Safety Data Sheet

Document Group:	11-2403-1	**Version Number:**	15.00
Issue Date:	01/22/18	**Supercedes Date:**	06/20/17

Product identifier
3M(TM) Scotch-Weld(TM) Epoxy Adhesive DP100NS Translucent

ID Number(s):

62-3265-1430-4, 62-3265-1431-2, 62-3265-1435-3, 62-3265-1436-1, 62-3265-3530-9, 62-3265-3830-3

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:

11-2402-3, 11-2401-5

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Safety Data Sheet

Document Group:	11-2401-5	**Version Number:**	16.00
Issue Date:	01/22/18	**Supercedes Date:**	06/20/17

SECTION 1: Identification

1.1. Product identifier
3M(TM) Scotch-Weld(TM) Epoxy Adhesive DP100NS Translucent, Part B

Product Identification Numbers
DP-100

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.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Epoxy Resin	25068-38-6	85 - 94 Trade Secret *
Epoxy Resin	30499-70-8	5 - 10 Trade Secret *
Amorphous Silica	67762-90-7	1 - 5 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
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Ketones	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. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. 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
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 acids. 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
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: Butyl Rubber
Polymer laminate

Respiratory 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Viscous
Odor, Color, Grade:	light straw colored, epoxy odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	*No Data Available*
Boiling Point	*Not Applicable*
Flash Point	>=240 ºC [*Test Method:*Estimated]
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	<=0.03 mmHg [@ 25 ºC]
Vapor Density	*Not Applicable*
Density	1.18 g/ml
Specific Gravity	1.18 [*Ref Std:*WATER=1]
Solubility in Water	Insoluble
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	90,000 - 150,000 centipoise
Hazardous Air Pollutants	0 % weight
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 per CARB title 2] [*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 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 acids

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	Dermal		No data available; calculated ATE >5,000 mg/kg
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
Epoxy Resin	Dermal	Rat	LD50 > 2,000 mg/kg
Epoxy Resin	Ingestion	Rat	LD50 > 2,000 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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value

Epoxy Resin	Rabbit	Mild irritant
Amorphous Silica	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin	Rabbit	Moderate irritant
Amorphous Silica	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Epoxy Resin	Human and animal	Sensitizing
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
Amorphous Silica	In Vitro	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
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
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.

California Proposition 65

Ingredient	C.A.S. No.	Listing
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	Female reproductive toxin

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:** 1 **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.

Document Group:	11-2401-5	**Version Number:**	16.00
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Sagety Data Sheet

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bssue DateG	01/22/18	**Supercedes DateG**	05/20/16

SEI TbCN 1Gbdentigication

1OOCProduct identigier
3M(7M) Tcotch-S eld(7M) WpoEy Adhesive x D100P T 7ranslucent, Dart A

Product bdentigication Nuf Vers
x D-100

1ØO ecof f ended use and restrictions on use

. ecof f ended use
Accelerator for 2-part epoEy adhesive, Ttructural adhesive

1ÖOSupplierRs details

MAN' UAI T' . E. G	3M
Dbx bSbCNG	Nndustrial Adhesives and 7apes x ivision
ADD. ESSG	3M Center, Tt. Daul, MP BB144-1000, I TA
TelephoneG	1-888-3M UWHDT (1-888-354-3B66)

1ØTCEf er8ency telephone nuf Ver
1-800-354-3B66 or (5Bl) 636-5B01 (24 hours)

SEI TbCN / G4 aHard identigication

/ ØOO4 aHard classigication
Terious Wye x amage/Nritation: Category 2A.
TLin Corrosion/Nritation: Category 2.
TLin Tensitizer: Category 1.

/ ØOz aVel elef ents
Si8nal Lord
S arning

Syf Vols
WEclamation marLk

Picto8raf s

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

Precautionary Statef ents

PreventionG
Avoid breathing dust/fume/gas/mist/vapors/spray.
S ear protective gloves and eye/face protection.
S ash thoroughly after handling.
Contaminated worL clothing must not be allowed out of the worLplace.

. esponseG
N\ NP WF WT: Yinse cautiously with water for several minutes. Yemove contact lenses, if present and easy to do. Continue rinsing.
Nf eye irritation persists: Ret medical advice/attention.
N\ GP TONP: S ash with plenty of soap and water.
Nf sLin irritation or rash occurs: Ret medical advice/attention.
7aLe off contaminated clothing and wash it before reuse.

