



# TECHNICAL DATA SHEET (TDS)

## RIGID PVC

### PRODUCT IDENTIFICATION

- **Product Name:** Rigid PVC
- **Material Type:** Polyvinyl Chloride – Unplasticised (PVC-U)
- **Details:**
  - **Company:** MISCO Australia
  - **Address:** 89-91 Licola Crescent, Dandenong South, VIC 3175
  - **Telephone Number:** 03 9706 5185
  - **Email:** info@misco.net.au
  - **Website:** [www.misco.net.au](http://www.misco.net.au)
- **TDS Number:** MISCO – TDS - 013
- **TDS Date:** 01/12/2024
- TDS Version: 1

### PRODUCT DESCRIPTION

Rigid PVC (PVC-U) is a high-performance, non-hygroscopic thermoplastic known for its excellent dielectric behaviour, moisture resistance, and reliable machining performance. It provides a stable insulating platform for covers, shrouds, guards, segregation plates, mounting panels, and low-mechanical-load components found within switchboards, electrical enclosures, plant utilities, HVAC systems, instrumentation, and industrial machinery.

PVC's unique combination of electrical insulation, dimensional stability and cost-efficiency makes it a strong choice for fabricated and CNC-machined components where temperatures are moderate, and no structural reinforcement or high-heat load is required.

PVC is **not suitable** for structural electrical supports, high-temperature environments, or arc-intensive assemblies. For these applications MISCO recommends: GPO-3, FR4, G11/FR5, phenolic cotton/paper laminates, or silicone-based composites.

## NEMA

Rigid PVC is **not classified** under NEMA thermoset laminate standards.

It is recognised as a **general-purpose insulating thermoplastic**.

## CLASS

Rigid PVC (PVC-U) is a **thermoplastic electrical insulating material** suitable for **low-temperature, non-structural** applications.

Continuous service temperature **-10°C to +60°C**; short-term maximum **70–75°C**.

Naturally **self-extinguishing**.

Appropriate for **low–medium voltage covers, guards, barriers and panels** where no heat or structural load is present.

## MILITARY SPECIFICATIONS AND TYPE

Rigid PVC is **not classified** under MIL-I-24768, as it is a thermoplastic and not a reinforced thermoset laminate.

It may be used in defence environments only for **light-duty, non-structural insulating components** such as covers, guards, shrouds and segregation panels where temperatures and mechanical loads are low.

PVC must **not** be used as a substitute for MIL-rated materials such as FR4, G11/FR5, phenolic paper or phenolic cotton grades.

## KEY PROPERTIES

- **Reliable Electrical Insulation**  
High dielectric strength and stable resistivity make PVC suitable for low–medium voltage barriers, covers, guards and internal switchboard components.
- **Non-Hygroscopic & Moisture Stable**  
Absorbs virtually no water; electrical and mechanical properties remain consistent in humid, wet or condensation-prone environments.
- **High Chemical Resistance**  
Withstands exposure to salts, dilute acids/alkalis, detergents, and many industrial processing fluids, supporting long service life in corrosive settings.
- **Good Rigidity & Dimensional Stability**  
Maintains flatness and geometry under typical industrial temperatures, ensuring reliable performance in fabricated parts and machined panels.
- **Smooth, Low-Porosity Surface**  
Easy to clean, hygienic, and resistant to dirt absorption—suitable for plantrooms, equipment housings and controlled environments.
- **Naturally Self-Extinguishing**  
PVC stops burning when the ignition source is removed; enhanced flame-rated grades (UL 94 V-0/V-2) are available where required.
- **Excellent Machinability**  
Predictable chip formation and low tool wear; suitable for CNC routing, drilling, milling and turning with clean edge quality.
- **Lightweight, Corrosion-Free Material**  
Does not rust or oxidise, reducing maintenance requirements and simplifying handling and installation.
- **Versatile Fabrication Options**  
Compatible with PVC welding, solvent bonding, adhesive bonding, and light thermoforming for custom assembly work.
- **Cost-Efficient Industrial Material**  
Offers strong performance at a lower cost than engineering plastics and thermoset composites where high heat or structural load is not required.

