

Pliobond TPO Bonding Adhesive

Material Safety Data Sheet

Updated: 8/08



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GAF Materials Corporation
Material Safety Data Sheet
MSDS # 2101
MSDS Date: August 2008

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: Pliobond® TPO Bonding Adhesive
TRADE NAME: N/A
CHEMICAL NAME / SYNONYM: N/A
CHEMICAL FAMILY: Adhesive
MANUFACTURER: GAF Materials Corporation
ADDRESS: 1361 Alps Road, Wayne, NJ 07470
24-HOUR EMERGENCY PHONE (CHEMTREC): 800 – 424 – 9300
INFORMATION ONLY: 800 – 766 – 3411
PREPARED BY: Randy Redwine
APPROVED BY: Phil Curry

NFPA Hazard Rating

HMIS Hazard Rating

Health	2	Health	2
Flammable	3	Flammable	3
Reactive	0	Reactive	0
Special Hazards	-	Personal Protection	X

OSHA HAZARDOUS: Yes No

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

OCCUPATIONAL EXPOSURE LIMITS

CHEMICAL NAME	CAS #	%(BY WT)	OSHA	ACGIH	OTHER
Toluene	108-88-3	30-40%	200 ppm 300 ppm – ceiling	20 ppm	REL: 100 ppm 150 ppm STEL
Acetone	67-64-1	20-30%	1000 ppm	500 ppm 750 ppm STEL	REL: 250 ppm

OCCUPATIONAL EXPOSURE LIMITS

CHEMICAL NAME	CAS #	%(BY WT)	OSHA	ACGIH	OTHER
Solvent Naphtha (Petroleum), Light Aliphatic	64742-89-8	5-10%	NE	300 ppm	REL: 350 mg/m ³ 1800 mg/m ³ – ceiling
N-Hexane	110-54-3	5-10%	500 ppm	50 ppm	REL: 50 ppm
Cyclohexane	110-82-7	1.5-5%	300 ppm	100 ppm	REL: 300 ppm
n-Heptane	142-82-5	1-1.5%	500 ppm	400 ppm	REL: 85 ppm
Ethyl Benzene	100-41-4	.1-5%	100 ppm	100 ppm	REL: 100 ppm

NE = Non Established

SECTION 3: HAZARDS IDENTIFICATION

PRIMARY ROUTE OF EXPOSURE: Inhalation, Skin, Eye, Ingestion

SIGNS & SYMPTOMS OF EXPOSURE

EYES: May cause irritation to the eyes. Symptoms include stinging, tearing, redness, and swelling of the eyes.

SKIN: May cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

INGESTION: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing and vomiting. This results in lung inflammation and other lung injuries.

INHALATION: Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits. May cause allergic respiratory reaction.

ACUTE HEALTH HAZARDS: Preexisting disorders of the following organs (or organ system) may be aggravated by exposure to this material; Upper respiratory track, skin, lung, liver, kidney, central nervous system, blood-forming system, male reproductive system, auditory system. Individuals with preexisting heart disorders may be more

susceptible to arrhythmias is exposed to high concentrations of this material.

CHRONIC HEALTH HAZARDS:

Overexposure to this material has been suggested as a cause of the following effects in humans; kidney damage, visual impairment, central nervous system effects. Toluene may be harmful to the human fetus based on positive test results with laboratory animals. Case studies show that prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans. Prolonged intentional toluene abuse may lead to hearing loss progressing to deafness. Prolonged and repeated exposure to n-hexane may cause peripheral neuropathy by damaging peripheral nerve tissue and result in muscular weakness and loss of sensation.

CARCINOGENICITY:

Ethyl benzene has been shown to cause cancer in laboratory animals. The relevance of this finding in humans is uncertain. The International Agency for Research on Cancer (IARC) has classified ethyl benzene as a possible human carcinogen (Group 2B).

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES**EYES:**

Immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart. Seek immediate medical attention.

SKIN:

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek immediate medical attention. Launder clothing before reuse.

INHALATION:

Immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep individual warm and quiet. If breathing is difficult, administer oxygen.

INGESTION:

Seek immediate medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity when deciding whether to induce vomiting. This material (or a component) has produced hyperglycemia and ketosis following substantial ingestion.

SECTION 5: FIRE FIGHTING PROCEDURES

SUITABLE EXTINGUISHING MEDIA:	Dry chemical, Carbon Dioxide (CO ₂)
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide and carbon monoxide, Hydrocarbons.
RECOMMENDED FIRE FIGHTING PROCEDURES:	Wear self-contained breathing apparatus and full protective clothing. Material is volatile and readily gives off vapors. Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.
UNUSUAL FIRE & EXPLOSION HAZARDS:	Vapors may accumulate and travel to ignition sources distant from handling site. Isolate from heat, sparks, and open flame. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:	Contain spillage and collect with non-combustible absorbent material and place in container for disposal. Suppress gases/vapors/mists with a water spray jet. Prevent run-off to sewers, streams or other bodies of water.
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SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE:	Containers of this material may be hazardous when emptied. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer. Store in a cool, dry, ventilated area, away from incompatible substances. Keep containers closed when not in use. Do not store near extreme heat, open flame, or sources of ignition.
OTHER PRECAUTIONS:	N/A

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS /
VENTILATION:**

Provide sufficient mechanical ventilation to maintain exposure below exposure guidelines or below levels that cause known, suspected or apparent adverse affects.

RESPIRATORY PROTECTION:

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

EYE PROTECTION:

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

SKIN PROTECTION:

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse.

OTHER PROTECTIVE EQUIPMENT:

Eye washes and safety showers could also be provided.