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

2K of the miEture consists of ingredients of unLnown acute oral toEicity.
3K of the miEture consists of ingredients of unLnown acute dermal toEicity.

SEI TbCN 3GI of positionBngorf ation on in8redients

bn8redient	I OASOCNoO	w Vy Wt
Dolypropyleneglycoltrimercaptanether	62244-98-B	50 - 80 7rade Tecret *
Uydrogenated 7erphenyl	51688-32-6	B- 20 7rade Tecret *
2,4,5-7ris((dimethylamino)methyl)phenol	90-62-2	B- 1B7rade Tecret *
Amorphous Tilica	56652-90-6	1 - B7rade Tecret *
bisV(x imethylamino)methylqDhenol	61064-89-0	; 3 7rade Tecret *
Dolyphenyls, partially hydrogenated	589B5-64-1	; 3 7rade Tecret *
Grganosilane	4420-64-0	; 0.B7rade Tecret *

*7he specific chemical identity and/or eEact percentage (concentration) of this composition has been withheld as a trade secret.

SEI TbCN FGUirst aid f easures

FOOCDescription oggirst aid f easures

bnhalationG
Yemove person to fresh air. Nf you feel unwell, get medical attention.

S%in I ontactG
Nmmediately wash with soap and water. Yemove contaminated clothing and wash before reuse. Nf signs/symptoms develop, get medical attention.

Eye I ontactG
Nmmediately flush with large amounts of water. Yemove contact lenses if easy to do. Continue rinsing. Ret medical attention.

bgSLalloLedG
Yinse mouth. Nf you feel unwell, get medical attention.

FØOMost if portant syf ptof s and eggects, Voth acute and delayed
Tee Tection 11.1. Nnformation on toEicological effects.

FGOOndication og any if f ediate f edical attention and special treatf ent rekuired
P ot applicable

SEI TbCN qGUire-gi8htin8 f easures

qØOOSuitaVle extin8uishin8 f edia
Nn case of fire: I se a fire fighting agent suitable for ordinary combustible material such as water or foam to eEtinguish.

qØOOSpecial haHards arisin8 gof the suVstance or f ixture
P one inherent in this product.

4 aHardous Decof position or 5y-Products

SuVstance	I ondition
Carbon monoEide	x uring Combustion
Carbon dioEide	x uring Combustion
Uydrogen Tulfide	x uring Combustion
GEides of P itrogen	x uring Combustion
GEides of Tulfur	x uring Combustion

qGOOSpecial protective actions gor gire-gi8hters
S ear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunLer coat and pants, bands around arms, waist and legs, face masL, and protective covering for eEposed areas of the head.

SEI TbCN 6GAccidental release f easures

6ØOOPersonal precautions, protective ekuipf ent and ef er8ency procedures
Wvacuate area. ' entilate the area with fresh air. | or large spill, or spills in confined spaces, provide mechanical ventilation to disperse or eEhaust vapors, in accordance with good industrial hygiene practice. Yefer to other sections of this Tx T for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective e>uipment.

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

6GOOMethods and f aterial gor containf ent and cleanin8 up
Contain spill. S orLing from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. MiE in sufficient absorbent until it appears dry. Yemember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Dlace in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate

solvent selected by a >ualified and authorized person. ' entilate the area with fresh air. Yead and follow safety precautions on the solvent label and Tx T. Teal the container. x ispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SEI TbCN 7G4 andlin8 and stora8e

7OOCPrecautions gor sage handlin8
Avoid breathing dust/fume/gas/mist/vapors/spray. x o not get in eyes, on sLin, or on clothing. x o not eat, drinL or smoLe when using this product. S ash thoroughly after handling. Contaminated worL clothing should not be allowed out of the worLplace. Avoid release to the environment. S ash contaminated clothing before reuse. Avoid contact with oEidizing agents (eg. chlorine, chromic acid etc.)

7OOCI onditions gor sage stora8e includin8 any incof patiVilities
Ttore away from acids. Ttore away from oEidizing agents.

SEI TbCN 2GExposure controlsBpersonal protection

2OOCI ontrol paraf eters

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

bn8redient	I OASOCNoO	A8ency	z if it type	Additional I of f ents
Uydrogenated 7erphenyl	51688-32-6	ACRNU	7S A:0.Bppm	
TNHNCA, AMGYDUGI T	56652-90-6	GTUA	7S A concentration:0.8 mg/m3=7S A:20 millions of particles/cu. ft.	

