

Interactive comment on “Database of global glendonite and ikaite records throughout the Phanerozoic” by Mikhail Rogov et al.

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Received and published: 29 November 2020

We thank anonymous reviewer for valuable comments.

MS structure and the organization of sections is confusing. I suggest an improved structure like that 1. Introduction, 2. Background of ikaite and glendonite (2.1 Mineralogy and petrology, 2.2 Morphology, 2.2 Isotopic signatures), 3. Method of data compilation (3.1 Data mining, 3.2 Database content), 4. Results and discussion of data compilation (4.1 Temporal and spatial distributions of glendonite, 4.2 Glendonites as palaeoenvironmental indicators), 5 Conclusions.

- proposed structure of the paper is very close to its current one, with minor corrections only. We accepted reviewer's suggestions

C1

Note: the cathodoluminescence properties should be included in the section about mineralogy and petrology.

- corrected

The language of the MS needs to be further sharpened. Line 84: cementation and diagenesis occur in sediments related to porewater not seawater.

- corrected

Line110: Mg and Fe-depleted.

- corrected

Line112: cement in different morphology.

- corrected

Line160: Supplementary material.

- corrected

Line171: in contrast to other geological periods.

- we have revised text following reviewer's suggestions

Line181: The occurrence of glendonite over geological time is patchy possibly due to challenges in preservation. Some periods in addition to Cretaceous lack glendonite record. I think it does not mean anything based on the lack of glendonite. It is OK to describe limited existence of glendonite in greenhouse-prevailed periods like Cretaceous.

- taking into account glendonite occurrences from the diverse terrigenous rocks (and also dissolved holes after glendonites) we rather suggest that lacking of glendonites from some stratigraphic intervals is corresponding to their real absence or rarity, but not to preservation bias

C2

In section 5.1. Temporal distribution of glendonite seems not simple. I suggest the periods can be reorganized into three categories including frequent occurrence, occasional occurrence, and absence.

- we prefer to consider glendonite distribution in stratigraphic order, as in this case abrupt appearance or disappearance of these pseudomorphs in the geological records became clearer

Line 223: experiments results in the last few years suggest:

- corrected

Line 225-235: I think the discussion should be extended regarding to the paradox between glendonite occurrence and non-low-T settings from both nature and labs. I suggest the discussion can be basically according to temporal and spatial distributions of glendonite summarized in this study. The importance of different environmental factors in glendonite/ikaite formation can be evaluated related to specific scenario and background of glendonite existence

- according to journal rules we provided description of database and brief geological summary rather than long paper with discussion of all features of ikaite/glendonite origin and transformations.

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-222>, 2020.