

PRODUCT DATA SHEET
100% SOLIDS, WIDE
SERVICE RANGE
EPOXY FILM
MA 529

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Last updated: 1/25/05

DESCRIPTION

MA 529 is a 100% solids modified epoxy film adhesive. The adhesive is designed for applications, which require extended service at temperatures ranging from -67°F (55°C) to 350°F (180°C). MA 529 is supplied as a film adhesive on a synthetic carrier and contains no asbestos.

FEATURES & BENEFITS

- Excellent chemical resistance
- Excellent durability
- Moderate tack
- Long term 350°F (180°C) properties

USES

- Bonding metal to metal and metal to honeycomb.

TYPICAL TECHNICAL DATA:	MA 529
Type:	Modified epoxy film, available supported and unsupported
Color:	Gray
Volatiles:	<1%
Scrim:	Nylon tricot scrim or other upon request
Weight:	.09 psf (439 g/m ²)
Width:	48" (121.9cm)
Out Time:	30 days at 77°F (25°C)
Shelf Life:	12 months @ 0°F (-18°C)
Thickness:	.023" (.058cm)

PERFORMANCE PROPERTIES

Based on 0.150 psf material cured at 350°F (180°C) and 35 psi (.24 MPa) pressure for one hour and bonded to P2 etched 2024-T3 aluminum.

EFFECT OF TEMPERATURE CHANGES ON TENSILE SHEAR STRENGTH

TEST TEMPERATURE °F	-67	75	180	250	270	350	400	500
TEST TEMPERATURE °C	-55	24	82	121	132	177	204	260
PSI	3200	3250	3170	3170	3100	2950	1960	650
MPa	22.0	22.4	21.8	21.8	21.3	20.3	13.5	4.5

MMM-A-132 TYPE 1, CLASS 3 TEST DATA

0.150 psf material cured at 350°F (180°C) for one hour at 35 psi (.24MPa) pressure.

TENSILE SHEAR @ 75° (23°C)	PSI	MPa
Initial	3200	22.1
10 minutes @	2900	20.0
10 minutes @	3800	26.2

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PERFORMANCE PROPERTIES (CONTINUED)

TENSILE-SHEAR – IMMERSION @ 75°F (23°C)	PSI	MPa
Initial	2980	20.6
after 30 days salt water spray	3270	22.6
after 7 days JP-4 fuel	3200	22.1
after 7 days anti-icing fluid	3400	23.4
after 7 days hydraulic oil	3200	22.1
after 30 days water		

OTHER TESTS @ 75°F (23°C)	PSI	MPa
after 2 hrs in distilled water @ 212°F (100°C)	2600	17.9
after 30 days @ 140°F (60°C), 95-100% RH	1820	12.6
Bell Peel	9#in/in width	40.0 N/35mm

TENSILE SHEAR – AGING	PSI	MPa
1000 hrs @ 300°F (149°C) tested @ 75°F (23°C)	2889	19.9
1000 hrs @ 300°F (149°C) tested @ 300°F (149°C)	2658	18.3
2000 hrs @ 300°F (149°C) tested @ 75°F (23°C)	2672	18.4
2000 hrs @ 300°F (149°C) tested @ 300°F (149°C)	2477	17.1
3000 hrs @ 300°F (149°C) tested @ 75°F (23°C)	2436	16.8
3000 hrs @ 300°F (149°C) tested @ 300°F (149°C)	2370	16.3
4000 hrs @ 300°F (149°C) tested @ 75°F (23°C)	1883	12.9
4000 hrs @ 300°F (149°C) tested @ 300°F (149°C)	1877	12.9
5000 hrs @ 300°F (149°C) tested @ 75°F (23°C)	1900	13.1
5000 hrs @ 300°F (149°C) tested @ 300°F (149°C)	1800	12.4
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @ -67°F (-55°C)	3200	22.1
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @ 75°F (23°C)	3283	22.6
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @ 250°F (120°C)	3217	22.2
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @ 270°F (132°C)	3117	21.5
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @ 350°F (180°C)	3100	21.4

