Safety Data Sheet

Document Group:	11-3317-2	**Version Number:**	13.00
Issue Date:	03/12/18	**Supercedes Date:**	04/16/15

Product identifier
3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent

ID Number(s):

62-3563-1430-2, 62-3563-1431-0, 62-3563-1434-4, 62-3563-1438-5, 62-3563-3530-7, 62-3563-3830-1

Recommended use
Structural adhesive

Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:

11-3316-4, 11-3315-6

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Safety Data Sheet

Document Group:	11-3315-6	**Version Number:**	17.00
Issue Date:	03/12/18	**Supercedes Date:**	01/18/18

SECTION 1: Identification

1.1. Product identifier
3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent, Part B

Product Identification Numbers
DP-110

1.2. Recommended use and restrictions on use

Recommended use
Structural adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Serious Eye Damage/Irritation: Category 2B.
Skin Sensitizer: Category 1.

2.2. Label elements
Signal word
Warning

Symbols
Exclamation mark |

Pictograms

Hazard Statements
Causes eye irritation.
May cause an allergic skin reaction.

Precautionary Statements

Prevention:
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

1% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Epoxy Resin	25068-38-6	60 - 90 Trade Secret *
Methacrylate/Butadiene/Styrene Polymer	25053-09-2	10 - 30 Trade Secret *
Hydrogenated Terphenyl	61788-32-7	5 - 10 Trade Secret *
Hydrogenated Polyphenyls	68956-74-1	< 2 Trade Secret *
Amorphous Silica	67762-90-7	0.5 - 1.5 Trade Secret *
Terphenyl	26140-60-3	< 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Ketones	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable

local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Terphenyl	26140-60-3	ACGIH	CEIL:5 mg/m3	
Terphenyl	26140-60-3	OSHA	CEIL:9 mg/m3(1 ppm)	
Hydrogenated Terphenyl	61788-32-7	ACGIH	TWA:0.5 ppm	
SILICA, AMORPHOUS	67762-90-7	OSHA	TWA concentration:0.8 mg/m3;TWA:20 millions of particles/cu. ft.	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Polymer laminate

Respiratory protection
None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Paste
Odor, Color, Grade:	Translucent, slight odor.
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*No Data Available*
Boiling Point	>=260 ºC
Flash Point	>=480 ºF [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Vapor Density	*Not Applicable*
Density	1.13 g/ml
Specific Gravity	1.13 [*Ref Std:*WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	45,000 - 65,000 centipoise [@ 73.4 ºF]
Hazardous Air Pollutants	0 % weight [*Test Method:*Calculated]
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part A]
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
VOC Less H2O & Exempt Solvents	0 % [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part A]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
No health effects are expected.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Epoxy Resin	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin	Ingestion	Rat	LD50 > 1,000 mg/kg
Methacrylate/Butadiene/Styrene Polymer	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methacrylate/Butadiene/Styrene Polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
Hydrogenated Terphenyl	Dermal	Rabbit	LD50 6,800 mg/kg
Hydrogenated Terphenyl	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 11.1 mg/l
Hydrogenated Terphenyl	Ingestion	Rat	LD50 > 10,000 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Terphenyl	Dermal	Rabbit	LD50 > 5,000 mg/kg

Terphenyl	Inhalation-Dust/Mist (4 hours)	Rat	LD50 > 3.8 mg/l
Terphenyl	Ingestion	Rat	LD50 2,304 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Mild irritant
Methacrylate/Butadiene/Styrene Polymer	Professional judgement	Minimal irritation
Hydrogenated Terphenyl	Rabbit	No significant irritation
Amorphous Silica	Rabbit	No significant irritation
Terphenyl	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Moderate irritant
Methacrylate/Butadiene/Styrene Polymer	Professional judgement	Mild irritant
Hydrogenated Terphenyl	Rabbit	No significant irritation
Amorphous Silica	Rabbit	No significant irritation
Terphenyl	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
Hydrogenated Terphenyl	Human	Not classified
Amorphous Silica	Human and animal	Not classified

