

## INDEX TO VOLUME 106/109

This index provides coverage for both the *Initial Reports* and *Scientific Results* portions of Volume 106/109 of the *Proceedings of the Ocean Drilling Program*. Index entries with the suffix *a* refer to pages in the *Initial Reports*, and those with *b*, to pages in the *Scientific Results* (this book).

The index is presented in two parts: (1) a Subject Index and (2) a Site Index. In addition to this printed version, the index is also available in the form of a machine-readable, ASCII-encoded, 9-track magnetic tape, 1600 bpi.

The index was prepared by Wm. J. Richardson Associates, Inc., under subcontract to the Ocean Drilling Program. It follows the concept developed by the Deep Sea Drilling Project at Scripps Institution of Oceanography for a comprehensive, cumulative index of DSDP volumes. Both of these indexes are based on a hierarchy of entries: (1) a main entry, defined as a key word or concept followed by a reference to the page on which that word or concept appears; (2) a subentry, defined as a further elaboration on the main entry followed by a page reference; and (3) a sub-subentry, defined as an even further elaboration on the main entry or subentry followed by a page reference.

The Subject Index follows a standard format. Geographic and individual names are referenced in the index only if they are subjects of discussion. This index also includes broad fossil groups, such as foraminifers and radiolarians, which also appear in a separate Paleontological Index in most volumes.

The Site Index is structured to contain entries for the sites discussed in the volume. Site entries are modified by subject subentries.

The indexes cover text figures and tables but not core description forms ("barrel sheets") or core photographs. Also excluded are bibliographic references, names of individuals, and routine front and back matter.

For further information, contact the Chief Production Editor, Ocean Drilling Program, 1000 Discovery Drive, College Station, Texas 77840.