WORK HYGIENIC PRACTICES:

Wash thoroughly after handling and before eating or smoking.

EXPOSURE GUIDELINES:

N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:	Amber liquid with a slight odor.		
FLASH POINT:	0.0 °F (-17.78 °C)	LOWER EXPLOSIVE LIMIT:	No data
METHOD USED:	No data	UPPER EXPLOSIVE LIMIT:	No data
EVAPORATION RATE:	> 1 (butyl acetate = 1)	BOILING POINT:	131 – 289 °F (55 – 143 °C)
pH (undiluted product):	No data	MELTING POINT:	No data
SOLUBILITY IN WATER:	Immiscible	SPECIFIC GRAVITY:	No data
VAPOR DENSITY:	No data	PERCENT VOLATILE:	No data
VAPOR PRESSURE:	46.10 hPa	MOLECULAR WEIGHT:	No data
VOC WITH WATER (LBS/GAL):	No data	WITHOUT WATER (LBS/GAL):	No data

SECTION 10: STABILITY AND REACTIVITY

THERMAL STABILITY: **STABLE** **UNSTABLE**

CONDITIONS TO AVOID (STABILITY): N/A

INCOMPATIBILITY (MATERIAL TO AVOID): Strong acids, Strong oxidizing agents, Acids, Alkalis, Reducing agents.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon dioxide and carbon monoxide, Hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION**TOXICOLOGICAL INFORMATION:****Acute Oral Toxicity**

Toluene	LD 50 Rat: 2,600-7,500 mg/kg
Acetone	LD 50 Rat: 5,800 mg/kg
Solvent Naphtha (Petroleum), Light Aliphatic	LD 50 Rat: > 8,000 mg/kg
N-Hexane	LD 50 Rat: 25 mg/kg
Cyclohexane	LD 50 Mouse: 1,300 mg/kg LD 50 Rat: 29,820 mg/kg
n-Heptane	LD 50 Rat: > 15,000 mg/kg
Ethyl Benzene	LD 50 Rat: 3,500 mg/kg

Acute Inhalation Toxicity

Toluene	LC 50 Rat: 8000 ppm, 4h
Acetone	LC 50 Rat: > 16000 ppm, 4h
Solvent Naphtha (Petroleum), Light Aliphatic	LC 50 Rat: 3400 ppm, 4h
N-Hexane	LC 50 Rat: 48000 ppm, 4h
Cyclohexane	LC 50 Rat: > 4044 ppm
n-Heptane	LC 50 Rat: 103 g/m ³ , 4h
Ethyl Benzene	LC 50 Rat: 4000 ppm, 4h

Acute Dermal Toxicity

Toluene	LD 50 Rabbit: 12,124 mg/kg
Acetone	LD 50 Rabbit: > 20,000 mg/kg
Solvent Naphtha (Petroleum), Light Aliphatic	LD 50 Rat: > 4,000 mg/kg
N-Hexane	LD 50 Rabbit: > 1.3 g/kg
Cyclohexane	LD 50 Rabbit: > 2.0 mg/kg
n-Heptane	LD 50 Rabbit: > 2,001 mg/kg

Ethyl Benzene

LD 50 Rabbit: 15,433 mg/kg

SECTION 12: ECOLOGICAL INFORMATION**ECOLOGICAL INFORMATION:** N/A**SECTION 13: DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD:** Dispose of containers and absorbed material in accordance with all federal, state, and local requirements.**RCRA HAZARD CLASS:** See Above.**SECTION 14: TRANSPORTATION INFORMATION****U.S. DOT TRANSPORTATION****PROPER SHIPPING NAME:** ADHESIVES, 3, UN1133, II**HAZARD CLASS:** 3**ID NUMBER:** UN1133**PACKING GROUP:** Flammable liquid**LABEL STATEMENT:** 49 CFR 172.101 Adhesives, UN1133, IMDG Class 3.2, Pg. 3174, Flash Point <40.01°F (4.45°C)**OTHER:** N/A**SECTION 15: REGULATORY INFORMATION****U.S. FEDERAL REGULATIONS****TSCA:** This product and its components are listed on the TSCA 8(b) inventory.**CERCLA:** N/A**SARA**

311/312 HAZARD CATEGORIES: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Toluene 108-88-3 38.84%
 N-Hexane 110-54-3 6.4032%
 Cyclohexane 110-82-7 1.6968%
313 REPORTABLE INGREDIENTS: Ethyl Benzene 100-41-4 0.2601%

CALIFORNIA PROPOSITION 65: This product contains a chemical known to the state of California to cause cancer and birth defects, or other reproductive harm.

Other state regulations may apply. Check individual state requirements. The following components appear on one or more of the following state hazardous substances lists:

Chemical Name	CAS #	CA	MA	MN	NJ	PA	RI
Toluene	108-88-3	Yes	Yes	Yes	Yes	No	Yes
Acetone	67-64-1	No	No	No	Yes	No	No
Solvent Naphtha (Petroleum), Light Aliphatic	64742-89-8	Yes	Yes	Yes	Yes	Yes	Yes
N-Hexane	110-54-3	No	Yes	Yes	Yes	Yes	Yes
Cyclohexane	110-82-7	Yes	Yes	Yes	Yes	Yes	Yes
n-Heptane	142-82-5	No	Yes	Yes	Yes	Yes	Yes
Ethyl Benzene	100-41-4	Yes	Yes	Yes	Yes	No	Yes

SECTION 16: OTHER INFORMATION

ADDITIONAL COMMENTS: N/A

DATE OF PREVIOUS MSDS: N/A

CHANGES SINCE PREVIOUS MSDS: New MSDS

This information relates to the specific material designated and may not be valid for such material used on combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee, expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license of valid patents.