## APPLICATIONS

### Electrical Applications

- Switchboard **covers, shrouds and touch-safe guards.**
- **Segregation plates** and protective partitions for low–medium voltage assemblies
- **Insulating backplates** and internal switchboard panels
- **Instrument and control-panel plates** requiring moisture resistance.
- Protective **terminal shields**, cable-entry guards and DIN-rail backing pieces.
- Low load **insulating spacers** and support components

### Industrial Applications

- **Machine guards**, inspection covers and lightweight equipment panels.
- **Pump room, plantroom, and wet-area panels** where corrosion resistance is essential.
- **HVAC ducting panels**, access plates and utility enclosures
- **Chemical-resistant trays, splash guards and process-area panels**
- **Water treatment & wastewater facility components** exposed to corrosive atmospheres.

### Fabrication & CNC Machining

- Custom **CNC-machined blocks, brackets, spacers, strips, and enclosures**
- Templates, jigs, and non-metallic fixtures for manufacturing
- Light-duty **fixtures, supports, housings and protective flanges.**
- Bonded or PVC-welded **assembled parts** for general industrial use.

### General Purpose & OEM

- Equipment covers, protective housings and service panels.
- Utility isolation plates, divider panels and enclosure linings
- Replacement parts where metal must be avoided due to corrosion, conductivity or weight.

## INDUSTRIES SERVED

- **Switchboard Manufacturing & Electrical Distribution**

Used for covers, guards, segregation plates, internal panels, and insulating parts in low–medium voltage assemblies.

- **Transformer, Motor & Generator Manufacturing / Rewinds**

Suitable for insulating plates, protective covers, cable management components and non-structural barriers.

- **Industrial Machinery, Automation & OEM Equipment**

Machine guards, access panels, safety shields, utility plates and light-duty CNC-machined parts.

- **HVAC, Mechanical Services & Building Services**

Used for utility panels, air-handling equipment covers, ducting components and corrosion-resistant housings.

- **Water, Wastewater & Treatment Facilities**

Ideal for environments with high moisture, aggressive chemicals, and wash-down conditions.

- **Mining, Resources & Heavy Industrial Processing**

Corrosion-resistant linings, protective plates, inspection covers and low-load insulating components.

- **Rail, Transport & Automotive**

Lightweight, non-conductive covers, trays, housings, and internal protective components.

- **Renewable Energy, Power Management & Battery Systems**

Used for internal enclosure panels, chemical-resistant plates, shrouds, and light-duty insulating parts.

- **General Engineering, Fabrication & Maintenance**

CNC-machined blocks, prototype components, templates, spacers, fixtures, and general industrial assemblies.

## SPECIFICATIONS

Category	Specification
Standard Sheet Sizes	1220 × 2440 mm
Sheet Thickness Range	3.0 - 12.0MM <i>(other sizes on request)</i>
Rod Diameters	10 mm – 150 mm <i>(grade/supplier dependent)</i>
Standard Colours	Clear • White Opal • Grey <i>(other colours available by special order)</i>
Material Forms	Sheet • Rod • Cut-to-size blanks • CNC-machined parts • Custom colours/profiles
Material Composition	Unplasticised PVC (PVC-U), lead-free/cadmium-free stabilisers, non-hygroscopic
Surface Finish	Smooth, low-porosity industrial surface; uniform colour; free from pits and voids

## TOLERANCES ON SHEET THICKNESS

Nominal Thickness Range	Typical Thickness Tolerance
1.0 – 3.0 mm	± 8–10%
4.0 – 10.0 mm	± 5–8%
12.0 – 25.0 mm	± 5%

## Additional Dimensional Notes

- **Flatness tolerance:** typically,  $\pm 0.3\text{--}0.6\%$ , depending on thickness and production method.
- **Width/length tolerance:** typically,  $\pm 1.0\text{--}1.5\%$  (supplier dependent).
- **Sheet squareness:**  $\pm 2\text{--}3$  mm across full sheet length.
- **Thermal expansion during machining:** allow  $5\text{--}8 \times 10^{-5} /K$ .
- Material should be **acclimated to workshop temperature** before machining to minimise dimensional movement.

