

**Markl et al. Supplementary material American Mineralogist Jan 2014 AM-14-106.**

**Electronic supplement A:** Sequence of Ca-Mg arsenates with erythrite, calcite and gypsum of all samples from Wittichen investigated for this study.

ID56	Sophia	Erythrite // sainfeldite + weilite, pharmacolite // picropharmacolite
ID57	Güte Gottes	Erythrite + sainfeldite // pharmacolite //+ picropharmacolite
ID58	Wittichen	Erythrite + pharmacolite (altered to weilite) // rauenthalite/phaunouxite + picropharmacolite
ID 59	Anton Heubachtal	Pharmacolite // machatschkiite // sainfeldite pseudomorph after guérinite
ID 60	Grube Sophia	Erythrite // sainfeldite +picropharmacolite
ID 61	Anton im Heubachtal	Pharmacolite //+ sainfeldite (pseudomorph after guérinite) + guérinite // picropharmacolite
ID 62b	Alt St. Joseph	Erythrite/hörnesite // guérinite (pseudomorph after pharmacolite) // wendwilsonite
ID 62	Alt St. Joseph	Erythrite // picropharmacolite + sainfeldite
ID 6	Anton im Heubachtal	Pharmacolite + picropharmacolite
ID 6	Anton im Heubachtal	Erythrite + pharmacolite // picropharmacolite
ID 65	Anton im Heubachtal	Pharmacolite + sainfeldite //+ picropharmacolite
ID 6	Alt St. Joseph	Erythrite // pharmacolite // sainfeldite + picropharmacolite
ID 67	Sophia	Arsenolite + Erythrite
ID 68	Simson	Erythrite/hörnesite
ID 69	Anton im Heubachtal	Sainfeldite // picropharmacolite + machatschkiite
ID 70	Alt St. Joseph	Picropharmacolite + phaunouxite

ID 71	Sophia	Erythrite // wendwilsonite // picropharmacolite
ID 72	Alt St. Joseph	Pharmacolite // rauenthalite/phaunouxite //+ picropharmacolite
ID 73	Neuglück	Erythrite + hörnesite // pharmacolite // picropharmacolite
ID 74	Anton im Heubachtal	Pharmacolite (strongly altered to weilite) + picropharmacolite
ID 75	Sophia	Picropharmacolite // saintfeldite + rauenthalite/phaunouxite
ID 76	Alt St. Joseph	Erythrite + calcite + monohydrocalcite // picropharmacolite
ID 77	Alt St. Joseph	Monohydrocalcite // picropharmacolite
ID 78	Sophia	Erythrite/hörnesite //+ pharmacolite //+ picropharmacolite // saintfeldite
ID 79	Sophia	Pharmacolite + picropharmacolite
ID 80	Alt St. Joseph	Rauenthalite/phaunouxite + picropharmacolite
ID 81	Sophia	Hörnesite + pharmacolite + weilite // picropharmacolite + saintfeldite
ID 82	Alt St. Joseph	Erythrite // picropharmacolite + rauenthalit/phaunouxit
ID 83	Anton im Heubachtal	Erythrite/Hörnesite // pharmacolite + gypsum // picropharmacolite
ID 84	Anton im Heubachtal	Gypsum + picropharmacolite + rauenthalit/phaunouxit //+ saintfeldite
ID 85	Anton im Heubachtal	Pharmacolite + gypsum + picropharmacolite
ID 86	Anton im Heubachtal	Gypsum // pharmacolite (altered to weilite) //+ saintfeldite // picropharmacolite
ID 87	Anton im Heubachtal	Pharmacolite (altered to weilite)
ID 88	Anton im Heubachtal	Pharmacolite (altered to weilite)
ID 89	Güte Gottes	Erythrite + pharmacolite // picropharmacolite

ID 90	Alt St. Joseph	Erythrite // picropharmacolite + rauenthalite/phaunouxite
ID 91		Pharmacolite //+ picropharmacolite
ID 92	Sophia	Pharmacolite (altered to weilite) // guérinite (partly altered to saintfeldite)
ID 93	Sophia	Erythrite + gypsum
ID 94	Neuglück	Pharmacolite + saintfeldite //+ picropharmacolite
ID 95	Anton im Heubachtal	Erythrite/hörnesite //+ pharmacolite + gypsum + weilite //+ saintfeldite + picropharmacolite + rauenthalite/phaunouxite
ID 96	Anton im Heubachtal	Gypsum //+ saintfeldite + // picropharmacolite + rauenthalite/phaunouxite
ID 97	Schmiedestollen	Erythrite/Hörnesite //+ pharmacolite
ID 98	Anton im Heubachtal	Pharmacolite //+ erythrite/hörnesite //+ pharmacolite + gypsum
ID 99	Anton im Heubachtal	Saintfeldite // picropharmacolite // hörnesite
ID 100	Alt St. Joseph	Erythrite + rauenthalite/phaunouxite + picropharmacolite
ID 101	Alt St. Joseph	Erythrite // pharmacolite (altered to weilite) //+ guérinite
ID 102a	Alt St. Joseph	Erythrite + pharmacolite + saintfeldite + rauenthalit/phaunouxit //+ picropharmacolite
ID 102b	Alt St. Joseph	Erythrite/hörnesite //+ pharmacolite // picropharmacolite
ID 102c	Alt St. Joseph	Erythrite / guérinit //+ picropharmacolite + rauenthalite/phaunouxite
ID 102d	Alt St. Joseph	Erythrite // pharmacolite + picropharmacolite
ID 102e	Alt St. Joseph	Erythrite // picropharmacolite
ID 103a	Alt St. Joseph	Erythrite // picropharmacolite //+ saintfeldite
ID 103b	Alt St. Joseph	Calcite + Monohydrocalcite, erythrite // pharmacolite (altered to weilite) + ferrarisite (after guérinite) //+

