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| Autore                  | Morse Stearns A  |
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| Soggetti                | Geochemistry<br>Earth sciences<br>Geology<br>Physical chemistry<br>Planetary science<br>Earth Sciences<br>Physical Chemistry<br>Planetary Science  |
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| Nota di contenuto       | - Introduction -- Mineralogy and Chemistry of Basalts -- Crystals and Melts -- The Phase Rule as a Tool -- Diopside and Anorthite: Supposedly a Binary Eutectic System -- Plagioclase: The System An-Ab -- Diopside-Albite: A Complex System -- Diopside-Anorthite-Albite -- Forsterite-Diopside-Anorthite: A Basaltic Analog -- Incongruent Melting: The System Forsterite - Silica -- Forsterite-Anorthite-Silica: Incongruent Melting in a Ternary System -- Forsterite-Diopside-Silica: Pyroxenes and Their Reactions -- Layered Intrusions -- Nepheline-Silica and the Rest of the Basalt Tetrahedron -- Potassium: Petrogeny's Residua System and Ternary Feldspars -- Iron and Oxygen -- Iron-Bearing Olivines and Pyroxenes -- The Effects of High Pressure -- Effects of Volatiles at High Pressure -- Leftovers. |
| Sommario/riassunto      | In this newly revised and expanded edition the reader finds both an introduction to igneous petrology and an exposition of the quantitative  |

use of phase diagrams in understanding the origin and crystallization history of basic magmas. The book provides a step-by-step analysis of crystallization and melting in a limited number of geologically significant phase diagrams. The limiting processes of fractional and equilibrium melting and fractional and equilibrium crystallization are rigorously examined. Examples of the use of phase diagrams are drawn from the literature of layered intrusions, redox equilibria in iron-bearing systems, and the high pressure equilibria of melting in the mantle.

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