

The Manuscript “**High-resolution geochemistry of volcanic ash highlights complex magma dynamics during the Eyjafjallajökull 2010 eruption**” by K. Laeger et al.

includes the following files within the Supplementary Material:

File name	Caption
Supplementary i	Sample names and coordinates of sample locations at Eyjafjallajökull volcano taken between April 15 th to May 22 nd in 2010.
Supplementary ii	Complete glass compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary iii	Complete clinopyroxene compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary iv	Complete olivine compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary v	Complete plagioclase compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary vi	Complete Fe-Ti-oxide compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary vii	Complete apatite compositions of this study of the Eyjafjallajökull 2010 eruption.
Supplementary viii	Conditions and setup of electron microprobe CAMECA SX100 for chemical analysis of minerals of this study.
Supplementary ix	Averaged chemical compositions of this study of the Eyjafjallajökull 2010 eruption for geochemical modeling completed by published compositions.
Supplementary x	Conditions of thermodynamic modeling using MELTS
Supplementary xi	Plots of liquid lines of descent (LLD) calculated with MELTS using varying starting melt compositions under varying conditions