



MIROTONE

Leading the way in coating systems since 1938

Data Sheet

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MIROTHANE® PU 5545 Clear Spray Sealer (Marine Grade)



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

MIROTHANE PU 5545 is premium, two pack, polyurethane clear sealer which provides an excellent sanding base for polyurethane topcoats. Fast dry and excellent free sanding means reduced time between coats. High build properties result in a fuller finish with excellent filling of open grain timber. MIROTHANE PU 5545 is suitable for top coating with a large range of Mirotone clear finishes. MIROTHANE PU 5545 is designed for interior use only.

Features & Benefits

| | |
|--|--|
| Versatility: | May be applied over a large variety of wood substrates and veneers. |
| Excellent Flow & Levelling: | Results in minimal sanding time, less coating waste and low sandpaper consumption. |
| Good Build: | Will enhance the finished appearance of the topcoat by sealing filling and covering the fibres of the substrate. |
| Easy Sanding: | This product will powder easily, ensuring the shortest time to sand and best possible surface for topcoating. |
| Low Yellowing: | Suitable for use over light coloured wood/veneers and liming stains when mixed with MIROTHANE PU 5705, 5747, 5746 or 5750 Hardeners. |

Typical Applications

- Commercial Joinery / Wall panelling
- Dining & Bedroom Suites
- High Rise Office & Hotel Fittings
- Ideal for Interior Marine Environments

Product Properties

| | |
|-----------------------------|--------------------------|
| Colour | Milky in can dries clear |
| Gloss Level | Sealer |
| Vertical Hang-Up | Good |
| Solvent Resistance | Very Good |
| Sandability | Excellent |
| Build | Very Good |
| Water Resistance | Excellent |
| Hardness | Good after 24 hours |
| Levelling & Flow | Excellent |
| Sink Back | Minimal |

Product Approvals

Marine Fire Rating Compliances

The following information only applies when MIROTHANE PU 5545 Clear Sealer and MIROTHANE PU 5555 Clear Topcoat are mixed with MIROTHANE PU 5747 Hardener.

Fire testing procedures and ratings for interior marine surface finishes are set by the International Convention for the Safety of Life at Sea (SOLAS), 1974 as amended. The SOLAS convention was established in 1914 in response to the earlier "Titanic" disaster, and is administered by the Maritime Safety Committee of the International Maritime organisation (a United Nations Agency).

The SOLAS convention (Chapter 11-12) makes the provisions of the International Code for Application of Fire Test Procedures (FTP Code) mandatory.

The MIROTHANE clear coating system above has been tested by VTEC Laboratories Inc. of New York (Test report no. VTEC #100-1807 2 dated 8/2003) and complies with the requirements of:

- IMO MSC 41(64) FTP Code
- Part 2 (smoke generation and toxicity test)
- Part 5 (test for surface flammability)
- IMO A 653 (16) Flame Spread

Note: These results are for the coating system only and do not apply to the substrate.

Fire Rating Compliance

(AS/NZS 1530.3:1999 Clause 4.4.3 "Simultaneous determination of Ignitability, Flame Propagation, Heat release and Smoke release".

The following information only applies when MIROTHANE PU 5545 Clear Sealer and MIROTHANE PU 5555 Clear Topcoat are mixed with MIROTHANE PU 5747 Hardener.

The system above has been tested by an accredited third party testing authority over a Group 4 substrate as specified by Clause 4.4.3 of the Australian Standard. Simultaneous determination of Ignitability, Flame Propagation, Heat release and Smoke release.

Results**Ignitability Index (0-20)**

The higher the figure, the quicker the sample ignites i.e. the more flammable.

14

Spread of Flame Index (0-10)

The higher the figure, the faster the flame spreads.

0

Heat Evolved Index (0-10)

The higher the figure, the more heat developed.

0

Smoke Developed Index (0-10)

The higher the figure, the denser the smoke produced.

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The coating system complies with Lift Standard Class 2-9 Buildings & some areas of Theatres & Public Halls Act.

The results of this fire test may be used to directly assess a fire hazard, but it should be recognised that a single test method will not provide a full assessment of the fire hazard under all fire conditions.

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.

