



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Weld™ Urethane Adhesive DP601 Gray and Urethane Adhesive 601 Gray, Part B

Product Identification Numbers

62-2649-8530-0, 62-2649-9530-9

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 1A.

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.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|-------------|------------------------|
| Polyether Polyol | 9082-00-2 | 40 - 70 Trade Secret * |
| Tetrakis(2-hydroxypropyl)ethylenediamine | 102-60-3 | 10 - 30 Trade Secret * |
| Propoxylated Trimethylolpropane | 25723-16-4 | 10 - 30 Trade Secret * |
| Amorphous Silica | 68611-44-9 | 1 - 5 Trade Secret * |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | <= 0.5 Trade Secret * |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | 41556-26-7 | <= 0.5 Trade Secret * |
| Polymeric Benzotriazole | 104810-48-2 | <= 0.5 Trade Secret * |
| Polymeric Benzotriazole | 104810-47-1 | <= 0.5 Trade Secret * |
| Substituted Piperidinyl Sebacate | 82919-37-7 | <= 0.2 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

Carbon monoxide
Carbon dioxide
Hydrogen Chloride
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

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. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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.

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 |
|---|------------|--------|--|---------------------|
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | ACGIH | CEIL:0.1 mg/m3 | Skin Notation |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | 41556-26-7 | CMRG | TWA:1 mg/m3 | |
| SILICA, AMORPHOUS | 68611-44-9 | OSHA | TWA concentration:0.8 mg/m3;TWA:20 millions of particles/cu. ft. | |
| Substituted Piperidinyl Sebacate | 82919-37-7 | CMRG | TWA:1 mg/m3 | |

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.

Gloves made from the following material(s) are recommended: Butyl Rubber
Fluoroelastomer
Neoprene

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: | Slight ammonia like odor, gray. |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>Not Applicable</i> |
| Melting point | <i>No Data Available</i> |
| Boiling Point | >=400 °F |
| Flash Point | >=290 °F [<i>Test Method:</i> Tagliabue Closed Cup] |
| Evaporation rate | <=1 [<i>Ref Std:</i> WATER=1] |
| Flammability (solid, gas) | Not Applicable |
| Flammable Limits(LEL) | <i>Not Applicable</i> |
| Flammable Limits(UEL) | <i>Not Applicable</i> |
| Vapor Pressure | <i>Not Applicable</i> |
| Vapor Density | >=1 [<i>Ref Std:</i> AIR=1] |
| Density | 1.04 g/ml |
| Specific Gravity | 1.04 [<i>Ref Std:</i> WATER=1] |
| Solubility in Water | Negligible |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>Not Applicable</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | 3,200 - 5,600 centipoise |
| Hazardous Air Pollutants | 0 % weight [<i>Test Method:</i> Calculated] |
| VOC Less H2O & Exempt Solvents | 0 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1] [<i>Details:</i> when used as intended with Part A] |
| VOC Less H2O & Exempt Solvents | 0 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1] [<i>Details:</i> as supplied] |
| VOC Less H2O & Exempt Solvents | 0 % [<i>Test Method:</i> calculated SCAQMD rule 443.1] [<i>Details:</i> 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

None known.

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:

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

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

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

Ingestion:

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

Toxicological Data

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

Acute Toxicity

| Name | Route | Species | Value |
|---------------------------------|-----------|---------|---|
| Overall product | Ingestion | | No data available; calculated ATE > 5,000 mg/kg |
| Polyether Polyol | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Polyether Polyol | Ingestion | Rat | LD50 > 10,000 mg/kg |
| Propoxylated Trimethylolpropane | Dermal | Rat | LD50 > 2,000 mg/kg |
| Propoxylated Trimethylolpropane | Ingestion | Rat | LD50 > 2,500 mg/kg |

