



 MIROTONE <i>Leading the way in coating systems since 1938</i>	Data Sheet	
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MIROSTAIN 2616 Pigment Stain



Important Information

Mirotone only warrants the quality of the product in the can. It is your responsibility as the user, before application, to ensure that the coating system meets your requirement and is fit for the intended purpose.

Product Description

MIROSTAIN 2616 is a high strength pigment stain designed to give traditional strong stain colours which accentuate the grain. It is easy to use and results in a uniform even colour with minimal lap marks when applied in one of the ready for use (RFU) tint strengths. MIROSTAIN 2616 can be applied by brush, spray or wiping and is suitable for staining, shading or toning operations when mixed with the appropriate Mirotone clear topcoat. The application and colour strength of the mixed colour can be adjusted with the addition of the correct MIROSOL reducer or MIROSTAIN 2616 clear tint base. Approved for interior use only.

Features & Benefits

Versatility:	Can be applied over all varieties of wood and wood veneers.
Non-Settling:	Ensures consistency of colour.
Improved Service Level:	Consistent colour and tint strength enables customers to receive accurate and consistent RFU colours.
Light Stability:	Excellent light stability for a pigment stain thereby providing more consistent and fade resistant colours.
Reduced Stock Holding:	Compatible with most Mirotone clear topcoats. Replaces MIROSTAIN 2602 and 2608 and therefore reduces the need to stock more than one pigment stain.

Typical Applications

- Pine Furniture
- Architraves & Skirting Boards
- Internal Doors
- Built-in Wardrobes
- Interior Furniture

Product Properties

Primary Colours	# 0001 White # 5001 Lemon # 5085 Orange # 5090 Yellow Oxide # 5139 Trans Yellow Oxide # 6022 Burnt Umber	# 7007 Scarlet # 7268 Trans Red Oxide # 8100 Phthalo Blue # 9100 Phthalo Green # 9999 Black
Custom Matched Colours	Contact Mirotone for custom matched colours	
Tint Strengths	MIROSTAIN TV Ultra Strong Tints MIROSTAIN TX Strong Tints MIROSTAIN TY Medium Tints MIROSTAIN TZ Light Tints	

Application Methods

Pad or Rag	Use a clean lint free cloth, apply in even strokes.
Conventional Spray (i.e. Suction Gun)	Use a 1.5mm (0.59 thou) orifice at 280 kPa (35 psi). It is important not to apply MIROSTAIN above this pressure to avoid dark or blotchy discolouration.
Pressure Pot	Use a 1mm orifice with pressure pot air-cap. Gun pressure 280 kPa (35 psi) and a pot pressure of 16 kPa (2 psi) max.
Airless Spray	Consult Mirotone's Technical Service Department.
Air Mix Guns	Consult Mirotone's Technical Service Department.

Mirotone recommends and supplies a range of spray equipment. Please contact your Mirotone representative for information on equipment for your application.

Recommended MIROSOL® Thinners

Thinner Rating Guide							
••• Highly Recommended		•• Recommended		• Approved			
				Pack Size Available			
Speed of Dry (Listed Fastest to slowest)	Suitability	MIROSOL Thinner	Aromatic Free?	4 Litre	20 Litre	60 Litre	205 Litre
Ultra Fast	•••	MIROSOL 1234	Yes		*	*	
	•	MIROSOL 1286	No		*	*	*
	•••	MIROSOL 1222	No	*	*	*	*

Fast	••	MIROSOL 1280	No	*	*	*	
	•	MIROSOL 1232	Yes	*	*	*	
	•	MIROSOL 1220	Yes	*	*	*	*
	•	MIROSOL 1225	Yes		*	*	
	•	MIROSOL 1217	Yes	*	*		
Medium	•	MIROSOL 1252	Yes	*	*		
	•••	MIROSOL 1231	No		*		
	•••	MIROSOL 1269	No	*	*		
	••	MIROSOL 1263	No	*	*	*	
	•	MIROSOL 1265	Yes	*	*	*	
Slow	••	MIROSOL 1266	Yes	*	*	*	
	•••	MIROSOL 1242	No	*	*	*	
Ultra Slow	•	MIROSOL 1218	No	*	*	*	
	•••	MIROSOL 1228	No		*	*	
	•	MIROSOL 1233	No		*	*	

Thinner Reduction Rate

MIROSTAIN 2616 is supplied ready for use (RFU). However to achieve lighter tones reduce with one of the above thinners or MIROSTAIN 2616 CTB. When MIROSTAIN 2616 is reduced with MIROSOL 1228 DO NOT mix into any MIROCAT PC, MIROBILD AC or MIROTHANE PU coatings. Only use unreduced MIROSTAIN 2616 in the above coatings to achieve transparent colours for toning operations.