ACRNU : American Conference of Rovernmental Nidustrial Uygienists
ANUA : American Nidustrial Uygiene Association
CMYR : Chemical Manufacturer's Yecommended Ruidelines
GTUA : I nited Ttates x epartment of Habor - Gccupational Tafety and Uealth Administration
7S A: 7ime-S eighted-Average
T7WH: Thort 7erm WEposure Himit
CWNH: Ceiling

2OOCExposure controls

2OOOCEn8ineerin8 controls
I se general dilution ventilation and/or local eEhaust ventilation to control airborne eEposures to below relevant WEposure Himits and/or control dust/fume/gas/mist/vapors/spray. Nf ventilation is not ade>uate, use respiratory protection e>uipment.

2OOOCPersonal protective ekuipf ent (PPE)

EyeBface protection

Telect and use eye/face protection to prevent contact based on the results of an eEposure assessment. 7he following eye/face protection(s) are recommended:
Nndirect ' ented Roggles

S%nBhand protection
Telect and use gloves and/or protective clothing approved to relevant local standards to prevent sLin contact based on the results of an eEposure assessment. Telection should be based on use factors such as eEposure levels, concentration of the substance or miEture, fre>uency and duration, physical challenges such as temperature eEtremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. P ote: P itrile gloves may be worn over polymer laminate gloves to improve deEterity.
Rloves made from the following material(s) are recommended: Dolymer laminate

. espiratory protection

An eEposure assessment may be needed to decide if a respirator is re>uired. Nf a respirator is needed, use respirators as part of a full respiratory protection program. [ased on the results of the eEposure assessment, select from the following respirator type(s) to reduce inhalation eEposure:
Ualf facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

| or >uestions about suitability for a specific application, consult with your respirator manufacturer.

SEI TbCN 9GPhysical and chef ical properties

90OOngorf ation on Vasic physical and chef ical properties

meneral Physical Uorf G	Hi>uid
Specigic Physical Uorf G	' iscous
Cdor, I olor, mradeG	Hight amber, strong mercaptan odor
Cdor threshold	*No Data Available*
p4	*Not Applicable*
Meltin8 point	*Not Applicable*
5 oilin8 Point	*Not Applicable*
Ulash Point	] <149 @C VTest Method:Wstimatedq
Evaporation rate	*Not Applicable*
Ulaf f aVility (solid, 8as)	P ot Applicable
Ulaf f aVle z if its(z Ez)	*Not Applicable*
Ulaf f aVle z if its(' Ez)	*Not Applicable*
: apor Pressure	; <0.02 mmUg V% 20 @Cq
: apor Density	*Not Applicable*
Density	1.1B g/ml
Specigic mravity	1.1B VRef Std:S A7 WY<1q
SoluVility in Water	P egligible
SoluVility- non-Later	*No Data Available*
Partition coeggicientGn-octanolBLater	*No Data Available*
Autoi8nition tef perature	*No Data Available*
Decof position tef perature	*No Data Available*
: iscosity	B0,000 - 8B,000 centipoise
4 aHardous Air Pollutants	0 K weight VTest Method:Calculatedq
Molecular Lei8ht	*No Data Available*
: CI z ess 4 / C & Exef pt Solvents	0 g/l VTest Method:calculated TCAQMx rule 443.1q VDetails:when used as intended with Dart [q
: CI z ess 4 / C & Exef pt Solvents	B g/l VTest Method:calculated TCAQMx rule 443.1q VDetails:as suppliedq
: CI z ess 4 / C & Exef pt Solvents	0 K VTest Method:calculated per CAY[title 2q VDetails:when used as intended with Dart [q

SEI TbCN 10GStaVility and reactivity

10OO eactivity
7his material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10OOCI hef ical staVility
Ttable.

10OOCPossiVility oghaHardous reactions
Uazardous 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

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.