## SUBJECT INDEX

- Alteration  
 basalt  
 Kane Fracture Zone: Site 669, 167a-170a  
 Serocki Volcano, 66a-67a, 182b, 190b  
 calcite, Serocki Volcano, 192b  
 crust, oceanic, Serocki Volcano, 181b-182b, 192b  
 phillipsite, Serocki Volcano, 192b  
 saponite, Serocki Volcano, 192b
- Anorthite  
 Serocki Volcano  
 iron concentrations, 141b  
 magnesium concentrations, 141b  
 strontium concentrations, 141b  
 zoning patterns, 130b-132b
- Antigorite, Mid-Atlantic Ridge: Site 670, texture, 105b-106b, 214a
- Aragonite, Kane Fracture Zone: Site 669, bladed habit, 169a
- Augite  
 Serocki Volcano  
 composition, 13b  
 crystallization, 14b  
 pressure affecting composition, 10b-11b, 13b
- Azimuth, Mid-Atlantic Ridge: Site 395, magnetic log, 310b
- Basalt  
 Serocki Volcano  
 age estimates, 285b-286b, 289b  
 alteration halo occurrences, 66a-67a, 182b, 190b  
 composition data, 62a  
 FAMOUS, 285b-286b, 288b, 292b-295b, 301b  
 geochemistry, 56a-63a, 57b-64b  
 iron-rich analyses, 187b, 191b  
 low-temperature alteration, 181b-192b  
 manganese-rich analyses, 187b, 192b  
 oxidation state, 283b-286b, 288b-289b  
 petrology, 56a-63a  
 potassium concentrations, 118b-121b  
 potassium-rich analyses, 185b-187b, 188b-189b  
 rubidium concentrations, 118b-121b  
 SAMF values, 185b-187b  
 samples, 183b  
 strontium concentrations, 118b-121b
- Basement  
 Mid-Atlantic Ridge: Site 395  
 resistivity, 206b-210b  
 temperature measurements, 182a-186a, 200b, 202b-203b  
 Snake Pit Hydrothermal Area, 144a, 146a-147a
- Bastite, Mid-Atlantic Ridge: Site 670, chrysotile and talc with, 213a
- Black smoker. *See* Snake Pit Hydrothermal Area
- Calcite, Serocki Volcano, low-temperature alteration, 192b
- Chalcopyrite  
 Snake Pit Hydrothermal Area, 149a  
 electron microprobe analyses, 170b  
 precipitation, 172b  
 sulfide deposits, 154b-157b, 160b, 169b, 170b
- texture, 153b, 164b-166b  
 X-ray diffraction analyses, 150a-151a, 153a-154a
- Chlorite, Snake Pit Hydrothermal Area, X-ray diffraction analyses, 154a
- Chondrite, Snake Pit Hydrothermal Area, rare earth elements, 317b
- Chrysotile  
 Mid-Atlantic Ridge: Site 670  
 bastite with, 213a  
 magnetite formation with, 105b, 115b  
 olivine with, 214a
- Clay  
 Kane Fracture Zone: Site 669  
 halo occurrences, 168a  
 X-ray diffraction analyses, 170a  
 Serocki Volcano, 64a-71a  
 color, 182b-183b  
 oxidation, 184b  
 thickness, 183b
- Clinocllore, Mid-Atlantic Ridge: Site 670, formation, 111b
- Clinopyroxene  
 Kane Fracture Zone: Site 669, groundmass, 164a-167a  
 Mid-Atlantic Ridge: Site 670, 206a-207a  
 composition, 20b, 24b, 30b-36b, 50b, 90b-91b, 95b  
 microstructure, 49b-50b, 54b  
 orthopyroxene equilibrium, 40b  
 size, 19b, 47b, 86b, 92b, 209a-210a  
 Serocki Volcano, 59a, 63a  
 composition, 13b  
 groundmass, 52a-56a  
 texture, 4b, 56a  
 Snake Pit Hydrothermal Area, 148a
- Crust, oceanic  
 MARK area  
 thickness, 18a, 20a  
 velocity, 18a  
 Mid-Atlantic Ridge: Site 395  
 age, 176a  
 magnetic properties, 189a  
 magnetization, 223b-229b  
 permeability, 205b, 213b-222b  
 petrology, 303b-305b  
 porosity, 205b, 208b-210b  
 resistivity, 206b-210b  
 Mid-Atlantic Ridge: Site 670  
 formation, 27b  
 NRM intensity, 258b-262b  
 thin, 85b  
 Serocki Volcano  
 age, 117b  
 alteration, 181b-182b, 192b
- Density  
 Kane Fracture Zone: Site 669, 171a  
 Mid-Atlantic Ridge: Site 395, 187a-188a, 190a, 240b-241b, 243b, 249b  
 Mid-Atlantic Ridge: Site 670, 93b, 221a-222a  
 Serocki Volcano, 78a-82a
- Dunite  
 Mid-Atlantic Ridge: Site 670  
 composition, 36b-37b  
 size, 29b
- East Pacific Rise  
 high-temperature sulfide deposits, 152a
- hydrothermal field, 151b  
 trace-element data, 316b  
 Explorer Ridge S, hydrothermal field, 149b-150b
- Galapagos Spreading Center, Mid-Atlantic Ridge  
 hydrothermal samples compared with, 147b, 149b-150b
- Harzburgite  
 Mid-Atlantic Ridge: Site 670, 206a-207a  
 composition, 36b-37b  
 faulting indicated by, 217a  
 magnetite concentrations, 270b  
 size, 29b  
 texture, 29b  
 Hydrothermal areas. *See* Snake Pit Hydrothermal Area
- Iceland, mantle melting, 132b
- Ilmenite, Serocki Volcano, 58a-59a
- Iron concentrations, Serocki Volcano, 62a
- Isocubanite  
 Snake Pit Hydrothermal Area  
 abundance, 173b  
 composition, 164b-165b  
 electron microprobe analyses, 168b-169b  
 precipitation, 172b  
 shape, 175b-177b  
 texture, 172b  
 X-ray powder data, 169b
- Jan Mayen Ridge, mantle melting, 132b
- Jaramillo Subchron, MARK area, 18a
- Juan de Fuca Ridge, hydrothermal field, 149b-150b
- Kane Fracture Zone: Site 669  
 alteration, 167a-170a  
 bathymetry, 165a  
 density, 171a  
 lithostratigraphy, 164a  
 location, 163a  
 petrography, 164a-167a  
 physical property measurements, 171a  
*See also specific types*  
 porosity, 171a  
 principal transform displacement zone, 164a  
 thermal conductivity, 171a  
 trace element data, 166a-167a  
 velocity, 171a  
 whole-rock analyses, 167a
- Kane Fracture Zone  
 location, 18a  
*See also* MARK area
- Lherzolite  
 Mid-Atlantic Ridge: Site 670  
 composition, 29b-30b, 36b-37b, 45b  
 size, 29b-30b
- Limestone, Mid-Atlantic Ridge: Site 670, 215a
- Lizardite  
 Mid-Atlantic Ridge: Site 670  
 composition, 109b-112b  
 texture, 115b