Application Viscosity & Wet Film Thickness

Spray only in properly constructed and compliant spray booth.

Apply by hand or spray and wipe even to achieve a uniform even colour.

Approximate Drying Times

Drying time, while dependant on the ambient temperature and humidity, is normally approximately 1-2 hours @ 25°C.



Warning: Do not blow air from a spray gun over stained article in order to speed up drying. This can cause blotchiness in the stain.

Note: Low temperatures and/or low airflow will extend drying time.

Shelf Life

MIROSTAIN has a 12 months shelf life when stored in sealed containers below 35°C in dry conditions.

Coverage (theoretical)

The coverage is determined by the application method and the strength of colour required.

Packaging

Product	Can Size	Net Contents
MIROSTAIN 2616 Primary Colours	1 Litre	1 Litre
	4 Litre	4 Litre
	20 Litre	20 Litre
MIROSTAIN 2616 Custom Colour	4 Litre	4 Litre
	20 Litre	20 Litre
MIROSTAIN 2616 Clear Tint Base (CTB)	4 Litre	4 Litre
	20 Litre	20 Litre
	205 Litre	205 Litre

Application Equipment Clean Up

Clean all equipment immediately after use with any of the MIROSOL thinners listed below. Do not leave MIROBILD AC acid catalysed, MIROTHANE PU polyurethane or MIROPOL PE polyester coatings in your equipment longer than the recommended pot life as this could result in the equipment becoming unusable.

Gun / Equipment Wash Rating Guide

••• Highly Recommended •• Recommended • Approved

Speed of Dry (Listed Fastest to slowest)	Rating	Thinner	Aromatic Free?	Pack Size Available			
				4 Litre	20 Litre	60 Litre	205 Litre
Ultra Fast	•••	MIROSOL 1208	Yes		*	*	*
	••	MIROSOL 1215	Yes		*	*	*
	•••	MIROSOL 1234	Yes	*	*	*	*
	•	MIROSOL 1286	No		*	*	*
		MIROSOL 1222	No				

	•			*	*	*	*
Fast	•••	MIROSOL 1224	Yes	*	*	*	
	••	MIROSOL 1280	No	*	*	*	
	•••	MIROSOL 1232	Yes		*		
	•	MIROSOL 1220	Yes	*	*	*	*
	•	MIROSOL 1225	Yes		*		
	•••	MIROSOL 1217	Yes	*	*		
Medium	•	MIROSOL 1252	Yes	*	*		
	•	MIROSOL 1294	Yes	*	*	*	
	•	MIROSOL 1263	No	*	*	*	
	••	MIROSOL 1265	Yes	*	*	*	
Slow	••	MIROSOL 1266	Yes	*	*	*	

Application System

Surface Preparation

All wood and wood related substrates must be free from dust, grease, dirt and all other contaminants before proceeding. Contaminants may be removed by washing the substrate with MIROSOL 1231 Medium Thinner which is ideal for removing wax and grease. Fill all wood defects with MIROPUTTY 916 water based wood filler (i.e. cracks, holes, etc) or fill open grain woods with MIROFIL 1702, if full high build finish is required.

Sanding

Wood Substrates - Sand to a smooth even finish using 180-240 grit 3M Production Fre-cut paper.
MDF Boards - Sand to a smooth even finish using 240-320 grit 3M Production Fre-cut paper.
Remove all sanding dust using an air gun and clean lint free cloths.

Staining

Apply stain either by spray gun or wiping:

- Spray Gun: Use low air pressure to create an even wet coat. While still wet, wipe or rub lightly along the grain with a clean dry cloth to even out the colour.
- Hand Staining: Using a cloth, apply in the direction of the grain. Remove excess stain to ensure that you achieve a uniform even colour. To reduce the risk of the stain "freckling" seal within 10 minutes.

Sealing

Seal substrate with one of the approved sealers below as per instructions on the data sheet:

- MIROCAT PC 3241
- MIROCAT PC 3242
- MIROCAT PC 3244
- MIROBILD AC 3622
- MIROBILD AC 3628
- MIROTHANE PU 5533
- MIROTHANE PU 5545 - recommended for MDF routed components and edges to reduce stress cracking.