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	Dermal		No data available=calculated ATE [5,000 mg/kg
Overall product	Ingestion		No data available=calculated ATE 2,000 - 5,000 mg/kg
Polypropyleneglycoltrimercaptanether	Dermal	Rabbit	LD50 > 10,200 mg/kg

Dolypropyleneglycoltrimercaptanether	Nigestion	Yat	Hx B0 2,500 mg/Lg
Uydrogenated 7erphenyl	x ermal	Yabbit	Hx B0 5,800 mg/Lg
Uydrogenated 7erphenyl	Nihalation-x ust/Mist (4 hours)	Yat	HCB0] 11.1 mg/l
Uydrogenated 7erphenyl	Nigestion	Yat	Hx B0] 10,000 mg/Lg
2,4,5-7ris((dimethylamino)methyl)phenol	x ermal	Yat	Hx B0 1,280 mg/Lg
2,4,5-7ris((dimethylamino)methyl)phenol	Nigestion	Yat	Hx B0 1,000 mg/Lg
Amorphous Tilica	x ermal	Yabbit	Hx B0] B,000 mg/Lg
Amorphous Tilica	Nihalation-x ust/Mist (4 hours)	Yat	HCB0] 0.591 mg/l
Amorphous Tilica	Nigestion	Yat	Hx B0] B,110 mg/Lg
bisV(x imethylamino)methylqDhenol	Nigestion		Hx B0 estimated to be 300 - 2,000 mg/Lg
Grganosilane	x ermal	Yabbit	Hx B0 2,260 mg/Lg
Grganosilane	Nigestion	Yat	Hx B0 660 mg/Lg

A7W< acute toEicity estimate

S%in I orrosionBrritation

Naf e	Species	: alue
Gverall product	Ni vitro data	Nrritant
Dolypropyleneglycoltrimercaptanether	Yabbit	P o significant irritation
Uydrogenated 7erphenyl	Yabbit	P o significant irritation
2,4,5-7ris((dimethylamino)methyl)phenol	Yabbit	Corrosive
Amorphous Tilica	Yabbit	P o significant irritation
bisV(x imethylamino)methylqDhenol	similar compoun ds	Corrosive

Serious Eye Daf a8elBrritation

Naf e	Species	: alue
Gverall product	Ni vitro data	Tevere irritant
Dolypropyleneglycoltrimercaptanether	Yabbit	Mild irritant
Uydrogenated 7erphenyl	Yabbit	P o significant irritation
2,4,5-7ris((dimethylamino)methyl)phenol	Yabbit	Corrosive
Amorphous Tilica	Yabbit	P o significant irritation
bisV(x imethylamino)methylqDhenol	similar compoun ds	Corrosive

S%in SensitiHation

Naf e	Species	: alue
Dolypropyleneglycoltrimercaptanether	Mouse	Tensitizing
Uydrogenated 7erphenyl	Uuman	P ot classified
2,4,5-7ris((dimethylamino)methyl)phenol	Ruinea pig	P ot classified
Amorphous Tilica	Uuman and animal	P ot classified

. espiratory SensitiHation

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

merf I ell Muta8enicity

Naf e	. oute	: alue
Dolypropyleneglycoltrimercaptanether	Ni ' itro	P ot mutagenic
Uydrogenated 7erphenyl	Ni vivo	P ot mutagenic

2,4,5-7ris((dimethylamino)methyl)phenol	Ni ' itro	P ot mutagenic
Amorphous Tilica	Ni ' itro	P ot mutagenic

I arcino8enicity

Naf e	. oute	Species	: alue
Amorphous Tilica	P ot Tpecified	Mouse	Tome positive data eEist, but the data are not sufficient for classification

. eproductive Toxicity

. eproductive andBor Developf ental Eggects

Naf e	. oute	: alue	Species	Test . esult	Exposure Duration
Uydrogenated 7erphenyl	Ningestion	P ot classified for female reproduction	Yat	P GAWH 81 mg/Lg/day	2 generation
Uydrogenated 7erphenyl	Ningestion	P ot classified for male reproduction	Yat	P GAWH 52 mg/Lg/day	2 generation
Uydrogenated 7erphenyl	Ningestion	P ot classified for development	Yat	P GAWH B00 mg/Lg/day	2 generation
Amorphous Tilica	Ningestion	P ot classified for female reproduction	Yat	P GAWH B09 mg/Lg/day	1 generation
Amorphous Tilica	Ningestion	P ot classified for male reproduction	Yat	P GAWH 496 mg/Lg/day	1 generation
Amorphous Tilica	Ningestion	P ot classified for development	Yat	P GAWH 1,3B0 mg/Lg/day	during organogenesis

Tar8et Cr8an(s)