## MECHANICAL PROPERTIES

<b>Property</b>	<b>Unit</b>	<b>Typical Value</b>	<b>Test Method / Standard</b>
Density	g/cm <sup>3</sup>	1.38 – 1.42	ISO 1183
Tensile Strength	MPa	45 – 55	ISO 527
Tensile Modulus	MPa	2500 – 3200	ISO 527
Tensile Yield Strength	MPa	40 – 50	ISO 527
Elongation at Break	%	15 – 30	ISO 527
Flexural Strength	MPa	70 – 90	ISO 178
Flexural Modulus	MPa	2500 – 3000	ISO 178
Compressive Strength	MPa	70 – 90	ISO 604
Compressive Modulus	MPa	2500 – 3200	ISO 604
Impact Strength (Notched) – Charpy	kJ/m <sup>2</sup>	3 – 7	ISO 179
Impact Strength (Notched) – Izod	kJ/m <sup>2</sup>	2 – 4	ISO 180
Hardness (Shore D)	–	75 – 80	ISO 868
Water Absorption (24 hr)	%	< 0.1	ISO 62
Poisson's Ratio	–	0.38 – 0.40	Typical (PVC-U)
Creep Resistance (1% strain)	MPa	8 – 12 (at 23°C)	ISO 899
Shear Strength	MPa	40 – 55	ASTM D732
Coefficient of Friction	–	0.35 – 0.45	ASTM D1894

## ELECTRICAL PROPERTIES

Property	Unit	Typical Value	Test Method / Standard
Dielectric Strength (Short-Time)	kV/mm	15 – 20	IEC 60243
Dielectric Strength (AC, 60 Hz)	kV/mm	12 – 18	IEC 60243
Breakdown Voltage (3 mm sheet)	kV	40 – 60	IEC 60243
Surface Resistivity	$\Omega$	$\geq 1 \times 10^{12}$	IEC 60093
Volume Resistivity	$\Omega\cdot\text{cm}$	$\geq 1 \times 10^{13}$	IEC 60093
Insulation Resistance	$\Omega$	$\geq 1 \times 10^{14}$	IEC 60093
Dielectric Constant (Relative Permittivity) – 50 Hz	–	3.0 – 3.5	IEC 60250 / IEC 62631
Dielectric Constant – 1 kHz	–	3.1 – 3.4	IEC 60250 / IEC 62631
Dielectric Constant – 1 MHz	–	2.7 – 3.1	IEC 60250 / IEC 62631
Dissipation Factor ( $\tan \delta$ ) – 50 Hz	–	0.020 – 0.030	IEC 60250 / IEC 62631
Dissipation Factor ( $\tan \delta$ ) – 1 kHz	–	0.018 – 0.028	IEC 60250 / IEC 62631
Dissipation Factor ( $\tan \delta$ ) – 1 MHz	–	0.015 – 0.025	IEC 60250 / IEC 62631
Comparative Tracking Index (CTI)	V	500 – 600	IEC 60112
Proof Tracking Index (PTI)	V	$\geq 600$	IEC 60112
Arc Resistance	s	100 – 180	ASTM D495
Electric Strength vs. Temperature	–	Reduces progressively above 50°C	IEC 60243
Electric Strength vs. Humidity	–	Stable—PVC is non-hygroscopic	IEC 60093

## THERMAL PROPERTIES

Property	Unit	Typical Value	Test Method / Standard
Continuous Service Temperature	°C	-10 to +60	Manufacturer Data
Short-Term Maximum Temperature	°C	70 – 75	Manufacturer Data
Vicat Softening Temperature (VST A50)	°C	75 – 85	ISO 306
Vicat Softening Temperature (VST B50)	°C	78 – 90	ISO 306
Heat Deflection Temperature (HDT, 0.45 MPa)	°C	60 – 70	ISO 75
Heat Deflection Temperature (HDT, 1.8 MPa)	°C	55 – 65	ISO 75
Glass Transition Temperature (T <sub>g</sub> )	°C	80 – 85	ISO 11357
Melt Temperature (T <sub>m</sub> )	°C	Amorphous – No Melting	Thermoplastic Behaviour
Thermal Conductivity	W/m·K	0.15 – 0.19	ISO 8302
Thermal Resistance (R-Value at 3 mm)	m <sup>2</sup> ·K/W	~0.020 – 0.025	Calculated (ISO Methods)
Coefficient of Linear Thermal Expansion (CLTE)	10 <sup>-5</sup> /K	5 – 8	ISO 11359
Specific Heat Capacity	kJ/kg·K	0.90 – 1.00	ISO 11357
Thermal Diffusivity	mm <sup>2</sup> /s	0.10 – 0.14	Derived from ISO 11357/8302
Heat Capacity Ratio (C <sub>p</sub> /C <sub>v</sub> )	–	~1.02 – 1.05	Typical PVC-U
Temperature Coefficient of Resistivity	–	Negative (resistivity decreases with rising temperature)	IEC 60093
Flammability Classification (Typical)	–	Self-extinguishing	Manufacturer Data

