

SAFETY DATA SHEET

Revision: 2.0 Date: 23.03.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

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1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	M-Bond 600 Adhesive
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s)	Adhesives.
Uses Advised Against	None known.

1.3 Supplier's details

Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com

1.4 Emergency Phone No.

1-800-424-9300
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 GHS Classification

Flam. Liq. 2; H225
Acute Tox. 4; H302
Skin Irrit. 2; H315
Skin Sens. 1; H317
Eye Irrit. 2; H319
STOT SE 3; H335
Carc. 2; H351
Aquatic Chronic 2; H411

2.2 Label elements

Product Name	According to Regulation (EC) No. 1272/2008 (CLP)
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	M-Bond 600 Adhesive
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Hazard Pictogram(s)



Signal Word(s)

Danger

Contains:

Tetrahydrofuran and Polyglycidyl Ether of Phenol-Formaldehyde

Hazard Statement(s)

H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer.
H411: Toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

Revision: 2.0 Date: 23.03.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

www.vishaypg.com

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P201: Obtain special instructions before use.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.

Additional Information

EUH019: May form explosive peroxides.

2.3 Other hazards

None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

GHS Classification

Tetrahydrofuran	45 – 55	109-99-9	203-726-8	None assigned	Flam. Liq. 2; H225 Acute Tox. 4; H302 Eye Irrit. 2; H319 STOT SE 3; H335 Carc. 2; H351 EUH019
Polyglycidyl Ether of Phenol-Formaldehyde	30 – 40	28064-14-4	-	None assigned	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411
Ethyl methyl ketone	12-18	78-93-3	201-159-0	None assigned	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066

H225: Highly flammable liquid and vapour. H302: Harmful if swallowed. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness. H351: Suspected of causing cancer. H411: Toxic to aquatic life with long lasting effects. EUH019: May form explosive peroxides. EUH066: Repeated exposure may cause skin dryness or cracking.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.

Eye Contact

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 exposed or concerned: Get medical advice/attention.

Ingestion

IF SWALLOWED: Rinse mouth. Make victim drink plenty of water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless

SAFETY DATA SHEET

Revision: 2.0 Date: 23.03.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

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| 4.2 | Most important symptoms and effects, both acute and delayed | instructed to do so by medical personnel. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.
Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer. |
| 4.3 | Indication of any immediate medical attention and special treatment needed | Treat symptomatically. |

5. SECTION 5: FIREFIGHTING MEASURES

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| 5.1 | Extinguishing media
Suitable Extinguishing media

Unsuitable extinguishing media | As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Do not use water jet. Direct water jet may spread the fire. |
| 5.2 | Special hazards arising from the substance or mixture | Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Phenolic and Explosive Peroxides. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. |
| 5.3 | Advice for fire-fighters | Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers. |

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

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| 6.1 | Personal precautions, protective equipment and emergency procedures | Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours. |
| 6.2 | Environmental precautions | Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body. |
| 6.3 | Methods and material for containment and cleaning up | Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. This material and its container must be disposed of as hazardous waste. |
| 6.4 | Reference to other sections | See Section: 8, 13 |

7. SECTION 7: HANDLING AND STORAGE

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| 7.1 | Precautions for safe handling | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all contact. Do not breathe vapour. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. |
| 7.2 | Conditions for safe storage, including any incompatibilities

Storage temperature
Storage life
Incompatible materials | Ground/bond container and receiving equipment. Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight.
Ambient. Keep at temperature not exceeding (°C): 32
Stable under normal conditions.
Keep away from: Oxidizing agents, Corrosive Substances, Reducing agents, Strong Acids and Alkalis. |
| 7.3 | Specific end use(s) | Adhesives. See Section: 1.2 |

SAFETY DATA SHEET

Revision: 2.0 Date: 23.03.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

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8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Tetrahydrofuran	109-99-9	200	590	250*	735*	NIOSH
Tetrahydrofuran	109-99-9	200	590	-	-	OSHA
Methyl ethyl ketone	78-93-3	200	590	300*	885*	NIOSH
Methyl ethyl ketone	78-93-3	200	590	-	-	OSHA

Note: OSHA 1910.1000 TABLE Z-1 / *NIOSH 15 minutes average value

8.1.2 Biological limit value

Not established.

8.1.3 PNECs and DNELs

Not established.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. or Use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Keep good industrial hygiene. Avoid all contact. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

Eye/ face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection (EN166).