## SUBJECT INDEX

- Magnesium concentrations, Serocki Volcano, 62a
- Magnetic properties
- Mid-Atlantic Ridge: Site 395, 189a, 312b  
BGR magnetometer logging, 309b-312b  
induced saturation magnetization, 312b
- Mid-Atlantic Ridge: Site 670, 219a-220a  
hysteresis parameters, 271b-272b  
magnetic susceptibility, 220a, 271b-273b  
NRM intensity, 217a-219a, 258b-262b, 269b-270b
- Q-ratio, 220a
- Serocki Volcano, 68a-70a, 70a-71a, 72a, 74a-75a, 291b-292b, 297b-300b  
ARM values, 72a, 76a, 292b-293b, 297b-300b  
ARM-NRM relation, 72a-74a, 76a  
cement samples, 277b-279b  
depth variation and, 279b-280b  
hysteresis loop parameters, 298b-299b  
induced saturation magnetization, 297b-300b  
magnetic grain size, 72a, 75a  
magnetic susceptibility, 276b, 293b, 297b-300b  
MDF values, 276b-278b, 285b, 292b-293b, 295b, 297b-300b  
mean destructive field, 71a-72a, 74a-75a  
NRM intensity, 73a-74a, 77a, 276b-278b, 285b, 297b-300b  
Q-ratio, 72a, 74a-75a, 293b  
TRM values, 297b  
viscosity index, 297b-300b
- Magnetite
- Serocki Volcano, 59a  
Snake Pit Hydrothermal Area, thermomagnetic curve, 152a
- Magnetostratigraphy
- MARK area, 18a-19a, 21a-22a  
Mid-Atlantic Ridge: Site 395, 231b-235b
- Marcasite
- Snake Pit Hydrothermal Area, 149a  
sulfide deposits, 154b  
X-ray diffraction analyses, 150a-151a, 153a
- MARK area
- basin, nodal, 15a, 17a  
bathymetry, 15a  
Sea Beam map, 17a  
location, 16a  
rift mountains, 15a  
rift valley, 15a  
crustal structure, 16a, 18a-20a  
tectonics, 16a, 19a  
spreading, 18a-19a  
volcanic activity, 19a  
*See also* Serocki Volcano
- Mid-Atlantic Ridge: Site 395  
bathymetry, 176a, 198b, 207b  
density, 187a-188a, 190a, 240b-241b, 243b, 249b  
lithology, 178a-179a, 239b  
location, 176a, 206b, 304b  
magnetic susceptibility, 197a-199a, 231b-235b  
magnetometer logs, 193a-197a  
multichannel sonic logging, 189a, 191a-193a  
natural gamma intensity, 240b-241b, 243b, 249b  
natural gamma radiation, 190a  
permeability tests, 200a-201a  
*See also* Permeability
- petrophysical measurements, 237b-252b  
*See also specific types*
- porosity, 187a-188a, 190a, 205b, 208b-210b, 240b-241b, 243b, 249b  
formation factor and, 250b  
resistivity related to, 245b, 247b  
seismic structure correlated with, 210b  
velocity related to, 247b-248b
- potassium concentrations, 188a, 243b, 249b  
reflectivity, 242b  
resistivity, 190a, 193a, 202b, 240b-241b, 243b, 244b  
Archie's law, 208b-209b  
large-scale tests, 199a-200a  
salinity, 209b  
temperature measurements, 182a-184a, 197b-200b  
BGR probe, 185a-186a  
conductive gradient, 201b-202b  
downhole flow, 184a-185a, 200b-202b  
Japanese magnetometer, 186a  
velocity, 187a-188a, 190a, 192a-193a, 240b-241b, 243b  
formation factor and, 250b  
P wave, 244b-246b, 249b  
porosity related to, 247b-248b  
S wave, 244b-246b
- Mid-Atlantic Ridge: Site 670  
bathymetry, 28b, 104b, 205a  
density, 93b, 221a-222a  
geologic cross section, 206a  
geologic map, 28b  
lithology, 105b  
lithostratigraphy, 206a-207a  
location, 28b, 48b, 205a, 304b  
magnetic fabrics, 263b-265b  
major-element data, 78b, 89b  
mineralogy, 208a  
petrography, 19b-20b, 28b-30b  
rubble pieces, 214a-217a  
ultramafic rocks, 206a-215a  
physical property measurements, 221a-222a  
*See also specific types*
- porosity, 221a-222a  
tectonic map, 86b  
thermal conductivity, 222a-223a  
thermomagnetic curves, 267b, 270b  
trace elements, 78b, 210a  
melting, 101b  
velocity, 221a-222a  
whole-rock analyses, 93b, 112b-113b, 210a  
least squares modeling of melting, 99b
- Mid-Atlantic Ridge  
bathymetry, 18a  
melt compositions, 142b  
*See also* MARK area
- Olivine
- Kane Fracture Zone: Site 669, ground mass, 164a-166a
- Mid-Atlantic Ridge: Site 670  
chrysolite with, 214a  
composition, 20b, 23b, 30b-37b, 50b, 90b-91b, 94b  
dilation fissure, 214a  
magnetic fabrics, 265b  
melting, 100b  
microstructure, 48b-49b, 54b  
orthopyroxene equilibrium, 40b  
size, 86b  
talc with, 214a  
texture, 209a, 213a
- Serocki Volcano, 50a-52a  
composition, 13b  
crystallization, 14b  
electron microprobe analyses, 129b  
groundmass, 52a-56a  
phenocrysts, 52a-53a  
pseudoliquidus projection, 63a  
size, 125b
- Snake Pit Hydrothermal Area, 148a
- Olivine websterite, Mid-Atlantic Ridge: Site 670, composition, 30b, 37b, 45b
- opal, Snake Pit Hydrothermal Area, magnetic separate, 155a
- Orthopyroxene
- Mid-Atlantic Ridge: Site 670, 206a-207a  
clinopyroxene equilibrium, 40b  
composition, 20b, 24b, 30b-37b, 50b, 90b-91b, 94b  
magnetic fabrics, 265b  
microstructure, 54b  
olivine equilibrium, 40b  
shape, 209a  
size, 19b, 86b, 92b
- Peridotite
- Kane Fracture Zone: Site 669  
major-element data, 78b  
trace-element data, 78b
- Kane Fracture Zone, melting, 101b
- Mid-Atlantic Ridge: Site 395  
petrology, 303b-305b  
stratigraphic position, 305b-306b
- Mid-Atlantic Ridge: Site 670  
antigorite formation, 105b-106b, 115b  
composition, 28b-30b  
composition, serpentine-free, 28b  
deformational serpentinization, 105b-106b, 115b  
electron microprobe analyses, 30b-35b  
equilibration temperature, 22b  
foliation dip, 50b, 55b  
geothermometry, 39b-43b, 88b-89b, 96b-97b  
late-stage tensional serpentinization, 106b  
magnetic fabrics, 263b-265b  
magnetic properties, 217a, 219a, 258b-262b  
magnetic susceptibility, 220a  
major-element data, 78b  
mantle residues, 37b  
melting, 37b-41b, 89b, 93b-95b, 95b-96b, 98b, 101b  
microstructures, 47b-50b, 52b  
mineral chemistry, 20b-22b, 88b, 90b-91b, 93b, 106b-108b, 110b-112b  
ocean floor exposure, 27b  
oxygen isotope geochemistry, 106b, 112b-113b  
pervasive serpentinization, 103b, 105b, 115b  
petrography, 47b-50b, 52b  
poor recovery, 29b  
serpentinization, 51b, 53b, 86b-87b, 88b  
Site 395 compared with, 21b-22b  
size, 19b, 112b  
strain intensity, 50b-51b  
stress intensity, 51b