Respiratory Sensitization

Name	Species	Value
Epoxy Resin	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin	In vivo	Not mutagenic
Epoxy Resin	In Vitro	Some positive data exist, but the data are not sufficient for classification
Hydrogenated Terphenyl	In vivo	Not mutagenic
Amorphous Silica	In Vitro	Not mutagenic
Terphenyl	In Vitro	Not mutagenic
Terphenyl	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Epoxy Resin	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Hydrogenated Terphenyl	Ingestion	Not classified for female reproduction	Rat	NOAEL 81 mg/kg/day	2 generation
Hydrogenated Terphenyl	Ingestion	Not classified for male reproduction	Rat	NOAEL 62 mg/kg/day	2 generation
Hydrogenated Terphenyl	Ingestion	Not classified for development	Rat	NOAEL 500 mg/kg/day	2 generation
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure
For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Epoxy Resin	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Epoxy Resin	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Hydrogenated Terphenyl	Inhalation	liver	Not classified	Rat	NOAEL 0.5 mg/l	90 days
Hydrogenated Terphenyl	Ingestion	endocrine system | blood | liver | kidney and/or bladder	Not classified	Rat	NOAEL 144 mg/kg/day	14 weeks
Amorphous Silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Not applicable

Health Hazards
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Sagety Data Sheet

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bssue DateG	12/11/17	**Supercedes DateG**	10/28/16

SEI TbCV 1Gbdentigication

1OOCProduct identigier
3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent, Part A

Product bdentigication Vuf Ners
DP-110

1OBO ecof f ended use and restrictions on use

. ecof f ended use
Structural adhesive

1O3OSupplierRs details

MAV' UAI T' . E. G	3M
Dbx bSbCVG	Industrial Adhesives and Tapes Division
ADD. ESSG	3M Center, St. Paul, MN 55144-1000, USA
TelephoneG	1-888-3M HELPS (1-888-364-3577)

1OTCEf er8ency telephone nuf Ner
1-800-364-3577 or (651) 737-6501 (24 hours)

SEI TbCV BG4 aHard identigication

BOOO4 aHard classigication
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1A.

BOBOz aNel elef ents
Si8nal Lord
Warning

Syf Nols
Exclamation mark |

Picto8raf s

4 aHard Statef ents
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.

Precautionary Statef ents

PreventionG
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

. esponseG
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

DisposalG
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2% of the mixture consists of ingredients of unknown acute oral toxicity.
2% of the mixture consists of ingredients of unknown acute dermal toxicity.

SEI TbCV 3GI of position/ingorf ation on in8redients

bn8redient	I CASCVoO	w Ny Wt
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Trade Secret*	40 - 80 Trade Secret *
Polyamide Resin	68410-23-1	5 - 30 Trade Secret *
Modified Epoxy Resin (NJTS Reg. No. 04499600-6838)	Trade Secret*	10 - 30 Trade Secret *
Hydrogenated Terphenyl	61788-32-7	5 - 10 Trade Secret *
2,4,6-tris[(Dimethylamino)Methyl]Phenol	90-72-2	1 - 5 Trade Secret *
Hydrogenated Polyphenyls	68956-74-1	< 2 Trade Secret *
Triethylenetetramine	112-24-3	< 1.5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SEI TbCV FGUirst aid f easures

FOOCDescription oggirst aid f easures

bnhalationG

Remove person to fresh air. If you feel unwell, get medical attention.

S%in I ontactG
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye I ontactG
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

bgSLalloLedG
Rinse mouth. If you feel unwell, get medical attention.

FOBOMost if portant syf ptof s and eggects, Noth acute and delayed
See Section 11.1. Information on toxicological effects.

FOCOndication og any if f ediate f edical attention and special treatf ent rekuired
Not applicable

SEI TbCV qGUire-gi8htin8 f easures

qOOOSuitaNe extin8uishin8 f edia
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

qOBOSpecial haHards arisin8 gr of the suNstance or f ixture
None inherent in this product.

4 aHardous Decof position or 5y-Products

SuNstance	I ondition
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Ketones	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Sulfur	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

qOOOSpecial protective actions gor gire-gi8hters
No special protective actions for fire-fighters are anticipated.

