



MIROTONE

Leading the way in coating systems since 1938

Data Sheet

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MIROCAT PC 3210 Clear Topcoat



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

MIROCAT PC 3210 is a user friendly single pack clear pre-catalysed lacquer for fixture and furniture finishing. MIROCAT PC 3210 is formulated to give a relatively full finish, combined with excellent surface hardness, minimal bubbling and excellent flow. MIROCAT PC 3210 is an economical, easy to use coating which results in a velvet smooth, high build finish when applied as per the directions on this data sheet. For interior use only.

Features & Benefits

Easy to Use:	Allows the applicator to achieve an excellent finish with minimal effort.
Ready For Use (RFU):	This RFU formulation enables the applicator to apply the coating directly from the can resulting in time saving.
Good Clarity:	The dry film provides good grain definition and depth of colour.
Excellent Build:	High solids content provides good hold up for a better overall appearance and reduces the number of coats required.
Excellent Flow & Levelling:	Ensures the product produces the smoothest possible finish.

Typical Applications

- Domestic Furniture
- Childrens Toys & Furniture
- Picture Frames
- Musical Instruments
- Joinery
- Antique Restoration

Product Properties

Colour	Milky in can but dries to a clear finish
Gloss Level	30% & 60%
Vertical Hang-Up	Good
Solvent Resistance	Good
Sandability	Excellent
Build	High
Water Resistance	Good
Hardness	Maximum after 7 days
Levelling & Flow	Excellent
Sink Back	Minimal

Application Methods

Suction Gun	Use 1.5 to 2mm (59 - 79 thou) orifice with 350-400kpa (50-55 psi).
Pressure Pot	Use 1.5 to 2mm (59 - 79 thou) orifice with pressure pot air-cap. Gun pressure 350-400kpa (50-55 psi) and a pot pressure of 45kpa (6 psi) max.
Airless Spray	Use 0.23 to 0.33mm (9 - 13 thou) orifice, 15cm fan (dependent on job) with regulated pump pressure of 350-400kpa (50-55 psi).
Air Mix Guns	Settings similar to airless spray with the air-assisted regulator pressure at 70-90kpa (10-15psi).

Mirotone recommends 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

Speed of Dry (Listed Fastest to slowest)	Rating	MIROSOL Thinner	Aromatic Free?	Pack Size Available			
				4 Litre	20 Litre	60 Litre	205 Litre
Ultra Fast	••	MIROSOL 1234	Yes		*	*	
	••	MIROSOL 1286	No		*	*	*
Fast	•••	MIROSOL 1222	No	*	*	*	*
	••	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	*	*	*	
	•••	MIROSOL 1242	No	*	*	*	
	••	MIROSOL 1260	Yes	*	*	*	
Ultra Slow	••	MIROSOL 1218	No	*	*	*	
Specialty Reducers	••	MIROSOL 1297 Retarder	No	*			

Thinner Reduction Rate

Thin up to 5% depending upon application requirements.

Note: In hot or draughty conditions Mirotone recommends that no more than 10% Ultra Slow Thinners is added. Exceeding this amount will retard the drying and could lead to problems with sanding, printing and blocking. Use faster thinners to achieve required viscosity and then use (only if required) a small amount of Ultra Slow Thinner to improve flow and levelling.

Application Viscosity & Wet Film Thickness

Spray only in properly constructed and compliant spray booth.

Spraying Viscosity: 40-48 seconds BS4 Flow Cup at 25°C.

Wet Film Thickness: 150-250 microns wet film thickness per coat. For satin gloss level application above 150 microns may appear milky on dark wood or stain.

Approximate Drying Times @ 23°C

Dust Free: 10-15 minutes

Touch Dry: 15-30 minutes

Sanding: 2-3 hours

Hard Dry: 4 hours to overnight depending on application WFT.

Block Stacking: 24 hours

Full Cure: 7 days



Note: Low temperatures or heavy film thickness will retard drying times.

Force Drying Procedure

Flash Off: 5 minutes @ 20°C

Force Dry: 10-20 minutes @ 40-60°C (dependent on airflow)

Cool Down: 15 minutes @ 20°C

The above temperatures are dependent on airflow.

Shelf Life

MIROCAT PC 3210 clear topcoat has 12 months shelf life when stored in sealed containers below 35°C.

Coverage (theoretical)

5-6 m² per litre when applied with a conventional spray gun at 150 micron wet film build applied at 45 seconds BS4 application viscosity. These measurements are dependent on the application equipment / gun set-up and the articles being coated.

Note: The above coverage is the maximum rate possible and will vary dependent on the application equipment set up and total wastage.

Packaging

Product	Can Size	Net Contents
MIROCAT PC 3210	20 Litre	20 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		*	*	*
Fast	•	MIROSOL 1222	No	*	*	*	*
	•••	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

If required, prepare and stain substrate. Apply the appropriate stain from the MIROSTAIN range as per instructions on the relevant product data sheet.

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](#)
- [MIROTHANE PU 5545](#)

Note: When sealing routed MDF apply one light coat, after a 10 minute interval apply a second coat to achieve a fuller finish over the MDF fibres. MIROTHANE PU 5545 is recommended for MDF routed components and edges to reduce stress cracking.

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 MIROCAT PC 3210 Clear Topcoat. Apply in light even coats over the sealed wood to obtain depth of colour.

Topcoat

Topcoat with MIROCAT PC 3210 as per instructions on this data sheet.

Allow 1-2 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 MIROCAT PC 3210 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.

! Bridging: On routed MDF panels and doors DO NOT exceed the recommended wet film thickness, as cracking or bridging of the dry film in the grooves may occur.

! Gloss Level: Care must be taken to apply a uniform wet film thickness (WFT). Gloss level is dependent on WFT and will be lower at low WFT and higher at high WFT.

! Handling: The transfer of oils or fats from the skin to the surface of the coating may leave visible finger prints on dry coatings. The lower the gloss level and the darker the colour the more visible the finger prints will be. Therefore use of dark low gloss colours should be carefully considered. In most cases Mirotone's Sprayglow will remove finger prints.

! Buffing: To improve gloss level of topcoats use light hand or machine buffing/polishing with the 3M Perfect IT polishing system. If sanding of the coating is required to remove surface defects, the panel must be sanded and resprayed in a dust free environment.

! In Can Appearance: Clear coatings in subdued gloss levels (matt, satin & semi-gloss) may have a slightly milky in-can appearance.

! 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.

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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