



Stevens Roofing Systems

Material Safety Data Sheet
STEVENS EP (TPO) Bonding Adhesive

Section 1: Chemical Product and Company Information

Stevens Roofing Systems
Carolina Plant
1535 Elastic Plant Road
Westfield, NC 27053
USA

Information Phone: (336) 351-3131
Emergency Phone: (413) 533-8100
CHEMTREC: (800) 424-9300 or
(703) 527-3887

Product Item Number: 2087082
CAS Number: Mixture
General Use: Roofing Adhesive

NFPA Ratings
Health - 2
Flammability - 3
Reactivity - 0
PPE - see Section 8

Section 2: Composition, Information on Ingredients

Ingredient Name	CAS #	% Wt
TOLUENE	108-88-3	>=30-<40%
ACETONE	67-64-1	>=20-<30%
SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8	>=5-<10%
N-HEXANE	110-54-3	>=5-<10%
CYCLOHEXANE	110-82-7	>=1.5-<5%
n-HEPTANE	142-82-5	>=1-<1.5%
ETHYL BENZENE	100-41-4	>=0.1-<0.5%

Section 3: Hazard Identification

Primary Entry Routes: Inhalation, skin absorption, skin contact, eye contact and ingestion

Potential Health Effects

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

Skin: May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, drying and cracking of the skin, and skin burns. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Ingestion: Ingesting small amounts of this material during normal handling is not likely to cause harmful effects. Ingestion of large quantities may be harmful. This material can get into the lungs during swallowing or vomiting. This may result in lung inflammation or 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 usually occur at air concentrations higher than the recommended exposure limits (see Section 2).

Symptoms of Exposure: Signs and symptoms of exposure to this material through breathing, ingestion, and/or skin absorption may include:

Metallic taste

Mouth and throat irritation (soreness, dry or scratchy feeling, cough)

Stomach or intestinal upset (nausea, vomiting, diarrhea)

Irritation (nose, throat, airways)



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Central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness)

Central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects

Other central nervous system effects

Temporary changes in mood and behavior

Muscle weakness

Loss of coordination

Confusion

Irregular heartbeat

High blood sugar

Coma

Death

Target Organs Effects: This material (or a component) shortens the time of onset or worsens the liver and kidney damage induced by other chemicals. Prolonged and repeated exposure to n-hexane may cause peripheral neuropathy by damaging peripheral nerve tissue (that of the arms and legs) and result in muscular weakness and loss of sensation.

Prolonged and repeated inhalation of high levels of mixed isomers of hexane resulted in kidney damage in male rats. The effects observed are the same as those seen in male rats exposed to other hydrocarbons. The mechanism by which these chemicals cause the characteristic kidney toxicity is unique to the male rat and the kidney effects are not expected to occur in man.

Prolonged intentional toluene abuse may lead to damage to many organ systems having effects on: central and peripheral nervous systems, vision, hearing, liver, kidneys, heart and blood. Such abuse has been associated with brain damage characterized by disturbances in gait, personality changes and loss of memory. Comparable central nervous systems effects have not been shown to result from occupational exposure to toluene. Prolonged intentional toluene abuse may lead to hearing loss progressing to deafness. In addition, while noise is known to cause hearing loss in humans, it has been suggested that workers exposed to organic solvents, including toluene, along with noise may suffer greater hearing loss than would be expected from exposure to noise alone.

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible liver effects; mild reversible kidney effects; blood abnormalities; liver abnormalities; nasal damage; respiratory tract damage (nose, throat, and airways); spleen damage eye damage; kidney damage; effects on hearing; testis damage; lung damage; and central nervous system damage.

Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: liver abnormalities, visual impairment, kidney damage, and central nervous system effects.

Developmental/Reproductive Information: This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

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.

Cancer Information: Based on the available information, this material cannot be classified with regard to carcinogenicity. This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program, or the Occupational Safety and Health Administration (OSHA).

Medical Conditions Aggravated by Long-Term Exposure: Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract, skin, lung (for example, asthma-like conditions), liver, kidney, central nervous system, blood-forming system, spleen, auditory system, and eyes.



