**Geological Magazine**

**Late Permian to Triassic isotope composition of sulfates in the Eastern Alps: palaeogeographic implications**

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**Online Supplementary Material**

**1.** Sampled sulfate and sulfides from the investigated evaporitic deposits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Locality** | **Age** | **Sample** | **Mineral** |  |
| **Salt, NCA** |  |  |  |  |
| **Hall in Tirol** | Late Permian  and Anisian | HT\_1 | anhydrite | coarse crystalline white grey anhydrite with slight pink-violet reflexes |
|  |  | HT\_2 | gypsum | fine grained grey gypsum overgrown by large transparent gypsum crystals with tabular habit |
| **Hallein**  **(Dürrenberg)** | Late Permian | D\_1 | polyhalite | fine grained porous polyhalite as wall-rock for a halite vein, possible both vein filling material |
|  |  | D\_2 | polyhalite | coarse crystalline, massive polyhalite |
|  |  | D\_3 | anhydrite | coarse crystalline white grey anhydrite with slight yellow-violet reflexes |
| **Hallstatt** | Late Permian | H\_1 | polyhalite | fibrous massive polyhalite |
|  |  | H\_2 | blödite | fine echigranular crystals from a blödite layer |
|  |  | H\_4 | gypsum | secondary gypsum crystals |
| **Altausee** | Late Permian | A\_1 | polyhalite | coarse crystalline grey anhydrite with polyhalite grown on cleavages and thin joints |
|  |  | A\_2 | anhydrite |  |
|  |  | A\_3 | anhydrite | anhydrite crystals in a vug overgrown by needle shaped polyhalite and gypsum |
|  |  | A\_4 | gypsum |  |
|  |  | A\_5 | gypsum | lath shaped transparent gypsum crystals |
| **Bad Ischl** | Late Permian | BI\_1 | polyhalite | fibrous polyhalite vein grown in salt clay |
|  |  | BI\_2 | polyhalite | fine crystallised polyhalite on grey salt clay |
| **Gypsum, NCA** |  |  |  |  |
| **Golling** |  | G\_2 | gypsum | grey dolomite breccia cemented with gypsum and crossed by a gypsum and sulfur joint |
|  |  | G\_1 | sulfur |  |
|  |  | G\_3 | dolomite |  |
|  |  | G\_4 | gypsum | grey dolomite breccia cemented with gypsum and crossed by a gypsum joint |
| **Wienern** |  | W\_2 | dolomite | grey dolomite breccia cemented with gypsum and crossed by a gypsum and sulfur joint; sulfur is grown in the inner part of the joint |
|  |  | W\_3 | gypsum |  |
|  |  | W\_4 | pyrite | sugar like gypsum with pyrite and hematite |
|  |  | W\_5 | magnesite |  |
|  |  | W\_6 | galenite | fine grained sulfides in grey, sugar like gypsum |
|  |  | W\_7 | sphalerite |  |
|  |  | W\_8 | gypsum |  |
|  |  | W\_9 | gypsum | white sugar like gypsum with sulfur |
| **Lessern-Tauplitz** | Late Permian | L\_2 | gypsum | grey dolomite, brittle deformed, with gypsum crossed by a gypsum and sulfur joint; sulfur is grown in the center of the joint |
|  |  | L\_1 | sulfur |  |
| **Unterlaussa** |  | Wd\_3 | gypsum | dark grey compact gypsum, deformed. No other major component could be detected using XRD. |
| **Wildalpen-St Gilgen** |  | Wd\_1 | gypsum | white, slightly pink-grey gypsum |
| **Tragöß** | Late Permian | T\_1 | galena | grey dolomite with white gypsum crossed by veins with gypsum, sphalerite, galena, pyrite and sulfur |
|  |  | T\_2 | sphalerite |  |
|  |  | T\_3 | pyrite |  |
|  |  | T\_4 | sulfur | vug filled with white gypsum and sulfur, brecciated dolomitic host rock remains |
|  |  | T\_5 | gypsum | white slightly pink gypsum with hematite |
|  |  | T\_6 | anhydrite | massive white-slightly pink anhydrite |
|  |  | T\_7 | gypsum | grey dolomite with white gypsum crossed by veins with gypsum, sphalerite, galena and sulfur |
|  |  | T\_8 | dolomite |  |
|  |  | T\_8/1 | sphalerite |  |
|  |  | T\_8 | gypsum |  |
|  |  | T\_9 | dolomite |  |
|  |  | T\_10 | sphalerite | grey dolomite with white gypsum crossed by veins with gypsum, sphalerite, galena and sulfur |
|  |  | T\_11 | gypsum |  |
|  |  | T\_12 | sphalerite (I, core, dark) |  |
|  |  | T\_13 | sphalerite |  |
|  |  | T\_14 | dolomite |  |
|  |  | T\_15 | pyrite |  |
| **Seewiesen** |  | Wd\_2 | gypsum | grey gypsum with detrital material |
| **Gyum, CAM** |  |  |  |  |
| **Stanz** | Triassic  (Carnian-Norian) | St\_1 | anhydrite | light grey, marble like anhydrite |
|  |  | St\_2 | gypsum | white marble like gypsum |
| **Göstritz** | Triassic (Carnian) | Gt\_1 | anhydrite | light grey, marble like anhydrite |
|  |  | Gt\_2 | gypsum | white-grey marble like gypsum |
|  |  | Gt\_3 | dolomite | grey dolomite with gypsum joints |
|  |  | Gt\_4 | gypsum |  |