



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

## IDENTIFICATION

### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Kit

### Product Identification Numbers

UU-0101-3332-8

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Recommended use

Structural adhesive.

### 1.3. Supplier's details

**Address:** 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100  
**Telephone:** 080-45543000, contact Product EHS team  
**E Mail:** productehs.in@mmm.com  
**Website:** <http://solutions.3mindia.co.in>

### 1.4. Emergency telephone number

080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

**This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet for each of these components is included. Please do not separate the component Safety Data Sheets from this cover page. The document numbers of the MSDSs for components of this product are:**

19-2630-2, 19-2691-4

## TRANSPORT INFORMATION

### Air Transport (IATA)Regulations

**UN No** Not applicable

**Proper Shipping Name** Not applicable

**Hazard Class/Division** Not applicable

**Subsidiary Risk** Not applicable

**Packing Group:** Not applicable

**Marine Transport (IMDG)**

**UN No** Not applicable

**Proper Shipping Name** Not applicable

**Hazard Class/Division** Not applicable

**Subsidiary Risk** Not applicable

**Packing Group:** Not applicable

**Environmental Hazards:** Not applicable

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**3M India SDSs are available at <http://solutions.3mindia.co.in>**



## Safety Data Sheet

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<b>Document group:</b>	19-2691-4	<b>Version number:</b>	1.00
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This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Part A of 2-Part Epoxy Adhesive, Structural adhesive.

#### 1.3. Supplier's details

**Address:** 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100  
**Telephone:** 080-45543000, contact Product EHS team  
**E Mail:** productehs.in@mmm.com  
**Website:** <http://solutions.3mindia.co.in>

#### 1.4. Emergency telephone number

080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

### SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

#### 2.1. Classification of the substance or mixture

Acute Toxicity (oral): Category 5.  
Serious Eye Damage/Irritation: Category 1.  
Skin Corrosion/Irritation: Category 1B.  
Skin Sensitizer: Category 1.  
Specific Target Organ Toxicity (single exposure): Category 3.

#### 2.2. Label elements

##### Signal Word

DANGER!

##### Symbols

Corrosion | Exclamation mark |

**Pictograms**



**HAZARD STATEMENTS:**

H303 May be harmful if swallowed.  
 H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H336 May cause drowsiness or dizziness.

**PRECAUTIONARY STATEMENTS**

**Prevention:**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280D Wear protective gloves, protective clothing, and eye/face protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER or doctor/physician.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**2.3. Other hazards**

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines. - May cause chemical gastrointestinal burns.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
ALIPHATIC POLYMER DIAMINE	68911-25-1	40 - 70
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	10 - 30
Amine terminated butadiene-acrylonitrile polymer	Trade Secret	10 - 30
AMORPHOUS FUMED SILICA	67762-90-7	7 - 13
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	7 - 13
Titanium dioxide	13463-67-7	1 - 5
Bis[(dimethylamino)methyl]phenol	71074-89-0	< 3
N-aminoethylpiperazine	140-31-8	< 1

**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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**Eye contact**

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

**If swallowed**

Rinse mouth. Do not induce vomiting. Get immediate 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**

Amine compounds.  
Carbon monoxide.  
Carbon dioxide.  
Oxides of nitrogen.  
Toxic vapour, gas, particulate.

**Condition**

During combustion.  
During combustion.  
During combustion.  
During combustion.  
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**

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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 of vapours created during the cure cycle. For industrial/occupational use only. Not for consumer sale or use. Do not breathe dust/fume/gas/mist/vapours/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. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Store away from heat. Store away from acids.

## 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	CAS Nbr	Agency	Limit type	Additional comments
Titanium dioxide	13463-67-7	ACGIH	TWA:10 mg/m <sup>3</sup>	A4: Not class. as human carcin

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

Provide ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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/vapours/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:

Full face shield.

