Revision Number: 006.0

Issue date: 08/27/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **LOCTITE MR FLEX 80 Known as Loctite Fixmaster Flex 80 Putty**
Product type: Polyurethane adhesive
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 702234
Item number: 97423_30012000
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.
FATAL IF INHALED.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

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

PICTOGRAM(S)



Precautionary Statements

Prevention: Do not breathe vapors, mist, or spray. Wash 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 eye and face protection. Wear protective gloves. [In case of inadequate ventilation] wear respiratory protection.

Response: IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Immediately call a poison control center or physician. 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*
Polyurethane Prepolymer	Proprietary	60 - 100
Dicyclohexylmethane-4,4'-diisocyanate	5124-30-1	10 - 30
Methylenebis(phenylisocyanate)	101-68-8	1 - 5
Polymeric diphenylmethane diisocyanate	9016-87-9	1 - 5

* Exact percentage is a 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. 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. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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. Never give anything by mouth to an unconscious person. Get 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:This compound is a known skin sensitizer.Treat symptomatically as for contact dermatitis or thermal burns.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.An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

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. Explosive rupture is possible.

Unusual fire or explosion hazards: 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. Hydrogen cyanide. Isocyanate vapors. Acids. Aldehydes. Ketones. Toxic fumes. 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: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Use only with adequate ventilation. Keep container closed. Protect from moisture. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard. Refer to Section 8.

Storage: For safe storage, store between 30 °C (86°F) and 40 °C (104°F)
Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Keep away from heat, spark and flame. 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. If container is exposed to high heat (204.4 °C (400 °F)), it can be pressurized and possibly rupture.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

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
Polyurethane Prepolymer	None	None	None	None
Dicyclohexylmethane-4,4'-diisocyanate	0.005 ppm TWA	None	None	None
Methylenebis(phenylisocyanate)	0.005 ppm TWA	0.02 ppm (0.2 mg/m3) Ceiling	None	None
Polymeric diphenylmethane diisocyanate	0.005 ppm TWA	0.02 ppm (0.2 mg/m3) Ceiling	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: Isocyanate exposure levels must be monitored. Monitoring of airborne isocyanates in the breathing zone of individuals should become part of the overall employee exposure characterization program. 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:	A positive pressure, supplied-air respirator or a self-contained breathing apparatus is recommended when: airborne concentrations of isocyanate are known to exceed 0.005 ppm; operations are performed in a confined space or area with limited ventilation; material is heated or sprayed. 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 glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing. 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. If skin creams are used, keep the area covered by the cream to a minimum. Cover as much of the exposed skin area as possible with appropriate clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Low viscosity, Liquid
Color:	Brown
Odor:	Aromatic
Odor threshold:	Not available.
pH:	Not available.
Vapor pressure:	0.2 mm hg (25 °C (77°F))
Boiling point/range:	Not available.
Melting point/ range:	Not available.
Specific gravity:	1.07
Vapor density:	Not available.
Flash point:	> 162.77 °C (> 324.99 °F) Tagliabue closed cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Reacts slowly with water to liberate carbon dioxide gas.
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0 %; 0 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	Contact with moisture, other materials that react with isocyanates, or temperatures above 350° F (177° C), may cause polymerization. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers.
Hazardous decomposition products:	Oxides of carbon. Oxides of nitrogen. Hydrogen cyanide. Isocyanate vapors Acids. Aldehydes. Ketones. Toxic fumes. Irritating vapors.
Incompatible materials:	Water. Amines. Strong bases. Alcohols. Will cause some corrosion to copper alloys and aluminum. Oxidizing agents. Strong acids.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, ignition sources and incompatible materials. Contamination with water.

11. TOXICOLOGICAL INFORMATION

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

Potential Health Effects/Symptoms

Inhalation: This product is harmful or fatal by inhalation. Acute: Inhalation of dicyclohexylmethane-4,4'-diisocyanate 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). These effects are usually reversible. Chemical or hypersensitive pneumonitis with flu-like symptoms (e.g. fever, chills) have also been reported. 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. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Dicyclohexylmethane-4,4'-diisocyanate is also a potent sensitizer. May cause allergic skin reaction. 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. 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. Animal tests have indicated that respiratory sensitization can result from skin contact with dicyclohexylmethane-4,4'-diisocyanate. Cured material is difficult to remove.

Eye contact: Causes serious eye irritation. Stinging. 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.

Ingestion: Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract if swallowed. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Polyurethane Prepolymer	None	Irritant, Allergen, Respiratory
Dicyclohexylmethane-4,4'-diisocyanate	Oral LD50 (RAT) = 1,065 mg/kg Dermal LD50 (RABBIT) = > 10,000 mg/kg Inhalation LC50 (RAT, 4 h) = 0.295 mg/l Inhalation LC50 (RAT, 4 h) = 0.307 mg/l	Irritant, Allergen, Respiratory
Methylenebis(phenylisocyanate)	Inhalation LC50 (RAT, 4 h) = 0.38 mg/l Inhalation LC50 (RAT, 4 h) = 0.369 mg/l	Irritant, Respiratory, Allergen
Polymeric diphenylmethane diisocyanate	None	Allergen, Irritant, Kidney, Liver, Respiratory

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyurethane Prepolymer	No	No	No
Dicyclohexylmethane-4,4'-diisocyanate	No	No	No
Methylenebis(phenylisocyanate)	No	No	No
Polymeric 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: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Aviation regulated liquid, n.o.s. (Dicyclohexyl methane diisocyanate)
Hazard class or division: 9
Identification number: UN 3334
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

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). Dicyclohexylmethane-4,4'-diisocyanate (CAS# 5124-30-1). Polymeric diphenylmethane diisocyanate (CAS# 9016-87-9).

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 08/27/2014

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