

Amphibole, chlorite and zoisite as retrograde phases in Shanderman eclogites

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Abstract: All samples of Shanderman eclogites contain amphibole. Epidote group minerals and chlorite formed during retrograde phases of metamorphism. Amphiboles show zoning with high FeO and Al₂O₃ content at the rims and high MgO in the cores in some samples. In these samples, the amphibole compositions vary from tremolitic hornblende to tschermakite and edenitic hornblende from core to rim, respectively. Amphibole inclusions in zoisite have similar composition to matrix amphiboles and show tremolitic hornblende nature. Epidotes include both zoisite and clinozoisite in all samples. They show zoning and have high Al₂O₃ content in the core and high FeO content at the rims. Pistasite content in the core is 0.09% and at the rim is 0.17%. Plagioclase is enriched in Na and is almost in the pure albite endmember. Chlorites are MgO rich and are of Repidolite and Brunsvigite types. They show FeMg₁ and tschermakitic substitutions. Fe/Mg distribution coefficient among amphibole and chlorite for the cores of the minerals is around 0.5 and for the rims is 1. Thermobarometry of zoned amphiboles show that these minerals are grown from core to rim due to an increase in temperature and pressure.

Keywords: *shanderman, eclogite, retrograde metamorphism.*

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