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

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - 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 vapours 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

<b>Physical state</b>	Solid.
<b>Specific Physical Form:</b>	Thixotropic paste
<b>Color</b>	Off-White
<b>Odor</b>	Typical Amine
<b>Odour threshold</b>	<i>No data available.</i>
<b>pH</b>	<i>Not applicable.</i>
<b>Melting point/Freezing point: NA</b>	<i>Not applicable.</i>
<b>Boiling point/Initial boiling point/Boiling range</b>	<i>Not applicable.</i>
<b>Flash point</b>	$\geq 100$ °C [ <i>Test Method: Closed Cup</i> ]
<b>Evaporation rate</b>	Negligible
<b>Flammability (solid, gas)</b>	Not classified
<b>Flammable Limits(LEL)</b>	<i>Not applicable.</i>
<b>Flammable Limits(UEL)</b>	<i>Not applicable.</i>
<b>Vapour pressure</b>	86,659.3 Pa
<b>Vapour density</b>	<i>Not applicable.</i>
<b>Density</b>	<i>No data available.</i>
<b>Relative density</b>	0.97 - 1.1 [ <i>Ref Std: WATER=1</i> ]
<b>Water solubility</b>	<i>No data available.</i>
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>Not applicable.</i>
<b>Autoignition temperature</b>	<i>Not applicable.</i>
<b>Decomposition temperature</b>	<i>No data available.</i>
<b>Viscosity</b>	70 - 155 Pa-s [ <i>@ 23 °C</i> ] [ <i>Test Method: Brookfield</i> ]
<b>Molecular weight</b>	<i>Not applicable.</i>
<b>Volatile organic compounds (VOC)</b>	<i>Not applicable.</i>
<b>Percent volatile</b>	$\leq 1$ % [ <i>Test Method: Estimated</i> ]
<b>VOC less H2O &amp; exempt solvents</b>	<i>Not applicable.</i>

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is considered to be non reactive under normal use conditions

### 10.2 Chemical stability

Stable.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

### 10.4 Conditions to avoid

Heat.

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.

#### **10.6 Hazardous decomposition products**

<u>Substance</u>	<u>Condition</u>
------------------	------------------

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 labelling, 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**

Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

##### **Eye contact**

Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

##### **Ingestion**

May be harmful if swallowed.

Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

#### **Additional Health Effects:**

##### **Single exposure may cause target organ effects:**

Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

##### **Additional information:**

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.



**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A****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
ALIPHATIC POLYMER DIAMINE	Dermal	Rat	LD50 > 2,000 mg/kg
ALIPHATIC POLYMER DIAMINE	Ingestion	Rat	LD50 > 2,000 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,500 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 3,160 mg/kg
Amine terminated butadiene-acrylonitrile polymer	Dermal	Rabbit	LD50 > 3,000 mg/kg
Amine terminated butadiene-acrylonitrile polymer	Ingestion	Rat	LD50 > 15,300 mg/kg
2,4,6-Tris(dimethylaminomethyl)-phenol	Dermal	Rat	LD50 1,280 mg/kg
2,4,6-Tris(dimethylaminomethyl)-phenol	Ingestion	Rat	LD50 1,000 mg/kg
AMORPHOUS FUMED SILICA	Dermal	Rabbit	LD50 > 5,000 mg/kg
AMORPHOUS FUMED SILICA	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
AMORPHOUS FUMED SILICA	Ingestion	Rat	LD50 > 5,110 mg/kg
Bis[(dimethylamino)methyl]phenol	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
N-aminoethylpiperazine	Dermal	Rabbit	LD50 865 mg/kg
N-aminoethylpiperazine	Ingestion	Rat	LD50 1,470 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
ALIPHATIC POLYMER DIAMINE	Rat	Irritant
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
2,4,6-Tris(dimethylaminomethyl)-phenol	Rabbit	Corrosive
AMORPHOUS FUMED SILICA	Rabbit	No significant irritation
Bis[(dimethylamino)methyl]phenol	similar compounds	Corrosive
Titanium dioxide	Rabbit	No significant irritation
N-aminoethylpiperazine	Rabbit	Corrosive

**Serious Eye Damage/Irritation**

Name	Species	Value
ALIPHATIC POLYMER DIAMINE	In vitro data	Severe irritant
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	similar health hazards	Corrosive
2,4,6-Tris(dimethylaminomethyl)-phenol	Rabbit	Corrosive
AMORPHOUS FUMED SILICA	Rabbit	No significant irritation
Bis[(dimethylamino)methyl]phenol	similar compounds	Corrosive
Titanium dioxide	Rabbit	No significant irritation
N-aminoethylpiperazine	Rabbit	Corrosive