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Section 4: First Aid Measures

Eye Contact: If symptoms develop, immediately move the individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids open. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion: Seek 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 the individual unattended.

Inhalation: If symptoms develop, move the individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet. Seek immediate medical attention.

Notes to Physicians or First Aid Providers:

Hazards: 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 (see Health Effects - Ingestion above) when deciding whether to induce vomiting. This material (or a component) has produced hyperglycemia and ketosis following substantial ingestion. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract, skin, lung (for example, asthma-like conditions), liver, kidney, central nervous system, blood-forming system, spleen, auditory system, and eyes.

Treatment: No information available.

Section 5: Fire-Fighting Measures

Flash Point: less than 0°F (-18°C)

Flash Point Method: SETA

Explosive Limit (for component)

Lower: 1.0 %

Upper: 12.8%

Flammability Class: Flammable Liquid Class IB

Auto ignition Temperature: No Data

Hazardous Decomposition Products: May form carbon dioxide, carbon monoxide, phenols and various hydrocarbons.

Fire and Explosion Hazards: Material is highly volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations distant from the material handling point. Never use welding or cutting torch on or near container (even empty) because product (even just residue) can ignite explosively.

Extinguishing Media: Regular foam, water fog, carbon dioxide, dry chemical

Fire-Fighting Procedures: Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the Exposure Controls/Personal Protection section of this MSDS.



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Section 6: Accidental Release Measures

Small Spills: Absorb liquid on vermiculite, floor absorbent or other absorbent material and transfer to ventilated area. Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks.

Large Spills: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from the area of the spill until cleanup has been completed. Stop spill at source. Dike area of spill to prevent spreading. Prevent runoff to sewers, drains, streams or other bodies of water. If runoff occurs, notify proper authorities as required that a spill has occurred. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Notify the proper authorities as required that a spill has occurred.

Section 7: Handling and Storage

Handling Precautions: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid and/or solid), all hazard precautions given in the data sheet must be observed.

All five-gallon pails and larger metal containers should be grounded and/or bonded when material is transferred.

When used as part of a roofing system involving roller application, pails should be electrically and mechanically connected to the application equipment and the system should be grounded. When used as part of a roofing system involving spray application, the roof surface, applicator nozzle and human operator should be electrically and mechanically connected, and the system should be grounded.

Storage: Do not store near high heat or open flames. Store in closed containers in a dry, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Eye Protection: Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin Protection: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see exposure limits in Section 2: Composition, Information on Ingredients), a NIOSH/MSHA approved, air-supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure limits (see Section 2: Composition, Information on Ingredients).

Work Hygienic Practices: Handle all chemicals with caution and care. Always wash before eating, smoking or using toilet facilities. As with all chemicals, caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.



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Exposure Guidelines:

TOLUENE

CAS# 108-88-3

CAD AB OEL	time weighted average	50 ppm
CAD AB OEL	time weighted average	188 mg/m3
CAD BC OEL	time weighted average	50 ppm
CAD ON OEL	time weighted average	50 ppm
OEL (QUE)	time weighted average	50 ppm
OEL (QUE)	time weighted average	188 mg/m3

ACETONE

CAS# 67-64-1

CAD AB OEL	time weighted average	75 ppm
CAD AB OEL	time weighted average	1,800 mg/m3
CAD AB OEL	short term exposure limit	1,000 ppm
CAD AB OEL	short term exposure limit	2,400 mg/m3
CAD BC OEL	time weighted average	250 ppm
CAD BC OEL	short term exposure limit	500 ppm
CAD ON OEL	time weighted average	500 ppm
CAD ON OEL	short term exposure limit	750 ppm
OEL (QUE)	time weighted average	500 ppm
OEL (QUE)	time weighted average	1,190 mg/m3
OEL (QUE)	short term exposure limit	1,000 ppm
OEL (QUE)	short term exposure limit	2,380 mg/m3

N-HEXANE

CAS# 110-54-3

CAD AB OEL	time weighted average	50 ppm
CAD AB OEL	time weighted average	176 mg/m3
CAD BC OEL	time weighted average	20 ppm
CAD ON OEL	time weighted average	50ppm
CAD ON OEL	time weighted average	176 mg/m3
OEL (QUE)	time weighted average	50 ppm
OEL (QUE)	time weighted average	176 mg/m3

