Revision Number: 004.1

Issue date: 05/23/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **LOCTITE 2046 THRDLCK 12ML PT A**
Product type: Anaerobic Adhesive
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 1189205
Item number: 1186840_1363470
Region: United States
Contact information:
Telephone: (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
DANGER:	CAUSES SKIN IRRITATION. MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES SERIOUS EYE IRRITATION. HARMFUL IF INHALED. MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED. MAY CAUSE RESPIRATORY IRRITATION. CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
ACUTE TOXICITY INHALATION	4
SKIN IRRITATION	2
EYE IRRITATION	2A
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1

PICTOGRAM(S)

Precautionary Statements

Prevention: Do not breathe vapors, mist, or spray. Wash affected area thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection. In case of inadequate ventilation wear respiratory protection.

Response: IF ON SKIN: Wash with plenty of water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. If experiencing respiratory symptoms: Call a poison center or physician. Take off contaminated clothing.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Methylene bisphenyl isocyanate	26447-40-5	60 - 70
Methylenebis(phenylisocyanate)	101-68-8	10 - 20
1,2-Propanediol, polymer with 1,3-butanediol, tripropylene glycol and diphenylmethane diisocyanate	150449-03-9	10 - 20

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after area is washed.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Symptoms: See Section 11.

Notes to physician: Eyes:Stain for evidence of corneal injury.If cornea is burned, instill antibiotic steroid preparation frequently.Workplace vapors have produced reversible corneal epithelial edema impairing vision.Skin:Treat symptomatically as for contact dermatitis or thermal burns.This compound is a known skin sensitizer.Ingestion:Treat symptomatically.There is no specific antidote.Inducing vomiting is contraindicated because of the irritating nature of this compound.Respiratory:This compound is a known pulmonary sensitizer.Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media: Foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures above 204.4°C (400°F), polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers. Sealed containers at elevated temperatures or contaminated with water may rupture explosively. Water or fog may cause frothing which can be violent especially if sprayed into containers of hot or burning liquid. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: Oxides of carbon. Oxides of nitrogen. Hydrocarbons. Hydrogen cyanide. Toxic and irritating vapors.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over spill. Large quantities may be pumped into closed, but not sealed containers for disposal. For minor spills, absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well ventilated area (outside) and treat with neutralizing solution: mixture of 80% water and 20% non-ionic surfactant Tergitol TMN-10; or 90% water, 3-8% concentrated ammonia and 2% detergent. Add about ten parts of neutralizer per part of isocyanate, with mixing. Allow to stand uncovered for 48 hours to let carbon dioxide escape. Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Protect from moisture. Exposure to vapors of heated MDI can be extremely dangerous. Keep container closed. Refer to Section 8.

Storage: For safe storage, store between 16 °C (60.8 °F) and 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use. Do not let moisture contaminate this material. Product reacts with water to release carbon dioxide, which could build up pressure in closed containers and lead to bursting. Do not reseal if moisture contamination is suspected. Do not reseal if contamination is suspected. MDI reacts slowly with water to form carbon dioxide gas. This gas can cause sealed containers to expand and possibly rupture. Do not store in reactive metal containers. If container is exposed to high heat (204.4 °C (400 °F)), it can be pressurized and possibly rupture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Methylene bisphenyl isocyanate	None	None	None	None
Methylenebis(phenylisocyanate)	0.005 ppm TWA	0.02 ppm (0.2 mg/m3) Ceiling	None	None
1,2-Propanediol, polymer with 1,3-butanediol, tripropylene glycol and diphenylmethane diisocyanate	None	None	None	None

Engineering controls:

Local exhaust should be used to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation. Air monitoring: Monitoring of airborne isocyanates in the breathing zone of individuals should become part of the overall employee exposure characterization program. Isocyanate exposure levels must be monitored. Monitoring techniques have been developed by NIOSH and OSHA. Medical Surveillance: Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with pulmonary function tests (FEV, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.

