



Safety Data Sheet

Copyright,2023, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

Document Group:	18-0732-0	Version Number:	5.05
Issue Date:	07/14/23	Supersedes Date:	10/03/22

Product identifier

3M™ Scotch-Weld™ Urethane Adhesive DP604NS Black

ID Number(s):

62-2648-3530-7, 62-2648-5030-6, 62-2648-5031-4, 62-2648-5035-5, 62-2648-5037-1

7000000822, 7000121228, 7100069452, 7100148738, 7010408993

Recommended use

Structural adhesive

Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division

ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

Emergency telephone number

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

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

18-0718-9, 18-0723-9

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the SDS available directly from 3M.

3M USA SDSs are available at www.3M.com



Safety Data Sheet

Copyright,2026, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

Document Group:	18-0718-9	Version Number:	10.05
Issue Date:	03/12/26	Supersedes Date:	07/06/23

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

Skin Corrosion/Irritation: Category 2.

Serious Eye Damage/Irritation: Category 1.

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 skin irritation.
Causes serious eye damage.
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 vapors.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, eye protection, and face protection.

Response:

IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical attention if you feel unwell.
If skin irritation or rash occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.

Disposal:

Dispose of contents and container in accordance with applicable local, regional, national, and 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 *
Polyol (NJTS Reg. No. 04466600-7463)	Trade Secret*	1 - 10 Trade Secret *
m-xylene-alpha, alpha'-diamine	1477-55-0	< 5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

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

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

Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. 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.

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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

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

Physical state	Liquid
Specific Physical Form:	Viscous
Color	Dark Amber, Green, Light Amber
Odor	Slight Ammoniacal
Odor threshold	No Data Available
pH	Not Applicable
Melting point/Freezing point	No Data Available
Boiling point/Initial boiling point/Boiling range	>=210 °C
Flash Point	>=143.3 °C [Test Method: Tagliabue Closed Cup]
Evaporation rate	<=1 [Ref Std: WATER=1]
Flammability	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	Not Applicable
Relative Vapor Density	>=1 [Ref Std: AIR=1]
Density	1.035 g/ml
Relative Density	1.035 [Ref Std: WATER=1]
Water solubility	Negligible
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Kinematic Viscosity	1,546 mm ² /sec
Volatile Organic Compounds	No Data Available

Percent volatile	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]
Molecular weight	No Data Available

Particle Characteristics	Not Applicable
--------------------------	----------------

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	similar compounds	LD50 > 2,000 mg/kg
Polyether Polyol	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 3.2 mg/l
Polyether Polyol	Ingestion	similar compounds	LD50 > 5,000 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
Polyol (NJTS Reg. No. 04466600-7463)	Dermal	Rat	LD50 > 2,000 mg/kg
Polyol (NJTS Reg. No. 04466600-7463)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
Polyol (NJTS Reg. No. 04466600-7463)	Ingestion	Rat	LD50 4,600 mg/kg
m-xylene-alpha, alpha'-diamine	Dermal	Rabbit	LD50 > 2,000 mg/kg
m-xylene-alpha, alpha'-diamine	Inhalation-	Rat	LC50 1.2 mg/l

	Dust/Mist (4 hours)		
m-xylene-alpha, alpha'-diamine	Ingestion	Rat	LD50 980 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polyether Polyol	similar compounds	Minimal irritation
Diethyltoluenediamine	Rabbit	No significant irritation
Polyol (NJTS Reg. No. 04466600-7463)	Rabbit	No significant irritation
m-xylene-alpha, alpha'-diamine	Rat	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polyether Polyol	similar compounds	Mild irritant
Diethyltoluenediamine	Rabbit	Severe irritant
Polyol (NJTS Reg. No. 04466600-7463)	Rabbit	Mild irritant
m-xylene-alpha, alpha'-diamine	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Polyether Polyol	similar compounds	Not classified
Diethyltoluenediamine	Human	Not classified
m-xylene-alpha, alpha'-diamine	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
Polyether Polyol	In Vitro	Not mutagenic
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	prematuring into lactation
m-xylene-alpha, alpha'-diamine	Ingestion	Not classified for male reproduction	Rat	NOAEL 450	48 days

				mg/kg/day	
m-xylene-alpha, alpha'-diamine	Ingestion	Not classified for development	Rat	NOAEL 450 mg/kg/day	prematuring into lactation