Apply in even wet coats between 100-125 WFT to achieve an even uniform base.
Allow 1-2 hours to dry and then sand with 280-320 grit 3M Production Fre-cut paper.
Remove all sanding dust using an air gun and clean lint free cloths.

Toning

If required to provide extra colour depth add up to 10% by volume MIROSTAIN 2010, 2011, 2013, 2015 (Dye Stain) or unreduced MIROSTAIN 2610, 2616 (Traditional Pigment Stain). Only add MIROSTAIN to freshly mixed clear topcoat. Apply in light even coats over the sealed wood to obtain the depth of colour. If toner coat has been applied, apply one further coat of clear (untoned) topcoat to seal and protect the toned coat.

Topcoat

Topcoat with one of the approved topcoats below as per instructions on the product data sheet:

- MIROCAT PC 3210
- MIROCAT PC 3220
- MIROBILD AC 3602
- MIROBILD AC 3606
- MIROBILD AC 3646
- MIROTHANE PU 5405
- MIROTHANE PU 5588
- MIROTHANE PU 5555

Allow 2-3 hours to dry and then sand with 320-400 grit 3M Production Fre-cut paper.
Remove all sanding dust using an air gun and clean lint free cloths.
Apply a second coat of clear topcoat.

Warnings

! **Follow Directions:** Carefully read the contents of this Data Sheet and the associated Material Safety Data Sheet (MSDS). Please do not apply this product unless:

- You have a Material Safety Data Sheet (MSDS) in your possession.
- You fully understand these important documents, and
- You are prepared to follow all directions.

! **Not Recommended:** This product is not recommended for the following applications:

- Exterior exposure
- Bar and counter tops
- Kitchen bench tops
- Bathroom vanity tops
- High humidity and / or wet areas

! Harsh In-Service Environments: For harsh in-service environments Mirotone recommends the use of MIROTHANE PU 5545 Clear sealer with MIROTHANE PU 5555 Clear topcoat or MIROTHANE PU 5625 or MIROPOL PE 5110 & 5111 pigmented undercoat with MIROTHANE PU 5650 or 5605 pigmented topcoat.

! Damage caused by sharp objects: Coatings can be damaged by sharp objects. Due care should be taken in harsh in-service environments to protect the coating e.g. use placemats, coasters, table cloths or other protective coverings.

! Recommended Coating System: For superior coating properties and in-service performance, Mirotone recommends the application of one sealer coat followed by two coats of an approved topcoat. Alternatively for high volume production environments a two sealer / one topcoat system may be used but this will lead to reduced physical properties of the coating system. In clear coating systems excessive application of sealer or topcoat may result in milky or cloudy appearance in the final finish.

! MIROSOL Thinners: The use of any thinner other than the approved list on this data sheet will void any warranty that Mirotone may offer. Refer to Mirotone's Technical Bulletin "Mixed Coating Systems".

! High Humidity and Moisture In-Service Environments: All wood will swell and discolour if allowed to come into contact with water vapour. The protection provided by a coating is dependent on the moisture transmission of the coating and on the thickness of the dry coating film applied. Coated sharp edges are usually the most vulnerable to damage either from the coating being removed or by inadequate film builds in high wear / traffic areas. Special care during sanding and coating should always be given to sharp edges as the coatings do not build as well onto them, resulting in reduced protection in high moisture environments.

! Damp Wood: Do not apply coatings over damp wood (moisture content greater than 15%) as the following may result:

- Loss of adhesion to the wood
- Cracking or veneer checking of the wood
- Frying of the coating system, particularly with Acid Catalysed systems

! High Humidity at Time of Application: Application of coatings at high humidity will:

- Speed up the drying process and reduce the pot life of polyurethane coatings.
- Increase the risk of blooming (whitening).
- Blooming may occur if the coating is applied over damp wood or exposed to water or dew during the first hour of drying.

! Temperature & Sunlight: Clear coatings do not permanently protect the substrate (in particular, wood) from the ageing/discolouration effects of temperature and sunlight. Even when UV absorbers are present in a coating they will sacrificially break down over time and eventually no longer help to protect the substrate.

! Milkiness: Coating systems using multiple coats of any sealer will increase the risk of the dry film appearing milky (especially when applied over dark stains or woods) and may result in white marking if the film is damaged by sharp objects.

! Cold Temperature: Application of any coating at low temperatures will reduce the general in-service performance of the coating due to reduced cross linking of the coating. Application of MIROTHANE PU or MIROPOL PE below 15°C and MIROCAT PC or MIROBILD AC below 10°C may affect drying and the gloss level of the coating.

