MATERIALS SAFETY DATA SHEET

Date Prepared June 21, 2013 5th Edition

FOR CHEMICAL EMERGENCY
During Business Hours: (800) 966-3458
Outside Business Hours: (800) 420-7186

1. IDENTIFICATION OF PRODUCT

Product Name: Gorilla Glue®
Product Type: Polyurethane adhesive

Distributor:
The Gorilla Glue Company
4550 Red Bank Expressway
Cincinnati, OH 45227
Tel: (513) 271-3300
Fax: (513) 527-3742

2. HAZARDS IDENTIFICATION

Harmful by inhalation. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

NFPA: Health – 2, Flammability – 1, Reactivity – 1
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS: Health – 2*, Flammability – 1, Reactivity – 1
0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe *=Chronic Health Hazard

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	% content
Prepolymer based on aromatic polyisocyanate	Trade Secret	50-60%
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	15-25%
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	10-20%
Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5	1-5%

4. FIRST AID MEASURES

Inhalation If aerosol or vapor is inhaled in high concentrations: Move affected individual to fresh air and keep him warm, let him rest. If there is difficulty in breathing; call a doctor.

Eye contact Flush eyes for at least 10 minutes while holding eyelids open. Contact a doctor.

Skin contact Remove contaminated clothes immediately, and wash skin with a cleanser based on polyethylene glycol or with plenty of water and soap. Consult a doctor in the event of a skin reaction.

Ingestion Product is not intended to be ingested or eaten. If this product is ingested, it may cause gastro-intestinal blockage. If ingested, it may cause severe irritation of the gastrointestinal tract, and should be treated symptomatically. Do not induce the patient or animal to vomit. Call a doctor, ambulance or seek veterinarian assistance immediately.

5. FIRE FIGHTING MEASURES

Upper flammable limit (UFL): Not determined
Lower flammable limit (LFL): Not determined
General fire hazards
Down-wind personnel must be evacuated. Do not reseal contaminated containers; a chemical reaction generating carbon dioxide gas pressure may occur resulting in rupture of the container. Dense smoke is emitted when product is burned without sufficient oxygen. When using water spray, boil-over may occur when product temperature reaches the boiling point of water, and the reaction forming carbon dioxide will accelerate. MDI vapor and other gases may be generated by thermal decomposition.

Special hazards in fire
In case of fire, formation of carbon monoxide, carbon dioxide, nitrogen oxide, isocyanate vapor, and traces of hydrogen cyanide is possible.
Extinguishing Media
Carbon dioxide, dry powder, and foam. In cases of large scale fires, alcohol-resistant foams are preferred. If water is used, it should be used in very large quantities. The reaction between water and isocyanate may be vigorous.
Required special protective equipment for fire-fighters
Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear full-protective clothing and respiratory protection as required maintaining exposures during clean-up below the applicable exposure limits.
Environmental precautions
Do not discharge spillage into drains.
Clean-up procedures
Remove mechanically; cover remainders with wet absorbent material (e. g. sand, earth, sawdust). After approx. 15 min. transfer to waste container and do not seal (evolution of CO2). Keep damp in a safe ventilated area for several days.

. HANDLING AND STORAGE

Handling
Avoid contact with skin and eye. Do not smoke, eat and drink at the work-place.
Ventilation: If vapor or mist is generated during processing or use, local exhaust ventilation should be provided to maintain exposures below the applicable limits.
Personal protection: see Section 8.
Storage
Keep product away from sources of alcohols, amines, or other materials that react with isocyanates. Avoid prolonged heating above 160°C/320°F. Store the product in tightly closed containers in a well-ventilated place and in accordance with national regulations. Keep out of reach of children and animals.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

For exposure controls see Section 15.
Component exposure limits

	CAS no.	Type	ppm	mg/m³
4,4'-Diphenylmethane diisocyanate	101-68-8	OSHA PEL	0.02	0.2
		ACGIH (TLV-TWA)	0.005	

Personal protection equipment
General: Wear suitable protective clothing, protective gloves and protective goggles/mask.
Suitable materials for safety gloves:
Natural rubber/natural latex – NR (>= 0.5 mm)
Polychloroprene – CR (>= 0.5mm)
Nitrile rubber – NBR (>= 0.35mm)
Butyl rubber – IIR (>= 0.5 mm)
Fluorinated rubber – FKM (>= 0.4 mm)

Personal protection equipment (continued)

Respiratory protection Required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.