Specigic Tar8et Cr8an Toxicity - sin8le exposure

Naf e	. oute	Tar8et Cr8an(s)	: alue	Species	Test . esult	Exposure Duration
2,4,5-7ris((dimethylamino)methyl)phenol	Ninhalation	respiratory irritation	Tome positive data eEist, but the data are not sufficient for classification		P GAWH P ot available	

Specigic Tar8et Cr8an Toxicity - repeated exposure

Naf e	. oute	Tar8et Cr8an(s)	: alue	Species	Test . esult	Exposure Duration
Dolypropyleneglycoltrimercaptanether	Ningestion	hematopoietic system	Tome positive data eEist, but the data are not sufficient for classification	Yat	P GAWH 6B mg/Lg/day	90 days
Dolypropyleneglycoltrimercaptanether	Ningestion	liver	Tome positive data eEist, but the data are not sufficient for classification	Yat	P GAWH 2B0 mg/Lg/day	90 days
Dolypropyleneglycoltrimercaptanether	Ningestion	endocrine system k heart ksLin k immune system k nervous system k eyes kLidney and/or bladder krespiratory system kvascular system	P ot classified	Yat	P GAWH 1,000 mg/Lg/day	90 days
Uydrogenated 7erphenyl	Ninhalation	liver	P ot classified	Yat	P GAWH 0.B mg/l	90 days
Uydrogenated 7erphenyl	Ningestion	endocrine system k blood kliver kLidney and/or bladder	P ot classified	Yat	P GAWH 144 mg/Lg/day	14 weeLs
2,4,5-7ris((dimethylamino)methyl)phenol	x ermal	sLin kliver knervous system kauditory system k hematopoietic system keyes	P ot classified	Yat	P GAWH 12B mg/Lg/day	28 days
Amorphous Tilica	Ninhalation	respiratory system k	P ot classified	Uuman	P GAWH P ot	occupational

		silicosis			available	eEposure

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

Please contact the address or phone nuf Ver listed on the girst pa8e og the SDS gor additional toxicolo8ical ingorf ation on this f aterial andBor its cof ponentsO

SEI TbCN 1/ GEcolo8ical ingorf ation

Ecotoxicolo8ical ingorf ation

Dlease contact the address or phone number listed on the first page of the Tx T for additional ecotoEicological information on this material and/or its components.

I hef ical gate ingorf ation

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

SEI TbCN 13GDisposal considerations

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

x ispose 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. Droper destruction may re>uire the use of additional fuel during incineration processes. Wmpty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/miEtures/preparations classified as Uazardous 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 aHrdous Waste Nuf Ver (. I . A)G Pot regulated

SEI TbCN 1FGTransport bngorf ation

| or 7ransport Nnformation, please visit http://3M.com/7ransportinfo or call 1-800-354-3B66 or 5B1-636-5B01.

SEI TbCN 1qG. e8ulatory ingorf ation

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

EPI . A 311B1/ 4 aHrd I lassigicationsG

Physical 4 aHrds
P ot applicable

4 ealth 4 aHrds
Yespiratory or TLin Tensitization
Terious eye damage or eye irritation
TLin Corrosion or Nritation

1qØOState . e8ulations
Contact 3M for more information.

1qGOCI hef ical bnventories
7he components of this material are in compliance with the provisions of the Oorean 7oEic Chemical Control Haw. Certain restrictions may apply. Contact the selling division for additional information.

7he components of this product are in compliance with the chemical notification re>uirements of 7TCA.

Contact 3M for more information.

1qOPOnternational . e8ulations
Contact 3M for more information.

This SDS has Veen prepared to f eet the ' OSOCS4 A 4 aHard I of f unication Standard, / 9 I U. 1910O/ 00O

SEI TbCN 16GCther ingorf ation

NUPA 4 aHard I lassigication
4 ealthG 2 **Ulaf f aVilityG** 1 **bnstaVilityG** 1 **Special 4 aHardsG** P one

P ational | ire Drotection Association (P | DA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute eEposure to a material under conditions of fire, spill, or similar emergencies. Uazard ratings are primarily based on the inherent physical and toEic properties of the material but also include the toEic properties of combustion or decomposition products that are Lnown to be generated in significant >uantities.

