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3M™ Scotch-Weld™ Epoxy Adhesive DP190 Translucent Duo-Pak, 1.7 fl oz, 12 per case



A flexible, two-part adhesive that cures at room temperature and provides high strength bonds with good performance in shear and peel. Can be used to bond rubber, metal, wood, most plastics, and masonry products.

GTIN(UPC/EAN) : 0 00 21200 87219 8
3M Id : 62-3286-1435-9
Buyer's Part Number : 87219

Additional Information

This adhesive has a 90 minute work life, with improved impact and shock resistance over many traditional epoxy adhesives. It is a 1:1 mix ratio of 2216 B/A Translucent Adhesive. Packaged in convenient Duo-Pak cartridges designed for use in the EPX Plus Ap

Characteristics

Color	Translucent
Product Form	Each
Trademark Name 1	3M
Trademark Name 2	Scotch-Weld

3M Scotch-Weld™ Epoxy Adhesives DP190 Translucent and Gray

Technical Data

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP190 Translucent is a 1:1 mix ratio, faster curing version of 3M™ Scotch-Weld™ Epoxy Adhesive 2216 B/A Translucent.

3M™ Scotch-Weld™ Epoxy Adhesive DP190 Gray is a 1:1 by volume mix ratio of 3M™ Scotch-Weld™ Epoxy Adhesive 2216 B/A Gray and exhibits good peel, shear and environmental aging properties.

Available in bulk containers as 3M™ Scotch-Weld™ Epoxy Adhesive 190 B/A Translucent and 190 B/A Gray.

Features

- 90 minute worklife
- Flexible
- Translucent or gray color
- High shear and peel strength
- 1:1 mix ratio

Typical Uncured Physical Properties

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

		Scotch-Weld Epoxy Adhesive DP190 Translucent	Scotch-Weld Epoxy Adhesive DP190 Gray
Base Resins		Epoxy/Amine	Epoxy/Amine
Viscosity¹, Approximate @ 75°F	Base (B) Accelerator (A)	2,000-8,000 cps 7,000-15,000 cps	75,000-150,000 cps 40,000-80,000 cps
Net Weight (Lbs./gal.)	Base (B) Accelerator (A)	9.3-9.7 8.2-8.6	11.0-11.4 10.6-11.0
Color (Lbs./gal.)	Base (B) Accelerator (A)	Clear Amber	White Gray
Mix Ratio (B:A)	By Volume By Weight	1:1 1.15:1	1:1 1.06:1
Worklife² @ 73°F (23°C)	2 gram 20 gram	80 min. 60 min.	— 90 min.

Footnotes:

1. Viscosity determined using 3M test method C-1D. Procedure involves Brookfield RVF, #7 spindle, 20 rpm and 80°F (26°C). Measurement taken after 1 minute rotation.
2. Worklife determined using 3M test method C-3180. Procedure involves periodically measuring a 2 gram mixed mass for self-leveling and wetting properties. This time will also approximate the usable worklife in an 3M™ EPX™ Applicator mixing nozzle.

Scotch-Weld™

Epoxy Adhesives

DP190 Translucent and Gray

Typical Cured Properties

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

Footnotes:

3. Tack-free time determined per 3M test method C-3173. Involves dispensing 0.5 gram amount of adhesive onto substrate and testing periodically for no adhesive transfer to metal spatula.
4. Handling strength determined per 3M test method C-3179. Time to handling strength taken to be that required to achieve a 50 psi OLS strength using aluminum substrates.
5. The cure time is defined as that time required for the adhesive to achieve a minimum of 80% of the ultimate strength as measured by aluminum-aluminum OLS.
6. Tensile and Elongation. Used procedure in 3M test method C-3094/ATSM D 882. Samples were 2 in. dumbbells with .0125 in. neck and .030 in. sample thickness. Separation rate was 2 inches per minute. Samples cured 2 hrs RT plus 2 hrs/ 160°F (71°C).
7. Weight loss by TGA reported as that temperature at which 5% weight loss occurs by TGA in air at 5°C rise per minute per ASTM 1131-86.
8. TCE determined using TMA Analyzer using a heating rate of 50°F (10°C) per minute. Second heat values given.
9. Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 68°F (20°C) per minute. Second heat values given.
10. Thermal conductivity determined using ASTM C177 and C-matic Instrument using 2 in. diameter samples.
11. Thermal shock resistance run per 3M test method C-3174. Involves potting a metal washer into a 2 in. x 0.5 in. thick section and cycling this test specimen to colder and colder temperatures.

