



## Safety Data Sheet

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|                        |           |                         |          |
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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ High Performance Industrial Plastic Adhesive 4693

#### Product Identification Numbers

62-4493-6530-3, 62-4493-6535-2, 62-4493-7530-2, 62-4493-8530-1, 62-4493-9530-0

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

##### Recommended use

Adhesive, Industrial use

#### 1.3. Supplier's details

|                      |   |
|----------------------|---|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Industrial Adhesives and Tapes Division |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 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

Flammable Liquid: Category 2.

Specific Target Organ Toxicity (central nervous system): Category 3.

#### 2.2. Label elements

##### Signal word

Danger

##### Symbols

Flame | Exclamation mark |

##### Pictograms



**Hazard Statements**

Highly flammable liquid and vapor.

May cause drowsiness or dizziness.

**Precautionary Statements**

**Prevention:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting equipment.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

**Response:**

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Call a POISON CENTER or doctor/physician if you feel unwell.

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

**Storage:**

Keep cool.

Keep container tightly closed.

Store locked up in a well-ventilated place.

**Disposal:**

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

**2.3. Hazards not otherwise classified**

None.

8% of the mixture consists of ingredients of unknown acute oral toxicity.

16% of the mixture consists of ingredients of unknown acute dermal toxicity.

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

| Ingredient                | C.A.S. No. | % by Wt                |
|---------------------------|------------|------------------------|
| Cyclohexane               | 110-82-7   | 60 - 80 Trade Secret * |
| Styrene-Butadiene Polymer | 9003-55-8  | 7 - 13 Trade Secret *  |
| Polyterpene Resin         | 31393-98-3 | 5 - 10 Trade Secret *  |
| Dipentene Polymer         | 9003-73-0  | 5 - 10 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 flammable liquids such as dry chemical or carbon dioxide to extinguish.

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

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

| <u>Substance</u> | <u>Condition</u>  |
|------------------|-------------------|
| Aldehydes        | During Combustion |
| Carbon monoxide  | During Combustion |
| Carbon dioxide   | During Combustion |

### 5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. 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. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. 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 using non-sparking tools. Place in a metal 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

For industrial or professional use only. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. 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. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

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

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. 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 |
|-------------|------------|--------|-------------------------|---------------------|
| Cyclohexane | 110-82-7   | ACGIH  | TWA:100 ppm             |                     |
| Cyclohexane | 110-82-7   | OSHA   | TWA:1050 mg/m3(300 ppm) |                     |

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. Use explosion-proof ventilation equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

None required.

**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: 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:

Full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

|  |  |
|--|--|
| <b>General Physical Form:</b>                  | Liquid   |
| <b>Odor, Color, Grade:</b>                     | Light amber colored, solvent odor.                             |
| <b>Odor threshold</b>                          | <i>No Data Available</i>                                       |
| <b>pH</b>                                      | <i>Not Applicable</i>  |
| <b>Melting point</b>                           | <i>Not Applicable</i>  |
| <b>Boiling Point</b>                           | >=81 °C [ <i>Details: Cyclohexane</i> ]                        |
| <b>Flash Point</b>                             | -4 °F [ <i>Test Method: Closed Cup</i> ]                       |
| <b>Evaporation rate</b>                        | >=2.0 [ <i>Ref Std: WATER=1</i> ]                              |
| <b>Flammability (solid, gas)</b>               | Not Applicable   |
| <b>Flammable Limits(LEL)</b>                   | 1.1 % volume   |
| <b>Flammable Limits(UEL)</b>                   | 8.0 % volume   |
| <b>Vapor Pressure</b>                          | <=95 mmHg [ <i>@ 68 °F</i> ]                                   |
| <b>Vapor Density</b>                           | 0.8 [ <i>Ref Std: AIR=1</i> ]                                  |
| <b>Density</b>                                 | 0.82 g/ml  |
| <b>Specific Gravity</b>                        | 0.82 [ <i>Ref Std: WATER=1</i> ]                               |
| <b>Solubility in Water</b>                     | Slight (less than 10%)   |
| <b>Solubility- non-water</b>                   | <i>No Data Available</i>                                       |
| <b>Partition coefficient: n-octanol/ water</b> | <i>No Data Available</i>                                       |
| <b>Autoignition temperature</b>                | 245 °C   |
| <b>Decomposition temperature</b>               | <i>No Data Available</i>                                       |
| <b>Viscosity</b>                               | 150 - 300 centipoise [ <i>@ 73.4 °F</i> ]                      |
| <b>Hazardous Air Pollutants</b>                | 0 % weight [ <i>Test Method: Calculated</i> ]                  |
| <b>VOC Less H2O &amp; Exempt Solvents</b>      | <=597 g/l [ <i>Test Method: calculated SCAQMD rule 443.1</i> ] |
| <b>Solids Content</b>                          | 20 - 40 %  |

**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  
Sparks and/or flames

### 10.5. Incompatible materials

Reducing agents  
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:

May be harmful if inhaled.

