

Australian Standard™

**Methods for the analysis of zircon sand
concentrates**

**Part 11: Determination of acid demand
value**

This Australian Standard was prepared by Committee MN-004, Heavy Mineral Sands. It was approved on behalf of the Council of Standards Australia on 1 October 2003 and published on 1 December 2003.

The following are represented on Committee MN-004:

Australasian Institute of Mining and Metallurgy

Chamber of Minerals and Energy of Western Australia

Additional interests participating in the preparation of this Standard:

Producers of heavy mineral sand concentrates

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Australia web site at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.com.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 03334.

Australian Standard™

Methods for the analysis of zircon sand concentrates

Part 11: Determination of acid demand value

Originated as AS 2489.11—1984.
Second edition 2003.

COPYRIGHT

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5580 1

PREFACE

This Standard was prepared by the Standards Australia Committee MN-004, Heavy Mineral Sands to supersede AS 2489.11—1984, *Methods for the analysis of zircon sand concentrates*, Part 11: *Determination of acid demand value*.

The significance of the acid demand value has been questioned, but in view of its usefulness by foundrymen as a guide to binder requirements for zircon sand moulds, the industry previously requested the preparation of this Standard.

This revision confirms the method for the determination of acid demand value in zircon sand concentrates.

Editorial changes have been made to bring the Standard into line with current style.

Following the withdrawal of the majority of Standards in the AS 2489 series, only AS 2489.5 and this Standard remain.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 OBJECTIVE	4
3 REFERENCED DOCUMENTS	4
4 DEFINITION	4
5 PRINCIPLE	4
6 SAFETY	4
7 REAGENTS	5
8 APPARATUS	5
9 SAMPLES	5
10 PROCEDURE	5
11 CALCULATION OF ACID DEMAND VALUE	6
12 EXPRESSION OF RESULTS	7
13 TEST REPORT	7

STANDARDS AUSTRALIA

Australian Standard

Methods for the analysis of zircon sand concentrates

Part 11: Determination of acid demand value

1 SCOPE

This Standard sets out a method for the determination of the acid demand value of zircon sand concentrates.

NOTE: Clause 9 describes the procedure for obtaining acid demand values at pH 3.00, pH 4.00 and pH 5.00. However, in some cases, a determination at a single pH value (preferably 5.00) may give significant information.

2 OBJECTIVE

The objective of this Standard is to provide producers and users of heavy mineral sand concentrates with a method for determining acid demand value.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1006	Solid-stem general purpose thermometers
2164	Laboratory glassware—One-mark volumetric flasks
2165	Laboratory glassware—Burettes
2166	Laboratory glassware—One-mark pipettes
2243	Safety in laboratories (series)
2884	Heavy mineral sand concentrates—Sampling
2884.1	Part 1: Moving streams
2884.2	Part 2: Sampling from stationary situations

4 DEFINITION

For the purpose of this Standard, the following definition applies:

4.1 Acid demand value

The volume (in millilitres) of 0.1 mol/L hydrochloric acid which will react with 100 g of zircon sand.

5 PRINCIPLE

The zircon sand concentrate is stirred with dilute hydrochloric acid. The solid is filtered off and the resulting solution titrated with dilute sodium hydroxide solution. The acid demand value at pH 3, pH 4 and pH 5 is calculated from the amount of hydroxide solution required to titrate the acidic solution to these pH values.

6 SAFETY

For information on laboratory safety, reference should be made to AS 2243.