



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M(TM) Scotch-Weld(TM) Urethane Adhesive DP604NS Black and Urethane Adhesive 604NS Black, Part B

Product Identification Numbers

62-2648-8530-2, 62-2648-9530-1, 62-2648-9531-9
7010367265, 7010412243

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 1.

Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Corrosion | Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

Causes serious eye damage.

Causes skin irritation.

May cause an allergic skin reaction.

Causes damage to organs through prolonged or repeated exposure:
liver |

May cause damage to organs through prolonged or repeated exposure:
endocrine system |

Precautionary Statements**Prevention:**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves and eye/face protection.

Do not eat, drink or smoke when using this product.

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 ON SKIN: Wash with plenty of soap and water.

Immediately call a POISON CENTER or doctor/physician.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Get medical advice/attention if you feel unwell.

Disposal:

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

Supplemental Information:

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

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---------------------------------|------------|------------------------|
| Polyether Polyol | 9082-00-2 | 60 - 90 Trade Secret * |
| Diethyltoluenediamine | 68479-98-1 | 5 - 20 Trade Secret * |
| Propoxylated Trimethylolpropane | 25723-16-4 | 1 - 10 Trade Secret * |
| m-xylene-alpha, alpha'-diamine | 1477-55-0 | < 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:

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. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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

Aldehydes
Carbon monoxide
Carbon dioxide
Oxides of Nitrogen
Toxic Vapor, 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. 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

For industrial/occupational use only. Not for consumer sale or use. Do not breathe 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:0.018 ppm | Danger of cutaneous absorption |

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:

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 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

Appearance

Physical state

Liquid

Color

Dark Amber, Green, Light Amber

Specific Physical Form:

Viscous

Odor

Slight Ammoniacal

Odor threshold

No Data Available

pH

Not Applicable

Melting point

No Data Available

Boiling Point

≥ 410 °F

Flash Point

≥ 290 °F [*Test Method*: Tagliabue Closed Cup]

Evaporation rate

≤ 1 [*Ref Std*: WATER=1]

Flammability (solid, gas)

Not Applicable

Flammable Limits(LEL)

Not Applicable

Flammable Limits(UEL)

Not Applicable

Vapor Pressure

Not Applicable

Vapor Density

≥ 1 [*Ref Std*: AIR=1]

Density

1.035 g/ml

Specific Gravity

1.035 [*Ref Std*: WATER=1]

Solubility in Water

Negligible

Solubility- non-water

No Data Available

Partition coefficient: n-octanol/ water

No Data Available

Autoignition temperature

Not Applicable

Decomposition temperature

No Data Available

Viscosity

1,200 - 2,200 centipoise

Hazardous Air Pollutants

0 % weight [*Test Method*: Calculated]

Molecular weight

No Data Available

VOC Less H₂O & Exempt Solvents

0.5 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

0.05 % [*Test Method*: calculated SCAQMD rule 443.1]
[*Details*: when used as intended with Part A]

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat 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

| <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 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:

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

May cause additional health effects (see below).

Additional Health Effects:**Prolonged or repeated exposure may cause target organ effects:**

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Endocrine Effects: Signs/symptoms may include disruption of gonadal, thyroid, adrenal, or pancreatic function; changes in hormone production; alterations in circulating hormone levels; and/or changes in tissue response to hormones.

Additional Information:

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

Increased numbers of tumors in the liver, thyroid, and possibly the mammary glands were observed in rats given DETDA (CAS No. 68479-98-1) in their diet for two years.

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 |
| Polyether Polyol | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Polyether Polyol | Ingestion | Rat | LD50 > 10,000 mg/kg |
| Diethyltoluenediamine | Dermal | Rat | LD50 > 2,000 mg/kg |
| Diethyltoluenediamine | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.61 mg/l |
| Diethyltoluenediamine | Ingestion | Rat | LD50 472 mg/kg |
| Propoxylated Trimethylolpropane | Dermal | Rat | LD50 > 2,000 mg/kg |
| Propoxylated Trimethylolpropane | Ingestion | Rat | LD50 > 2,500 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 |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---------------------------------|---------|---------------------------|
| Diethyltoluenediamine | Rabbit | No significant irritation |
| Propoxylated Trimethylolpropane | Rabbit | No significant irritation |
| m-xylene-alpha, alpha'-diamine | Rat | Corrosive |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---------------------------------|---------|-----------------|
| Diethyltoluenediamine | Rabbit | Severe irritant |
| Propoxylated Trimethylolpropane | Rabbit | Mild irritant |
| m-xylene-alpha, alpha'-diamine | Rabbit | Corrosive |

Skin Sensitization

| Name | Species | Value |
|--------------------------------|---------|----------------|
| Diethyltoluenediamine | Human | Not classified |
| m-xylene-alpha, alpha'-diamine | Guinea | Sensitizing |

pig

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 |
|--------------------------------|----------|--|
| Diethyltoluenediamine | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Diethyltoluenediamine | In vivo | Some positive data exist, but the data are not sufficient for classification |
| m-xylene-alpha, alpha'-diamine | In Vitro | Not mutagenic |
| m-xylene-alpha, alpha'-diamine | In vivo | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|-----------------------|-----------|---------|--|
| Diethyltoluenediamine | Ingestion | Rat | 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 |
|--------------------------------|-----------|--|---------|---------------------|-------------------|
| m-xylene-alpha, alpha'-diamine | Ingestion | Not classified for female reproduction | Rat | NOAEL 450 mg/kg/day | 1 generation |
| m-xylene-alpha, alpha'-diamine | Ingestion | Not classified for male reproduction | Rat | NOAEL 450 mg/kg | 1 generation |
| m-xylene-alpha, alpha'-diamine | Ingestion | Not classified for 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 |
|--------------------------------|-----------|---|--|---------|---------------------|-------------------|
| Diethyltoluenediamine | Ingestion | liver | Causes damage to organs through prolonged or repeated exposure | Rat | LOAEL 0.4 mg/kg/day | 24 months |
| Diethyltoluenediamine | Ingestion | endocrine system | May cause damage to organs though prolonged or repeated exposure | Rat | NOAEL 1.4 mg/kg/day | 24 months |
| Diethyltoluenediamine | Ingestion | kidney and/or bladder | Not classified | Rat | NOAEL 2.8 mg/kg/day | 24 months |
| Diethyltoluenediamine | Ingestion | eyes | Not classified | Rat | NOAEL 1.4 mg/kg/day | 24 months |
| Diethyltoluenediamine | Ingestion | heart skin bone, teeth, nails, and/or hair hematopoietic system immune system muscles nervous system respiratory system | Not classified | Rat | NOAEL 3.5 mg/kg/day | 24 months |
| m-xylene-alpha, alpha'-diamine | Ingestion | endocrine system blood bone marrow | Not classified | 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. 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

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

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. All required components of this product are listed on the active portion of the TSCA Inventory.

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: 3 **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: *3 **Flammability:** 1 **Physical Hazard:** 1 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) 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® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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