



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Light Guide Resin RE1001 (Part A)

Product Identification Numbers

LA-T100-1653-1, 75-3472-2643-5

1.2. Recommended use and restrictions on use

Recommended use

Automotive - Industrial/Professional use, Lighting

1.3. Supplier's details

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

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Skin Corrosion/Irritation: Category 2.

Respiratory Sensitizer: Category 1A.

Skin Sensitizer: Category 1A.

Reproductive Toxicity: Category 1B.

Specific Target Organ Toxicity (respiratory irritation): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

Causes 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.
 May damage fertility or the unborn child.

Precautionary Statements**Prevention:**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Avoid breathing 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.
 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.
 IF exposed or concerned: Get medical advice/attention.

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.

2.3. Hazards not otherwise classified

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

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
HEXAMETHYLENE DIISOCYANATE POLYMER	28182-81-2	40 - 60 Trade Secret *
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	5124-30-1	30 - 50 Trade Secret *
1,4-BUTANEDIOL, POLYESTER WITH 2-OXEPANONE	31831-53-5	1 - 15
HEXAMETHYLENE DIISOCYANATE	822-06-0	< 0.2 Trade Secret *

DIBUTYLTIN DIACETATE

1067-33-0

< 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:

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 water-reactives such as dry chemical to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide
Hydrogen Cyanide
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for

information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin contact with hot material. Do not handle until all safety precautions have been read and understood. 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.) Use personal protective equipment (gloves, respirators, etc.) as required.

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 heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents. Store away from amines.

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
TIN, ORGANIC COMPOUNDS	1067-33-0	OSHA	TWA(as Sn):0.1 mg/m3	
TIN, ORGANIC COMPOUNDS	1067-33-0	ACGIH	TWA(as Sn):0.1 mg/m3;STEL(as Sn):0.2 mg/m3	A4: Not class. as human carcin, Skin Notation
HEXAMETHYLENE DIISOCYANATE POLYMER	28182-81-2	CMRG	TWA:0.5 mg/m3;STEL:1 mg/m3	
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	5124-30-1	ACGIH	TWA:0.005 ppm	
FREE ISOCYANATES	5124-30-1	Manufacturer determined	TWA:0.005 ppm;STEL:0.02 ppm	
FREE ISOCYANATES	822-06-0	Manufacturer determined	TWA:0.005 ppm;STEL:0.02 ppm	
HEXAMETHYLENE DIISOCYANATE	822-06-0	CMRG	CEIL:0.02 ppm	
HEXAMETHYLENE	822-06-0	ACGIH	TWA:0.005 ppm	

DIISOCYANATE

ACGIH : American Conference of Governmental Industrial Hygienists
 AIHA : American Industrial Hygiene Association
 CMRG : Chemical Manufacturer's Recommended Guidelines
 OSHA : United States Department of Labor - Occupational Safety and Health Administration
 TWA: Time-Weighted-Average
 STEL: Short Term Exposure Limit
 CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

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

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 – Butyl rubber

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

Half facepiece or full facepiece supplied-air respirator

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

Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Waxy Solid Low temperature; Liquid at room temperature
Odor, Color, Grade:	Slight inherent odor; clear color
Odor threshold	<i>No Data Available</i>

pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>No Data Available</i>
Flash Point	≥ 202 °C [<i>Test Method</i> : Tagliabue Closed Cup]
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	<i>Not Applicable</i>
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Vapor Pressure	<i>No Data Available</i>
Vapor Density	<i>Not Applicable</i>
Density	1,070 kg/m ³ [@ 20 °C]
Specific Gravity	1.07 [<i>Test Method</i> : Tested per ASTM protocol] [<i>Ref Std</i> : WATER=1]
Solubility In Water	<i>Not Applicable</i>
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	225 °C [<i>Test Method</i> : Setchkin] [<i>Details</i> : 1.013 HPa]
Decomposition temperature	150 °C [<i>Details</i> : Material decomposes above 150 °C]
Viscosity	300 - 600 centistoke [@ 25 °C]
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H₂O & Exempt Solvents	<i>Not Applicable</i>

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

Temperatures above the boiling point

10.5. Incompatible materials

Alcohols

Amines

Combustibles

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

Reducing agents

Strong acids

Strong bases

Strong oxidizing agents

Water

10.6. Hazardous decomposition products

Substance

None known.

