Håvard Gautneb (Geological Survey of Norway) 11 January 2023

Commodity	**Beryllium metal (Be)**	**Data source**
Significance for the EU (2023)	*Critical, not strategic*	
Uses of the commodity	Main uses: *About 65 % of the production of beryllium is used as copper-beryllium alloy.* *By industry sector: Electronic & telecommunications equipment (42 %), Transport and Defence (44 %)* Minor uses: *High-beryllium alloys (>40 % Be) in electro-optical systems in the space and aviation industries. Pure Be metal: X-ray windows. Be metal applications consume on average 20 % of the production.* Future uses: *Defence applications, nonmedical and industrial X-ray products, semiconductor processing equipment and new types of beryllium alloys*	Latunussa et al (2020)
Resources and potential in Nordic countries	*No mine production in the Nordic countries* Estonia: *None* Finland: *Lithium deposits have Be as a potential byproduct. Estimated resources 294 t.* Greenland: *Estimated resources 65 t. Minor additional indications of Be resources.* Norway: *The Høgtuva area, where several small deposits occur within 8 km^2. Estimated resources 630 t* Sweden: *Minor historic production from Kolsva, Perstorp and other localities. The Yxsjöberg deposit contains elevated concentration of Be.*	Jonsson et al. (2022), Gautneb et al. (2022)
Anthropogenic resources and potential in Nordic countries	*Beryllium alloys and pure metal are, due to their high cost, systematically recycled*	
Main deposit types in Nordic countries	*Granites and granitic pegmatites hosting beryl, bertrandite or phenakite. Possible potential in peralkaline intrusions.*	Eilu et al (2021)
Main global deposit types	*Granites and granitic pegmatites hosting beryl, bertrandite or phenakite. In some cases, also alkaline-peralkaline intrusions have Be as a potential commodity.*	Dostal (2016), London (2016)
Global production (2022)	*280 t (mining)*	USGS (2023)
Nordic production (2022)	*None*	
Main producing countries (2022)	*USA 64 %, China 25 %, Mozambique 4.6 %, Uganda 2.5 %, Brazil 1.1 % (mining)*	USGS (2023)

Technological challenges in production	*Making the metal from ore includes several energy-consuming stages, due to beryllium's high affinity for oxygen at elevated temperatures*	Latunussa et al. (2016)
Recycling	Present: *Beryllium is not recycled from end-of-life products, but 94–100% of new scrap is recycled.* Future: *No changes to current recycling assumed*	Latunussa et al. (2020)

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