

CONTENTS

I. Introduction to Refractories	1
1. Definition and Classification	2
2. Fundamentals of Refractories	8
3. Testing of Refractories	60
II. Details of Refractories	127
1. Shaped Refractories	128
2. Unshaped/Monolithic Refractories	215
3. Insulating and Fiber Materials	268
III. Refractory Raw Materials and Manufacturing Equipment	287
1. Refractories Raw Materials	289
2. Manufacturing Equipment	312
IV. Industrial Application of Refractories	341
1. Iron and Steel Industry	343
2. Non-Ferrous Metal Industry	423
3. Ceramic Industry	446
4. Incinerators	471
V. Phase Diagrams of Refractories System	485
VI. Appendices	517
1. Standard Atomic Weight	518
2. Periodic Table of the Elements	519
3. Properties of Elements and Compounds	520
4. Chemistry of Minerals	521
5. Mean Specific Heats of Typical Refractory Bricks	523
6. Thermal Conductivity of Typical Refractory Bricks	524
7. Thermal Expansion of Typical Refractory Bricks	525
8. Methods for Calculating Heat Transfer through a Furnace Wall	526
9. Correlation Table for Seger, Orton and ISO Cones	530
10. Mesh Sizes for Particle Sizing	531
11. Formulas for Calculation of Area and Volume	532
12. Steel Used for Refractory Manufacturing	535
13. ISO and JIS Standards for Refractories (Titles only)	537

14. SI Units and Conversions	540
15. Supporting Members of The Technical Association of Refractories, Japan	544
16. Refractories Statistics for Japan	549
17. Index of Taikabutsu Overseas	551
Index	563
Editor's Notes	577