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	May cause respiratory irritation	similar health hazards	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	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	skin	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	immune system	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	muscles	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	nervous system	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
Diethyltoluenediamine	Ingestion	respiratory system	Not classified	Rat	NOAEL 3.5 mg/kg/day	24 months
m-xylene-alpha, alpha'-diamine	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.005 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	heart	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	skin	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	liver	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	immune system	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	muscles	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	nervous system	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	eyes	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks

m-xylene-alpha, alpha'-diamine	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Inhalation	vascular system	Not classified	Rat	NOAEL 0.03 mg/l	13 weeks
m-xylene-alpha, alpha'-diamine	Ingestion	endocrine system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	heart	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	liver	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	immune system	Not classified	Rat	NOAEL 600 mg/kg/day	28 days
m-xylene-alpha, alpha'-diamine	Ingestion	kidney and/or bladder	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).

Document Group: 18-0718-9

Version Number: 10.05

Issue Date: 03/12/26

Supersedes Date: 07/06/23

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable

for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the SDS available directly from 3M.

3M USA SDSs are available at www.3M.com



Safety Data Sheet

Copyright,2023, 3M Company.

All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

Document Group:	18-0723-9	Version Number:	9.03
Issue Date:	08/24/23	Supersedes Date:	07/14/23

SECTION 1: Identification

1.1. Product identifier

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

Product Identification Numbers

62-2748-8530-0, 62-2748-9530-9, 62-2748-9531-7
7010365926, 7010329538

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 2A.
Skin Corrosion/Irritation: Category 2.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

Pictograms**Hazard Statements**

Causes serious eye irritation.

Causes skin irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation.

Causes damage to organs through prolonged or repeated exposure:
respiratory system |

Precautionary Statements**Prevention:**

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

Use only outdoors or in a well-ventilated area.

In case of inadequate ventilation wear respiratory protection.

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 INHALED: Remove person to fresh air and keep comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

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

Take off contaminated clothing and wash it before reuse.

Get medical advice/attention if you feel unwell.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

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

Supplemental Information:

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

34% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
polyurethane prepolymer	67837-35-8	40 - 70 Trade Secret *

dicyclohexylmethane-4,4'-diisocyanate (HMDI)	5124-30-1	15 - 40 Trade Secret *
1,1'-diphenylmethane diisocyanate polymer	39310-05-9	1 - 5 Trade Secret *
1,1'-methylenebis(isocyanatobenzene)	26447-40-5	1 - 5 Trade Secret *
4,4'-diphenylmethane diisocyanate	101-68-8	1 - 5 Trade Secret *
carbon black	1333-86-4	0.05 - 0.5 Trade Secret *
Organic-Chrome-Complex 1	71701-12-7	< 0.3 Trade Secret *
Chromium	7440-47-3	< 0.1 Trade Secret *
Organic-Chrome-Complex 2	74421-71-9	< 0.1 Trade Secret *
Organic-Chrome-Complex 3	Trade Secret*	< 0.1 Trade Secret *

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

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

Skin Contact:

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

Eye Contact:

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

Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). 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
Isocyanates
Carbon monoxide
Carbon dioxide
Hydrogen Cyanide
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

Toxic Vapor, Gas, Particulate

During Combustion

5.3. Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

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

6.2. Environmental precautions

Avoid release to the environment. 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. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. 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 container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. 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. 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.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from acids. Store away from strong bases.