		sainfeldite +wendwilsonite //+ picropharmacolite ; guérinite
ID 104a	Alt St. Joseph	Erythrite // guérinite // wendwilsonite //+ picropharmacolite
ID 104b	Alt St. Joseph	Erythrite/hörnesite + pharmacolite // guérinite + rauenthalite/phaunouxite + picropharmacolite
ID 104c	Alt St. Joseph	Erythrite // picropharmacolite
ID L 1	Sophia	Erythrite // gypsum + pharmacolite // picropharmacolite + rauenthalite/phaunouxite; guérinite
ID L 2	Sophia	Erythrite/hörnesite // gypsum + pharmacolite // picropharmacolite
ID L 3	Sophia	Gypsum + pharmacolite + weilite // picropharmacolite
ID L 4	Sophia	Erythrite // pharmacolite (altered to weilite) //+ sainfeldite + guérinite + picropharmacolite + rauenthalite/phaunouxite
ID L 5	Sophia	Erythrite // pharmacolite // picropharmacolite + sainfeldite
ID L 6	Sophia	Erythrite // pharmacolite + gypsum // sainfeldite + picropharmacolite + rauenthalite/phaunouxite
ID L 7	Sophia	Erythrite/hörnesite // gypsum + pharmacolite // picropharmacolite + rauenthalite/phaunouxite
ID L 8	Sophia	Erythrite // gypsum + pharmacolite (altered to weilite) + picropharmacolite; guérinite
ID L 9	Sophia	Erythrite // gypsum /pharmacolite + picropharmacolite
ID M 1	Sophia	Erythrite/hörnesite // pharmacolite + picropharmacolite
ID M 2	Sophia	Erythrite/hörnesite // pharmacolite + picropharmacolite
ID M 3	Sophia	Erythrite // pharmacolite + guérinite + sainfeldite // picropharmacolite //+ rauenthalite/phaunouxite
ID M 4	Sophia	Erythrite // pharmacolite (altered to weilite) + sainfeldite + picropharmacolite
ID M 5	Sophia	Erythrite // gypsum + pharmacolite // wendwilsonite // sainfeldite + picropharmacolite
ID M 6	Sophia	Erythrite // pharmacolite + gypsum + sainfeldite // picropharmacolite

ID M 7	Sophia	Erythrite/hörnesite // pharmacolite // picropharmacolite + rauenthalite/phaunouxite
ID M 8	Sophia	Erythrite/hörnesite // pharmacolite //+ picropharmacolite
ID M 9	Sophia	Erythrite // pharmacolite //+ sainfeldite // picropharmacolite + rauenthalite/phaunouxite + wendwilsonite
ID M 10	Sophia	Erythrite/hörnesite + lavendulane
ID M 11	Sophia	Sophia Erythrite/hörnesite // pharmacolite (altered to weilite) + gypsum + guérinite //+ sainfeldite + picropharmacolite + rauenthalite/phaunouxite
ID M 12	Sophia	Erythrite // gypsum // picropharmacolite
ID M 13	Sophia	Erythrite/hörnesite
ID M 14	Sophia	Erythrite //+ gypsum + pharmacolite + picropharmacolite + guérinite
ID M 15	Sophia	Pharmacolite + picropharmacolite + rauenthalite/phaunouxite
ID M 16	Sophia	Erythrite //+ pharmacolite // picropharmacolite
ID M 17	Sophia	Erythrite/hörnesite // pharmacolite + gypsum //+ picropharmacolite
ID M 18	Sophia	Erythrite/hörnesite + sainfeldite // picropharmacolite //+ rauenthalite/phaunouxite
ID M 19	Sophia	Erythrite/hörnesite //+ pharmacolite
ID M 20	Sophia	Erythrite // pharmacolite + picropharmacolite //+ sainfeldite
ID M 21	Sophia	Erythrite // pharmacolite // sainfeldite // picropharmacolite //+ rauenthalite/phaunouxite
ID M 22	Sophia	Erythrite/hörnesite + gypsum //+ pharmacolite //+ sainfeldite // picropharmacolite
ID M 23	Sophia	Erythrite // pharmacolite // pharmacolite // picropharmacolite
ID M 24:	Sophia	Erythrite // pharmacolite + weilite //+ sainfeldite //+ picropharmacolite + rauenthaite/phaunouxite
ID M 25	Sophia	Erythrite/hörnesite // picropharmacolite

ID M 26	Sophia	Erythrite //+ pharmacolite
ID M 27	Sophia	Erythrite // gypsum+ pharmacolite + saintfeldite //+ micropharmacolite
ID M 28	Sophia	Erythrite // pharmacolite // saintfeldite //+ guérinite //+ micropharmacolite //+ raenthalite/phaunouxite
ID M 29	Sophia	Erythrite/hörnesite // pharmacolite + weilite // saintfeldite // micropharmacolite
ID M 30	Sophia	Erythrite // pharmacolite + saintfeldite // micropharmacolite

+ = coeval with, // = later, //+ = unclear relationship