

June 7, 2013

▪ **TEST REPORT** ▪

PN 109951
PO 11019

PLASTICS TESTING DEPARTMENT

Prepared For:

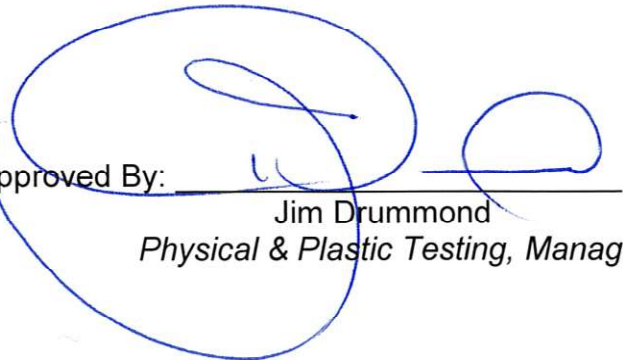
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Prepared By:



Karl Sanderson
Project Technician

Approved By:



Jim Drummond
Physical & Plastic Testing, Manager



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Chris Kaskey
Sure Foot Industries Corp.

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SUBJECT: Flammability testing on two materials.

RECEIVED: Two sets of flame plaques identified as Yellow and Black.

FLAMMABILITY, FMVSS 302

Flame Height: 1 ½ in
Flame Application: 15 seconds

<u>Sample I.D.</u>	<u>Burn Rate, in/min</u>	<u>Pass / Fail</u>
Yellow	Specimens Did Not Ignite	Pass
Black	Specimens Did Not Ignite	Pass

Requirements: 4.0 in/min maximum burn rate

Prepared By:



Karl Sanderson
Project Technician

Approved By:



Scott W. Yates
Plastics Testing Assistant Manager

sc

Product Datasheet:**SURE-FOOT Fiber Glass Epoxy
BLACK**

A two component epoxy adhesive designed to provide superior adhesion to a variety of substrates.

Product Identification: Adhesive	Color, Mixed: Black
Component Count: 2	Shelf Life 25C, Part B: 12 Months
Color, Part B: Yellow	

Viscosity, Part A (ASTM D2393):	10,000 - 15,000 cps @ 25C, 20 RPM	Viscosity, Part B (ASTM D4287):	300 - 500 cps @ 25C, 200 RPM
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Weight/Gallon A (ASTM D1875):	9.40 - 9.60 lb/gal	Weight/Gallon B (ASTM D1875):	7.80 - 8.00 Ibig a I
Weight/Gallon Mixed (ASTM D1875):	8.87 - 9.07 lb/gal		

Mix Ratio by Weight: 100:41.5	Mix Ratio by Volume: 2:1
Cure Schedule, Days: 14 days @ 25C	Alternate Cure, Hours: 3 - 4 hours @ 70C

Gel Time, minutes (ASTM D3056): 70 - 90 minutes @ 25C, 100 Grams

Hardness, Shore D (ASTM D2240):	50 - 55 @ 65C	Hardness, Shore D (ASTM D2240):	74 - 78
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Epoxy Mixing Instructions: When mixing two component epoxy resins, the ideal method is to mix by weight using a balance or digital scale. The mixing container should be placed on the scale and set to read zero, the appropriate amount of resin should be weighed followed by the appropriate amount of hardener. The material should then be stirred, ideally with a metal spatula, ensuring that the material is thoroughly mixed to a homogenous state by scraping the sides, bottom and the area where the sides meet the bottom of the container. Failure to do so can result in uncured sections of material or altered properties of the cured material. When mixing epoxy resins it is important to keep in mind that the larger the quantity of material mixed, the shorter the pot life (working time) will be.

Product Datasheet:

**SURE-FOOT Fiber glass Epoxy
YELLOW**

Description

A two component epoxy adhesive designed to provide superior adhesion to a variety of substrates.

Typical Properties

Product Identification: Adhesive	Product Resin: Epoxy
Component Count: 2	Color, Part A: Yellow
Color, Part B: Yellow	Color, Mixed: Yellow
Shelf Life 25C, Part A: 12 Months	Shelf Life 25C, Part B: 12 Months

Viscosity

Viscosity, Part A (ASTM D2393): 10,000 - 15,000 cps @ 25C, 20 RPM	Viscosity, Part B (ASTM D4287): 300 - 500 cps @ 25C, 200 RPM
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Weight per Gallon

Weight/Gallon A (ASTM D1875): 9.40 - 9.60 lb/gal	Weight/Gallon B (ASTM D1.875): 7.80 - 8.00 lb/gal
Weight/Gallon Mixed (ASTM D1.875): 8.87 - 9.07 lb/gal	

Processing

Mix Ratio by Weight: 100:41.5	Mix Ratio by Volume: 2:1
Cure Schedule, Days: 14 days @ 25C	Alternate Cure, Hours: 3 - 4 hours @ 70C

Gel Time

Gel Time, minutes (ASTM D3056): 70 - 90 minutes @ 25C, 100 Grams

Cured Properties

Hardness, Shore D (ASTM D2240): 74 - 78	Hardness, Shore D (ASTM D2240): 50 - 55 @ 65C
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Mixing Instructions

Epoxy Mixing Instructions: When mixing two component epoxy resins, the ideal method is to mix by weight using a balance or digital scale. The mixing container should be placed on the scale and set to read zero, the appropriate amount of resin should be weighed followed by the appropriate amount of hardener. The material should then be stirred, ideally with a metal spatula, ensuring that the material is thoroughly mixed to a homogenous state by scraping the sides, bottom and the area where the sides meet the bottom of the container. Failure to do so can result in uncured sections of material or altered properties of the cured material. When mixing epoxy resins it is important to keep in mind that the larger the quantity of material mixed, the shorter the pot life (working time) will be.

