Liquid Conformal Coating Masking Materials
Technical Datasheet

Tapes, Masking Dots, Die-Cut Shapes & Sheet Materials

Executive Summary

This technical datasheet defines SCH's range of masking materials developed specifically for use in liquid conformal coating processes across electronics manufacturing, prototyping and production environments.

The product range includes masking tapes, pre-converted masking dots and shapes supplied on rolls, and sheet-based masking formats for flexible in-house conversion. The materials are engineered to provide controlled adhesion, effective edge sealing, and clean removal following coating, curing and thermal exposure.

The masking system supports compatibility with common coating chemistries including acrylics, polyurethanes and silicones, and is suitable for manual, semi-automated and low-volume production workflows. Format selection allows users to balance flexibility, scalability and operational efficiency without compromising coating protection performance.

This datasheet provides representative technical characteristics, application guidance and process considerations to support correct material selection, qualification and deployment.

Product Scope & Description

This datasheet covers SCH's range of masking materials developed specifically for use in liquid conformal coating processes, including acrylic, polyurethane, silicone and solvent-based coating systems.

The product family includes pressure-sensitive masking tapes, precision masking dots, custom die-cut shapes and blank masking sheets for in-house conversion. All formats are designed to provide controlled adhesion, dimensional stability and clean removal following coating, curing and thermal exposure.

The materials are optimised for selective protection of connectors, keep-out zones, test points and functional interfaces where coating exclusion is critical to electrical performance, reliability and rework accessibility.

Material & Adhesive System

The masking range utilises a high-temperature paper carrier combined with a rubber-based pressure sensitive adhesive system.

This construction enables rapid wet-out onto common PCB substrates while maintaining stable adhesion during elevated temperature exposure and solvent contact typically encountered during coating and curing cycles.

The adhesive system is engineered to balance:

- Secure retention during processing
- Resistance to edge lift and adhesive migration
- Clean, residue-controlled removal after processing

Residue Control, Edge Sealing & Removal Behaviour

The masking materials are formulated to provide controlled adhesion and clean removal across typical conformal coating process conditions.

Key performance behaviour includes:

Residue Control

The adhesive system is designed to minimise adhesive transfer and residue on PCB surfaces and component interfaces when removed within validated process windows.

Edge Sealing Performance

The paper carrier and adhesive wet-out characteristics support effective edge conformity, helping to reduce coating creep, capillary wicking and edge bleed during liquid application and curing.

Removal Integrity

Masking materials maintain cohesive strength during removal, reducing tearing, fragmentation and adhesive stringing that can compromise cleanliness or introduce rework risk.

Process Stability

Adhesion remains stable during short-term thermal exposure and solvent contact typically encountered in coating and cleaning operations.

Actual performance will depend on surface energy, contamination level, coating chemistry, cure temperature, dwell time and removal timing. Users should validate removal behaviour and residue levels under their specific process conditions.

Thermal Exposure & Solvent Interaction Guidance

The masking materials are intended to withstand short-term thermal exposure and incidental solvent contact typically encountered during liquid conformal coating operations.

Thermal Exposure

The stated temperature resistance reflects short-duration exposure during processes such as accelerated curing, oven drying, or localised heating. Prolonged exposure at elevated temperatures, repeated thermal cycling, or constrained airflow conditions may influence adhesive performance, removal behaviour and residue characteristics. Users should validate masking performance where extended dwell times or higher thermal loads are expected.

Solvent Interaction

The adhesive system demonstrates resistance to brief contact with common coating solvents and cleaning agents used in electronics manufacturing. However, solvent immersion, aggressive cleaning chemistries, or prolonged solvent exposure may affect adhesion strength, edge sealing performance or ease of removal.

Where solvent-based coatings or cleaning processes are used, users should confirm compatibility under representative production conditions.

Process Window Control

Optimal masking performance is achieved when application pressure, coating dwell time, cure temperature and removal timing are controlled within a validated process window. Deviations outside normal operating ranges may impact edge integrity, residue behaviour and removal consistency.

Typical Technical Characteristics

Representative values – individual formats and batches may vary

Adhesive Type: Rubber-based pressure sensitive adhesive

Total Thickness: 0.180 mm

Peel Adhesion: > 0.28 kN/m

Initial Tack: > 10# (ball tack method)

Holding Power (Shear): > 15 hours

Temperature Resistance: Up to 160°C short-term exposure (30 minutes)

Available Product Formats

The masking material is supplied in multiple configurable formats to support different production volumes, workflow efficiency and conversion requirements:

Masking Tapes – Standard roll formats suitable for manual and semi-automated masking operations.

Pre-Converted Masking Dots and Shapes – Precision die-cut formats supplied on rolls for high repeatability applications and volume production environments.

Sheet-Based Masking Formats – Masking dot sheets and blank masking sheets intended for flexible in-house cutting, prototyping and low-to-medium volume production.

Custom Geometry Options – Application-specific shapes available subject to volume and tooling requirements.

Format Selection Guidance

Different masking formats are suited to different production volumes, workflow efficiency and conversion flexibility.

Pre-Converted Formats (Rolls)

Recommended for:

- Medium to high production volumes
- Consistent repeatability of masking geometry
- Reduced operator handling and application time
- Semi-automated or standardised application workflows

Sheet-Based Formats

Recommended for:

- Prototyping and engineering development
- Low to medium production volumes
- Rapid design iteration and geometry changes
- In-house cutting or plotter-based conversion

Typical Applications

- Selective masking of PCB assemblies prior to conformal coating
- Protection of connectors, pads, switches and interfaces
- Temporary shielding during solvent exposure or thermal processing
- Production masking in electronics manufacturing and assembly
- Prototype and low-volume development work

Process Compatibility Considerations

The masking materials are intended for use with common liquid conformal coating chemistries including:

- Acrylic coatings
- Polyurethane coatings
- Silicone coatings
- Solvent-based protective coatings

Compatibility should be verified against specific coating formulations, solvents, cure profiles, substrate materials and environmental conditions prior to production use.

Performance Tolerances & Data Notice

All technical values shown represent typical laboratory measurements and are provided for guidance only. Actual performance will depend on surface condition, application method, environmental conditions and processing parameters. Users must determine product suitability for their specific application through appropriate qualification testing.

Limitation of Liability

SCH Services Ltd provides this information in good faith but makes no warranty, express or implied, regarding suitability or performance in any particular application. The purchaser and/or end user assumes full responsibility for validation, process control and any risks associated with use or integration into finished assemblies.

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