

Australian Standard<sup>®</sup>

**Graphic technology—Colour and  
transparency of printing ink sets for  
four-colour printing**

**Part 1: Sheet-fed and heat-set web  
offset lithographic printing**

**STANDARDS**  
Australia



This Australian Standard® was prepared by Committee EX-004, Graphic Technologies. It was approved on behalf of the Council of Standards Australia on 12 April 2012. This Standard was published on 24 April 2012.

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The following are represented on Committee EX-004:

- Australian Paper Industry
  - Lithographic Institute of Australia, NSW
  - Printing Industries Association of Australia
  - TAFE NSW
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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## PREFACE

This Standard was prepared by the Standards Australia Committee EX-004, Graphic Technologies.

The objective of this Standard is to define the colour and transparency of lithographic printing inks.

This Standard is identical with, and has been reproduced from ISO 2846-1:2006, *Graphic technology—Colour and transparency of printing ink sets for four-colour printing—Part 1: Sheet-fed and heat-set web offset lithographic printing*.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text ‘this part of ISO 2846’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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## INTRODUCTION

This part of ISO 2846 defines the colour and transparency of lithographic printing inks. Different sets of inks (both for proof and production printing) conforming to this part of ISO 2846 will produce a similar colour when printed on the same substrate at the appropriate film thickness. This enables colour separations for offset-lithographic printing to be based on known colour references and simplifies the task of consistently printing the same images in multiple printing sites.

It should be noted that the colorimetric characteristics specified can only be obtained when the inks are printed on the reference substrate. However, the similarity of two inks on a reference substrate generally ensures similarity on another substrate, and it is this similarity that has enabled industry specifications or standards such as ISO 12647-2<sup>[1]</sup>, which specifies the colour of these inks on other substrates, to be developed.

The colour specified in the previous edition of this part of ISO 2846 was based on extensive measurements of commercial ink sets made in Europe, Japan and the USA. A working group of ISO TC 100 process control and material experts examined data sets from various countries at the time that edition was prepared and found that a single set of colour coordinates could adequately represent all three proposals within reasonable tolerances. In addition, they found that the transparency of various inks could also be adequately represented by a new method of evaluation. A review undertaken prior to the revision of this edition suggested that there had been little change in the colour and transparency of the inks commercially available and that the characteristics specified in this part of ISO 2846 could be reconfirmed.

## AUSTRALIAN STANDARD

**Graphic technology—Colour and transparency of printing ink sets for four-colour printing**

## Part 1:

## Sheet-fed and heat-set web offset lithographic printing

**1 Scope**

This part of ISO 2846 specifies the colour and transparency characteristics that have to be met by each ink in a process colour ink set intended for proof and production printing using offset lithography. The specified printing conditions (which use a laboratory printability tester), the defined substrate and a method for testing to ensure conformance are also defined. Characteristics are specified for inks used for sheet-fed, heat-set web and radiation-curing processes.

This part of ISO 2846 does not apply to fluorescent inks and it does not specify pigments (or spectral characteristics — except informatively) in order not to preclude developments which may enable different pigment combinations to be used advantageously while still achieving the colorimetric requirements specified in this part of ISO 2846.

**2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 535, *Paper and board — Determination of water absorptiveness — Cobb method*

ISO 536, *Paper and board — Determination of grammage*

ISO 2144, *Paper, board and pulps — Determination of residue (ash) on ignition at 900 °C*

ISO 2834-1, *Graphic technology — Laboratory preparation of test prints — Part 1: Paste inks*

ISO 6588-1, *Paper, board and pulps — Determination of pH of aqueous extracts — Part 1: Cold extraction*

ISO 8254-1, *Paper and board — Measurement of specular gloss — Part 1: 75° gloss with a converging beam, TAPPI method*

ISO 8791-4, *Paper and board — Determination of roughness/smoothness (air leak methods) — Part 4: Print-surf method*

ISO 13655, *Graphic technology — Spectral measurement and colorimetric computation for graphic arts images*

ANSI CGATS.5:2003, *Graphic technology — Spectral measurement and colorimetric computation for graphic arts images*