

Intermediate Module 313

The Testing of Pigments

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Summary

Section 1 of this Module is concerned with the testing of several important pigment characteristics and properties, such as tinting strength, weathering resistance, resistance to light and heat etc.

In **Section 2**, the importance of contrast ratio is described along with its determination.

In **Section 3** you are encouraged to compare and contrast the properties described in Section 1, for a wide range of pigments which are currently used in the coatings industry.

Introduction to Module 313

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In **Section 3**, you are encouraged to compare and contrast the properties described in Section 1, for a wide range of pigments which are currently used in the coatings industry.

Structure of the Module

The module consists of a theory block of 3 sections, 1 CMA and 1 assignment.

The total study time will be approx.9 -10hr, with additional time being required for the CMA and the ASG. Experience indicates that on average, the total time to complete this module will be of the order of 4 – 6 weeks.

Marks for the module

CMA answers	20%
ASG	35%
End Test (TMA)	45%

For full certification, all three components must be completed satisfactorily.

An overall mark of 50% or more is necessary for successful completion of the module, with students achieving at least 40% of the marks available in each element

It is advisable to wait until you have completed 3 modules before sitting the end tests, as this will involve only one visit to the examination room

Module Prerequisites

It will be a distinct advantage if students tackling this module have already studied some science subjects to GCSE or relevant GNVQ level and have completed other modules at Foundation level

A student should be currently employed within the Coatings Industry or be with a supplier to this Industry.

Past relevant experience of employment within the industry would be a distinct advantage.

CMA – Computer Marked Assessment

The CMA may be found on the website. Full details of how to complete this important part of the Module may be found in the general introduction to this module.

SAQ – Self Assessment Questions

Although these do not carry any marks for completion, nevertheless they are important to the student, as they show that the Section has been clearly understood.

The answers to SAQs may be found in Appendix 1.

ASG – Assignment

In Appendix 2, at the end of the Module, there is an Assignment.

The Assignment will involve gathering data on a given list of organic pigments, assessment of their various properties and preparation of a written report. The report should also include recommendations regarding the types of coatings, in which each pigment could best be used.

Guidance is given on how to prepare the report, which must then be submitted to the course Tutor for marking.

Module Objectives

When you have finished this module, you should be able to carry out the following:

Section 1 – Pigment characteristics and the testing of the principle properties

- 1.1 Preparation of standard pigment dispersions
- 1.2 Sampling of pigments
- 1.3 Oil absorption
- 1.4 Tinting strength
- 1.5 Hiding power
- 1.6 Pigment purity
- 1.7 Weathering resistance
- 1.8 Resistance to light
- 1.9 Resistance to solvent
- 1.10 Resistance to heat
- 1.11 Resistance to bleeding

Section 2 – Contrast Ratio

Section 3 – The testing of pigment performance

- 3.1 General performance testing
- 3.2 Resistance to heat and “bleeding”