



Geochemistry of volcanic gas from Avachinsky volcano (Kamchatka, Russia)

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Among 29 active volcanoes on Kamchatka Avachinsky volcano (2741 m) attracts more attention than others due to its proximity (25 km) to Petropavlovsk-Kamchatsky, the biggest city on Kamchatka. The last eruption at Avacha occurred in summit crater in January 1991. It produced small lava flow and left lava plug, which cracked in 2001. Gas emissions from the crack and fumarolic sites at Avachinsky have been monitored from 1994 (Malik, Zelensky, 2014). Previous data show that gas temperature increase ($T^{\circ}\text{C}$): 473 (09.94), 416 (08.97), 400 (08.99), 500 (10.01), 626 (09.13). We present chemical and isotopic data on gas and condensate samples taken from the hottest fumarole at Avacha (630°C) in July 2014 (mol.%): H_2O 96.46, CO_2 1.55, SO_2 1.32, HCl 0.27, HF 0.02, H_2 0.28; $\delta^{18}\text{O}$ 2.28‰ δD -48.8‰ According to data available gas from Avacha is close to magmatic fluid of subduction zone volcanoes. ICP data on condensate collected allow to intercompare metal-bearing capacity of high-temperature gases from Avacha, Gorely, Tolbachik and Kudriavy volcanoes. The study is supported by RFBR, grant 14-05-00874.