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: SURE-FOOT INDUSTRIES
 20260 FIRST AVENUE
 CLEVELAND, OH 44130

Information Phone: 1-440-234-4446

Series : **SURE-FOOT STEP COVERS**

Product Class : Fiberglass
 Trade Name : Anti-Skid
 Product Code : 91F

Hazardous Rating: Health -- 1
 none --> extreme Fire -- 0
 0 -----> 4 Reactivity -- 0

SECTION II -- HAZARDOUS INGREDIENTS

Chemical Name	CAS#	WT%	Vapor Pressure MM HG @ TEMP		OSHA PEL
Styrene	100-42-5	25-55%	N/A		5mg/m ³ (Nuisance Dust)
Aminoamine None Established at this time	MIXTURE		< 1	20° C	
Tetraethylenepentamine	112-57-2	0 – 10%	< 0.01	21° C	
Alkyl Glycidyl Ether Butyle Benzyl Phthalate Non Established Reportable Quantity = 100 lbs.	PROPIERTARY 85-68-7	0 – 10%	< 0.1 .1580	20° C 20° C	
Silicon Dioxide	7631-86-9	41 – 53%	N/A		(80mg/M3)/%SiO ₂
Aluminum Oxide	1344-28-1	17 – 25%	N/A		15mg/m ³

N.A. – NOT APPLICABLE

SECTION III - PHYSICAL DATA

Physical Form : SOLID
Solubility in Water : N/A
Odor : Slight
Specific Gravity (H₂O)=1, at 4° C: 1.61-2.0
Appearance : **COLORS VARY**
Auto Ignition Temp : 800° F
Melting Temp : > 2500° F
Toxicity : N/A
% Volatile : None

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: (Dust) 675° F LEL: N/A VEL: N/A

EXTINGUISHING MEDIA:

WATER, FOAM , TYPE A, B, or C EXTINGUISHER

--SPECIAL FIREFIGHTING PROCEDURES:

WNEH FIREFIGHTING WEAR FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS

--UNUSUAL FIRE & EXPLOSION HAZARDS:

DO NOT EXPOSE FINE DUST TO AN IGNITION SOURCE

--HAZARDOUS COMBUSTION PRODUCTS: HEAVY SMOKE, CO, CO₂, AND IRRITATING OR TOXIC VAOPRS AND GASES

SECTION V -- FIRST AID MEASURES

--INHALATION: REMOVE TO FRESH AIR
--EYE CONTACT: FLUSH WITH WATER
--SKIN CONTACT: WASH WITH SOAP AND WATER
--INGESTION: N/A

IF CONDITION PERSISTS, GET APPROPRIATE IN-PLANT MEDICAL SUPPORT OR CONSULT PHYSICIAN

TDS: ANTI-SLIP PANELS

SECTION VI - ACCIDENTAL RELEASE MEASURES

DUST DEPOSITS SHOULD NOT BE ALLOWED TO ACCUMULATE ON SURFACE. DUST IS CONSIDERED A St 1 CLASS DUST WITH A Kst (bar-m/s) OF LESS THAN 100. AVOID DISPERSAL OF DUST WITH COMPRESSED AIR.

SECTION VII -- SAFE HANDLING AND STORAGE

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

--RESPIRATORY PROTECTION:

DUST MASK THAT IS NOT NIOSH APPROVED

--VENTILATION:

MUST COMPLY WITH NFPA 68

--PROTECTIVE GLOVES:

NEOPRENE OR NITRILE RUBBER

--EYE PROTECTION:

SAFETY GLASSES

--OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

LONG SLEEVE SHIRT AND PANT RECOMMENDED

--WORK/HYGIENIC PRACTICES

WASH HANDS BEFORE AND AFTER USE

SECTION VIII – STABILITY/REACTIVITY

STABILITY: STABLE

POLYMERIZATION: WILL NOT OCCUR

SECTION IX – ECOLOGICAL INFORMATION

ECOTOXICITY: NO DATA

ENVIRONMENTAL DEGRADATION: NO DATA

ENVIRONMENTAL FATE: NO DATA

SOIL ABSORPTION/MOBILITY : NO DATA

SECTION X – DISPOSAL CONSIDERATIONS

DISPOSAL: CONSULT FEDERAL, STATE AND LOCAL REGULATIONS. CONSIDERED A SOLID WASTE. NOT TOXIC BY TCLP TESTING

SECTION XI – TRANSPORT INFORMATION

DOT TRANSPORTATION DATA (49 CFR 172.101):

SHIPPING NAME: NOT REGULATED

PACKAGING GROUP: NOT DETERMINED

SHIPPING SYMBOLS: NA

LABEL: NOT REQUIRED

HAZARD CLASS: NOT HAZARDOUS

SPECIAL PROVISION (172.101): NONE

ID NO.: NA

SECTION XII – REGULATORY INFORMATION

EPA REGULATIONS:

RCRA: NOT LISTED

CERCLA: NOT LISTED

SARA311/312 CODES: NONE

SARA 313: NONE ABOVE DE MINIMUS QUANTITY

OSHA: HAZARDOUS BY DEFINITION OF HAZARDOUS COMMUNICATION STANDARD (29 CFR 1910-1200)

SECTION IX -- DISCLAIMER

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