## CHEMICAL RESISTANCE

Chemical Group / Substance	Resistance	Typical Behaviour	Notes & Engineering Commentary	Standard
<b>Water / Moisture</b>	Excellent	Non-hygroscopic; no swelling	PVC absorbs virtually no water. Maintains dielectric strength and dimensional stability even under	ISO 175

			condensation, wash down or damp environments.	
<b>Salt Solutions / Brines</b>	Excellent	No degradation	Ideal for marine, coastal, pump room and wastewater environments. Corrosion-proof alternative to metal components.	ISO 175
<b>Dilute Acids (HCl, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>)</b>	Excellent	Stable at low concentrations	Highly suitable for chemical plants, battery rooms (non-heated zones), and utilities. Concentrated acids may cause slow surface dulling over long exposure.	ISO 175
<b>Dilute Alkalis (NaOH, KOH)</b>	Excellent	Stable; no stress cracking	Resistant to alkaline cleaners, wash-down solutions, and industrial water treatment chemicals. Not recommended for high-temperature caustic environments.	ISO 175
<b>Detergents / Cleaning Agents</b>	Excellent	Fully resistant	Compatible with most industrial cleaning and sanitation processes. No whitening or stress cracking observed.	ISO 175
<b>Alcohols (Methanol, Ethanol, IPA)</b>	Moderate	Possible slight softening over time	Prolonged immersion or high-temperature contact may cause minor softening. Wipe-down use is typically safe.	ISO 175
<b>Glycols (EG, PG)</b>	Moderate	Generally resistant	Suitable for coolant areas (non-pressurised). Continuous high-temperature glycol exposure not recommended.	ISO 175
<b>Aliphatic Hydrocarbons</b>	Moderate	Limited swelling possible	Diesel, kerosene, and mineral spirits may cause slow softening if pooled. Short-term contact acceptable.	ISO 175
<b>Aromatic Hydrocarbons</b>	Poor	Significant swelling & softening	Rapid material attack: sheet softens and loses mechanical strength.	ISO 175

<b>(Toluene, Xylene)</b>			Must not be used in solvent-rich electrical or industrial environments.	
<b>Ketones (Acetone, MEK)</b>	Poor	Rapid attack; severe softening	Immediate and severe damage. Even brief surface contact can dissolve or craze PVC. Strictly avoid.	ISO 175
<b>Chlorinated Solvents (DCM, TCE)</b>	Poor	Severe attack; not recommended	Causes extreme softening, surface dissolution and structural failure. PVC must not be exposed.	ISO 175
<b>Strong Oxidising Acids</b>	Poor	Rapid chemical degradation	Material becomes brittle and discoloured. Not suitable for oxidising chemical storage or containment.	ISO 175
<b>Oils &amp; Non-Aromatic Greases</b>	Good	Generally stable	PVC is suitable for light-to-moderate oil exposure. Constant heavy oil saturation may reduce long-term rigidity.	ISO 175
<b>Mineral Oils</b>	Good	Good resistance; minimal effect	Acceptable for industrial plantrooms, motor housings and mechanical equipment enclosures.	ISO 175
<b>Bleach (Sodium Hypochlorite)</b>	Moderate	Resistant at low concentration	High-concentration bleach can cause surface whitening and long-term embrittlement. Ideal for low-strength sanitation tasks.	ISO 175
<b>Ammonia Solutions</b>	Moderate	Acceptable at low concentration	Suitable for cleaning and mild exposure. High concentrations cause slow surface erosion.	ISO 175
<b>Organic Esters</b>	Poor	Softening; material attack	Avoid in lubrication or fluid-transfer systems containing ester oils or plasticiser-rich substances.	ISO 175

## General Notes & Engineering Commentary

### 1. PVC-U performs best in ambient-temperature chemical environments.

Chemical resistance drops significantly above **50–60°C**, even for otherwise compatible chemicals. Selection must consider both **chemical type and operating temperature**.

