chains. In this regard, the Council of the European Union will ensure the secure, sustainable and undistorted supply of strategic raw materials to the Union.

Defence, of course, also plays an important role in the programme. The trio stresses that, in the context of rising global uncertainty, the EU must assume greater security responsibilities. According to the document, this can be achieved through the strengthening of all the different programmes that enable the EU to have an international projection.

However, the document provides for a significant step forward: securing the Union's access to the global commons, including space, cyberspace, the air domain, and the high seas, as well as deeper strategic reflections on the EU's space, security, and defense dimensions, and increased military mobility across the Union.

As you probably know, beryllium is one of the 30 current Critical Raw Materials to the EU (beryllium has been CRM since the first list in 2011) and plays a key role in several strategic applications in the field of space.

The JWST is just the most recent example. Beryllium is also used in strategic applications in the aerospace and defence sector. The beryllium industry will definitely be involved in the discussions around the space and defence agenda of the European Union.

What to expect in 2022?

This year will be full of political and regulatory initiatives. In particular, BeST will keep a close eye on the following relevant dossiers, which are expected to be presented in Q1 and Q2 of 2022.

ROADMAP ON SECURITY AND DEFENCE TECHNOLOGIES

Beryllium is a crucial element in the defence and security sector. Military systems, communications and homeland security rely on beryllium and beryllium-containing materials. The European Union intends to develop new technologies to boost innovation and support the development of critical technologies, through the launch of three flagship projects: the EU drone technologies, the EU space-based communications system, and the EU Strategy for Space Traffic Management.

NEW STRATEGY ON INTERNATIONAL ENERGY ENGAGEMENT

Beryllium and its alloys have unique qualities and are used in a variety of applications that are critical to the digital, energy, and environmental transformation. The EU will reshape its energy diplomacy to ensure worldwide access to clean, affordable, and secure energy sources, under changing conditions, considering the specificities of particular regions and countries while fostering energy partnerships.

As a reminder, beryllium is a key material in the ITER (International thermonuclear experimental reactor) project. ITER ("The Way" in Latin) is one of the most ambitious energy projects in the world today. In southern France, 35 nations are collaborating to build the world's largest tokamak, a magnetic fusion device that has been designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy based on the same principle that powers our sun and stars.

REVISION OF CLP REGULATION

Beryllium is classified under the CLP Regulation. BeST took part in the public consultation by presenting its position paper. BeST addressed reclassification issues, including supporting the option of industry reclassification without the need for Member State approval, and paying specific emphasis to the prospective procedure that will need to be followed in the context of a reclassification proposal.

BeST recalls that beryllium metal and beryllium soluble compounds have been identically classified for decades while more recent epidemiological studies clearly show that the risk is not the same for soluble and insoluble forms. Many substances are classified according to outdated schemes and more flexibility is needed to revise classifications to reflect the reality of risks towards workers and end-consumers.

EUROPEAN CHIPS ACT

Copper-beryllium alloys can be found in computer chip heat sinks, due to its thermal conductivity and strength. The European Chips Act has the goal of identifying present gaps in the manufacture of microchips and the technology improvements needed for firms of any size to prosper.

BeST holds French webinar on the Be Responsible Programme

On 30 November 2021 at 10.00 am CET, BeST hosted its Be Responsible Webinar – Working Safely with Beryllium in French.

Our expert guests offered an extremely interesting event. Ms. Angélique Renier, Communication and Environment Manager at NGK Berylco and BeST's Secretary General, addressed occupational health and safety at the workplace and highlighted good practices applied to beryllium.

Mr. Patrick Levy, Director of the Pôle Santé and Director of the Health Business Line at SOCOTEC, addressed the regulatory situation of beryllium in France and provided participants with an important anticipation: the transposition of the Carcinogens and Mutagens Directive to be discussed by the French Council of State.

Did you miss the event? Don't worry, BeST will organise similar activities in 2022.

Already mark your calendars for the first English webinar which will take place on Q1 2022.

In the meantime, you can read more about our Be Responsible Programme on our website. The website is free of charge and available in all official EU languages. To have a look at it, **click here.**

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First edition of the Easy Guide Blast published

The first edition of the Easy Guide Blast dedicated to Health and Safety has been published.

The Guide provides you with information on the Beryllium worker protection model and its key eight elements.

This initiative, as you may know, is part of the Be Responsible Programme, a project launched by the Beryllium industry in an effort to promote the science of beryllium health and safety while also protecting beryllium workers and their close entourage.

Don't miss out on our next edition of the Easy Guide Blast dedicated to the PERSONAL PROTECTIVE EQUIPMENT & HYGIENE GUIDE. Check out our first edition of the Easy Guide Blast on Health and Safety **here.**

Stay in Touch

The BeST website keeps you informed with a 'Latest News' section, where readers can follow the latest news and features on beryllium.

The news section complements the wealth of information already on the site, on issues such as environment, health, and safety.

Get the latest news on BeST online.

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