SEI TbCV 6GAccidental release f easures

6OOOPersonal precautions, protective ekuipf ent and ef er8ency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6OBOEnvironf ental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6OCOMethods and f aterial gor containf ent and cleanin8 up

Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SEI TbCV 2G4 andlin8 and stora8e

2OOCPrecautions gor sage handlin8
For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

2OBCI onditions gor sage stora8e includin8 any incof patiNilities
Store away from acids. Store away from strong bases. Store away from oxidizing agents.

SEI TbCV 7GExposure controls/personal protection

7OOCI ontrol paraf eters

Cccupational exposure lif its
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

bn8redient	I OACSOVoO	A8ency	z if it type	Additional I of f ents
Triethylenetetramine	112-24-3	AIHA	TWA:6 mg/m3(1 ppm)	SKIN
Hydrogenated Terphenyl	61788-32-7	ACGIH	TWA:0.5 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

7OBCExposure controls

7OBOCEn8ineerin8 controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

7OBBCPersonal protective ekuipf ent (PPE)

Eye/gace protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

S%n/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective

clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Polymer laminate

. espiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SEI TbCV 9G Physical and chef ical properties

9OOnngorf ation on Nasic physical and chef ical properties

meneral Physical Uorf G	Liquid
Specigic Physical Uorf G	Paste
Cdor, I olor, mradeG	Translucent, slight odor.
Cdor threshold	*No Data Available*
p4	*Not Applicable*
Meltin8 point	*No Data Available*
5 oilin8 Point	>=185 ºC
Ulash Point	>=365 ºF [*Test Method:*Closed Cup]
Evaporation rate	*Not Applicable*
Ulaf f aNility (solid, 8as)	Not Applicable
Ulaf f aNle z if its(z Ez)	*Not Applicable*
Ulaf f aNle z if its(' Ez)	*Not Applicable*
: apor Pressure	*Not Applicable*
: apor Density	*Not Applicable*
Density	1.1 g/ml
Specigic mravity	1.1 [*Ref Std:*WATER=1]
SoluNility in Water	Nil
SoluNility- non-Later	*No Data Available*
Partition coeggicientGn-octanol/ Later	*No Data Available*
Autoi8nition tef perature	*No Data Available*
Decof position tef perature	*No Data Available*
: iscosity	30,000 - 70,000 centipoise [@ 73.4 ºF]
4 aHrdous Air Pollutants	0 % weight [*Test Method:*Calculated]
Molecular Lei8ht	*No Data Available*
: CI z ess 4 BC & Exef pt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part B]
: CI z ess 4 BC & Exef pt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied]
: CI z ess 4 BC & Exef pt Solvents	0 % [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*when used as intended with Part B]

SEI TbCV 10G StaNility and reactivity

10OO eactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10OBCI hef ical staNility
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5. Incompatible materials
Strong oxidizing agents
Strong acids
Strong bases

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.
Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
May be harmful if swallowed.
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Information:
Persons previously sensitized to amines may develop a cross-sensitization reaction to certain other amines.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or

the data are not sufficient for classification.

Acute Toxicity

Vaf e	. oute	Species	: alue
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Dermal	Rabbit	LD50 > 10,200 mg/kg
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Ingestion	Rat	LD50 2,600 mg/kg
Polyamide Resin	Dermal	Rat	LD50 > 2,000 mg/kg
Polyamide Resin	Ingestion	Rat	LD50 > 2,000 mg/kg
Hydrogenated Terphenyl	Dermal	Rabbit	LD50 6,800 mg/kg
Hydrogenated Terphenyl	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 11.1 mg/l
Hydrogenated Terphenyl	Ingestion	Rat	LD50 > 10,000 mg/kg
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Dermal	Rat	LD50 1,280 mg/kg
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Ingestion	Rat	LD50 1,000 mg/kg
Triethylenetetramine	Dermal	Rabbit	LD50 550 mg/kg
Triethylenetetramine	Ingestion	Rat	LD50 2,500 mg/kg

ATE = acute toxicity estimate

S%in I orrosion/brritation

Vaf e	Species	: alue
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Rabbit	No significant irritation
Polyamide Resin	similar compounds	Irritant
Hydrogenated Terphenyl	Rabbit	No significant irritation
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Rabbit	Corrosive
Triethylenetetramine	Rabbit	Corrosive

