شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قَسَـــم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

STUDIES ON SOME ZIRCON-ALUMINA REFRACTORIES

Thesis

Submitted to

Chemistry Department

Faculty of Science

Ain Shams University

In partial fulfillment for the requirements of the Degree of M. Sc. in Chemistry

BY

Mohammad Awaad Ahmad

B.Sc. in Chemistry

Very Good With Honour Degree

(1989)

Refractories, Ceramics & Building Materials Department

National Research Centre

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"STUDIES ON SOME ZIRCON-ALUMINA REFRACTORIES"

THESIS APPROVED

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INTRODUCTION

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Refractories are defined as nonmetallic materials suitable for construction or lining of furnaces operated at high temperatures. Both chemical and physical suitability are the primary requirements for refractory materials. They may be called upon while hot to withstand pressures from the weight of furnace parts or contents, thermal shock resulting from rapid heating or cooling, other stresses induced by temperature change, mechanical wear resulting from movement of furnace contents, and chemical attack by heated solids, liquids, gases, or fumes.

It is appropriate to mention the role of refractories in present day civilization, our national economy, and our individual lives. Refractories are indispensable for substantially everything that is manufactured. Their need is obvious for smelting of ores, refining of metals, generation of steam power, and production of glass, portland cement, pottery, and building bricks.

Refractory materials of various kinds are needed for the many and widely diversified industrial applications. Those in greatest tonnage demand are classified on the basis of composition and properties into few main types known as : fireclay, high alumina, silica, basic, and insulating refractories. In addition, there are various special refractories including :