CYCLOHEXANE

CAS# 110-82-7

OEL (QUE)	time weighted average	300 ppm
OEL (QUE)	time weighted average	1,030 mg/m3
CAD AB OEL	time weighted average	300 ppm
CAD AB OEL	time weighted average	1,080 mg/m3
CAD BC OEL	time weighted average	100 ppm
CAD ON OEL	time weighted average	100ppm

n-HEPTANE

CAS# 142-82-5

OEL (QUE)	time weighted average	400 ppm
OEL (QUE)	time weighted average	1,640 mg/m3
OEL (QUE)	short term exposure limit	500 ppm
OEL (QUE)	short term exposure limit	2,050 mg/m3
CAD AB OEL	time weighted average	400 ppm
CAD AB OEL	time weighted average	1,640 mg/m3
CAD AB OEL	short term exposure limit	500 ppm
CAD AB OEL	short term exposure limit	2,050 mg/m3
CAD BC OEL	time weighted average	400 ppm
CAD BC OEL	short term exposure limit	500 ppm



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CAD ON OEL	time weighted average	400 ppm
CAD ON OEL	time weighted average	1,635 mg/m ³
CAD ON OEL	short term exposure limit	500 ppm
CAD ON OEL	short term exposure limit	2,045 mg/m ³
CAD ON OEL	time weighted average	400 ppm
CAD ON OEL	time weighted average	1,635 mg/m ³
CAD ON OEL	short term exposure limit	500 ppm
CAD ON OEL	short term exposure limit	2,045 mg/m ³
OEL (QUE)	time weighted average	400 ppm
OEL (QUE)	time weighted average	1,640 mg/m ³
OEL (QUE)	short term exposure limit	500 ppm
OEL (QUE)	short term exposure limit	2,050 mg/m ³

General Advice: These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations, and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Section 9: Physical and Chemical Properties

Boiling Point (for component): 133°F (56°C) @ 1,013.23 hPa

Vapor Pressure (for component): 307.96 hPa @ 77°F (25°C)

Vapor Density: No data

Specific Gravity (H₂O = 1): 0.873 @: 77°F (25°C)

Liquid Density: 7.277 lb/gal @ 77°F (0.87 kg/l @ 25°C)

Percent Volatile: 70%

Volatile Organic Compounds (VOC): 5.1 lb/gal (611 g/l)

Evaporation Rate: No data

Color: Yellow-amber

Physical State: Liquid

Odor: No data

Solubility: No data

Partition coefficient: n-octanol/water: No data

pH: No data

Section 10: Stability and Reactivity

Stability: Stable

Polymerization: Product will not undergo hazardous polymerization.

Chemical Incompatibility: Avoid contact with acids, strong alkalis, strong mineral acids and strong oxidizing agents.

Conditions to Avoid: Avoid excessive heat.

Hazardous Decomposition Products: May form carbon monoxide, carbon dioxide, phenols and various hydrocarbons.

Thermal Decomposition: No data.



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Section 11: 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)	LD 50 Rat:	>8,000 mg/kg
LIGHT ALIPHATIC		
N-HEXANE	LD 50 Rat:	25g/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	LD 50 Rat:	8,000 ppm, 4h
ACETONE	LD 50 Rat:	16,000 ppm, 4h
SOLVENT NAPHTHA (PETROLEUM)	LD 50 Rat:	3,400 ppm, 4h
LIGHT ALIPHATIC		
N-HEXANE	LD 50 Rat:	48,000 ppm, 4h
CYCLOHEXANE	LD 50 Rat:	>4,044 ppm
n-HEPTANE	LD 50 Rat:	103 g/m ³ , 4h
ETHYL BENZENE	LD 50 Rat:	4,000 ppm, 4h