Serious Eye Daf a8e/brritation

Vaf e	Species	: alue
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Rabbit	Mild irritant
Polyamide Resin	similar compounds	Corrosive
Hydrogenated Terphenyl	Rabbit	No significant irritation
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Rabbit	Corrosive
Triethylenetetramine	Rabbit	Corrosive

S%in SensitiHation

Vaf e	Species	: alue
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Mouse	Sensitizing
Polyamide Resin	Mouse	Sensitizing
Hydrogenated Terphenyl	Human	Not classified
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Guinea pig	Not classified
Triethylenetetramine	Guinea pig	Sensitizing

. espiratory SensitiHation

For the component/components, either no data are currently available or the data are not sufficient for classification.

merf I ell Muta8enicity

Vaf e	. oute	: alue
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	In Vitro	Not mutagenic
Hydrogenated Terphenyl	In vivo	Not mutagenic

2,4,6-tris[(Dimethylamino)Methyl]Phenol	In Vitro	Not mutagenic

I arcino8enicity
For the component/components, either no data are currently available or the data are not sufficient for classification.

. eproductive Toxicity

. eproductive and/or Developf ental Eggects

Vaf e	. oute	: alue	Species	Test . esult	Exposure Duration
Hydrogenated Terphenyl	Ingestion	Not classified for female reproduction	Rat	NOAEL 81 mg/kg/day	2 generation
Hydrogenated Terphenyl	Ingestion	Not classified for male reproduction	Rat	NOAEL 62 mg/kg/day	2 generation
Hydrogenated Terphenyl	Ingestion	Not classified for development	Rat	NOAEL 500 mg/kg/day	2 generation

Tar8et Cr8an(s)

Specigic Tar8et Cr8an Toxicity - sin8le exposure

Vaf e	. oute	Tar8et Cr8an(s)	: alue	Species	Test . esult	Exposure Duration
Polyamide Resin	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specigic Tar8et Cr8an Toxicity - repeated exposure

Vaf e	. oute	Tar8et Cr8an(s)	: alue	Species	Test . esult	Exposure Duration
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 75 mg/kg/day	90 days
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg/day	90 days
Mercaptan Polymer (NJTS Reg. No. 04499600-6776)	Ingestion	endocrine system | heart | skin | immune system | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	90 days
Hydrogenated Terphenyl	Inhalation	liver	Not classified	Rat	NOAEL 0.5 mg/l	90 days
Hydrogenated Terphenyl	Ingestion	endocrine system | blood | liver | kidney and/or bladder	Not classified	Rat	NOAEL 144 mg/kg/day	14 weeks
2,4,6-tris[(Dimethylamino)Methyl]Phenol	Dermal	skin | liver | nervous system | auditory system | hematopoietic system | eyes	Not classified	Rat	NOAEL 125 mg/kg/day	28 days

Aspiration 4 aHard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone nuf Ner listed on the girst pa8e ogthe SDS gor additional toxicolo8ical ingorf ation on this f aterial and/or its cof ponentsO

SEI TbCV 1BGEcolo8ical ingorf ation

Ecotoxicolo8ical ingorf ation

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

I hef ical gate ingorf ation

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SEI TbCV 13GDisposal considerations

13OOCDisposal f ethods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA 4 aHardous Waste Vuf Ner (. I . A)G Not regulated

SEI TbCV 1FGTransport bngorf ation

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SEI TbCV 1qG. e8ulatory ingorf ation

1qOOO S Uederal . e8ulations
Contact 3M for more information.

EPI . A 311/31B4 aHard I lassigicationsG

Physical 4 aHards
Not applicable

4 ealth 4 aHards
Respiratory or Skin Sensitization
Serious eye damage or eye irritation
Skin Corrosion or Irritation

1qOBOState . e8ulations
Contact 3M for more information.

1qO3OI hef ical bnventories
The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

1qOPOnternational . e8ulations
Contact 3M for more information.

