| Table S1 Materials |
|--------------------|
| 2.8 | Fe | Fe2O3 | Fe3+ | Fe2+ | Fe | FeTiO3 | YBaFe4O7 | Fe2O3 | Fe2TiO5 | Sr2Fe2O5 | BaFeO2.9 | Fe3O4 | Fe2O3 | Fe2O3 |
| 15 | Cr | Cr | Cr3+ | Cr6+ | Cr | Cr3C2−x | Cr3C2−x | Cr2O3 | Cr3C2 | Cr2O3 | Cr Corundum | K2CrO4 oreillyite | Corundum | Corundum |
| 16 | Mn | MnO2 | KMnO4 | Mn2O3 | Mn3O4 | MnO | MnxOy | MnV2O4 | MnOOH | SrMnO3 | CaMnO3 | Mn2O4 | Mn2O4 | Mn2O4 |
| 17 | Fe | Fe2O3 | Fe3+ | Fe2+ | Fe | FeTiO3 | YBaFe4O7 | Fe2O3 | Fe2TiO5 | Sr2Fe2O5 | BaFeO2.9 | Fe3O4 | Fe2O3 | Fe2O3 |
| 18 | Ni | NiO | NiFe-2 | NiAl | Ni | Ni3Al | Ni | Ni-rich SEI | NMC442 – 2 | Li0.2Ni0.4M | Li0.2Ni0.4M | Li0.2Ni0.4M | Li0.2Ni0.4M | Li0.2Ni0.4M |
| 19 | Cu | Cu | CuO | Cu2O | Cu | Cu1.1V4O11 | Cu | Cu | Cu | Cu | Cu | Cu | Cu |
| 20 | Si | Si | SiO2 | Si-Sn | SiNW | SiGeNW | Si | Si | Si | Si | Si | Si | Si | Si |
| 21 | P | BP | BP | BP | BP | BP | P | P | P | P | P | P | P | P |
| 22 | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 23 | Cl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl | NaCl |
| 24 | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar | Ar |

Note: The table lists materials with their respective chemical compounds and symbols.