HONEYCOMB SANDWICH PROPERTIES	°F	°C	PSI	MPa
Climbing Drum Peel	75	23	25 lbs/3 in	111 N/75mm
Flatwise Tensile @	75	23	1925	13.3
Flatwise Tensile @	180	82	1656	11.4
Flatwise Tensile @	250	120	1428	9.8
Flatwise Tensile @	270	132	1400	9.7
Flatwise Tensile @	350	180	1395	9.6

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PERFORMANCE PROPERTIES (CONTINUED)

FLATWISE TENSILE IMMERSION	°F	°C	PSI	MPa
7 days JP-4 Fuel @	75	23	1875	12.9
7 days hydraulic oil @	75	23	1880	13.0
7 days anti-icing fluid @	75	23	1825	12.6
30 days @ 200°F (93°C) & 95-100% humidity, Tested @	75	23	867	6.0
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @	75	23	1353	9.3
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @	270	132	1115	7.7
300 hrs @ 270°F (132°C) followed by 10 hrs @ 350°F (180°C), Tested @	350	180	1082	7.5
Fuel penetration @ 30 psi (.21 MPa) for 24 hours			None	

APPLICATION METHOD

Allow adhesive film to reach room temperature before opening poly bag to prevent moisture contamination. Bonding surfaces should be clean, dry and free of contamination. Remove poly liner and apply adhesive to one surface to be bonded. Just prior to bonding, remove remaining liner. The bonded parts should be held in contact until the adhesive is cured.

CURING CONDITIONS

- 60 minutes @ 350°F (180°C) and 35 psi (.24 MPa) pressure.
- Other times and temperatures may be used.

CLEAN UP

Uncured adhesive may be removed effectively with ketone solvents in well ventilated areas. Avoid contaminating uncured parts. Consult solvent container label/MSDS for proper safety and handling procedures.

STORAGE

MA 529 has a shelf life of 12 months @ 0°F (-18°C).
The product has an out time of 30 days @ 77°C (25°C).

CAUTION

MA 529 may cause skin irritations. Prevent contact with skin. If contact occurs, wash with soap and water. Consult Material Safety Data Sheet before using or storing this product.

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EPOXY SAFETY SHEET

Read Material Safety Data Sheet before handling, storing or using this product.

Important Safety Information - Read Before Using This Product

WARNING - This product may cause skin sensitization, dermatitis, or other allergic responses. Prevent all contact with skin. If skin contact occurs, the contaminated skin areas should be washed immediately with soap and water. Any clothing contaminated by the epoxy should be removed and cleaned immediately. Avoid inhalation of vapor. Work area should be well ventilated. **DANGER** - PREVENT CONTACT WITH EYES. IF EYE CONTACT OCCURS, IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES AND SEEK PROMPT MEDICAL ATTENTION. THIS PRODUCT IS HARMFUL IF SWALLOWED AND CAN CAUSE SERIOUS PERSONAL INJURY. IF SWALLOWED, INDUCE VOMITING: SEE A PHYSICIAN IMMEDIATELY.

PROTECTION - WEAR PROTECTIVE GLOVES, IMPERVIOUS TYPE EYE PROTECTION, SPLASH-PROOF GOGGLES (ANS 1287.1 1968).

EMPTY CONTAINER AND WASTE DISPOSAL - Scrap must be stored in an isolated and segregated area while awaiting disposal and should, in no event, be mixed with other types of scrap. Disposal by an industrial waste firm that is qualified to handle hazardous materials is recommended. Disposal must be by burial in accordance with state, local and federal regulations. Observe all of the above warnings and instructions with scrap material and empty containers. For industrial and professional use only. If resold or repackaged for household use, containers must be labeled in accordance with the Federal Hazardous Substances Labeling Act and other laws and the label must be approved by SIA Adhesives, Inc.

LIMITED WARRANTY

Except as provided below, we warrant our products to be free of defects and manufactured to meet published physical properties when cured and tested according to applicable specifications and SIA Adhesives, Inc. standards. Under this warranty, we will provide, at no charge, product in containers to replace any product proved to be defective when applied in accordance with our written instructions, and in applications recommended by us as suitable for this product. All claims must be in writing and must be made within 30 days of shipment. The absence of claims during this period will constitute a waiver of all claims with respect to claims with respect to such product. This warranty is IN LIEU OF any and all other warranties, expressed or implied, including but not limited, any implied warranty of MERCHANTABILITY or fitness for a particular purpose.

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