- tensional serpentinization, 105b, 115b  
 texture, 20b  
 thermomagnetic curves, 267b  
 trace-element data, 78b  
 zero-offset transform, 95b-96b  
*See also specific types*
- Permeability**  
 Mid-Atlantic Ridge: Site 395, 205b  
 constant-rate injection test, 215b  
 depth uncertainties, 216b  
 model-fitting procedures, 216b  
 packer inflation testing, 218b-222b  
 packer seal integrity, 215b-216b  
 pressure records, 217b-218b  
 pressurized fluid properties, 216b  
*in-situ* versus calculated bulk, 215b  
 slug test, 214b-215b
- Phillipsite, Serocki Volcano, low-temperature alteration, 192b**
- Pigeonite, Serocki Volcano, composition, 13b**
- Plagioclase**  
 Kane Fracture Zone: Site 669  
 groundmass, 164a-167a  
 X-ray diffraction analyses, 170a
- Serocki Volcano, 50a-52a, 59a**  
 composition, 125b, 127b-136b  
 cooling rate, 5b-7b, 129b  
 crystallization, 14b, 16b  
 disequilibrium partitioning, 132b  
 electron microprobe analyses, 126b-136b  
 excess, 63a  
 groundmass, 52a-56a, 125b  
 liquid exchange, 16b  
 magma mixing, 16b  
 melt compositions, 142b  
 melting, 132b, 135b-136b  
 phenocrysts, 52a-55a  
 pre-eruptive history, 132b, 135b-136b  
 shape, 124b  
 size, 124b-125b  
 tabular crystals with prismatic inner zones, 125b-126b, 130b-133b  
 tabular crystals with rounded and embayed cores, 128b, 139b-140b  
 texture, 4b, 125b  
 X-ray diffractometry, 73a  
 zoning patterns, 125b-126b, 138b-140b
- Snake Pit Hydrothermal Area, 148a**
- Porosity**  
 Kane Fracture Zone: Site 669, 171a  
 Mid-Atlantic Ridge: Site 395, 187a-188a, 190a, 205b, 208b-210b, 240b-241b, 243b, 249b  
 formation factor and, 250b  
 resistivity related to, 245b, 247b  
 seismic structure correlated with, 210b  
 velocity related to, 247b-248b  
 Mid-Atlantic Ridge: Site 670, 221a-222a  
 Serocki Volcano, 78a-82a
- Pyrite**  
 Snake Pit Hydrothermal Area, 149a  
 sulfide deposits, 151b, 154b-155b  
 X-ray diffraction analyses, 150a-151a, 153a
- Pyroxene, Mid-Atlantic Ridge: Site 670, melting, 100b**
- Pyrrhotite**  
 Snake Pit Hydrothermal Area, 149a  
 electron microprobe analyses, 172b  
 magnetic separate, 155a  
 size, 165b  
 sulfide deposits, 151b, 153b-154b, 156b, 170b, 172b
- thermomagnetic curve, 152a  
 X-ray diffraction analyses, 150a-151a, 153a
- Quartz, Serocki Volcano, composition, 13b**
- Salinity, Mid-Atlantic Ridge: Site 395, 209b**
- Saponite, Serocki Volcano, low-temperature alteration, 192b**
- Serocki Volcano**  
 age, 39a  
 alteration, 63a-64a  
 low-temperature, 62b-63b, 119b-120b, 181b-192b  
 petrography, 64a-71a  
 types, 64a-67a  
 bathymetry, 37a, 68b  
 crater composition, 69b, 84b  
 crater wall, 42a  
 density, 78a-82a  
 evolution, 77b, 79b  
 fissures, 38a-41a  
 geologic map, 43a, 70b  
 glass analyses, 82b  
 hard-rock guidebase (HRGB), 42a-43a, 44a-46a  
 iron concentrations, 62a  
 isotope data, 119b-120b  
 lava cooling, 3b-4b, 61a  
 crystal growth rates correlated with, 129b  
 rate estimation, 4b-7b  
 Site 396 compared to, 7b  
 texture of experiments, 4b, 6b  
 texture of lava, 4b, 5b  
 lava melting, 9b-10b  
 compositional variation, 11b-15b  