**Skin Sensitisation**

Name	Species	Value
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**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A**

ALIPHATIC POLYMER DIAMINE	Guinea pig	Sensitising
Amine terminated butadiene-acrylonitrile polymer	Guinea pig	Not classified
2,4,6-Tris(dimethylaminomethyl)-phenol	Guinea pig	Not classified
AMORPHOUS FUMED SILICA	Human and animal	Not classified
Titanium dioxide	Human and animal	Not classified
N-aminoethylpiperazine	Guinea pig	Sensitising

**Respiratory Sensitisation**

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

**Germ Cell Mutagenicity**

Name	Route	Value
ALIPHATIC POLYMER DIAMINE	In Vitro	Not mutagenic
2,4,6-Tris(dimethylaminomethyl)-phenol	In Vitro	Not mutagenic
AMORPHOUS FUMED SILICA	In Vitro	Not mutagenic
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
N-aminoethylpiperazine	In vivo	Not mutagenic
N-aminoethylpiperazine	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
AMORPHOUS FUMED SILICA	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic.

**Reproductive Toxicity**
**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
AMORPHOUS FUMED SILICA	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
AMORPHOUS FUMED SILICA	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
AMORPHOUS FUMED SILICA	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
N-aminoethylpiperazine	Ingestion	Not classified for female reproduction	Rat	NOAEL 598 mg/kg/day	prematng & during gestation
N-aminoethylpiperazine	Ingestion	Not classified for male reproduction	Rat	NOAEL 409 mg/kg/day	32 days
N-aminoethylpiperazine	Ingestion	Not classified for development	Rat	NOAEL 899 mg/kg/day	prematng & during gestation

**Target Organ(s)**

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A****Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
ALIPHATIC POLYMER DIAMINE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
ALIPHATIC POLYMER DIAMINE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
2,4,6-Tris(dimethylaminomethyl)-phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
N-aminoethylpiperazine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2,4,6-Tris(dimethylaminomethyl)-phenol	Dermal	skin   liver   nervous system   auditory system   hematopoietic system   eyes	Not classified	Rat	NOAEL 125 mg/kg/day	28 days
AMORPHOUS FUMED SILICA	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
N-aminoethylpiperazine	Ingestion	heart   endocrine system   hematopoietic system   liver   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 598 mg/kg/day	28 days

**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**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

**12.1. Toxicity****Acute aquatic hazard:**

Not acutely toxic to aquatic life by GHS criteria.

**Chronic aquatic hazard:**

Not chronically toxic to aquatic life by GHS criteria.

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A**

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
ALIPHATIC POLYMER DIAMINE	68911-25-1		Data not available or insufficient for classification			
Amine terminated butadiene-acrylonitrile polymer	Trade Secret		Data not available or insufficient for classification			
3,3'-Oxybis(ethylen eoxy)bis(propylamine)	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
3,3'-Oxybis(ethylen eoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	EC50	>500 mg/l
3,3'-Oxybis(ethylen eoxy)bis(propylamine)	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l
3,3'-Oxybis(ethylen eoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	Effect Concentration 10%	5.4 mg/l
AMORPHOUS FUMED SILICA	67762-90-7		Data not available or insufficient for classification			
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	175 mg/l
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Grass Shrimp	Experimental	96 hours	LC50	718 mg/l
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Green algae	Experimental	72 hours	EC50	84 mg/l
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.25 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A**

Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l
Bis[(dimethylamino)methyl]phenol	71074-89-0		Data not available or insufficient for classification			
N-aminoethylpiperazine	140-31-8	Golden Orfe	Experimental	96 hours	LC50	368 mg/l
N-aminoethylpiperazine	140-31-8	Green Algae	Experimental	72 hours	EC50	>1,000 mg/l
N-aminoethylpiperazine	140-31-8	Water flea	Experimental	48 hours	EC50	58 mg/l
N-aminoethylpiperazine	140-31-8	Green Algae	Experimental	72 hours	NOEC	31 mg/l