Eyes protection Chemical goggles or full face shields are recommended. An eyewash fountain and safety shower should be available in the work area. Contact lenses should not be worn when working with this product.

Skin protection Wear special gloves and working clothes to avoid skin irritation or sensitization. Depending on operation, chemical resistant boots, overshoes, and apron may also be required.

Suitable materials for clothing: Polyethylene/ethylene vinyl alcohol laminates (PE/VAL) has been reported as an effective material of construction for chemical protective clothing for MDI.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form. . . . . Liquid
Color . . . . . Dark-Brown
Odor . . . . . Earthy,musty
Boiling point . . . . . >300°C
Flash point . . . . . >250°C
Vapour pressure. . . . . <0,00001 mbar at 20° C (diphenyl-methane-diisocyanate)
Specific gravity . . . . . Approx. 1,14 g/cm3 at 20° C
Viscosity . . . . . 4,000 – 7,000 mPa.s at 25°C (Brookfield sp. 6/20 rpm)
Solubility in water . . . . . reacts
Percent VOC . . . . . 1% does not contain solvents. (12 g/L SCAQMD compliant)
Pour point. . . . . Approx -12°C (10.4 °F)

10. STABILITY AND REACTIVITY

Stability

The product is stable under the recommended handling and storage conditions (see section 7).

Hazardous decomposition products

By exposure to high temperature, hazardous decomposition products may develop, such as isocyanate vapour and mist, carbon dioxide, carbon monoxide, nitrogen oxide, and traces of hydrogen cyanide.

Hazardous reaction

Exothermic reaction with amines and alcohols; reacts with water forming heat,CO2, and insoluble polyurea. The combined effect of CO2 and heat can produce enough pressure to rupture a closed container.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity LD50 rat: > 2,000 mg/kg
Acute Inhalation Toxicity LC50 rat: 490 mg/m³, aerosol, 4 h
Skin Irritation rabbit, slight irritant
Inhalation Over-exposure may cause irritating effects on nose throat and respiratory tract.
Skin contact Prolonged or repeated contact may result in tanning and irritating effects.
Eye contact Over-exposure may cause irritating effects on eyes.

12. ECOLOGICAL INFORMATION

Do not allow the product to escape into waters, wastewater or soil.

Biodegradability	0% after 28 days
Bioaccumulation	Does not bioaccumulate.
Acute toxicity to fish	LC0 > 1,000 mg/l (Zebra fish, Brachydanio rerio) 96 hrs.
Toxicity for daphnia	EC 50 > 1,000 mg/l (24 hrs.)
Acute toxicity to bacteria	EC 50 > 100 mg/l (3 hrs.)

13. DISPOSAL CONSIDERATIONS

The product remnants are classified as chemical waste. Dispose of waste according to Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

No classification assigned to: Land transport (DOT) / Sea transport (IMDG) / Air transport (ICAO/IATA)

15. REGULATION INFORMATION

This product and its components are listed on the TSCA 8(b) inventory.

United States Federal Regulations
OSHA Hazcom Standard Rating: Hazardous
US. Toxic Substances Control Act: Listed on the TSCA Inventory.
US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components
4,4'-Diphenylmethane Diisocyanate (MDI)

SARA Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components
None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

Components
Polymeric Diphenylmethane Diisocyanate (pMDI)
4,4'-Diphenylmethane Diisocyanate (MDI)

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):
If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24).

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

This product contains a trace (ppm) amount of phenyl isocyanate (CAS# 103-71-9) and monochlorobenzene (CAS# 108-90-7), present below the maximum concentration for D021toxicity.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Weight %	Components	CAS-No.
50 - 60%	Polyisocyanate Prepolymer based on MDI	CAS# is a trade secret
15 - 25%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
10 - 20%	Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9
1 - 5%	Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

Weight %	Components	CAS-No.
15 - 25%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
10 - 20%	Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9

California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be - Developmental toxin.

Weight %	Components	CAS-No.
< 1ppm	Methanol	67-56-1

16. OTHER INFORMATION

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or Provincial, and Local laws.

The Gorilla Glue Company does not test on animals, nor do we require our suppliers to test on animals. Any information provided in this MSDS is based on existing scientific testing of the various raw materials, and is not commissioned by this Company.