 electron microprobe analyses, 12b  
 elevated pressure fractionation, 15b-16b  
 multiple saturation boundaries, 10b, 13b  
 pressure effects, 10b-11b, 13b  
 lithological sequence, 68b-69b  
 lithostratigraphy, 50a-52a, 59b  
 location, 36a-37a, 39a, 67b, 68b  
 magma mixing, 61a, 63a  
 magnesium concentrations, 62a  
 major-element data, 69b-76b, 78b, 118b  
 regional comparisons, 73b, 76b  
 Makaopuhi lava, composition, 129b  
 microprobe analyses, 60a  
 MORB (mid-ocean ridge basalts), 36a  
 petrography  
 macroscopic features, 182b  
 thin section, 182b-183b  
 physical property measurements, 76a-78a  
*See also specific types*  
 pillow flows, 38a, 40a-41a  
 porosity, 78a-82a  
 sediment thickness, 68b  
 stratigraphic sequence, 72b  
 strontium concentrations, 59b, 63b-64b  
 subaerial volcanoes compared with, 76b-77b  
 surface morphology, 68b, 83b  
 thermal conductivity, 82a-84a  
 thermomagnetic curves, 300b  
 three-dimensional view, 69b  
 tools required for further study, 42a  
 trace-element data, 60b-61b, 69b-76b, 78b, 81b, 118b, 129b
- regional comparisons, 73b, 76b  
 velocity, 78a-81a  
 whole-rock analyses, 60a-61a, 80b, 129b  
 X-ray diffractometry, 67a, 72a-73a
- Serpentinite**  
 Mid-Atlantic Ridge: Site 670, 206a-207a  
 antigorite formation, 212a-213a  
 chrysotile formation, 212a  
 chrysotile, second-generation, 213a  
 composition, 50b  
 origin, 112b  
 pervasive serpentinization, 211a-212a  
 texture, 103b, 211a-212a
- Silica, Snake Pit Hydrothermal Area, composition, 149b**
- Silicate, Mid-Atlantic Ridge: Site 670, electron microprobe analyses, 30b**
- Smectite**  
 Kane Fracture Zone: Site 669  
 botryoidal overgrowths, 168a  
 X-ray diffraction analyses, 170a  
 Serocki Volcano, X-ray diffractometry, 73a
- Snake Pit Hydrothermal Area**  
 bathymetry, 139a-140a, 164b  
 "black-smoker" chimney, 140a-141a, 143a  
 morphology, 144a  
 fissure, 139a-140a, 143a  
 geologic map, 142a  
 glass analyses, 82b  
 hydrothermal field, 138a-140a, 145b-146b, 315b  
 cross section, 165b  
 major-element data, 148b-149b  
 mineral chemistry, 154b-158b, 160b-162b  
 samples, 146b-147b  
 trace-element data, 149b-151b  
 isotope data, 315b-318b  
 lithology, 145a, 147a-148a  
 lithostratigraphy, 144a, 146a-148a  
 location, 138a, 139a, 146b, 164b  
 "black smoker" related to, 146a  
 major-element data, regional comparisons, 73b, 76b  
 mineralogy, 148a-149a  
 crystal morphology, 152a, 155a  
 identification of minerals, 149a, 152a  
 petrography, 148a  
 rare earth elements, 317b-318b  
 sonar coverage, 141a-143a  
 sulfide deposits  
 brassy yellow fragments, 164b-165b, 175b-177b  
 bulk chemistry, 166b-167b  
 dark gray fragments, 166b, 175b-177b  
 friable, unconsolidated material, 166b, 175b-176b  
 isotope ratios, 167b-168b  
 major-element data, 148b-149b  
 mineral chemistry, 154b-158b, 160b-162b, 168b-177b  
 samples, 166b  
 size, 151b-154b  
 texture, 151b-154b  
 trace-element data, 149b-151b  
 yellow massive fragments, 165b-166b, 175b-176b  
 trace-element data, 315b-318b  
 regional comparisons, 73b, 76b  
 vent, 140a  
 video coverage, 141a-143a

