SNAPSHOOT
ENGINEERED FOR A SAFER TOMORROW

현장을 이해하고, 필요한 솔루션을 연결합니다.

산업안전 · 추락방지 시스템
산업용 소재 · 건축자재
제품 제안부터 공급·시공·설치·교육까지



COMPANY INFORMATION

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TECHNICAL DOCUMENTS

인증서 · 데이터시트 · 기술자료

제품의 규격과 성능, 인증 및 적용 조건을 확인하기 위한 자료입니다.

ABOUT SNAPSHOOT

제품 공급을 넘어, 현장에 맞는 해결책으로

스냅슛은 산업현장의 작업 환경과 요구 조건을 바탕으로
적합한 제품과 시스템을 제안합니다. 현장 실사를 통해 설치 조건을 확인하고,
공급부터 시공·설치 및 사용 교육까지 필요한 과정을 함께합니다.

추락방지 시스템

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산업안전 보호구

전신형 안전대 · 랜야드 · 안전블록
작업 환경에 맞춘 개인보호구

산업용 소재·건축자재

산업용 테이프 · 접착제 · 기능성 소재
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홈페이지 바로가기 →
문서 라이브러리 바로가기 →
시공사례 바로가기 →
문의하기 →

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Technical Data Sheet

3M™ Scotch-Weld™ UV Dual Cure Adhesive 3581

Additional Info

Regulatory Info/SDS

Product Description

3M™ Scotch-Weld™ 3581 is a high-performance UV and thermal dual cure adhesive that offers high bonding strength and heat and humidity resistance. It features low shrinkage, low CTE, high Tg and effective UV cure depth.

Product Features

- Dual cure technology - UV + thermal
- Low shrinkage
- High Tg and low CTE
- Non-sag formulation

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Uncured Physical Properties

Attribute Name	Temperature	Value
Color		Off-White [1]
Density		1.6 g/mL (13.4 lb/gal)
Pot Life	23 °C (73 °F)	3 d [2]
Viscosity	25 °C (77 °F)	10,000 cP (10,000 mPa.s) [3]

[1] Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.

[2] Time to double viscosity measure by cone and plate rheometer.

[3] Shear rate 10s-1

Typical Cure Profiles

Attribute Name	Temperature	Value
UV Curing		3,000-10,000 mJ/cm² [1]
Time to Full Cure	80 °C (176 °F)	50-60 min
Time to Full Cure	100 °C (212 °F)	30 min

[1] UV Cure at 365nm to achieve green strength

Typical Cured Characteristics

Attribute Name	Test Method	Temperature	Value
Modulus		25 °C (77 °F)	6,600 MPa
Shore D Hardness	ASTM D2240	25 °C (77 °F)	87
Volume Shrinkage	ISO3521	23 °C (73 °F)	0.9% [1]

[1] Measured by Helium gas pycnometer

Typical Performance Characteristics

Attribute Name	Test Method	Dwell Time	Temperature	Test Condition	Substrate	Surface Prep	Value
Green Strength				365nm, 30s, 400mw/cm2	Glass to An Al		1.8 MPa (261 lb/in²)
Overlap Shear Strength	ASTM D1002, ISO 4587	30 min	100 °C (212 °F)	23 °C	AnAl to AnAl	IPA Wipe	8.7 MPa (1260 lb/in²) [1]

[1] 25 mm (1) wide, 12.7 mm (1/2) overlap samples, 25 mm (1) x 102 mm (4) substrates, bondline thickness: 0.13-0.20 mm (5-8 mil) Separation rate 2.5 mm/min (0.1 in/min) metal, 51 mm/min (2 in/min) plastic, 510 mm/min (20 in/min) rubber. Substrate thickness: steel 1.5 mm (60 mil), other metal 1.3-1.6 mm (50-64 mil), rubber and plastic 3.2 mm (125 mil)

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Water Absorption	ISO 62	0.1% [1]

[1] Duration: 24 hours

Electrical and Thermal Properties

Attribute Name	Value
Glass Transition Temperature (Tg)	139 °C (282.2 °F) [1]
Coefficient of Thermal Expansion	40 x 10^{-6} m/m/°C

[1] Measured at one week via DMA

Handling/Application Information

Directions for Use

1. Storage at -18 °C (-0.4 °F) or below.

2. Warm products to room temperature before opening containers to restore proper application consistency and to prevent moisture condensation on adhesive surface. Containers may be stored at room temperature for 1-2 days to thaw. Do not warm at temperatures above 27 °C (80.6 °F).

3. Use glove to avoid contacting container directly.

4. Avoid freezing products again after warming.

Surface Preparation

The following cleaning methods are suggested for common surfaces:

Steel

1. Wipe surface free of dust and dirt with oil-free solvent such as methyl ethyl ketone.*

2. Sandblast or lightly abrade using clean fine grit abrasives.

3. Wipe again with solvent to remove loose particles.*

Aluminum

1. Vapor degrease - Perchloroethylene* condensing vapors for 5-10 minutes.

2. Alkaline degrease - Oakite 164 solution (9-11 oz./gallon water) at 87 °C ± 5 °C (190 °F±10 °F) for 10-20 minutes. Rinse immediately in large quantities of cold running water.

3. Acid (FPL) etch - Place panels in their following solution for 10 minutes at 66 °C ± 2 °C (150 °F± 5 °F).

Sodium Dichromate 4.1-4.9 oz./gallon

Sulfuric Acid, 66°3e 38.5-41.5 oz./gallon

2024-T3 aluminum (dissolved) 0.2 oz./gallon minimum

Tap water as needed to balance

4. Rinse - Rinse panels in clear running tap water.

5. Dry - Air dry 15 minutes; force dry 10 minutes at 66 °C ± 5 °C (150 °F ± 10 °F).

6. If primer is to be used, it should be applied within 4 hours after surface preparation.

Plastics

1. Solvent wipe with Isopropyl Alcohol.*

2. Abrade using clean fine grit abrasives.

3. Solvent wipe with Isopropyl Alcohol.*

Glass

1. Solvent wipe with acetone or methyl ethyl ketone.*

*Note: Prior to use of these solvents, extinguish or eliminate any ignition sources and read and follow supplier’s environmental, health, and safety recommendations listed on the MSDS and product label.

Storage and Shelf Life

Store products at -18 °C (-0.4 °F) or below for maximum storage life. Higher temperatures reduce normal storage life. Rotate stock on a “first-in-first-out” basis.

This product has a shelf life of 9 months when stored in their unopened containers at -18 °C (-0.4 °F) or below.

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577.

Automotive Disclaimer

Select Automotive Applications:
This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

Information

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ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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