## 2. Prolonged immersion vs. incidental contact.

- PVC typically withstands **incidental splashes, wipe-downs, and surface exposure** very well.
- **Full immersion** may cause slow softening depending on the chemical group, particularly alcohols, glycols, and hydrocarbons.

## 3. Stress cracking is rare but possible under load + solvent exposure.

Areas under mechanical stress (bent panels, clamps, bolted edges) can experience accelerated attack when exposed to incompatible solvents (ketones, aromatics, chlorinated solvents).

## 4. PVC should never be used as a barrier in solvent-handling or solvent-storage systems.

In such environments, FRP composites, PTFE, PVDF, or phenolic-based laminates provide substantially better resistance.

## 5. Electrical properties remain stable in chemically aggressive settings.

Because PVC is **non-hygroscopic**, dielectric strength and resistivity remain stable even when exposed to most industrial chemicals — provided the chemical is not one that degrades the polymer structure.

## PROCESSING AND MACHINING CONSIDERATIONS

Rigid PVC (PVC-U) machines cleanly using standard woodworking and plastic-processing equipment. Correct tooling and controlled heat management ensure accurate, stable, and high-quality fabricated parts.

### Cutting & Sawing

- Suitable for panel saws, circular saws, and CNC beam saws.
- Use **carbide-tipped blades** with medium tooth pitch.
- Maintain steady feed rates to avoid melting or edge softening.

- Clamp securely to prevent vibration.

### **CNC Routing & Milling**

- Machines well with **sharp carbide cutters**.
- Typical spindle speeds: **12,000–18,000 rpm**.
- Feed rates: **1,000–3,000 mm/min**, depending on tool and thickness.
- Ensure effective **chip evacuation** to prevent re-cutting softened material.

### **Drilling**

- HSS or carbide drills recommended.
- Use moderate pressure; step-drill larger diameters.
- Deburr immediately to prevent stress risers.

### **Turning (Rod Stock)**

- Clean machining with positive-rake carbide tools.
- Moderate speeds and good chip control prevent heat distortion.

### **Threading & Fastening**

- Coarse threads preferred; fine threads may strip.
- For repeated fastening, use **threaded inserts** (brass or self-tapping).
- Pre-drill pilot holes to minimise cracking.

### **Bonding & Welding**

- Compatible with **PVC solvent cements**, PU adhesives and light-duty PVC welding.
- Ensure surfaces are clean and dry before bonding.

### **Thermoforming**

- Limited forming possible at **60–80°C**.
- Suitable for gentle bends; tight radii may whiten or craze.

### **Finishing**

- Edges can be sanded, routed, or lightly polished.
- Do not flame-polish.

### **Heat Management**

- Avoid tool dwell and frictional heating.
- Use sharp tools and light passes to maintain dimensional accuracy.

### Laser Processing

**Not permitted** — produces corrosive chlorine fumes harmful to equipment and personnel.

### Pre-Machining Conditioning

- Acclimate sheets to workshop temperature before machining.
- Store flat, clean, and fully supported.