Physical

	3M™ Scotch-Weld™ Epoxy Adhesive DP190 Translucent	3M™ Scotch-Weld™ Epoxy Adhesive DP190 Gray
Color	Translucent	Gray
Hardness (ASTM D 2240) Shore D	35	60
Worklife²	80 minutes	90 minutes
Tack-free Time³	~ 4 hrs	~ 6 hrs
Time to Handling Strength⁴	6 hrs	8-12 hrs
Full Cure Time⁵	14 days	7 days
Elongation⁶	120%	30%
Tensile Strength⁶	2750 psi	3500 psi

Thermal

	Scotch-Weld Epoxy Adhesive DP190 Translucent	Scotch-Weld Epoxy Adhesive DP190 Gray
Weight Loss by Thermal Gravimetric Analysis (TGA)⁷	1% @ 390°F (199°C) 5% @ 594°F (312°C)	1% @ 477°F (247°C) 5% @ 639°F (337°C)
Thermal Coefficient of Expansion (TCE) by TMA⁸ ($\infty \times 10^{-6}$ units/unit°C)		
Below Tg	86 (41-68°F [5-20°C] range)	62 (41-68°F [5-25°C] range)
Above Tg	166 (167-284°F [75-140°C] range)	177 (167-284°F [65-140°C] range)
Glass Transition Temperature (Tg) by DCS⁹		
Onset	50°F (10°C)	45°F (7°C)
Mid-Point	80°F (27°C)	68°F (20°C)
Thermal Conductivity¹⁰ (@ 110°F on .250 in. samples)		
BTU - ft./ft.² - hr. - °F	.079	.220
Cal./sec. - cm - °C	.39 x 10 ⁻³	90.9 x 10 ⁻²
Watt/m - °C	.136	.381
Thermal Shock Resistance¹¹		
Potted Washer Olyphant Test (3M ITSD Test Method C-3174 +100°C [air] to -50°C [liquid])	Pass 5 cycles without cracking	Pass 5 cycles without cracking

Electrical

	Scotch-Weld Epoxy Adhesive DP190 Translucent	Scotch-Weld Epoxy Adhesive DP190 Gray
Dielectric Constant @ 1 KHz @ 73°F (23°C) (ASTM D 150)	6.2	6.5
Dissipation Factor @ 1 KHz @ 73°F (23°C) (ASTM D 150)	0.16	0.09
Dielectric Strength (ASTM D 149) Sample Thickness Approx. 30 mil.	875 volts/mil	830 volts/mil
Volume Resistivity (ASTM D 257)	7.5 x 10 ¹⁰ ohm-cm	5.0 x 10 ¹² ohm-cm

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Storage	Store products at 60-80°F (15-27°C) for maximum shelf life.
Shelf Life	These products have a shelf life of two years in their unopened original bulk containers and 15 months in duo-pak containers from date of shipment.
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 or (651) 737-6501.
For Additional Information	To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/adhesives . Address correspondence to: 3M Industrial Adhesives and Tapes Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.
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This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.



Industrial Business
Industrial Adhesives and Tapes Division



Recycled Paper
40% pre-consumer
10% post-consumer



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Scotch-Weld(TM) Epoxy Adhesive DP-190, Translucent (Part B)
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division

ADDRESS: 3M Center
St. Paul, MN 55144-1000

Issue Date: 02/18/2009
Supersedes Date: 12/22/2005

Document Group: 05-6837-8

Product Use:
Intended Use: Adhesive

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
EPOXY RESIN	25068-38-6	60 - 70
EPOXY RESIN	30583-72-3	30 - 40

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Viscous Liquid
Odor, Color, Grade: Clear, slight epoxy odor
General Physical Form: Liquid

Immediate health, physical, and environmental hazards: May cause allergic skin reaction.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Safety Glasses with side shields, Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid skin contact. Avoid skin contact with hot material. Wear appropriate gloves, such as Nomex, when handling this material to prevent thermal burns.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene, Nitrile Rubber, Polyethylene/Ethylene Vinyl Alcohol. The following protective clothing material(s) are recommended: Apron - Neoprene.

8.2.3 Respiratory Protection

Avoid breathing of dust created by cutting, sanding, grinding or machining.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half mask R95 particulate respirator, Half mask or full facepiece air-purifying respirator with N100 particulate filters, Half facepiece or fullface air-purifying respirator with P100 particulate filters, Half facepiece or fullface air-purifying respirator with P95 particulate filters, Half facepiece or fullface air-purifying respirator with N95 particulate filters. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not ingest. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

8.3 EXPOSURE GUIDELINES

None Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Viscous Liquid
Odor, Color, Grade:	Clear, slight epoxy odor
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	>=200 °F [<i>Test Method:</i> Pensky-Martens Closed Cup]
Flammable Limits - LEL	<i>No Data Available</i>
Flammable Limits - UEL	<i>No Data Available</i>
Boiling point	>=210 °F
Density	1.17 g/ml [@ 20 °C]
Vapor Density	<i>No Data Available</i>
Vapor Pressure	<=27 psia [@ 131.0000000000 °F] [<i>Details:</i> MITS data]
Specific Gravity	Approximately 1.17 Units not avail. or not appl. [<i>Ref Std:</i> WATER=1]
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Solubility in Water	Nil
Evaporation rate	Negligible
Volatile Organic Compounds	0.09 % weight [<i>Test Method:</i> tested per EPA method 24]
VOC Less H2O & Exempt Solvents	<i>No Data Available</i>
Viscosity	2000 - 8000 centipoise [@ 20 °C] [<i>Test Method:</i> Brookfield]