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
4,4'-diphenylmethane diisocyanate	101-68-8	ACGIH	TWA:0.005 ppm	
4,4'-diphenylmethane diisocyanate	101-68-8	OSHA	CEIL:0.2 mg/m ³ (0.02 ppm)	
carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3 mg/m ³	A3: Confirmed animal carcin.

carbon black	1333-86-4	OSHA	TWA:3.5 mg/m3	
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	5124-30-1	ACGIH	TWA:0.005 ppm	
CHROMIUM (III) COMPOUNDS	71701-12-7	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 mg/m3	A4: Not class. as human carcin
CHROMIUM (III) COMPOUNDS	71701-12-7	OSHA	TWA(as Cr):0.5 mg/m3	
Chromium	7440-47-3	ACGIH	TWA(as Cr(0), inhalable fraction):0.5 mg/m3	
Chromium	7440-47-3	OSHA	TWA(as Cr):1 mg/m3	
CHROMIUM (III) COMPOUNDS	74421-71-9	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 mg/m3	A4: Not class. as human carcin
CHROMIUM (III) COMPOUNDS	74421-71-9	OSHA	TWA(as Cr):0.5 mg/m3	
Organic-Chrome-Complex 3	Trade Secret	ACGIH	TWA(as Cr(III), inhalable fraction):0.003 mg/m3;TWA(as Cr):0.5 mg/m3	A4: Not class. as human carcin
Organic-Chrome-Complex 3	Trade Secret	OSHA	TWA(as Cr):0.5 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:

Safety Glasses with side shields

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

Nitrile Rubber

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

Black

Specific Physical Form:

Viscous liquid

Odor

Low Odor

Odor threshold*No Data Available***pH***Not Applicable***Melting point***No Data Available***Boiling Point** ≥ 400 °F**Flash Point** ≥ 290 °F [*Test Method*: Tagliabue Closed Cup]**Evaporation rate** ≤ 1 [*Details*: Gels with exposure to humidity.]**Flammability (solid, gas)**

Not Applicable

Flammable Limits(LEL)*No Data Available***Flammable Limits(UEL)***No Data Available***Vapor Pressure** ≤ 0.000004 mmHg [*@* 68 °F]**Vapor Density** ≥ 1 [*Ref Std*: AIR=1]**Density**1.056 g/ml [*Ref Std*: WATER=1]**Specific Gravity**1.056 [*Ref Std*: WATER=1]**Solubility in Water**

Negligible

Solubility- non-water*No Data Available***Partition coefficient: n-octanol/ water***No Data Available***Autoignition temperature***No Data Available***Decomposition temperature***No Data Available***Viscosity**1,500 - 2,400 centipoise [*@* 20 °C] [*Test Method*: Brookfield]**Hazardous Air Pollutants** ≤ 5 % 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 B]**VOC Less H2O & Exempt Solvents**1 g/l [*Test Method*: calculated SCAQMD rule 443.1] [*Details*: as

supplied]

VOC Less H2O & Exempt Solvents0.05 % [*Test Method*: calculated SCAQMD rule 443.1][*Details*: when used as intended with Part B]**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

Water

Strong acids

Strong bases

Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure buildup.

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.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

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

Eye Contact:

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

Ingestion:

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

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Additional Information:

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

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	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Dermal	Rat	LD50 > 7,000 mg/kg
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.33 mg/l
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Ingestion	Rat	LD50 18,200 mg/kg
1,1'-methylenebis(isocyanatobenzene)	Dermal	Rabbit	LD50 > 5,000 mg/kg
1,1'-methylenebis(isocyanatobenzene)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
1,1'-methylenebis(isocyanatobenzene)	Ingestion	Rat	LD50 31,600 mg/kg
4,4'-diphenylmethane diisocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
4,4'-diphenylmethane diisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
4,4'-diphenylmethane diisocyanate	Ingestion	Rat	LD50 31,600 mg/kg
1,1'-diphenylmethane diisocyanate polymer	Dermal	Rabbit	LD50 > 5,000 mg/kg
1,1'-diphenylmethane diisocyanate polymer	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
1,1'-diphenylmethane diisocyanate polymer	Ingestion	Rat	LD50 31,600 mg/kg
carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Rabbit	Irritant
1,1'-methylenebis(isocyanatobenzene)	official classification	Irritant
4,4'-diphenylmethane diisocyanate	official classification	Irritant
1,1'-diphenylmethane diisocyanate polymer	official classification	Irritant
carbon black	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Rabbit	Mild irritant
1,1'-methylenebis(isocyanatobenzene)	official classification	Severe irritant
4,4'-diphenylmethane diisocyanate	official classification	Severe irritant
1,1'-diphenylmethane diisocyanate polymer	official classification	Severe irritant
carbon black	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Human and animal	Sensitizing
1,1'-methylenebis(isocyanatobenzene)	official classification	Sensitizing
4,4'-diphenylmethane diisocyanate	official classification	Sensitizing
1,1'-diphenylmethane diisocyanate polymer	official classification	Sensitizing