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
ALIPHATIC POLYMER DIAMINE	68911-25-1	Data not available-insufficient			N/A	
Amine terminated butadiene-acrylonitrile polymer	Trade Secret	Data not available-insufficient			N/A	
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t <sub>1/2</sub> )	Other methods
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Biodegradation	25 days	CO <sub>2</sub> evolution	-8 %CO <sub>2</sub> evolution/THC O <sub>2</sub> evolution	OECD 301B - Modified sturm or CO <sub>2</sub>
AMORPHOUS FUMED SILICA	67762-90-7	Data not available-insufficient			N/A	
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Experimental Biodegradation	28 days	BOD	4 % weight	OECD 301D - Closed bottle test
Titanium dioxide	13463-67-7	Data not available-insufficient			N/A	
Bis[(dimethylamino)methyl]phenol	71074-89-0	Estimated Biodegradation	28 days	BOD	20 % weight	OECD 301C - MITI test (I)
N-aminoethylpiperazine	140-31-8	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	OECD 301C - MITI test (I)

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A****12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
ALIPHATIC POLYMER DIAMINE	68911-25-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Amine terminated butadiene-acrylonitrile polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	Other methods
AMORPHOUS FUMED SILICA	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2,4,6-Tris(dimethylaminomethyl)-phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	Other methods
Titanium dioxide	13463-67-7	Experimental BCF-Carp	42 days	Bioaccumulation factor	9.6	Other methods
Bis[(dimethylamino)methyl]phenol	71074-89-0	Estimated Bioconcentration		Log Kow	-2.34	Estimated: Octanol-water partition coefficient
N-aminoethylpiperazine	140-31-8	Experimental Bioconcentration		Log Kow	0.3	Other methods

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5 Other Adverse effects**

No information available.

**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 polymerised) 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.

**SECTION 14: Transport Information**

## 3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part A

### Air Transport (IATA) Regulations

UN No UN3263

**Proper Shipping Name** CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (3,3'-Oxybis(Ethyleneoxy)Bis(Propylamine) and 2,4,6Tris((Dimehtylamino)Methyl)Phenol))

**Hazard Class/Division** 8

**Subsidiary Risk** Not applicable

**Packing Group:** II

### Marine Transport (IMDG)

UN No UN3263

**Proper Shipping Name** CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (3,3'-Oxybis(Ethyleneoxy)Bis(Propylamine) and 2,4,6Tris((Dimehtylamino)Methyl)Phenol))

**Hazard Class/Division** 8

**Subsidiary Risk** Not applicable

**Packing Group:** II

**Environmental Hazards:** Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Global inventory status

Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

#### Applicable Environmental, Health and Safety Regulations

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

Hazardous Waste(Management , Handling & Transboundary) Rules, 2008

Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules

None.

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:

The product is classified as Non-Hazardous as per MSIHC Rules, 1989.

## SECTION 16: Other information

### NFPA Hazard Classification

**Health:** 3 **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.

### Revision information:

No revision information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to

satisfy themselves as to the suitability of the product for their own intended applications.

**3M India SDSs are available at <http://solutions.3mindia.co.in>**





## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Part B of 2-Part Epoxy Adhesive, Structural adhesive.

#### 1.3. Supplier's details

**Address:** 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100  
**Telephone:** 080-45543000, contact Product EHS team  
**E Mail:** productehs.in@mmm.com  
**Website:** <http://solutions.3mindia.co.in>

#### 1.4. Emergency telephone number

080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

### SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

#### 2.1. Classification of the substance or mixture

Serious Eye Damage/Irritation: Category 2A

Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1.

Acute Aquatic Toxicity: Category 2.

Chronic Aquatic Toxicity: Category 2.

#### 2.2. Label elements

##### Signal Word

WARNING!

##### Symbols

Exclamation mark |Environment |

## 3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B

### Pictograms



### HAZARD STATEMENTS:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

### PRECAUTIONARY STATEMENTS

#### Prevention:

P280E	Wear protective gloves.
P273	Avoid release to the environment.

#### Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

#### Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.
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### 2.3. Other hazards

None known.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	40 - 70
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	10 - 20
Acrylate/methacrylate/butadiene/styrene polymer	Trade Secret	< 20
Acrylic butadiene styrene copolymer	Trade Secret	10 - 20
AMORPHOUS FUMED SILICA	67762-90-7	1 - 5
Carbon black	1333-86-4	1 - 5
SODIUM BOROSILICATE	65997-17-3	1 - 5
Titanium dioxide	13463-67-7	1 - 5
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	2530-83-8	< 2
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	< 2

## 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

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. 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 carbon dioxide or dry chemical extinguisher to extinguish.

### 5.2. Special hazards arising from the substance or mixture

None inherent in this product.

### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	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**

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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 of vapours created during the cure cycle. For industrial/occupational use only. Not for consumer sale or use. Decontaminate work surfaces frequently to avoid exposure by contact. 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 oxidising agents (eg. chlorine, chromic acid etc.)

**7.2. Conditions for safe storage including any incompatibilities**

Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidising 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.

<b>Ingredient</b>	<b>CAS Nbr</b>	<b>Agency</b>	<b>Limit type</b>	<b>Additional comments</b>
Carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m3	A3: Confirmed animal carcin.
Titanium dioxide	13463-67-7	ACGIH	TWA:10 mg/m <sup>3</sup>	A4: Not class. as human carcin
SODIUM BOROSILICATE	65997-17-3	Manufacturer determined	TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3;TWA(as non-fibrous, respirable)(8 hours):3 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists  
 AIHA : American Industrial Hygiene Association  
 CMRG : Chemical Manufacturer's Recommended Guidelines  
 TWA: Time-Weighted-Average  
 STEL: Short Term Exposure Limit  
 CEIL: Ceiling

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Provide ventilated enclosure for curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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/vapours/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

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - 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 vapours 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**

<b>Physical state</b>	Solid.
<b>Specific Physical Form:</b>	Thixotropic paste
<b>Color</b>	Black
<b>Odor</b>	Mild Epoxy
<b>Odour threshold</b>	<i>No data available.</i>
<b>pH</b>	<i>No data available.</i>
<b>Melting point/Freezing point: NA</b>	<i>No data available.</i>
<b>Boiling point/Initial boiling point/Boiling range</b>	<i>No data available.</i>
<b>Flash point</b>	>=93.3 °C [ <i>Test Method</i> :Closed Cup]
<b>Evaporation rate</b>	<i>Not applicable.</i>
<b>Flammability (solid, gas)</b>	Not classified
<b>Flammable Limits(LEL)</b>	<i>No data available.</i>
<b>Flammable Limits(UEL)</b>	<i>No data available.</i>
<b>Vapour pressure</b>	< 0.01 Pa [ <i>@ 20 °C</i> ]
<b>Vapour density</b>	<i>Not applicable.</i>
<b>Density</b>	<i>No data available.</i>
<b>Relative density</b>	0.97 - 1.1 [ <i>@ 23 °C</i> ] [ <i>Ref Std</i> :WATER=1]
<b>Water solubility</b>	<i>No data available.</i>
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>Not applicable.</i>
<b>Autoignition temperature</b>	<i>No data available.</i>
<b>Decomposition temperature</b>	<i>No data available.</i>
<b>Viscosity</b>	300 - 900 Pa-s [ <i>@ 23 °C</i> ] [ <i>Test Method</i> :Brookfield]
<b>Molecular weight</b>	<i>Not applicable.</i>
<b>Volatile organic compounds (VOC)</b>	11.2 g/l [ <i>Test Method</i> :calculated SCAQMD rule 443.1] [ <i>Details</i> :as supplied]
<b>Volatile organic compounds (VOC)</b>	1.1 % [ <i>Test Method</i> :calculated SCAQMD rule 443.1] [ <i>Details</i> :as supplied]
<b>Volatile organic compounds (VOC)</b>	< 3 g/l [ <i>Test Method</i> :calculated SCAQMD rule 443.1] [ <i>Details</i> :when used as intended with Part A (est.)]

Percent volatile

1 % [*Test Method*:Estimated]

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is considered to be non reactive under normal use conditions

### 10.2 Chemical stability

Stable.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation 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 oxidising agents.

### 10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
------------------	------------------

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 labelling, 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.