This SDS has Neen prepared to f eet the ' GSOCS4 A 4 aHard I of f unication Standard, B9 I U. 1910OB00O

SEI TbCV 16GCther ingorf ation

VUPA 4 aHard I lassigication
4 ealthG 2 **Ulaf f aNilityG** 1 **bnstaNilityG** 1 **Special 4 aHardsG** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Docuf ent mroupG	11-3316-4	**: ersion Vuf NerG**	18.00
bssue DateG	12/11/17	**Supercedes DateG**	10/28/16

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3M ' SA SDSs are availaNe at LLLG3MGoof

3M Scotch-Weld™ Epoxy Adhesive DP110 Translucent and Gray

Technical Data **December, 2009**

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent and Gray are two-part epoxy adhesives which combine a fast cure with flexibility.

Features

- Controlled flow
- Duo-Pak cartridge dispensing system
- 20 minute handling strength
- Good adhesion to many plastics and metals

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.

Product		Scotch-Weld Epoxy Adhesive DP110 Translucent	Scotch-Weld Epoxy Adhesive DP110 Gray
Viscosity @ 72°F (23°C), 73°F (24°C) (CPS)	Base Accelerator	30,000 - 70,000 30,000 - 70,000	40,000 - 90,000 40,000 - 90,000
Base Resin	Base Accelerator	Modified Epoxy Amine	Modified Epoxy Amine
Color	Base Accelerator	Translucent White Light Yellow	White Black
Net Weight (Lbs./Gallon)	Base Accelerator	9.1 - 9.4 9.0 - 9.3	9.1 - 9.4 9.0 - 9.3
Mix Ratio B : A	Volume Weight	100 : 100 100 : 99	100 : 100 100 : 99
Worklife @ 73°F (24°C) (minutes)		8 - 13	8 - 13

Typical Cured Physical Properties

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

Product	Scotch-Weld Epoxy Adhesive DP110 Translucent	Scotch-Weld Epoxy Adhesive DP110 Gray
Color	Yellow Translucent	Gray
Shore D Hardness (approx.)	40	45
Elongation (approx.)	40%	40%

3M™ Scotch-Weld™
Epoxy Adhesives
DP110 Translucent and Gray

Typical Cured Thermal Properties

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

Product	3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent	3M™ Scotch-Weld™ Epoxy Adhesive DP110 Gray
Thermal Conductivity BTU/Hr/Ft²/°F/Ft.	.106 @ 113°F (45°C)	.104 @ 113°F (45°C)
Thermal Coefficient of Expansion -58°F (-50°C) - 32°F (0°C) -58°F (-50°C) - 166°F (110°C)	 80 x 10^{-6} 200 x 10^{-6}	 73 x 10^{-6} 165 x 10^{-6}
Glass Transition Temp.	55°F (13°C)	61°F (16°C)

Typical Cured Electrical Properties

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

Product	Scotch-Weld Epoxy Adhesive DP110 Translucent	Scotch-Weld Epoxy Adhesive DP110 Gray
Dielectric Strength (volts/mil)	520	470
Volume Resistivity (ohms - cm)	4.5 x 10^{10}	6.9 x 10^{10}

Typical Adhesive Performance Characteristics

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

The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data show typical results obtained with Scotch-Weld epoxy adhesive DP110 Translucent and Gray when applied to properly prepared substrates and cured for 48 hours at 73°F (23°C) under 2 psi pressure and tested according to the specifications indicated.

Note: All data developed after a 48 hour cure @ 75°F (24°C) under 2 psi pressure unless noted otherwise.

A. Aluminum Overlap Shear

Overlap shear shear strength was measured on FPL etched 1 in. wide by 1/2 in. overlap specimens. The bonds were made from 2 panels of 4 in. x 7 in. x .063 in., 2024 T3 clad aluminum bonded together and cut into 1 in. wide specimens. The separation rate of the testing jaws was .1 in./minute. Tests similar to ASTM D-1002.

Test Temp	Scotch-Weld Epoxy Adhesive DP110 Translucent	Scotch-Weld Epoxy Adhesive DP110 Gray
-67°F (-55°C)	2500 psi	2700 psi
75°F (24°C)	2500 psi	3500 psi
160°F (71°C)	270 psi	270 psi
180°F (82°C)	200 psi	250 psi

Typical Adhesive Performance Characteristics (*continued)*

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

B. Aluminum T-Peel

T-Peel bonds were measured on 1 in. wide specimens cut from two FPL etched 8 in. x 8 in. x .032 in., 2024 T3 clad aluminum panels bonded together. The separation note of the testing jaws was 20 in./minute. Tests similar to ASTM D-1876.

