

FORBO 660 B

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 05/06/2015

Version: 2.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: FORBO 660 B

Intended Use of the Product

Adhesive

Name, Address, and Telephone of the Responsible Party

Forbo Linoleum, Inc.
Humboldt Industrial Park
PO Box 667
800-842-7839

Manufacturer

Helmitin Inc.
11110 Airport Road
Olive Branch, MS 38654
Phone: 877.823.2624
www.helmitinadhesives.com

Emergency Telephone Number

Emergency Number : CHEMTREC 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Acute Tox. 3 (Oral) H301
Acute Tox. 3 (Dermal) H311
Skin Corr. 1B H314
Eye Dam. 1 H318
Skin Sens. 1 H317
Aquatic Acute 2 H401
Aquatic Chronic 3 H412

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H301+H311 - Toxic if swallowed or in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H401 - Toxic to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements (GHS-US)

: P260 - Do not breathe vapors, spray, mist.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.

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P280 - Wear protective gloves, protective clothing, face protection, eye protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other Hazards

May be corrosive to respiratory tract.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)
Trimethylolpropane Polyoxypropylene Triamine	(CAS No) 39423-51-3	15 - 40
Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine (Polyamide Resin)	(CAS No) 68082-29-1	15 - 40
2,4,6-Tri(dimethylaminomethyl)phenol	(CAS No) 90-72-2	15 - 40
Propanol, oxybis-, dibenzoate	(CAS No) 27138-31-4	5 - 10
Bis[(dimethylamino)methyl]phenol	(CAS No) 71074-89-0	1 - 5
Triethylenetetramine	(CAS No) 112-24-3	1 - 5
Octylphenol ethoxylate	(CAS No) 9036-19-5	0.5 – 1.5

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with plenty of water for at least 60 minutes. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage. May cause an allergic skin reaction. Toxic if swallowed. Toxic in contact with skin.

Inhalation: May be corrosive to the respiratory tract. May cause respiratory irritation.

Skin Contact: Causes severe skin burns. Symptoms may include: Redness, pain, swelling, itching, burning, dryness, and dermatitis. May cause an allergic skin reaction.

Eye Contact: Causes serious eye damage. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

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SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions. Thermal decomposition generates corrosive vapors.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂). Nitrogen oxides.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Specific End Use(s)

No use is specified.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

Triethylenetetramine (112-24-3)		
Ontario	OEL TWA (mg/m ³)	3 mg/m ³
Ontario	OEL TWA (ppm)	0.5 ppm

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Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Dark Pourable Liquid
Odor	: Amine Odor
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: 0 °C (32° F)
Boiling Point	: > 126 °C (260 °F)
Flash Point	: > 93 °C (200 °F) (Tag Closed Cup)
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 1.0
Solubility	: Not available
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Approximately 600 cps
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

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SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions. Thermal decomposition generates corrosive vapors.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂). Nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.

LD50 and LC50 Data:

ATE US (oral)	293.18 mg/kg body weight
ATE US (dermal)	759.23 mg/kg body weight

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

Serious Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May be corrosive to the respiratory tract. May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: Causes severe skin burns. Symptoms may include: Redness, pain, swelling, itching, burning, dryness, and dermatitis. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Causes serious eye damage. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Trimethylolpropane Polyoxypropylene Triamine (39423-51-3)	
ATE US (oral)	100.00 mg/kg body weight
ATE US (dermal)	300.00 mg/kg body weight
Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine (Polyamide Resin) (68082-29-1)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
Triethylenetetramine (112-24-3)	
LD50 Oral Rat	2500 mg/kg
LD50 Dermal Rabbit	550 mg/kg
2,4,6-Tri(dimethylaminomethyl)phenol (90-72-2)	
LD50 Oral Rat	1000 mg/kg
LD50 Dermal Rat	1280 mg/kg
Bis[(dimethylamino)methyl]phenol (71074-89-0)	
ATE US (oral)	500.00 mg/kg body weight
ATE US (dermal)	1,100.00 mg/kg body weight

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Octylphenol ethoxylate (9036-19-5)	
LD50 Oral Rat	1700 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Triethylenetetramine (112-24-3)	
LC50 Fish 1	570 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [semi-static])
EC50 Daphnia 1	31.1 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	495 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
Octylphenol ethoxylate (9036-19-5)	
LC50 Fish 1	7.2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	8.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])
ErC50 (algae)	0.21 mg/l (Exposure time: 96 h - Species: Selenastrum Green Algae)

Persistence and Degradability Not available

Bioaccumulative Potential

Triethylenetetramine (112-24-3)	
BCF Fish 1	(no bioaccumulation expected)
Log Pow	-1.4

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT

Proper Shipping Name : CORROSIVE LIQUIDS, TOXIC, N.O.S. (Contains Trimethylolpropane Polyoxypropylene Triamine and 2,4,6-Tri(dimethylaminomethyl)phenol)

Hazard Class : 8

Identification Number : UN2922

Label Codes : 8,6.1

Packing Group : II

ERG Number : 154



In Accordance with IMDG

Proper Shipping Name : CORROSIVE LIQUID, TOXIC, N.O.S. (Contains Trimethylolpropane Polyoxypropylene Triamine and 2,4,6-Tri(dimethylaminomethyl)phenol)

Hazard Class : 8

Identification Number : UN2922

Packing Group : II

Label Codes : 8,6.1

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-B



In Accordance with IATA

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Proper Shipping Name : Corrosive liquid, toxic, n.o.s. (Contains Trimethylolpropane Polyoxypropylene Triamine and 2,4,6-Tri(dimethylaminomethyl)phenol)

Packing Group : II

Identification Number : UN2922

Hazard Class : 8

Label Codes : 8,6.1

ERG Code (IATA) : 8P



In Accordance with TDG

Proper Shipping Name : CORROSIVE LIQUID, TOXIC, N.O.S. (Contains Trimethylolpropane Polyoxypropylene Triamine and 2,4,6-Tri(dimethylaminomethyl)phenol)

Packing Group : II

Hazard Class : 8

Identification Number : UN2922

Label Codes : 8,6.1



SECTION 15: REGULATORY INFORMATION

US Federal Regulations

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Trimethylolpropane Polyoxypropylene Triamine (39423-51-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine (Polyamide Resin) (68082-29-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Triethylenetetramine (112-24-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
2,4,6-Tri(dimethylaminomethyl)phenol (90-72-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Propanol, oxybis-, dibenzoate (27138-31-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Octylphenol ethoxylate (9036-19-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Triethylenetetramine (112-24-3)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Canadian Regulations

WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Trimethylolpropane Polyoxypropylene Triamine (39423-51-3)	
Listed on the Canadian DSL (Domestic Substances List)	

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WHMIS Classification	Class E - Corrosive Material Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine (Polyamide Resin) (68082-29-1)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
Triethylenetetramine (112-24-3)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
2,4,6-Tri(dimethylaminomethyl)phenol (90-72-2)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
Bis[(dimethylamino)methyl]phenol (71074-89-0)	
WHMIS Classification	Class E - Corrosive Material
Propanol, oxybis-, dibenzoate (27138-31-4)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Octylphenol ethoxylate (9036-19-5)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/06/2015
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

H301	Toxic if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H401	Toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

Party Responsible for the Preparation of This Document

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

North America GHS US 2012 & WHMIS 2