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

**Ingestion**

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

**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
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Rat	LD50 > 1,000 mg/kg
Acrylate/methacrylate/butadiene/styrene polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Acrylate/methacrylate/butadiene/styrene polymer	Ingestion	Rat	LD50 > 5,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.19 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Rat	LD50 1,098 mg/kg
AMORPHOUS FUMED SILICA	Dermal	Rabbit	LD50 > 5,000 mg/kg
AMORPHOUS FUMED SILICA	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
AMORPHOUS FUMED SILICA	Ingestion	Rat	LD50 > 5,110 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg
SODIUM BOROSILICATE	Dermal		LD50 estimated to be > 5,000 mg/kg
SODIUM BOROSILICATE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Rabbit	LD50 4,000 mg/kg
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Rat	LD50 7,010 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Rabbit	Mild irritant
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	Irritant
AMORPHOUS FUMED SILICA	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation
SODIUM BOROSILICATE	Professional judgement	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Mild irritant

**Serious Eye Damage/Irritation**

Name	Species	Value

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Rabbit	Moderate irritant
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vitro data	No significant irritation
AMORPHOUS FUMED SILICA	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation
SODIUM BOROSILICATE	Professional judgement	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Rabbit	Corrosive

**Skin Sensitisation**

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Human and animal	Sensitising
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Mouse	Sensitising
AMORPHOUS FUMED SILICA	Human and animal	Not classified
Titanium dioxide	Human and animal	Not classified
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Guinea pig	Not classified

**Respiratory Sensitisation**

Name	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Human	Not classified

**Germ Cell Mutagenicity**

Name	Route	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	In vivo	Not mutagenic
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In vivo	Not mutagenic
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	In Vitro	Some positive data exist, but the data are not sufficient for classification
AMORPHOUS FUMED SILICA	In Vitro	Not mutagenic
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification
SODIUM BOROSILICATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In vivo	Not mutagenic
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	In Vitro	Some positive data exist, but the data are not sufficient for classification

**Carcinogenicity**

Name	Route	Species	Value
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
AMORPHOUS FUMED SILICA	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal	Mouse	Not carcinogenic



**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.
SODIUM BOROSILICATE	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic.
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Dermal	Mouse	Not carcinogenic

**Reproductive Toxicity**
**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	prematuring into lactation
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for male reproduction	Rat	NOAEL 300 mg/kg/day	33 days
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	prematuring into lactation
AMORPHOUS FUMED SILICA	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
AMORPHOUS FUMED SILICA	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
AMORPHOUS FUMED SILICA	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
[3-(2,3-Epoxypropoxy)propyl] trimethoxysilane	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis

**Target Organ(s)**
**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4,4'-Isopropylidenediphenol,	Dermal	liver	Not classified	Rat	NOAEL 1,000	2 years

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

oligomeric reaction products with 1-chloro-2,3-epoxypropane					mg/kg/day	
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	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
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	Ingestion	endocrine system   gastrointestinal tract   liver   heart   hematopoietic system   immune system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	33 days
AMORPHOUS FUMED SILICA	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
SODIUM BOROSILICATE	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	Ingestion	heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

**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**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

**12.1. Toxicity**
**Acute aquatic hazard:**

GHS Acute 2: Toxic to aquatic life.

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**
**Chronic aquatic hazard:**

GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Water flea	Estimated	48 hours	LC50	1.8 mg/l
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Green Algae	Experimental	72 hours	EC50	>11 mg/l
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Green Algae	Experimental	72 hours	NOEC	4.2 mg/l
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Water flea	Experimental	21 days	NOEC	0.3 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Green algae	Estimated	72 hours	EC50	26.7 mg/l
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Rainbow trout	Estimated	96 hours	LC50	10.1 mg/l
1,4-Bis[(2,3-	14228-73-0	Water flea	Estimated	48 hours	EC50	16.3 mg/l