Test Temp	3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent	3M™ Scotch-Weld™ Epoxy Adhesive DP110 Gray
75°F (24°C)	20 piw	20 piw

C. Overlap shear on abraded metals, plastics, and rubber

Overlap shear strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate.

The thickness of the substrates were: cold rolled, galvanized and stainless steel – 0.056-0.062 in., copper – 0.032 in., brass – 0.036 in., rubbers – 0.125 in., plastics – 0.125 in. All surfaces were prepared by solvent wiping/abrading/solvent wiping.

The jaw separation rate used for testing was 0.1 in. per minute for metals, 2 in. per minute for plastics, and 20 in. per minute for rubbers.

Substrate	Overlap Shear (psi) @ 75°F (24°C)	
	Scotch-Weld Epoxy Adhesive DP110 Translucent	Scotch-Weld Epoxy Adhesive DP110 Gray
Aluminum/Aluminum	1000	2300
Cold Rolled Steel/Cold Rolled Steel	1500	2500
Stainless Steel/Stainless Steel	1500	2450
Galvanized Steel/Galvanized Steel	1500	2600
Copper/Copper	1500	1750
Brass/Brass	1500	2450
Styrene Butadiene Rubber/Steel	80 - 100	80 - 100
Neoprene Rubber/Steel	40 - 60	40 - 60
ABS/ABS Plastic	500	680
PVC/PVC, Rigid	400	390
Polycarbonate/Polycarbonate	500	660
Acrylic/Acrylic	250	480
Fiber Reinforced Polyester/Fiber Reinforced Polyester	1400*	1400*

*The substrate broke during the test instead of the bond.

Scotch-Weld™
Epoxy Adhesives
DP110 Translucent and Gray

Environmental Resistance

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

Overlap shear specimens were prepared on aluminum as above and exposed to the environment conditions described below.

Environment	Overlap Shear (psi) @ 75°F (24°C)			
	3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent		3M™ Scotch-Weld™ Epoxy Adhesive DP110 Gray	
	Etched	Abraded	Etched	Abraded
Initial	2500	1000	2500	2300
30 days tap water @ 75°F (24°C)	2300	1250	2300	1250
3 days, 160°F (71°C), 100% rel. humidity	1200	700	1200	700
14 days in 5% salt spray @ 95°F (35°C)	500	150	500	150

Note: Avoid using either Scotch-Weld epoxy adhesive DP110 Translucent or Gray on metals where the bonded parts will experience high humidity/hot water conditions. User must test thoroughly adhesive performance for any environments which will be encountered.

3M™ EPX™ Pneumatic Applicator Delivery Rates

400 ml Applicator – Maximum Pressure 73 psi

Adhesive*	6mm Nozzle gms/minute	10mm Nozzle gms/minute
Scotch-Weld epoxy adhesive DP110 Gray	8.3	31.5
Scotch-Weld epoxy adhesive DP110 Gray 100°F (38°C)	14.0	50.3

200 ml Applicator – Maximum Pressure 58 psi

Scotch-Weld epoxy adhesive DP110 Gray	6.6	25.6
Scotch-Weld epoxy adhesive DP110 Gray 100°F (38°C)	35.1	115.9
Scotch-Weld epoxy adhesive DP110 Gray 125°F (49°C)	53.8	129.6
Scotch-Weld epoxy adhesive DP110 Gray 150°F (66°C)	332.0	687.0**

50 ml Applicator – Maximum Pressure 50 psi

Adhesive*	1/4 in. Nozzle gms/minute
Scotch-Weld epoxy adhesive DP110 Translucent	6.3 6.2 (nozzle cut back 2 divisions)
Scotch-Weld epoxy adhesive DP110 Gray	12.3 12.1 (nozzle cut back 2 divisions)

*Tests were run at a temperature of 70°F ± 2°F (21°C ± 1°C) and at maximum applicator pressure.
**Did not mix adequately.