! Inter-coat Adhesion: To ensure sound inter-coat adhesion, thoroughly sand between coats. To reduce the potential for adhesion failure in the field, Mirotone strongly recommends it's customers carry out regular and appropriate quality control testing of their production output.

! Mixing: All MIROSTAIN stains must be regularly mixed well to maintain constant colour stability during their application.

! Colour Consistency: The choice of either MIROSTAIN pigment or dye stain will affect the look of the finished wood. For a consistent result, furniture started with a stain matched in either pigment or dye stain MUST be completed with the same type of stain and stain formula. In addition it is important that the same MIROSOL thinner must be used throughout the entire job to main consistency of colour and effect.

! Toning/Shading: DO NOT use MIROSTAIN by itself between coats of clear as this may cause delamination. For tone/shading applications, read the appropriate topcoat product data sheet. Only MIROSTAIN 2013 may be added to MIROTHANE PU clear coatings for shading and toning.

! Polyester Sealer: Application of MIROPOL PE 5010 directly over MIROSTAIN 2010, 2011, 2013, 2015, 2050 or 2101 is NOT recommended as it may cause the dye stain to change colour. An isolator coat of MIROTHANE PU 5545 or MIROSTOP 3511 must be applied first.

! Stain Strength: MIROSTAIN dye and pigment stains are available in four Ready For Use (RFU) strengths. The strengths from strongest to weakest are TV, TX, TY & TZ. TV strength (strongest) can be applied directly from the can onto small areas but may need to be reduced with one of the approved MIROSTAIN reducers or thinners when applied on large areas.

! UV Coatings: Use only MIROSTAIN 2050 or 2610 with MIROCURE UV coatings.

Health & Safety

Refer to Material Safety Data Sheet (MSDS). MSDS sheets are available at www.mirotone.com

Ensure that all Personnel using this product have read and understood this data sheet and the associated MSDS and packaging label before using this product.

Engineering Controls: Avoid inhalation of vapour or sanding dust by maintaining adequate ventilation. Avoid pockets of vapour. This is normally achieved by applying in a well-exhausted spray or sanding booth complying with AS 4114. If inhalation risk exists (e.g. spraying) the operator must wear a half-face respirator complying with AS1716 (type A/P) and use in accordance with AS1715.

Personal Protection: Contact with any chemical should be avoided. Avoid contact with skin and eyes, and avoid breathing the vapour or spray mist. Wear suitable protective clothing including rubber or PVC gloves and safety goggles. When using, do not eat nor smoke.

Mirotone Accreditations

Research Laboratory: Mirotone's head office research laboratory in Sydney, Australia holds N.A.T.A. accreditation No. 865 under ISO/IEC 17025:1999 General Requirements for the Competence of Testing and Calibration Laboratories.
N.A.T.A. - National Association of Testing Authorities

Quality System: Mirotone is N.A.T.A. certified to AS/NZS ISO 9001:2000 Quality Systems for design and manufacturing.

Mixed System Policy

A Mixed System is:

Where any coating or additive manufactured by another coating manufacturer is applied under, between, in, or on top of, coatings manufactured by Mirotone.

[Additives may include thinners, retarding solvents, hardeners, flow additives, stains or catalysts]; or

Where products manufactured or supplied by Mirotone are used in a manner not approved or recommended by Mirotone on its labels or Data Sheets.

Policy: Mirotone will not recognise any warranty claim from customers or third parties if any Mirotone product has been used in a Mixed System. Mirotone can only warrant the quality of its own range of coatings when used in strict accordance with the recommended coating systems thinners and additives stated on Mirotone's labels and Data Sheets.

Limitation of Liability

This Data Sheet is based on information in Mirotone's possession at the "Date of Issue" above. Later experience may lead to amendments. Users should check with Mirotone to ensure that this Data Sheet is still current.

The information contained in this Data Sheet is based on data appraised in our Laboratories and on our own research, and that of others whose work we believe is reliable. Due to possible differences between controlled laboratory test conditions and methods, and actual application conditions and methods, coupled with possible differences in interpretation of results, the user of this product must satisfy himself that the end result obtainable under his particular application conditions meets his requirements. Special attention is directed to the problem of chemical compatibility, as Mirotone can control only the quality and formulation of its own materials. Mirotone has no control over quality, formulation or consistency of other manufacturers' products or the substrate to which its product is applied. Therefore Mirotone supplies its products only on condition that the consumer himself is satisfied as to the performance of the product in meeting his particular requirements.

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