Docuf ent mroupG	11-2402-3	**: ersion Nuf VerG**	23.00
bssue DateG	01/22/18	**Supercedes DateG**	05/20/16

x NTCHANSMWY: 7he information in this Tafety x ata Theet (Tx T) is believed to be correct as of the date issued.3MMAOWT PGS AYYAP7NWT, WXDYWTTWx GY NSMDHNWx , NPCHI x NPR, [I 7 PG7 HNSMN7Wx 7G, APF NSMDHNWx S AYYAP7F G| MWYCUAP7A[NHN7F GY | N7PWTT | GY A DAY7NCI HAY DI YDGTWGY CGI YTWG| DWY| GYMAPCWGY I TARWG| 7YAx WI ser is responsible for determining whether the3Mproduct is fit for a particular purpose and suitable for user's method of use or application.Riven the variety of factors that can affect the use and application of a3Mproduct, some of which are uni>uely within the user's Lnowledge and control,it is essential that the user evaluate the3Mproduct to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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3M ' SA SDSs are availaVle at LLLG3MGoof

Scotch-Weld™
Epoxy Adhesives
DP-100 Clear • DP-100 NS Translucent

Technical Data **December, 2009**

Product Description

3M™ Scotch-Weld™ Epoxy Adhesives DP-100 and DP-100NS are two-part adhesives offering fast cure and machinability.

Available in larger containers like 3M™ Scotch-Weld™ Epoxy Adhesives 100 B/A or 100 NS B/A.

Features

- Easy mixing
- High Flow (Scotch-Weld DP-100 Clear)
- Non-Sag (Scotch-Weld DP-100 NS Translucent)
- Fast Cure
- Scotch-Weld DP-100 meets UL 94 HB

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		**3M™ Scotch-Weld™ Epoxy Adhesive**	
		DP-100 Clear	**DP-100 NS Translucent**
Viscosity[1] @ 73°F (23°C)	Base Accelerator	8,000-15,000 cps 9,000-16,000 cps	90,000-150,000 cps 50,000-85,000 cps
Base Resin		Epoxy	Epoxy
Color		Clear/Lt. Amber[4]	Translucent[4]
Net Weight (Lbs./Gallon)	Base Accelerator	9.5-9.9 9.2-9.6	9.6-10.0 9.2-9.6
Mix Ratio (B:A)	Volume Weight	1 : 1 1 : 0.98	1: 1 1 : 0.96
Worklife[2] @ 73°F (23°C)	10 g mixed	5 minutes	5 minutes (Gel time[3])

1. Viscosity determined using 3M test method C-1d. Procedure involves Brookfield RVF, #6 spindle, 20 rpm and 80°F (27°F). (100 Clear) and #6 spindle, 4 rpm and 80°F (27°F) (100 NS). Measurement taken after 1 minute.
2. Worklife determined using 3M test method C-548. Procedure involves periodically measuring a 10 gram mixed mass for spreading and wetting properties. This time approximates the usable worklife in an EPX applicator nozzle.
3. Gel time determined using 3M test method C-554. Procedure involves periodically checking a 10 gram mixed mass for flowing properties.
4. Color may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.

3M™ Scotch-Weld™
Epoxy Adhesives
DP-100 Clear • DP-100 NS Translucent

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.

Product	3M™ Scotch-Weld™ Epoxy Adhesive	
	DP-100 Clear	DP-100 NS Translucent
Physical:		
Color	Translucent[11]	Translucent[11]
Shore D Hardness (ASTM D 2240)	80-85	80-85
Time to Handling Strength[5]	15-20 min. @ 23°C (73°F)	15-20 min. @ 23°C (73°F)
Cure Time[6]	24-48 hours @ 23°C (73°F)	24-48 hours @ 23°C (73°F)
Thermal:		
Wt. loss by Thermal Gravimetric Analysis[7]	5% @ 307°C (585°F)	
Glass Transition Temp[8]	33°C (91°F)	34°C (86°F)
Coefficient of Thermal[9] Expansion (in./in./°C)	60×10^{-6} (-40°C to +20°C) (-38°F to +68°F) 209×10^{-6} (60°C to 120°C) (+140°F to +248°F)	29×10^{-6} (-50°C to +30°C) (-56°F to +86°F) 149×10^{-6} (50°C to 110°C) (+122°F to +230°F)
Thermal Conductivity[10] (btu-ft./sq. ft.-hr. °F)	0.107 @ 46°C (115°F)	0.106 @ 45°C (113°F)
Electrical:		
Dielectric Strength (ASTM D 149)	860 volts/mil	1100 volts/mil
Volume Resistivity (ASTM D 257)	3.5×10^{12} ohm-cm	2.2×10^{14} ohm-cm