3M™ Scotch-Weld™
Epoxy Adhesives
DP110 Translucent and Gray

Handling/Curing Information

Directions for Use

1. For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed from substrates to be bonded. However, the amount of surface preparation necessary directly depends on the user's required bond strength, environmental aging resistance and economic practicalities. For specific surface preparations on common substrates, see the section on surface preparation.
2. These products consist of two parts.

   Mixing

   For Duo-Pak Cartridges

   3M™ Scotch-Weld™ Epoxy Adhesive DP110 Translucent and Gray are supplied in a dual syringe plastic duo-pak cartridge as part of the 3M™ EPX™ Applicator system. To use, simply insert the duo-pak cartridge into the EPX applicator and start the plunger into the cylinders using light pressure on the trigger. Next, remove the duo-pak cartridge cap and expel a small amount of adhesive to be sure both sides of the duo-pak cartridge are flowing evenly and freely. If automatic mixing of Part A and Part B is desired, attach the EPX mixing nozzle to the duo-pak cartridge and begin dispensing the adhesive. For hand mixing, expel the desired amount of adhesive and mix thoroughly. Mix approximately 15 seconds after a uniform color is obtained.

   For Bulk Containers

   Mix thoroughly by weight or volume in the proportions specified on the product label or in the uncured properties section. Mix approximately 15 seconds after a uniform color is obtained.
3. For maximum bond strength apply product evenly to both surfaces to be joined.
4. Application to the substrates should be made within 8 minutes. Larger quantities and/or higher temperatures will reduce this working time.
5. Join the adhesive coated surfaces and allow to cure at 60°F (16°C) or above until completely firm. Heat up to 200°F (93°C), will speed curing. These products will fully cure in 48 hours @ 75°F (24°C).
6. Keep parts from moving during cure. Contact pressure necessary. Maximum shear strength is obtained with a 3-5 mil bond line.
7. Excess uncured adhesive can be cleaned up with ketone type solvents.*

***Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Adhesive Coverage: A 0.005 in. thick bondline will typically yield a coverage of 320 sq. ft./gallon.

3M™ Scotch-Weld™
Epoxy Adhesives
DP110 Translucent and Gray

Application Equipment Suggestions

These products may be applied by spatula, trowel or flow equipment.

Two part mixing/proportioning/dispensing equipment is available for intermittent or production line use. These systems are ideal because of their variable shot size and flow rate characteristics and are adaptable to many applications.

Surface Preparation

For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed from substrate to be bonded. However, the amount of surface preparation necessary directly depends on the user's required bond strength, environmental aging resistance and economic practicalities.

The following cleaning methods are suggested for common surfaces:

Steel:

1. Wipe free of dust with oil-free solvent such as acetone or isopropyl alcohol solvents.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with solvent to remove loose particles.*
4. If a primer is used, it should be applied within 4 hours after surface preparation.

Aluminum:

1. Alkaline Degrease: Oakite 164 solution (9-11 oz./gallon water) at 190°F ± 10°F (88°C ± 23°C) for 10-20 minutes. Rinse immediately in large quantities of cold running water.
2. Acid Etch: Place panels in the following solution for 10 minutes at 150°F ± 5°F (66°C ± 23°C).

Sodium Dichromate	4.1 - 4.9 oz./gallon
Sulfuric Acid, 66°Be	38.5 o 41.5 oz./gallon
2024-T3 aluminum (dissolved)	0.2 oz./gallon minimum
Tap water as needed to balance	

3. Rinse: Rinse panels in clear running tap water.
4. Dry: Air dry 15 minutes; force dry 10 minutes at 150°F ± 10°F (66°C ± 23°C).
5. If primer is to be used, it should be applied within 4 hours after surface preparation.

Plastics/Rubber:

1. Wipe with isopropyl alcohol.*
2. Abrade using fine grit abrasives.
3. Wipe with isopropyl alcohol.*

***Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

3M™ Scotch-Weld™
Epoxy Adhesives
DP110 Translucent and Gray

Storage

Store products at 60-80°F (16-27°C) for maximum storage 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.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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