



# Certified Colour Reference Standards

## Oils, Fuels & Chemicals



Contents 500 mL

The Tintometer Limited, certifies that this reference standard has been manufactured and tested under the control of an ISO9001:2000 Quality Management System.

**Tintometer Limited**  
The Colour Laboratory  
Waterloo Road  
Salisbury, SP1 2JY, UK  
Tel: +44 1722 327242  
Fax: +44 1722 412322  
www.tintometer.com

Based in the UK for Tintometer by Paragon Scientific Ltd  
www.paragon-scientific.com

**Colour Reference Standard**

Scale: Lovibond RYBN  
Value: 0.5R  
Lot no: F107310  
Expiry date: October 2004  
Certificate no: 123456  
Reorder no: 134210

Store in external packaging or in a cool, dark place.  
Discard after use

**Paragon Scientific**

**Colour Reference Standard**

Scale: Saybolt  
Value: 10  
Lot no: F107310  
Expiry date: October 2004  
Certificate no: 123456  
Reorder no: 134210

Store in external packaging or in a cool, dark place.  
Discard after use

**Paragon Scientific**

**Colour Reference Standard**

Scale: Platinum-Cobalt  
Value: 10  
Lot no: F107310  
Expiry date: October 2004  
Certificate no: 123456  
Reorder no: 134210

Store in external packaging or in a cool, dark place.  
Discard after use

**Paragon Scientific**

**Colour Reference Standard**

Scale: Gardner Colour (ASTM D 153)

Value: Gardner 5  
Lot no: F108763  
Expiry date: October 2004  
Certificate no: TO2072  
Reorder no: 134210

Store in external packaging or in a cool, dark place.  
Discard after use

**Paragon Scientific**

**CERTIFICATE OF ISSUE**  
ISSUED BY: The Tintometer Limited  
DATE OF ISSUE: 12<sup>th</sup> September 2001

**Lovibond**

The Tintometer Limited  
Waterloo Road  
Salisbury SP1 2JY UK  
Tel: +44 1722 327242 Fax: +44 1722 412322  
Email: sales@tintometer.com  
www.tintometer.com

Customer: Paragon Scientific Ltd, Wirral Business Centre, Dock Road, Wirral, Merseyside, UK

Description: ASTM D 6045 Liquid Reference Standard

Identification: Batch Number 123456

Date of calibration: 5 September 2001 to 11 September 2001

Measurements: A Shimadzu UV-2501PC spectrophotometer was used to measure vertical samples of the liquid from 380nm to 780nm at 2nm intervals. The spectral bandwidth and extending optical path were calculated in accordance with ASTM E308-95. The transfer standards derived from the CIE data. The mean value of the 25 measurements made according to Tintometer Environmental Control.

**Colour Scales**

AOCS-Tintometer      Lovibond RYBN  
ASTM Color              Pt-Co/Hazen/APHA  
Gardner                      Saybolt

## Certified Colour Reference Standards

- Ideal for routine calibration of colour measuring instruments & verification of test data
- Ensure good inter-laboratory and inter-instrument correlation
- Applications in statistical quality control (SQC) and statistical process control (SPC)
- High stability standards with a guaranteed 12-month shelf-life
- Full traceability to internationally recognised standards
  - ASTM, Gardner & Saybolt Colour standards certified under UKAS to ISO 17025
  - AOCS-Tintometer, Lovibond RYBN & Pt-Co Colour certified under ISO 9001 quality system
- All classified as non-hazardous according to EU directives
- Each bottle supplied with full certification including MSDS

### Covers the Key Colour Scales applied to Oils, Fuels & Chemicals

The range of Lovibond colour reference standards includes AOCS-Tintometer, ASTM, Gardner, Lovibond RYBN, Pt-Co/Hazen/APHA and Saybolt Colour, the key colour scales applied to oils, fuels & chemicals. Each standard is supplied in a 500 mL bottle with a 12-month guarantee of colour stability. The values indicated are typical nominal values; individual values may vary but these are always specified on the certificate of calibration supplied with each standard.

### Excellence in Colour Measurement

Process industries throughout the world use Lovibond colorimeters for colour control of products such as edible and industrial oils, fuels, chemicals, paint vehicles and coatings. The Lovibond brand is recognised by major international standardising bodies, including the AOCS, ISO and ASTM, who quote our equipment in their specifications for colour measurement. It is this unparalleled knowledge that ensures good correlation with Lovibond colorimeters.

Colour Scale	Nominal Certified Value	Order Code	Accreditation Standard
<b>AOCS-Tintometer Colour</b> (AOCS Cc 13j-97, Cc 13b-45)	0.3R 2.0Y (5 $\frac{1}{4}$ "	134240	ISO 9001
	1.0R 9.0Y (5 $\frac{1}{4}$ "	134250	ISO 9001
	1.2R 12.0Y (5 $\frac{1}{4}$ "	134260	ISO 9001
	2.2R 22.0Y (5 $\frac{1}{4}$ "	134270	ISO 9001
	3.6R 28.0Y (5 $\frac{1}{4}$ "	134280	ISO 9001
<b>ASTM Color</b> (ASTM D6045, D1500)	0.4 (<0.5)	134290	UKAS
	1	134000	UKAS
	3	134010	UKAS
	5	134020	UKAS
<b>Gardner Colour</b> (ASTM D1544, D6166)	2	134200	UKAS
	5	134210	UKAS
	8	134220	UKAS
	<b>Lovibond RYBN Colour</b> (AOCS Cc 13j-97)	0.4R 1.9Y 0.1N (5 $\frac{1}{4}$ "	134080
1.0R 4.3Y 0.1N (5 $\frac{1}{4}$ "		134090	ISO 9001
1.4R 7.3Y 0.2N (5 $\frac{1}{4}$ "		134100	ISO 9001
1.6R 11.0Y 0.1N (5 $\frac{1}{4}$ "		134110	ISO 9001
1.8R 14.0Y 0.3N (5 $\frac{1}{4}$ "		134120	ISO 9001
2.5R 24.0Y 0.5N (5 $\frac{1}{4}$ "		134130	ISO 9001
3.3R 33.0Y 0.3N (5 $\frac{1}{4}$ "		134230	ISO 9001
<b>Platinum-Cobalt Colour</b> (ASTM D1209)	5	134140	ISO 9001
	10	134150	ISO 9001
	15	134160	ISO 9001
	30	134170	ISO 9001
	50	134180	ISO 9001
<b>Saybolt Colour</b> (ASTM D6045, D1500)	100	134190	ISO 9001
	-10	134040	UKAS
	0	134050	UKAS
	+12	134060	UKAS
	+25	134070	UKAS



### Quality Assurance

Lovibond colour reference standards are produced for Tintometer by Paragon Scientific, the UK based manufacturer of certified reference materials with a reputation for analytical excellence and first-class customer service. Each standard is issued with a Certificate of Calibration, which confirms that the product has been manufactured and tested under the control of Tintometer's ISO 9001 Quality Management System and conforms in all respects with the stated standard or test method. In addition, Tintometer has been awarded UKAS (United Kingdom Accreditation Service) accreditation as a colour calibration laboratory for spectral response and CIE measurements. As a result, we are able to supply reference standards for Saybolt, ASTM and Gardner Colour that are directly traceable to internationally recognised standards and certified under UKAS to ISO/IEC 17025.



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The Tintometer Ltd · Waterloo Road · Salisbury · SP1 2JY · UK · Tel: +44 1722 327242 · Fax: +44 1722 412322  
 Email: sales@tintometer.com · www.tintometer.com  
 Offices in Switzerland, Far East & Australia