Condition

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.

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:

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

Ingestion:

May cause additional health effects (see below).

Additional Health Effects:

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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	Ingestion		No data available; calculated ATE > 5,000 mg/kg
HEXAMETHYLENE DIISOCYANATE POLYMER	Inhalation-Dust/Mist (4 hours)	Professional judgement	LC50 estimated to be 1 - 5 mg/l
HEXAMETHYLENE DIISOCYANATE POLYMER	Dermal	Rabbit	LD50 > 5,000 mg/kg
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	Dermal	Rabbit	LD50 > 10,000 mg/kg
HEXAMETHYLENE DIISOCYANATE POLYMER	Ingestion	Rat	LD50 > 5,000 mg/kg
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	Inhalation-Dust/Mist	Rat	LC50 0.434 mg/l

	(4 hours)		
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	Ingestion	Rat	LD50 9,900 mg/kg
1,4-BUTANEDIOL, POLYESTER WITH 2-OXEPANONE	Ingestion	Rat	LD50 > 2,000 mg/kg
HEXAMETHYLENE DIISOCYANATE	Dermal	Rabbit	LD50 570 mg/kg
HEXAMETHYLENE DIISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.12 mg/l
HEXAMETHYLENE DIISOCYANATE	Ingestion	Rat	LD50 710 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
HEXAMETHYLENE DIISOCYANATE POLYMER	Rabbit	Mild irritant
HEXAMETHYLENE DIISOCYANATE	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
HEXAMETHYLENE DIISOCYANATE POLYMER	Rabbit	Moderate irritant
HEXAMETHYLENE DIISOCYANATE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
HEXAMETHYLENE DIISOCYANATE POLYMER	Guinea pig	Sensitizing
HEXAMETHYLENE DIISOCYANATE	Multiple animal species	Sensitizing

Respiratory Sensitization

Name	Species	Value
HEXAMETHYLENE DIISOCYANATE POLYMER	similar compounds	Some positive data exist, but the data are not sufficient for classification
HEXAMETHYLENE DIISOCYANATE	Human and animal	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
HEXAMETHYLENE DIISOCYANATE POLYMER	In Vitro	Not mutagenic
HEXAMETHYLENE DIISOCYANATE POLYMER	In vivo	Not mutagenic
HEXAMETHYLENE DIISOCYANATE	In Vitro	Not mutagenic
HEXAMETHYLENE DIISOCYANATE	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
HEXAMETHYLENE DIISOCYANATE	Inhalation	Rat	Not carcinogenic

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

Name	Route	Value	Species	Test Result	Exposure Duration
HEXAMETHYLENE DIISOCYANATE	Inhalation	Not toxic to female reproduction	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	Not toxic to development	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for	Rat	NOAEL 0.014 mg/l	4 weeks

classification

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

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
HEXAMETHYLENE DIISOCYANATE POLYMER	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
HEXAMETHYLENE DIISOCYANATE	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
HEXAMETHYLENE DIISOCYANATE	Inhalation	blood	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
HEXAMETHYLENE DIISOCYANATE POLYMER	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL .084 mg/l	2 weeks
HEXAMETHYLENE DIISOCYANATE POLYMER	Inhalation	blood	All data are negative	Rat	NOAEL .084 mg/l	2 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.002 mg/l	3 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.0014 mg/l	4 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.0012 mg/l	2 years
HEXAMETHYLENE DIISOCYANATE	Inhalation	nervous system	All data are negative	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	heart	All data are negative	Rat	NOAEL 0.001 mg/l	90 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): D003 (Reactive)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

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

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>
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE)	5124-30-1	30 - 50
METHYLENEBIS(4-CYCLOHEXYL ISOCYANATE) (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	5124-30-1	30 - 50
HEXAMETHYLENE DIISOCYANATE (DIISOCYANATES (CERTAIN CHEMICALS ONLY))	822-06-0	< 0.2

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

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

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

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

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 1 Special Hazards: Reacts with Water

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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