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

epoxypropoxy) methyl]cyclohexane						
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Green algae	Estimated	72 hours	Effect Concentration 10%	21.4 mg/l
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Water flea	Estimated	21 days	NOEC	11.7 mg/l
Acrylate/methacrylate/butadiene/styrene polymer	Trade Secret		Data not available or insufficient for classification			
AMORPHOUS FUMED SILICA	67762-90-7		Data not available or insufficient for classification			
Carbon black	1333-86-4		Data not available or insufficient for classification			
SODIUM BOROSILICATE	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
SODIUM BOROSILICATE	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
SODIUM BOROSILICATE	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
SODIUM BOROSILICATE	65997-17-3	Green algae	Experimental	72 hours	NOEC	≥1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Common Carp	Experimental	96 hours	LC50	55 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Crustacea other	Experimental	48 hours	LC50	324 mg/l
[3-(2,3-Epoxypropoxy)	2530-83-8	Green algae	Experimental	96 hours	EC50	350 mg/l

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

propyl] trimethoxysilane						
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Green Algae	Experimental	96 hours	NOEC	130 mg/l
[3-(2,3-Epoxypropoxy) propyl] trimethoxysilane	2530-83-8	Water flea	Experimental	21 days	NOEC	>=100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Green algae	Experimental	72 hours	EC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Water flea	Experimental	48 hours	EC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Green algae	Experimental	72 hours	NOEC	100 mg/l

**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Experimental Hydrolysis		Hydrolytic half-life	117 hours (t <sub>1/2</sub> )	Other methods
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
1,4-Bis[(2,3-epoxypropoxy) methyl]cyclohexane	14228-73-0	Estimated Biodegradation	28 days	Dissolv. Organic Carbon Deplet	16.6 %removal of DOC	OECD 301F - Manometric respirometry
Acrylate/methacrylate/butadie	Trade Secret	Data not available-			N/A	

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

ne/styrene polymer		insufficient				
AMORPHOUS FUMED SILICA	67762-90-7	Data not available-insufficient			N/A	
Carbon black	1333-86-4	Data not available-insufficient			N/A	
SODIUM BOROSILICATE	65997-17-3	Data not available-insufficient			N/A	
Titanium dioxide	13463-67-7	Data not available-insufficient			N/A	
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Other methods
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Other methods
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Experimental Hydrolysis		Hydrolytic half-life	36 hours (t 1/2)	Other methods
Silane, triethoxy[3-(oxiranylmethoxy)propyl]-	2602-34-8	Experimental Biodegradation	28 days	BOD	53 % BOD/ThBOD	OECD 301F - Manometric respirometry

**12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4,4'-Isopropylidene diphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6	Experimental Bioconcentration		Log Kow	3.242	Other methods
1,4-Bis[(2,3-epoxypropoxy)methyl]cyclohexane	14228-73-0	Estimated Bioconcentration		Bioaccumulation factor	3	Estimated: Bioconcentration factor
Acrylate/methacrylate/butadiene/styrene polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
AMORPHOUS FUMED SILICA	67762-90-7	Data not available or insufficient for	N/A	N/A	N/A	N/A

**3M™ Scotch-Weld™ DP-490 Black Structural Adhesive Part B**

		classification				
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
SODIUM BOROSILICATE	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Experimental BCF-Carp	42 days	Bioaccumulation factor	9.6	Other methods
[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane	2530-83-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silane, triethoxy[3-(oxiranylethoxy)propyl]-	2602-34-8	Estimated Bioconcentration		Bioaccumulation factor	2.5	Estimated: Bioconcentration factor

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5 Other Adverse effects**

No information available.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

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

Dispose of waste product in a permitted industrial waste facility. 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.

**SECTION 14: Transport Information****Air Transport (IATA) Regulations**

UN No UN3077

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Solid Epoxy Resin)

**Hazard Class/Division** 9

**Subsidiary Risk** Not applicable

**Packing Group:** III

**Marine Transport (IMDG)**

UN No UN3077

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Solid Epoxy Resin)

**Hazard Class/Division** 9

**Subsidiary Risk** Not applicable

**Packing Group:** III

**Environmental Hazards:** Marine Pollutant: Yes

## **SECTION 15: Regulatory information**

### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

#### **Global inventory status**

Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

#### **Applicable Environmental, Health and Safety Regulations**

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

Hazardous Waste(Management , Handling & Transboundary) Rules, 2008

Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules

None.

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:

The product is classified as Non-Hazardous as per MSIHC Rules, 1989.

## **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.

#### **Revision information:**

No revision information

**DISCLAIMER:** The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

**3M India SDSs are available at <http://solutions.3mindia.co.in>**