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection: Wear suitable coveralls to prevent exposure to the skin.

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Almost colourless Liquid
Odour	Ether-like Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	66°C
Flash point	-14 °C (Mixture)
Evaporation rate	8 (BuAc = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1.8 Flammable Limits (Upper) (%v/v): 11.8
Vapour pressure	129 (mmHg) @ 20°C
Vapour density	2.4 (Air = 1)
Relative density	0.9 (H2O = 1)
Solubility(ies)	Water: >50%

SAFETY DATA SHEET

Revision: 2.0 Date: 23.03.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

www.vishaypg.com

Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	320 °C
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not oxidising.

9.2 Other information VOC 598 g/L

10. SECTION 10: STABILITY AND REACTIVITY

10.1	Stability and reactivity	Stable under normal conditions.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. May form explosive peroxides. Contact with aliphatic amines will cause irreversible polymerization with considerable heat build-up.
10.4	Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Keep at a temperature not exceeding (°C): 32.
10.5	Incompatible materials	Oxidizing agents, Corrosive Substances, Reducing agents, Strong Acids and Alkalis.
10.6	Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Phenolic and Explosive Peroxides.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1	Information on toxicological effects (Substances in preparations / mixtures)	
	Acute toxicity	
	Ingestion	Acute Tox. 4: Harmful if swallowed. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 996 mg/kg bw/day.
	Inhalation	Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
	Skin Contact	Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
	Skin corrosion/irritation	Skin Irrit. 2: Causes skin irritation.
	Serious eye damage/irritation	Eye Irrit. 2: Causes serious eye irritation.
	Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction.
	Germ cell mutagenicity	Based on available data, the classification criteria are not met.
	Carcinogenicity	Carc. 2: Suspected of causing cancer.
	Reproductive toxicity	Based on available data, the classification criteria are not met.
	STOT - single exposure	STOT SE 3: May cause respiratory irritation.
	STOT - repeated exposure	Based on available data, the classification criteria are not met.
	Aspiration hazard	Based on available data, the classification criteria are not met.
11.2	Other information	None

12. SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	Aquatic Chronic 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 >1 ≤ 10 mg/l (Fish)
12.2	Persistence and degradability	Part of the components are poorly biodegradable.
12.3	Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4	Mobility in soil	The product is predicted to have high mobility in soil.
12.5	Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6	Other adverse effects	None known.

SAFETY DATA SHEET

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1272/2008 (CLP) & 453/2010

www.vishaypg.com

13. SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** This material and its container must be disposed of as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
- 13.2 Additional Information** Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

- 14.1 UN number** ADR/RID / IMDG / IATA
UN 1133
- 14.2 Proper Shipping Name** ADHESIVES containing flammable liquid
- 14.3 Transport hazard class(es)** 3
- 14.4 Packing group** II
- 14.5 Environmental hazards** Marine Pollutant / Environmentally hazardous substance
- 14.6 Special precautions for user** See Section: 2
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.
- 14.8 Additional Information** None.

15. SECTION 15: REGULATORY INFORMATION

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- 15.1.1 EU regulations**
SVHCs None
Germany Water hazard class: 2
- 15.1.2 National regulations**
USA NTP: Not listed
IARC Monographs: Not listed
OSHA Regulated: Not listed
- 15.2 Chemical Safety Assessment** Not available.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Tetrahydrofuran (CAS# 109-99-9) and Methyl ethyl ketone (CAS# 78-93-3), Existing ECHA registration(s) for Tetrahydrofuran (CAS# 109-99-9) and Methyl ethyl ketone (CAS# 78-93-3) and the Classification and Labelling Inventory for Polyglycidyl Ether of Phenol-Formaldehyde (CAS# 28064-14-4).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Flam. Liq. 2; H225	Flash Point [Closed cup] Test Result/ Boiling Point (°C)
Acute Tox. 4; H302	Acute Toxicity Estimate (ATE) Calculation.
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H335	Threshold Calculation
Carc. 2; H351	Threshold Calculation
Aquatic Chronic 2	Summation Calculation

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level

SAFETY DATA SHEET

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PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
OSHA	The Occupational Safety & Health Administration
NIOSH	National Institute for Occupational Safety and Health

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Annex to the extended Safety Data Sheet (eSDS)

No information available.