## SHEET HANDLING BEFORE MACHINING

- **Store sheets flat and fully supported** on a clean, level surface to prevent bowing, warping, or edge lift. Avoid leaning sheets vertically for long periods, as this may introduce permanent distortion.
- Keep material in a **dry, temperature-controlled area**, protected from direct sunlight, radiant heaters, or any heat sources that may cause localised softening or surface deformation.
- Maintain sheets in their **original packaging or protective film** until preparation and machining to minimise surface scratching, dust accumulation, and contamination.
- **Do not place heavy objects** on top of thin-gauge sheets. Excessive weight can cause compression dents, stress lines, or permanent deflection.
- Allow sheets to **acclimate to workshop temperature for 12–24 hours** before cutting or machining. Temperature differences can cause dimensional movement, internal stress relief, and loss of machining accuracy.
- When moving sheets, use **two-person handling** or mechanical lifting equipment for larger sizes to avoid flexing or cracking, particularly in cold conditions.
- Handle sheets using **clean gloves** or non-marking lifting equipment to prevent contamination of bonding surfaces and to avoid fingerprints or surface blemishes.
- Ensure sheet surfaces are **free from dust, chips, oil, metal particles, solvents, and other contaminants** before machining, bonding, or welding.

- Clean material using **mild detergent and warm water** only. Solvents such as acetone, MEK, toluene, or alcohol-based cleaners must not be used, as they may soften or mark the sheet.
- For precision machining, allow sheets to **stabilise on the machining bed** for several minutes prior to clamping, ensuring they lay flat with no internal stresses.
- Use **protective interleaving or scratch-resistant film** when stacking multiple sheets to prevent abrasion during handling.
- Avoid dragging sheets across machinery tables or floor surfaces; always lift to relocate.
- Where sheets have been stored in cold environments, allow extra acclimation time — **PVC becomes stiffer and more brittle at low temperatures**, increasing handling risk.
- Inspect sheets for **surface imperfections, warpage, embedded particles, or contamination** before machining to ensure consistent finish and dimensional accuracy.

## ENVIRONMENTAL COMPLIANCE

Rigid PVC (PVC-U) supplied by MISCO Australia complies with the following environmental and regulatory frameworks:

- **RoHS (Restriction of Hazardous Substances)**  
Complies with EU Directive 2011/65/EU and subsequent amendments.  
Material is free from lead, mercury, cadmium, hexavalent chromium, PBBs and PBDEs.
- **REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)**  
Manufactured using substances that are not listed on the current ECHA SVHC (Substances of Very High Concern) list.  
No authorisation-restricted or intentionally added SVHCs above 0.1% w/w.
- **Halogen Content**  
Contains bound chlorine inherent to PVC-U polymer structure.  
No added brominated flame retardants or halogenated plasticisers.

- **Stabiliser System**

Manufactured using **lead-free and cadmium-free stabilisers**, in line with global environmental directives.

- **VOC and Emissions**

Low-VOC material suitable for indoor industrial environments.

Does not release harmful emissions under normal operating temperatures.

- **Recyclability**

PVC-U is fully recyclable through established PVC recovery streams.

Offcuts and unused material can be returned to appropriate PVC recycling systems.

- **Ozone Depleting Substances**

Contains no CFCs, HCFCs or ozone-depleting blowing agents.

- **PFAS / PFOA / PFOS**

PVC-U is free from per- and polyfluoroalkyl substances.

- **Compliance with Australian Environmental Regulations**

Meets applicable Australian chemical management, workplace safety, and environmental disposal requirements (Safe Work Australia and state EPA guidelines).

## **SUSTAINABILITY AND ENVIRONMENTAL IMPACT**

Rigid PVC (PVC-U) offers a long service life and a stable environmental profile when used, processed, and disposed of correctly. MISCO Australia supplies PVC-U manufactured under controlled conditions to minimise ecological footprint and ensure compliance with modern environmental standards.

- **Long Service Life**

PVC-U has a durable polymer structure with excellent resistance to moisture, corrosion, and many industrial chemicals. Its longevity reduces material replacement frequency and supports resource efficiency across the product life cycle.

- **Recyclability**

PVC-U is fully recyclable through established PVC material recovery streams. Clean

offcuts, machining scrap, and end-of-life components can be collected and reprocessed into secondary PVC products.

- **Low Environmental Burden During Use**

PVC-U does not corrode, degrade rapidly, or dissolve in water, reducing the risk of environmental contamination during service. It emits no harmful vapours under normal operating temperatures.

- **Low VOC Characteristics**

PVC-U releases minimal volatile organic compounds (VOC) and is suitable for indoor industrial environments where air quality controls apply.