5. Handling strength determined per 3M test method C-3179. Time to handling strength is the time required to achieve 50 psi OLS strength to aluminum.
6. The cure time is defined as the time required for the adhesive to achieve a minimum of 80% of its ultimate OLS on aluminum.
7. Weight loss by Thermal Gravimetric Analysis reported as that temperature at which 5% weight loss occurs by TGA in air at 5°C (41°F) rise per minute per ASTM 1131-86 Test Procedures.
8. Glass transition temperature (Tg) determined using Perkin Elmer (DSC) Analyzer with a heating rate of 20°C (68°F) per minute. Second heat values given.
9. Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.
10. Thermal conductivity determined using ASTM C177 and C-matic Instrument with 2 in. diameter samples.
11. Color may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.

3M™ Scotch-Weld™
Epoxy Adhesives
DP-100 Clear • DP-100 NS Translucent

Handling/Curing Information

1. For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by user. For specific surface preparations on common substrates, see the following section on Surface Preparation.
2. Use gloves to minimize skin contact with adhesive.
3. These products consist of two parts.

Mixing and Applying

For Duo-Pak Cartridges - 50 ml

3M™ Scotch-Weld™ DP-100 and DP-100 NS Adhesives are suppled in a dual syringe plastic Duo-Pak cartridge as part of the 3M™ Scotch-Weld™ 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 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 uniform color is obtained.

For Duo-Pak Cartridges - 200/400 ml

Directions for Use: While holding cartridge in an upright position, remove insert from Duo-Pak cartridge by unscrewing plastic nut. Detach metal removal disc from insert to free plastic nut for nozzle attachment. Clear orifices if necessary. Attach mixing nozzle and secure with plastic nut. Place cartridge into EPX Applicator. Dispense a small quantity of adhesive to assure both components are dispensing equally. Apply adhesive to clean surfaces, join parts, secure until set up (20 minutes @ 75°F [24°C]). Leave nozzle attached to store. Replace nozzle after storage.

For Bulk Containers

Mix thoroughly by weight or volume in the proportions specified in the Typical Uncured Properties section. Mix approximately 15 seconds after uniform color is obtained.

4. For maximum bond strength apply adhesive evenly to both surfaces to be joined.
5. Application to the substrates should be make within 5 minutes. Larger quantities and/or higher temperatures will reduce this working time.
6. 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 24-48 hours @ 75°F (24°C).
7. Keep parts from moving during cure. Contact pressure is necessary. Maximum shear strength is obtained with a 3-5 mil bond line.
8. Excess uncured adhesive can be cleaned up with ketone type solvents.*

***Note:** When using solvents, extinguish all ignition sources 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.

Surface Preparation

For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by the user.

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

Sodium Dichromate	4.1 - 4.9 oz./gallon
Sulfuric Acid, 66°Be	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 and force dry 10 minutes at 150°F ± 10°F (66°C ± 5°C).
6. 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 and follow the manufacturer's precautions and directions for use.

Application Equipment Suggestions

For small or intermittent applications the 3M™ Scotch-Weld™ EPX™ applicator is a convenient method of application.

For larger applications these adhesives may be applied by use of flow equipment.

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

3M™ Scotch-Weld™
Epoxy Adhesives
DP-100 Clear • DP-100 NS Translucent

Typical Adhesive Performance Characteristics

Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP-100 and DP-100 NS when applied to properly prepared substrates, cured for 7 days at 73°F (23°C) under 2 psi cure pressure, and tested according to the test methods indicated.

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

A. Overlap Shear

Overlap shear (OLS) 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 except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours. The thickness of the bond line was 0.005 - 0.008 in. All strengths were measured at 73°F (23°C) except where noted. (Tests per ASTM D 1002-72.)

The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.

B. T-peel

T-peel strengths were measured on 1 in. wide bonds at 73°F (23°C). The testing jaw separation rate was 20 inches per minute. The substrates were 0.032 in. thick. (Tests per ASTM D 1876-61T.)

C. Cure Cycle

With the exception of Rate of Strength Build-Up Tests, all bonds were cured 7 days at 73°F (23°C)/50% RH before testing or subjected to further conditioning or environmental aging.