## SITE INDEX

whole-rock analysis, 148a  
 X-ray diffraction analysis, 149a  
 Sphalerite  
 Snake Pit Hydrothermal Area, 149a  
 electron microprobe analyses, 171b  
 magnetic separate, 155a  
 sulfide deposits, 155b, 161b-162b,  
 170b-171b  
 X-ray diffraction analyses, 150a-151a,  
 153a-154a  
 Spherulite, Mid-Atlantic Ridge: Site 670,  
 groundmass, 216a  
 Spinel  
 Mid-Atlantic Ridge: Site 670  
 aluminum concentrations, 38b  
 chromium concentrations, 21b, 25b,  
 38b-39b  
 color, 210a  
 composition, 20b-21b, 31b-36b, 50b,  
 90b-91b, 95b  
 electron microprobe analyses, 30b  
 iron concentrations, 36b, 38b-39b  
 magnesium concentrations, 21b, 25b,  
 38b  
 silicon concentrations, 40b  
 size, 50b, 52b

Talc  
 Mid-Atlantic Ridge: Site 670  
 bastite with, 213a  
 formation, 109b-110b  
 olivine with, 214a  
 Snake Pit Hydrothermal Area, 147a  
 precipitation, 157b  
 X-ray diffraction analyses, 153a-154a  
 Thermal conductivity  
 Kane Fracture Zone: Site 669, 171a  
 Mid-Atlantic Ridge: Site 670, 222a-223a  
 Serocki Volcano, 82a-84a  
 Titanomagnetite  
 Mid-Atlantic Ridge: Site 395, size com-  
 pared with magnetic susceptibility,  
 234b  
 Serocki Volcano, 57a-58a  
 age estimates, 285b-286b, 289b  
 color, 284b, 286b  
 electron microprobe analyses, 300b  
 ground mass, 288b  
 magnetic properties, 75a, 285b, 299b-  
 300b  
 oxidation state, 283b-286b, 288b-289b  
 shape, 284b, 286b

Tremolite  
 Mid-Atlantic Ridge: Site 670  
 antigorite replaced by, 215a  
 formation, 111b  
 size, 106b  
 Velocity  
 Kane Fracture Zone: Site 669, 171a  
 MARK area, 18a  
 Mid-Atlantic Ridge: Site 395, 187a-188a,  
 190a, 192a-193a, 240b-241b, 243b  
 formation factor and, 250b  
 P- wave, 244b-246b, 249b  
 porosity related to, 247b-248b  
 S- wave, 244b-246b  
 Mid-Atlantic Ridge: Site 670, 221a-222a  
 Serocki Volcano, 78a-81a  
 Volcanism. *See* Serocki Volcano  
 Websterite, Mid-Atlantic Ridge: Site 670,  
 composition, 29b, 30b, 45b, 50b,  
 52b  
 Zeolite, Mid-Atlantic Ridge: Site 670, 216a