Acute dermal toxicity

TOLUENE	LD 50 Rabbit:	12,124 mg/kg
ACETONE	LD 50 Rabbit:	>20,000 mg/kg
SOLVENT NAPHTHA (PETROLEUM)	LD 50 Rat:	>4,000 mg/kg
LIGHT ALIPHATIC		
N-HEXANE	LD 50 Rabbit:	>1.3 g/kg
CYCLOHEXANE	LD 50 Rabbit:	>2.0 g/kg
n-HEPTANE	LD 50 Rabbit:	>2,000 mg/kg
ETHYL BENZENE	LD 50 Rabbit:	15,433 mg/kg

Section 12: Ecological Information

Ecological Information:

Aquatic Toxicity:

Acute and Prolonged Toxicity to Fish: No data

Acute Toxicity to Aquatic Invertebrates: No data

Environmental fate and pathways: No data

Section 13: Disposal Considerations

Waste Disposal Method: Destroy by liquid incineration in accordance with applicable regulations.



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Section 14: Transportation Information

U.S. Department Of Transportation Data (49 CFR 172.101)

Shipping Name: ADHESIVES
Hazard Label: Flammable Liquid
Hazard Class: 3
ID Number: UN1133
Packing Group: II

Section 14 Notes: The Transportation Information may vary with the container and mode of shipment.

Section 15: Regulatory Information

U.S. Federal Regulations

TSCA (Toxic Substances Control Act): All intentional ingredients of this product are listed.

CERCLA Reportable Quantities (40 CFR 302.4(a)):

<u>Component</u>	<u>Reportable Quantity (lb)</u>
Toluene	1,000
Acetone	5,000
N-Hexane	5,000
Cyclohexane	1,000
Ethyl benzene	1,000

CERCLA Hazardous Substance (40 CFR 302.4(b)): Materials without a listed RQ (Reportable Quantity) may be reportable as an "unlisted hazardous substance". See 40 CFR 302.5(b).

SARA 311/312 Codes: Immediate Delayed Fire
Reactive Sudden Release of Pressure

SARA 313 Toxic Chemicals (40 CFR 372.65):

<u>Component</u>	<u>CAS Number</u>	<u>Weight %</u>
Toluene	108-88-3	>=30-<40%
N-Hexane	110-54-3	>=5-<5%
Cyclohexane	110-82-7	>=1.5-<5%
Ethylbenzene	100-41-4	>=0.1-<0.5%

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): None listed

OSHA Process Safety Management (29 CFR 1910): None listed

EPA Accidental Release Prevention (40 CFR 68): None listed

WHMIS Classification:

B2: Flammable Liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: 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 MSDS contains all information required by the CPR.

International Regulations

Inventory Status

AICS (Australia): The intentional ingredients of this product are listed.

DSL (Canada): The intentional ingredients of this product are listed.

ECL (South Korea): The intentional ingredients of this product are listed.

EINECS (Europe): The intentional ingredients of this product are listed.

ENCS (Japan): The intentional ingredients of this product are listed.

IECSC (China): The intentional ingredients of this product are listed.

PICCS (Philippines): The intentional ingredients of this product are listed.

State and Local Regulations

California Proposition 65: The following statements are made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:



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This product contains the following substances known to the state of California to cause cancer:

Benzene
Acetaldehyde
Formaldehyde (gas)

This product contains the following substances known to the state of California to cause reproductive harm:

Toluene
Benzene

New Jersey RTK Label Information

Component	CAS Number
Toluene	108-88-3
Acetone	67-64-1
Naphtha, Solvent	64742-89-8
n-Hexane	110-54-3

Pennsylvania RTK Label Information

Component	CAS Number
Benzene, methyl-	108-88-3
2-Propanone	67-64-1
Aliphatic Hydrocarbons	64742-89-8
Hexane	110-54-3

Section 16: Other Information

Preparation Information: Stevens Roofing Systems

Preparation Date: March 10, 2008

Revision History:

10/1/04	Revised Section 3 - Hazards Identification
	Revised Section 7 - Handling and Storage
03/10/08	Revised Section 2 - Composition, Information on Ingredients
	Revised Section 4 - First Aid Measures
	Revised Section 5 - Fire-Fighting Measures
	Revised Section 8 - Exposure Controls/Personal Protection
	Revised Section 9 - Physical and Chemical Properties
	Revised Section 11- Toxicological Information
	Revised Section 12- Ecological Information
	Revised Section 15- Regulatory Information

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