Etched Aluminum, Overlap Shear, at temperature (psi)

	3M™ Scotch-Weld™ Epoxy Adhesive	
Test Temp. °F (°C)	DP-100 Clear	DP-100 NS Translucent
-67°F (-53°C)	900	900
73°F (23°C)	1500	1500
180°F (82°C) (15 min.)[1]	300	300

[1]Represents time in test chamber oven before test.

Metals, Overlap Shear, Tested @ 73°F (23°C) (psi)

		3M™ Scotch-Weld™ Epoxy Adhesive	
		DP-100 Clear	DP-100 NS Translucent
Aluminum-	Etched MEK/abrade/MEK	1500 950	1500 570
Cold Rolled Steel- Copper- Brass-	MEK/abrade/MEK MEK/abrade/MEK MEK/abrade/MEK	1000 950 700	890 1140 500
Stainless Steel- Galvanized Steel-	MEK/abrade/MEK MEK/abrade/MEK	750 900	840 1080

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.

Aluminum, T-peel (piw), tested @ 73°F (23°C) (psi)

		3M™ Scotch-Weld™ Epoxy Adhesive	
		DP-100 Clear	DP-100 NS Translucent
Aluminum etched	17-20 mil bondline 5-8 mil bondline	2 2	2 2
Cold Rolled Steel	17-20 mil bondline MEK/abrade/MEK	2	2

Other Substrates, Overlap Shear tested @ 73°F (23°C) (psi)
All cleaned by alcohol wipe, abrade, alcohol wipe.

	3M™ Scotch-Weld™ Epoxy Adhesive	
	DP-100 Clear	DP-100 NS Translucent
ABS	490	180
PVC	330	240
Polycarbonate	250	120
Polyacrylic	100	150
FRP	950	680
SBR/Steel	125	230
Neoprene/Steel	140	60
Nitrile/Steel	140	90

Note: The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.

Rate of Strength Build-Up
Aluminum, Overlap Shear (7 mil Bondline) (psi)
Bonds Tested at 73°F (23°C)

	3M™ Scotch-Weld™ Epoxy Adhesive	
Time	DP-100 Clear	DP-100 NS Translucent
10 minutes	0	200
20 minutes	400	220

Compression Strength (ASTM D 695-68T)

3M™ Scotch-Weld™ DP-100 Clear Adhesive	8400 psi @ 73°F (23°C)
3M™ Scotch-Weld™ DP-100 NS Translucent Adhesive	8400 psi @ 73°F (23°C)

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.

Environmental Resistance
Aluminum (Etched)
Measured by Overlap Shear tested 73°F (23°C) psi[1]

Environment	Condition	3M™ Scotch-Weld™ Epoxy Adhesive	
		DP-100 Clear	DP-100 NS Translucent
73°F (23°C)/50% RH	30 days	1500	1500
Water Vapor	160°F/100 RH, 3 days	1500	1500

Solvent Resistance:[10]
(Visual check after immersion in specified solvent at 73°F [23°C]).

	3M™ Scotch-Weld™ Epoxy Adhesive			
	DP-100 Clear		DP-100 NS Translucent	
	1 Hour	1 Month	1 Hour	1 Month
Acetone	A	A	A	A
Isopropyl Alcohol	A	B	A	B
Freon TF	A	A	A	A
Freon TMC	A	A	A	A
1, 1, 1-Trichlorethane	A	B	A	B
RMA Flux	A	A	A	A

Key: A - Unaffected; B - Slight Attack; C - Moderate/Severe Attack

1. Viscosity determined using 3M test method C-1d. Procedure involves Brookfield RVF, #6 spindle, 20 rpm and 80°F (27°F). (100 Clear) and #6 spindle, 4 rpm and 80°F (27°F) (100 NS). Measurement taken after 1 minute.

10. Solvent resistance was determined using cured (24 hrs RT + 2 hrs 160°F [71°C]) samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed in the test solvent for 1 hour and 1 month. After the allowed period of time, the sample was removed and visually examined for surface attack as compared to the control.

3M™ Scotch-Weld™
Epoxy Adhesives
DP-100 Clear • DP-100 NS Translucent

Storage and Shelf Life

Storage: Store products at 60-80°F (16-27°C) for maximum storage life. Rotate on "first in-first out" basis.

Shelf Life: When stored as recommended in original unopened container, this product has a shelf life of 15 months.

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.

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