

Australian/New Zealand Standard™

Methods of test for pulp and paper

Method 011: Klason lignin in wood and pulp



AS/NZS 1301.011:2018

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PREFACE

This Standard was prepared by Standards Australia Committee PK-019, Methods of Test for Pulp and Paper, to supersede AS/NZS 1301.11s:2005, *Methods of Test for Pulp and Paper*, Method 11s: *Klason lignin in wood and pulp*.

This Standard describes a method for determination of acid-insoluble ('Klason') lignin.

This Method is similar in principle to TAPPI T 222 and ASTM D1106.

The objective of this revision is to establish the correct designation for this Standard: 1301.011, not 1301.11s. No technical revisions have been made.

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FOREWORD

Lignin is the aromatic amorphous material found in the cell wall and middle lamella of a wood fibre (1) and (2). Its removal is the main objective of chemical pulping and bleaching processes.

For the purpose of this Standard, Klason lignin is defined as those components of wood or pulp which are insoluble after treatment with 72 per cent m/m sulphuric acid followed by boiling in 3 per cent sulphuric acid. The lignin content should not be less than 1 per cent to provide a sufficient amount of lignin, about 20 mg, for accurate weighing.

Most woods contain some lignin which is rendered soluble by the above treatment and which is not determined by this Standard. In softwoods and sulphate pulps this soluble lignin content is small, about 0.2 per cent to 0.5 per cent, but in hardwoods it can amount to 5 per cent. In semi-bleached pulps about one-half of the total lignin content could be acid soluble. Hardwoods contain appreciable quantities of alkali soluble lignin so hardwood which has had any alkali treatment may give a lower result than would be obtained on the untreated wood. Some eucalypt woods contain polyphenolic substances which are included in the acid insoluble lignin if not removed prior to the test (3).