## SITE INDEX

Site 395  
 bathymetry, 176a  
 BGR magnetometer logging, 309b-313b  
 borehole televiewer log, 239b, 241b-  
 242b  
 drilling  
 objectives, 176a-177a  
 summary, 177a, 178a-182a  
 geophysical logging results, 240b-244b  
 lithology, 209b  
 location, 4a, 176a, 238b, 304b  
 magnetic field  
 depth variation, 225b  
 horizontal boundary model, 224b  
 tilted boundary model, 224b-228b  
 variation, 223b-224b  
 vertical-horizontal variation, 226b  
 magnetic susceptibility logging, 197a-  
 199a, 231b  
 conditions, 231b-232b  
 corrections, 232b  
 grain size and, 234b  
 stratigraphy and, 233b  
 tools, 231b  
 magnetometer logging, 193a-197a  
 multichannel sonic logging, 189a, 191a-  
 193a, 244b-245b  
 P- waves, 244b-247b  
 permeability  
 data summary, 219b-220b  
 downhole pressure records, 217b-218b  
 experimental methods, 213b-215b  
 hydrogeological measurements, 213b  
 packer inflated testing, 218b-219b  
 porosity and, 222b  
 pressurized system fluid properties,  
 216b  
 uncertainties in calculating, 215b-217b  
 petrophysical properties, 249b  
 resistivity, 206b-208b

experiments, 199a-201a  
 porosity and, 208b-210b, 245b, 247b  
 S waves, 244b-247b  
 Schlumberger logging, 186a-190a  
 stratigraphic columns, peridotite, 306b  
 temperature measurements, 182a-186a,  
 197b-200b  
 downhole flow, 184a-186a, 200b-201b  
 gradients, 200b-202b

Site 648  
 alteration, 63a-64a, 117b-121b  
 analytical techniques, 183b  
 chemical analysis, 184b-189b, 191b-  
 192b  
 halo occurrences, 66a  
 macroscopic features, 64a-67a, 182b  
 thin section petrography, 64a-68a,  
 182b-183b  
 titanomagnetite, 283b  
 X-ray diffractometry, 67a, 187b-188b  
 bathymetry, 17a-18a, 37a, 68b  
 cementing techniques, 31a  
 cooling experiments, 3b-7b  
 coring, summary, 46a  
 crater wall, 42a  
 crustal structure, 16a, 18a, 20a  
 drilling  
 problems, 23a-24a  
 results, 39a, 42a  
 summary, 29a-30a  
 survey, 36a-37a, 39a-42a  
 tools, 47a-50a  
 electron microprobe analyses, 12b, 60a,  
 78b, 129b, 300b  
 elevated pressure fractionation, 15b-16b  
 geochemistry, 56a-63a, 58b-64b, 69b-  
 73b  
 regional comparisons, 73b, 76b  
 geologic map, 43a

hard-rock coring systems, 28a-29a  
 hard-rock drilling systems, 28a  
 hard-rock guidebase, 24a-25a, 30a-31a,  
 42a, 44a-46a  
 deployment methods, 25a-27a  
 hysteresis loop parameters, 298b-299b  
 liquid compositions, 13b  
 lithostratigraphy, 50a-52a, 59b  
 location, 4a  
 magnetic anomaly, 21a-22a  
 magnetic field  
 cement cores, 275b, 277b-278b  
 depth variation, 279b-280b  
 experiments, 275b  
 measurements, 276b-281b  
 model, 278b-279b  
 magnetic properties, 68a-70a  
 experiments, 291b  
 measurements, 292b-295b, 298b-301b  
*See also* Subject Index  
 magnetomineralogy, 284b-285b  
 magnetostratigraphy, 70a-77a  
*See also* Subject Index  
 melting experiments, 9b-10b  
 multiple saturation, 10b  
 pressure effects on augite, 10b-11b  
 morphology, 15a-16a  
 stratigraphic section, 68b-69b, 72b,  
 84b  
 surface, 68b, 70b-72b, 83b  
 petrography, 52a, 125b  
 groundmass, 52a-56a  
 phenocrysts, 52a-53a, 54a-55a  
 petrology, 56a-63a  
 physical property measurements, 12a  
 13a, 76a-82a  
*See also* Subject Index  
 plagioclase zoning, 125b-128b, 30b  
 138b-141b  
 crystal growth rates, 129b