Mixing Ratio / Thinning Reduction Rate / Pot Life

| MIROTHANE PU High Solids (HS) Part B's | Mixing Ratio | Cure Speed | Low Yellowing | Solids | Flexibility | Thinning | Pot Life @ 25°C |
|---|--------------|-------------|---------------|-----------|-------------|----------|-----------------|
| All new High Solids (HS) PU Hardeners have equal strength and may be blended to achieve intermediate rates of cure without changing the specified mixing ratio. | | | | | | | |
| MIROTHANE PU 5715 Ultra Fast Cure High Solids Hardener | 4A: 1B | Ultra Fast | •• | High | OK | 20% | 2 hours |
| MIROTHANE PU 5718 Fast Cure High Solids Hardener | 4A: 1B | Very Fast | • | High | Very Good | 20% | 8 hours |
| MIROTHANE PU 5728 Fast Cure High Solids Hardener | 4A: 1B | Fast | •• | High | Good | 20% | 2 hours |
| MIROTHANE PU 5735 Fast-Medium Cure High Solids Hardener | 4A: 1B | Fast-Medium | ••• | High | Very Good | 20% | 3 hours |
| MIROTHANE PU "Ready For Use" (RFU) Part B's | | | | | | | |
| MIROTHANE PU "Ready For Use" (RFU) Part B's | Mixing Ratio | Cure Speed | Low Yellowing | Solids | Flexibility | Thinning | Pot Life @ 25°C |
| MIROTHANE PU 5746 Hardener | 2A: 1B | Very Fast | •• | Low - RFU | OK | 10% | 8 hours |
| MIROTHANE PU 5747 Hardener | 2A: 1B | Medium | •• | Low - RFU | Good | 10% | 4 hours |
| Existing PU Hardeners (To be rationalised) | | | | | | | |
| Existing PU Hardeners (To be rationalised) | Mixing Ratio | Cure Speed | Low Yellowing | Solids | Flexibility | Thinning | Pot Life @ 25°C |
| MIROTHANE PU 5705 Hardener | 5A: 1B | Medium | ••• | High | Very Good | 15-20% | 6 hours |
| MIROTHANE PU 5750 Hardener | 4A: 1B | Medium | ••• | High | Very Good | 15-20% | 6 hours |
| MIROTHANE PU 5791 Hardener | 3A: 1B | Fast | • | Medium | Good | 0-5% | 6 hours |

Low Yellowing Rating Guide

••• Non-Yellowing •• Low Yellowing •• Will Yellow Slightly • Will Yellow

Mixing: Mix Part A and Part B together before thinning. Mix thoroughly.

Thinning: The thinning rates above are based upon thinning with MIROSOL 1217 Fast Aromatic Free Thinner to 18 seconds BS4 viscosity at 25°C. The % thinning rate is based on Part A and Part B total mixed volume.

Pot life varies with ambient temperature and the quantity mixed. Pot life is longer at lower temperatures and shorter at higher temperatures. Only mix the quantity required for the job.

Retarder (Ultra Slow) Thinner: In hot or draughty conditions Mirotone recommends that no more than 10% Ultra Slow Thinner is added. Exceeding this amount may 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.

Recommended MIROSOL® Thinners**Thinner Rating Guide**

••• Highly Recommended •• Recommended • Approved

| Speed of Dry (Listed Fastest to slowest) | Suitability | MIROSOL Thinner | Aromatic Free? | Pack Size Available | | | |
|--|-------------|-----------------|----------------|---------------------|----------|----------|-----------|
| | | | | 4 Litre | 20 Litre | 60 Litre | 205 Litre |
| | | | | | | | |

| | | | | | | | |
|--------------------|-----|---|-----|---|---|---|--|
| Ultra Fast | •• | MIROSOL 1234 | Yes | | * | * | |
| Fast | ••• | MIROSOL 1280 | No | | * | * | |
| | ••• | MIROSOL 1232 | Yes | * | * | * | |
| | ••• | MIROSOL 1217 | Yes | * | * | | |
| Medium | •• | MIROSOL 1231 | No | | * | | |
| | •• | MIROSOL 1269 | No | * | * | | |
| | ••• | MIROSOL 1263 | No | * | * | * | |
| | •• | MIROSOL 1265 | Yes | * | * | * | |
| Slow | ••• | MIROSOL 1266 | Yes | * | * | * | |
| | •• | MIROSOL 1260 | Yes | * | * | * | |
| Ultra Slow | ••• | MIROSOL 1218 | No | * | * | * | |
| Specialty Reducers | • | MIROSOL 1281 Matt Promoter for PU 5555 & 5650 | No | * | * | | |

Application Viscosity & Wet Film Thickness

Spray only in properly constructed and compliant spray booth.