Respiratory Sensitization

Name	Species	Value
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Professional judgement	Sensitizing
1,1'-methylenebis(isocyanatobenzene)	Human	Sensitizing
4,4'-diphenylmethane diisocyanate	Human	Sensitizing
1,1'-diphenylmethane diisocyanate polymer	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	In Vitro	Not mutagenic
1,1'-methylenebis(isocyanatobenzene)	In Vitro	Some positive data exist, but the data are not sufficient for classification
4,4'-diphenylmethane diisocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,1'-diphenylmethane diisocyanate polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification
carbon black	In Vitro	Not mutagenic
carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
1,1'-methylenebis(isocyanatobenzene)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
4,4'-diphenylmethane diisocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
1,1'-diphenylmethane diisocyanate polymer	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
carbon black	Dermal	Mouse	Not carcinogenic
carbon black	Ingestion	Mouse	Not carcinogenic

carbon black	Inhalation	Rat	Carcinogenic
--------------	------------	-----	--------------

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	Not classified for female reproduction	Rat	NOAEL 6 mg/m3	prematuring into lactation
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	Not classified for male reproduction	Rat	NOAEL 6 mg/m3	28 days
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	Not classified for development	Rat	NOAEL 6 mg/m3	during gestation
1,1'-methylenebis(isocyanatobenzene)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
4,4'-diphenylmethane diisocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
1,1'-diphenylmethane diisocyanate polymer	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	NOAEL not available	
1,1'-methylenebis(isocyanatobenzene)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
4,4'-diphenylmethane diisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
1,1'-diphenylmethane diisocyanate polymer	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	respiratory system	Not classified	Rat	NOAEL 3 mg/m3	90 days
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	Inhalation	heart skin endocrine system gastrointestinal tract bone, teeth, nails, and/or hair hematopoietic system liver immune system muscles nervous system eyes kidney and/or bladder vascular system	Not classified	Rat	NOAEL 18 mg/m3	90 days
1,1'-methylenebis(isocyanatobenzene)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
4,4'-diphenylmethane diisocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
1,1'-diphenylmethane diisocyanate polymer	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks

carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
--------------	------------	----------------	----------------	-------	---------------------	-----------------------

Aspiration Hazard

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

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

SECTION 12: Ecological information

Ecotoxicological information

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

Chemical fate information

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
4,4'-diphenylmethane diisocyanate	101-68-8	Trade Secret 1 - 5
4,4'-diphenylmethane diisocyanate (Benzene, 1,1'-methylenebis[4-isocyanato-])	101-68-8	Trade Secret 1 - 5
4,4'-diphenylmethane diisocyanate (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	101-68-8	Trade Secret 1 - 5
dicyclohexylmethane-4,4'-diisocyanate (HMDI)	5124-30-1	Trade Secret 15 - 40
dicyclohexylmethane-4,4'-diisocyanate (HMDI) (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	5124-30-1	Trade Secret 15 - 40

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: 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: *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).

Document Group:	18-0723-9	Version Number:	9.03
Issue Date:	08/24/23	Supersedes Date:	07/14/23

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable

for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the SDS available directly from 3M.

3M USA SDSs are available at www.3M.com