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

May cause additional health effects (see below).

#### Skin Contact:

May be harmful in contact with skin.

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

#### Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

#### Ingestion:

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

#### Additional Health Effects:

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

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

**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 2,000 - 5,000 mg/kg |
| Overall product           | Inhalation-Vapor(4 hr)     |         | No data available; calculated ATE 20 - 50 mg/l        |
| Overall product           | Ingestion                  |         | No data available; calculated ATE > 5,000 mg/kg       |
| Cyclohexane               | Dermal                     | Rat     | LD50 > 2,000 mg/kg                                    |
| Cyclohexane               | Inhalation-Vapor (4 hours) | Rat     | LC50 > 32.9 mg/l                                      |
| Cyclohexane               | Ingestion                  | Rat     | LD50 6,200 mg/kg                                      |
| Styrene-Butadiene Polymer | Dermal                     | Rabbit  | LD50 > 2,000 mg/kg                                    |
| Styrene-Butadiene Polymer | Ingestion                  | Rat     | LD50 > 5,000 mg/kg                                    |
| Polyterpene Resin         | Ingestion                  | Rat     | LD50 > 34,000 mg/kg                                   |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name                      | Species                | Value                     |
|---------------------------|------------------------|---------------------------|
| Cyclohexane               | Rabbit                 | Mild irritant             |
| Styrene-Butadiene Polymer | Professional judgement | No significant irritation |

**Serious Eye Damage/Irritation**

| Name        | Species | Value         |
|-------------|---------|---------------|
| Cyclohexane | Rabbit  | Mild irritant |

**Skin Sensitization**

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

**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  |
|-------------|----------|--|
| Cyclohexane | In Vitro | Not mutagenic  |
| Cyclohexane | In vivo  | Some positive data exist, but the data are not sufficient for classification |

**Carcinogenicity**

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

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

| Name        | Route      | Value   | Species | Test Result    | Exposure Duration |
|-------------|------------|---|---------|----------------|-------------------|
| Cyclohexane | Inhalation | Not toxic to female reproduction  | Rat     | NOAEL 24 mg/l  | 2 generation      |
| Cyclohexane | Inhalation | Not toxic to male reproduction  | Rat     | NOAEL 24 mg/l  | 2 generation      |
| Cyclohexane | Inhalation | Some positive developmental data exist, but the data are not sufficient for | Rat     | NOAEL 6.9 mg/l | 2 generation      |

classification

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

| Name        | Route      | Target Organ(s)                   | Value  | Species          | Test Result         | Exposure Duration |
|-------------|------------|-----------------------------------|--|------------------|---------------------|-------------------|
| Cyclohexane | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human and animal | NOAEL Not available |                   |
| Cyclohexane | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Human and animal | NOAEL Not available |                   |

**Specific Target Organ Toxicity - repeated exposure**

| Name        | Route      | Target Organ(s)           | Value  | Species | Test Result    | Exposure Duration |
|-------------|------------|---------------------------|--|---------|----------------|-------------------|
| Cyclohexane | Inhalation | liver                     | Some positive data exist, but the data are not sufficient for classification | Rat     | NOAEL 24 mg/l  | 90 days           |
| Cyclohexane | Inhalation | auditory system           | Some positive data exist, but the data are not sufficient for classification | Rat     | NOAEL 1.7 mg/l | 90 days           |
| Cyclohexane | Inhalation | kidney and/or bladder     | Some positive data exist, but the data are not sufficient for classification | Rabbit  | NOAEL 2.7 mg/l | 10 weeks          |
| Cyclohexane | Inhalation | hematopoietic system      | Some positive data exist, but the data are not sufficient for classification | Mouse   | NOAEL 24 mg/l  | 14 weeks          |
| Cyclohexane | Inhalation | peripheral nervous system | All data are negative  | Rat     | NOAEL 8.6 mg/l | 30 weeks          |

**Aspiration Hazard**

| Name        | Value             |
|-------------|-------------------|
| Cyclohexane | Aspiration hazard |

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.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.



EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

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

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

| <u>Ingredient</u> | <u>C.A.S. No</u> | <u>% by Wt</u> |
|-------------------|------------------|----------------|
| Cyclohexane       | 110-82-7         | 60 - 80        |

### 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: 1 Flammability: 3 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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