- **Responsible Stabiliser System**

Modern PVC-U is produced using **lead-free and cadmium-free** stabilisers, reducing reliance on heavy-metal additives and supporting global sustainability commitments.

- **Energy Efficiency in Processing**

PVC-U can be processed at relatively low temperatures compared with engineering plastics and thermoset composites, leading to reduced energy consumption during fabrication.

- **Chemical Resistance Reduces Waste**

The material's strong resistance to moisture and industrial chemicals minimises premature failure, reducing the frequency of disposal and replacement.

- **End-of-Life Considerations**

PVC-U must **not** be incinerated, as thermal decomposition produces hydrogen chloride gas. Disposal should follow local EPA guidelines, directing the material to approved recycling or landfill facilities.

- **Packaging & Waste Management**

MISCO encourages responsible management of protective films, pallets, and packaging materials, supporting recycling wherever possible.

## SAFETY INFORMATION

- Refer to MISCO Australia’s **Safety Data Sheet (SDS)** for Rigid PVC for full health, safety, and handling requirements.
- Machining operations (cutting, routing, drilling, turning) may generate **fine dust particles**; use appropriate dust extraction, local exhaust ventilation, and PPE such as safety glasses and respiratory protection as required.
- Avoid inhalation of dust and prevent accumulation on surrounding machinery and surfaces.
- Do not expose the material to **open flames**, high-temperature sources, or prolonged overheating, PVC decomposition releases **hydrogen chloride gas** and other irritating combustion by-products.
- **Laser cutting or laser engraving is not permitted** due to the formation of corrosive and hazardous fumes.
- When heating for forming, use controlled temperatures below the Vicat softening point and ensure adequate ventilation.
- Avoid contact with incompatible solvents (e.g., acetone, MEK, toluene, chlorinated solvents), which may soften or degrade the material.
- Store and handle sheets to prevent slips, trips, manual handling injuries, and edge sharpness hazards.
- Dispose of offcuts, dust, and end-of-life components in accordance with local environmental and waste management regulations — **do not incinerate** PVC material.
- Follow standard workshop safety practices including guarding, PPE use, and safe tool operation.

**Refer to Safety Data Sheet (SDS) for full details before handling.**

## **WARRANTY**

MISCO Australia warrants that all Rigid PVC (PVC-U) products supplied are free from defects in material and workmanship at the time of dispatch. This warranty applies when the product is stored, handled, and processed in accordance with recognised industry practices and MISCO-provided guidelines.

The warranty covers:

- Manufacturing defects

- Workmanship defects arising from MISCO fabrication.
- Material non-conformance directly attributable to the supplier or MISCO Australia

The warranty does **not** cover damage or failure resulting from:

- Improper storage, handling, or installation
- Exposure to temperatures, chemicals, or environments outside the published specifications
- Incorrect machining, bonding, or fabrication practices
- Misuse, modification, or application beyond intended design parameters.

Liability is limited to replacement of the supplied material or credit to the original purchase value. MISCO Australia is not responsible for consequential or indirect losses arising from the use of this product.

## DISCLAIMER

*The information provided in this data sheet is intended as a general guide for the use and handling of material. It is based on current knowledge, testing, and is believed to be accurate and reliable as of the date of publication. However, **MISCO Australia** makes no warranties, express or implied, regarding the material's performance, suitability, or fitness for any specific application.*

*Users are responsible for determining the material's suitability for their intended purpose, including conducting independent tests and evaluations as necessary. MISCO Australia does not accept any liability for any loss, damage, or injury resulting from the use of this information, the products described, or reliance on the provided recommendations.*

*Specifications are subject to change without notice as part of MISCO Australia's ongoing product improvement initiatives.*

*Always refer to the latest version of this data sheet before proceeding with critical applications.*

*All sales are subject to MISCO Australia's standard terms and conditions of sale.*

Revision	Date Issued	Prepared / Reviewed By	Description of Change	Approved By
1.0	January 2025	MISCO Australia	Initial release of Data Sheet	Director, MISCO Australia

### Document Control:

- **Document Title:** Rigid PVC (Polyvinyl Chloride) – Technical Data Sheet
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- **Review Cycle:** 24 months or upon regulatory update (whichever occurs first)

## End of Technical Data Sheet.