Respiratory protection:

Concentrations greater than the TLV can occur when MDI is sprayed, heated or used in a poorly ventilated area. In such cases, or whenever concentrations of MDI exceed the TLV, respiratory protection must be worn. A positive pressure, supplied-air respirator or a self-contained breathing apparatus is recommended. In situations where MDI is not sprayed, heated, or used in a poorly ventilated area, and a supplied-air or self-contained breathing apparatus is unavailable or its use impractical, at least an air-purifying cartridge and particulate pre-filters must be worn.
However, this should be permitted only for short periods of time (less than one hour) at relatively low concentrations (at or near the TLV). However, due to the poor warning properties of MDI, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Eye/face protection:

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available. Vapor resistant goggles should be worn when contact lenses are in use.

Skin protection:

Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that polyvinyl alcohol degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Light, Yellow
Odor: Slightly, Musty
Odor threshold: Not available.
pH: Not applicable
Vapor pressure: Not available.
Boiling point/range: > 300 °C (> 572°F)Decomposes.
Melting point/ range: Not available.

Specific gravity:	1.23
Vapor density:	8.5
Flash point:	> 110 °C (> 230°F) Closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	> 600 °C (1,112°F)
Flammability:	Not applicable
Evaporation rate:	Not available.
Solubility in water:	Insoluble
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.37 % (value as mixed for use)
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapors. Oxides of nitrogen. Oxides of carbon. Hydrogen cyanide. Isocyanates.
Incompatible materials:	Bases. Water, Amines, Alkalis, Alcohols. Will cause some corrosion to copper alloys and aluminum.
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials. Contamination with water.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Acute: Harmful if inhaled. Methylene bisphenyl isocyanate (MDI) vapors or mist at concentrations above the TLV can irritate the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with preexisting, nonspecific bronchial hyper-reactivity can respond to concentrations below the TLV with similar symptoms as well as lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Chronic overexposure to isocyanates has been reported to cause lung damage. May cause allergic respiratory reaction. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Over exposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

Skin contact: Acute: Causes skin irritation. May cause allergic skin reaction. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove. Chronic: Prolonged contact can cause reddening, swelling, rash, scaling, blistering and in some cases, skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapor. Once sensitized, an individual may react even to airborne levels below the TLV with the following symptoms: itching and tingling of the earlobes and neck, rash, hives, swelling of the arms and legs or other symptoms common to allergic dermatitis. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. These data reinforce the need to prevent direct skin contact with MDI.

Eye contact: Causes serious eye irritation. Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage however is usually reversible.

Ingestion: May cause irritation or burns of mouth, throat, and stomach, with nausea, abdominal pain, and possible collapse.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Methylene bisphenyl isocyanate	None	Allergen, Irritant, Mutagen, Respiratory
Methylenebis(phenylisocyanate)	Inhalation LC50 (Rat, 4 h) = 0.38 mg/l Inhalation LC50 (Rat, 4 h) = 0.369 mg/l	Irritant, Respiratory, Allergen
1,2-Propanediol, polymer with 1,3-butanediol, tripropylene glycol and diphenylmethane diisocyanate	None	No Records

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Methylene bisphenyl isocyanate	No	No	No
Methylenebis(phenylisocyanate)	No	No	No
1,2-Propanediol, polymer with 1,3-butanediol, tripropylene glycol and diphenylmethane diisocyanate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal:	Follow all local, state, federal and provincial regulations for disposal.
Hazardous waste number:	Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III
DOT Hazardous Substance(s):	Methylene diphenyl diisocyanate

International Air Transportation (ICAO/IATA)

Proper shipping name:	RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III

Water Transportation (IMO/IMDG)

Proper shipping name:	RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division:	9
Identification number:	UN 3082
Packing group:	III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	None above reporting de minimis.
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Methylenebis(phenylisocyanate) (CAS# 101-68-8).
CERCLA Reportable quantity:	Methylenebis(phenylisocyanate) (CAS# 101-68-8) 5,000 lbs. (2,270 kg)
California Proposition 65:	No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status:	Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: Reviewed SDS. Reissued with new date.

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 05/23/2017

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