- patchy origin, 128b-129b, 133b-136b  
 pre-eruptive history, 132b, 135b-136b  
 trace element partitioning, 129b, 132b  
 positive displacement motors, 31a  
 radiogenic isotope ratios, 117b-121b  
 real-time television system, 31a  
 SeaMARC I record, 38a  
 spreading history, 18a-19a  
 tectonics, 16a, 19a, 36a, 67b-68b  
 thermal conductivity measurements, 82a-84a  
 thermomagnetic analysis, 283b-284b  
 thermomagnetic curves, 300b  
 whole-rock analyses, 13b, 60a-61a
- Site 649**  
 bathymetry, 17a-18a, 139a-140a, 146b, 164b  
 cementing techniques, 31a  
 crustal structure, 16a, 18a, 20a  
 crystal morphology, 152b  
 drilling  
   objectives, 137a-138a  
   problems, 23a-24a  
   procedures, 141a-144a  
   summary, 30a, 145b  
 electron microprobe analyses, 171b-172b  
 hard-rock coring systems, 28a-29a  
 hard-rock drilling systems, 28a  
 hard-rock guidebase, 24a-25a, 30a-31a  
   deployment methods, 25a-27a  
 hydrothermal field, 138a-141a  
 hydrothermal sample preservation, 10a  
 lithostratigraphy, 144a, 146b-148b  
 location, 4a  
 magnetic anomaly, 21a-22a  
 magnetic minerals separation procedure, 155b  
 mineral chemistry, 168b-170b  
 mineral identification, 149b-152b, 153b-154b  
 morphology, 15a-16a  
 oxidation  
   magnetic properties and, 285b  
   titanomagnetite, 285b  
 petrography, 148b  
 positive displacement motors, 31a  
 rare earth elements, 318b  
 real-time television system, 31a  
 spreading history, 18a-19a
- sulfide deposits  
   bulk chemistry, 166b-167b  
   cobalt histograms, 160b  
   composition, 148b-149b  
   mineral chemistry, 154b-155b  
   mineral paragenesis, 163b-166b  
   mineral phases, 150b  
   sulfur isotopes, 167b-168b  
   zinc histograms, 157b  
 tectonics, 16a, 19a  
 whole-rock analyses, 148b
- Site 669**  
 alteration, 167b-170b  
 bathymetry, 17a, 165b  
 cementing techniques, 31a  
 coring, summary, 165b  
 crustal structure, 16a, 18a, 20a  
 drilling  
   objectives, 163b-164b  
   problems, 23a-24a  
   procedures, 164b  
   summary, 30a  
 hard-rock coring systems, 28a-29a  
 hard-rock drilling systems, 28a  
 hard-rock guidebase, 24a-25a, 30a-31a  
   deployment methods, 25a-27a  
 lithostratigraphy, 164b  
 location, 4a  
 magnetic anomaly, 21a-22a  
 morphology, 15a-16a  
 petrography, 164b-167b  
   groundmass, 166b  
 physical property measurements, 171b  
   *See also* Subject Index  
 positive displacement motors, 31a  
 real-time television system, 31a  
 spreading history, 18a-19a  
 tectonics, 16a, 19a  
 thermal conductivity, 171b  
 whole-rock analyses, 167b
- Site 670**  
 bathymetry, 17a-18a, 104b, 205a  
 cementing techniques, 31a  
 crustal structure, 16a, 18a, 20a  
 deformation  
   deviatoric stress intensity estimates, 51b  
   geometry, 50b, 55b
- strain intensity estimates, 50b-51b  
 temperature, 51b  
 drilling  
   objectives, 203a-204a  
   problems, 23a-24a  
   procedures, 204a, 206a  
   summary, 30a  
 electron microprobe analyses, 30b-35b  
 equilibration temperature, 22b  
 geothermometry, 39b-42b, 88b-89b, 96b-97b  
 hard-rock coring systems, 28a-29a  
 hard-rock drilling systems, 28a  
 hard-rock guidebase, 24a-25a, 30a-31a  
   deployment methods, 25a-27a  
 hysteresis parameters, 271b-272b  
 lithostratigraphy, 206a-207a  
 location, 4a, 205a, 304b  
 magnetic anomaly, 21a-22a  
 magnetic fabrics, 263b-264b  
 magnetic properties, 217a-221a  
   experiments, 257b  
   measurements, 257b-262b  
   *See also* Subject Index  
 magnetic susceptibility, 271b-272b  
 anisotropy, 271b-272b  
 mantle residues, 37b  
 melting experiments, 89b, 99b-101b  
   percentage estimation, 38b-39b  
   percentages, 89b, 93b-95b, 98b  
 mineral chemistry, 20b-21b, 24b-25b, 88b, 90b-91b, 94b-95b, 106b-108b  
   regional comparisons, 21b-22b  
 morphology, 15a-16a  
 oxygen isotope geochemistry, 106b  
 petrography, 19b-20b, 28b-30b, 47b-50b, 86b-88b  
   nonserpentine rubble pieces, 214a-217a  
   ultramafic rocks, 206a-214a  
 petrology, serpentinization structures, 103b, 105b-106b  
 physical property measurements, 221a-222a  
   *See also* Subject Index  
 positive displacement motors, 31a  
 real-time television system, 31a  
 spreading history, 18a-19a  
 tectonics, 16a, 19a  
 thermal conductivity, 222a-223a  
 thermomagnetic curves, 267b, 270b