Spraying Viscosity: 18 seconds BS4 Flow Cup at 25°C.

Wet Film Thickness: 125-150 microns wet film thickness per coat.

Approximate Drying Times @ 23°C

Dust Free: 15 minutes

Touch Dry: 20 minutes

Sanding: 1-2 hours

Hard Dry: 6 hours

Block Stacking: 24 hours

Full Cure: 5-7 days



Note: Stated temperatures are dependent on your choice of hardener and thinners. Temperatures below 16°C and the use of Slow or Ultra Slow thinners will retard the drying time.

Force Drying Procedure

Flash Off: 10 minutes @ 20°C

Force Dry: 30 - 60 minutes @ 40-50°C (dependent on airflow)

Cool Down: 10 minutes @ 20°C

The above temperatures are dependent on airflow.

Shelf Life

MIROTHANE PU 5545 Clear Spray Sealer has 12 months shelf life when stored in sealed containers below 25°C.

Coverage (theoretical)

6 m² per litre at 100% transfer rate when applied with a conventional spray gun at 150 micron wet film build applied at 18 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 |
|-------------------------------|----------|--------------|
| MIROTHANE PU 5545 Part A Base | 4 Litre | 4 Litre |
| | 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 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

Pack Size Available

| Speed of Dry (Listed Fastest to slowest) | Rating | Thinner | Aromatic Free? | 4 Litre | 20 Litre | 60 Litre | 205 Litre |
|--|--------|--------------|----------------|---------|----------|----------|-----------|
| Ultra Fast | ••• | MIROSOL 1208 | Yes | | * | * | * |
| | ••• | MIROSOL 1234 | Yes | * | * | * | * |
| Fast | ••• | MIROSOL 1224 | Yes | * | * | * | |
| | •• | MIROSOL 1280 | No | * | * | * | |
| | ••• | MIROSOL 1232 | Yes | | * | | |
| Medium | ••• | MIROSOL 1217 | 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 MIROTHANE PU 5545 as per instructions on this data sheet. Sealing Routed MDF: Apply one light coat and allow a 10 minute interval, then apply a second coat to achieve a fuller finish over MDF fibres. MIROTHANE PU 5545 is recommended for MDF routed components and edges to reduce stress cracking. | | | | | | |
| Sanding: Allow to dry for 1-2 hours. To ensure the best adhesion between topcoat and undercoat, sand the undercoat immediately prior to top coating. For subdued gloss finishes, sand with 280-320 grit Fre-Cut paper. For high gloss finishes, use 400-500 grit Free-Cut paper. Remove all sanding dust using an air gun and clean lint free cloths. | | | | | | |
| Topcoat | | | | | | |
| MIROTHANE PU 5545 may be topcoated with: <ul style="list-style-type: none"> • MIROTHANE PU 5555 Clear Spray Topcoat (Marine Grade) If sanding between coats, allow to dry as per the relevant product data sheet and then sand with 400-500 grit Fre-Cut paper. Remove all sanding dust using an air gun and clean lint free cloths. Apply a second coat of 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Exterior exposure • Wear surfaces on flooring | | | | | | |
|  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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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. | | | | | | |
|  White Marking: If damaged by sharp objects, MIROTHANE PU 5555 may show white marking when applied over MIROPOL PE 5010 clear sealer and should therefore not be used in high traffic environments. | | | | | | |
|  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.

! 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.

! 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.

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

! Packaging: Any two component coating mixed with a slow hardener or retarder thinner will require increased drying time before packaging. The same Part B must be used on the entire job to ensure a visually consistent finish.

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 an air supplied positive pressure demand full-face mask complying with AS1716 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 compatability, 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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