| | | | |
|---|--------------------------------|--------|--------------------|
| Tetrakis(2-hydroxypropyl)ethylenediamine | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| Tetrakis(2-hydroxypropyl)ethylenediamine | Ingestion | Rat | LD50 3,280 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 |
| m-Xylene-.alpha.alpha'.-diamine | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| m-Xylene-.alpha.alpha'.-diamine | Inhalation-Dust/Mist (4 hours) | Rat | LC50 1.2 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | Rat | LD50 980 mg/kg |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | Ingestion | Rat | LD50 3,125 mg/kg |
| Polymeric Benzotriazole | Dermal | Rat | LD50 > 2,000 mg/kg |
| Polymeric Benzotriazole | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.8 mg/l |
| Polymeric Benzotriazole | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Substituted Piperidinyl Sebacate | Ingestion | Rat | LD50 3,125 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---|---------|---------------------------|
| Propoxylated Trimethylolpropane | Rabbit | No significant irritation |
| Amorphous Silica | Rabbit | No significant irritation |
| m-Xylene-.alpha.alpha'.-diamine | Rat | Corrosive |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | Rabbit | No significant irritation |
| Polymeric Benzotriazole | Rabbit | No significant irritation |
| Substituted Piperidinyl Sebacate | Rabbit | No significant irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|---------|---------------------------|
| Propoxylated Trimethylolpropane | Rabbit | Mild irritant |
| Amorphous Silica | Rabbit | No significant irritation |
| m-Xylene-.alpha.alpha'.-diamine | Rabbit | Corrosive |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | Rabbit | No significant irritation |
| Polymeric Benzotriazole | Rabbit | No significant irritation |
| Substituted Piperidinyl Sebacate | Rabbit | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|---|------------------|-----------------|
| Amorphous Silica | Human and animal | Not sensitizing |
| m-Xylene-.alpha.alpha'.-diamine | Guinea pig | Sensitizing |
| Bis(1,2,2,6,6-pentamethyl-4-piperidinyl) sebacate | Guinea pig | Sensitizing |
| Polymeric Benzotriazole | Guinea pig | Sensitizing |
| Substituted Piperidinyl Sebacate | Guinea pig | Sensitizing |

Respiratory Sensitization

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

Germ Cell Mutagenicity

| Name | Route | Value |
|---------------------------------|----------|---------------|
| Amorphous Silica | In Vitro | Not mutagenic |
| m-Xylene-.alpha.alpha'.-diamine | In Vitro | Not mutagenic |
| m-Xylene-.alpha.alpha'.-diamine | In vivo | Not mutagenic |

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| | | |
|---|----------|---------------|
| Bis(1,2,2,6,6-pentamethyl-4-piperidiny)l sebacate | In Vitro | Not mutagenic |
| Substituted Piperidiny Sebacate | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|------------------|---------------|---------|--|
| 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 |
|---------------------------------|-----------|----------------------------------|---------|-----------------------|----------------------|
| Amorphous Silica | Ingestion | Not toxic to female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Amorphous Silica | Ingestion | Not toxic to male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Amorphous Silica | Ingestion | Not toxic to development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| m-Xylene-.alpha.alpha'-.diamine | Ingestion | Not toxic to female reproduction | Rat | NOAEL 450 mg/kg/day | 1 generation |
| m-Xylene-.alpha.alpha'-.diamine | Ingestion | Not toxic to male reproduction | Rat | NOAEL 450 mg/kg | 1 generation |
| m-Xylene-.alpha.alpha'-.diamine | Ingestion | Not toxic to development | Rat | NOAEL 450 mg/kg/day | 1 generation |

Target Organ(s)

Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---------------------------------|------------|------------------------|--|---------------|---------------------|-------------------|
| m-Xylene-.alpha.alpha'-.diamine | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Not available | NOAEL Not available | |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---------------------------------|------------|--|--|---------|---------------------|-----------------------|
| Amorphous Silica | Inhalation | respiratory system silicosis | All data are negative | Human | NOAEL Not available | occupational exposure |
| m-Xylene-.alpha.alpha'-.diamine | Ingestion | endocrine system blood bone marrow | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 600 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

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.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

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

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

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

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 1 **Instability:** 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.

HMIS Hazard Classification

Health: *2 **Flammability:** 1 **Physical Hazard:** 1 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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