Håvard Gautneb (Geological Survey of Norway) Update by Diogo Rosa (Geological Survey of Denmark and Greenland), 29 November 2022

Commodity	Fluorspar (natural CaF ₂)	Data source
Significance for the EU (20)23) Critical, not strategic	
Uses of the commodity	Main uses: The three principal markets for fluorspar are: acid, metallurgical and ceramic, with their specific grades and quality parameters. The former two are commercially called "acidspar" (60 % of demand) and "metspar" (25 % of demand), respectively. Minor uses: All fluorine-bearing chemicals. Ceramics: The addition of 10–30 % of fluorspar in glass and ceramic products produces a white opaque and opalescent effect in glass and enamels. Elemental fluorine in organic synthesis, and is necessary in the production of uranium hexafluoride, the starting material for separation of uranium isotopes for making nuclear fuel. Future uses: Applications and uses of fluorspar will remain stable, except there is a major push to substitute fluorine used in many industries (especially in the air condition and refrigerator sector) for more environmentally friendly options. The future demand for fluorspar is assumed to grow.	Fulton & Miller (2006), Latunussa et al. (2020), USGS (2022)
Resources and potential in Nordic countries	Finland: No known resources nor resource potential. Greenland: At Kvanefjeld, there are large fluorine resources of villiaumite (CaF). The Ivittuut deposit has 250,000 t fluorspar. Several other fluorspar occurrences are known but their resources not assessed. Iceland: Possible potential for deposits. Norway: About 30 registered deposits of fluorspar, the largest being Lassedalen with reserves of 4 Mt ore at 24.6 % fluorite. Sweden: 2.828 Mt. The Storuman deposit has 27.7 Mt at 10.21 % fluorite. The other known deposits are historic closed mines from which there are no resource estimates available.	Tertiary Minerals (2012), GME (2018), Lauri et al. (2018), Rosa et al. (2023)
Anthropogenic resources and potential in Nordic countries	None?	
Main deposit types in Nordic countries	Hydrothermal veins, MVT, alkaline intrusions	
Main global deposit types	Hydrothermal veins dominate production (related to MVT deposits, peralkaline and carbonatite	Warren (2016)

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	intrusions, non-magmatic(?) in large continental rifts). Phosphorites.	
Global production (2022)	8.3 Mt fluorspar	USGS (2023)
Nordic production (2022)	None	
Main producing countries (2022)	China 68.7 %, Mexico 11.7 %, South Africa 5.1 %, Mongolia 4.2 %, Vietnam 2.7 %, Spain 1.9 %	USGS (2023)
Technological challenges in production	Apparently, no major issues	Latunussa et al. (2020)
Recycling	Very little is recycled, as the dominant uses of the mineral are destructive. End-of-life recycling assumed at 1 %.	Latunussa et al. (2020)

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