

MATERIAL SAFETY DATA SHEET

MSDS Number: WP017996

Revision Date: May 2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: TAMKO TWM-1 Rubberized Bitumen Mastic

USE & DESCRIPTION:

CHEMICAL FAMILY: Asphalt mixture

MANUFACTURED FOR:

TAMKO Building Products, Inc.
P.O. Box 1404
Joplin, MO 64802-1404

EMERGENCY TELEPHONE NUMBERS;

General Information: 1-904-284-7571 (8 a.m. - 5 p.m. EST)
1-620-429-1800 (8 a.m. - 5 p.m. CST)
1-417-624-6644 (8 a.m. - 5 p.m. CST)
Chemtrec: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Cas No.	% by Wt.	Exposure Limits*				
			OSHA		ACGIH		Unit
			TWA	STEL	TWA	STEL	
Petroleum Asphalt	8052-42-4	32	5 fume	NE	0.5 fume	NE	mg/m ³
Limestone**	1317-65-3	30	15 total dust 5 resp. dust	NE	10 total dust 5 resp. dust	NE	mg/m ³
Elastomer	Mixture	19	NE	NE	NE	NE	--
Aromatic Solvent	64742-95-6	11	NE	NE	NE	NE	--
Clay**	68911-87-5	6	NE	NE	NE	NE	--
Propylene carbonate	108-32-7	4	NE	NE	NE	NE	--
Xylene	1330-20-7		100	150	100	150	ppm
Cumene	98-82-8		NE	NE	50	NE	ppm
Trimethylbenzenes	25551-13-7		25	NE	25	NE	ppm
**contains: crystalline silica >5% quartz	14808-60-7	>0.1	0.05	NE	0.05	NE	mg/m ³
crystobalite	14464-46-1		0.05	NE	0.05	NE	mg/m ³

*See Section 8 for additional relevant exposure limits

NE = Not established

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING!

VAPORS, MISTS OR FUMES MAY IRRITATE THE EYES AND RESPIRATORY TRACT
MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION

DIRECT CONTACT MAY CAUSE EYE AND SKIN IRRITATION

PROLONGED AND REPEATED EXPOSURE TO FUMES AND VAPORS MAY CAUSE KIDNEY
OR LIVER DAMAGE

HEATED MATERIAL MAY CAUSE THERMAL BURNS

HEATING MAY RELEASE TOXIC HYDROGEN SULFIDE GAS (H₂S) WHICH MAY ACCUMULATE
IN CONFINED SPACES

ASPIRATION HAZARD IF SWALLOWED

Potential Health Effects:

EYE CONTACT: May cause eye irritation resulting in tearing, stinging, redness or swelling.
Vapors, mists, or fumes may be irritating.

SKIN CONTACT: Contact may cause skin irritation. Redness, drying and cracking of the skin may occur following prolonged and repeated contact. In addition, prolonged and repeated exposure to asphalt fumes has been reported to cause skin discoloration, and may increase sensitivity to the sun.

SKIN ABSORPTION: Not expected to be significant with short-term skin contact. However, prolonged or repeated skin contact may result in absorption of hazardous components.

INGESTION: This product may cause irritation of the digestive tract followed by vomiting and central nervous system depression (see "Inhalation" for symptoms). If vomiting occurs, avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis.

INHALATION: Exposure to fumes, vapors or mists may cause irritation of the nose and throat, and possible signs of central nervous system depression (symptoms may include headache, dizziness, loss of coordination, and drowsiness). Loss of consciousness can occur in poorly ventilated or confined spaces. Additional signs and symptoms of exposure may include reduced appetite and abnormal fatigue. Use of this product in well-ventilated working conditions is not expected to cause adverse effects.

Hydrogen sulfide (H₂S), an extremely toxic gas, may be emitted from heated asphalt and may accumulate in storage tanks and other confined spaces. At low concentrations (< 1 ppm), H₂S can be irritating to the eyes, nose and throat, and at high concentrations (>500 ppm) can cause rapid unconsciousness and death. The odor of H₂S cannot be used as an indicator of exposure, because the gas causes rapid olfactory fatigue which deadens the sense of smell. Use this product only under well-ventilated working conditions.

CHRONIC EFFECT/CARCINOGENICITY/SPECIAL TOXIC EFFECTS: This product contains petroleum asphalt. Petroleum asphalt is not listed as a carcinogen by OSHA or NTP. The International Agency for Research on Cancer (IARC) has determined there is inadequate evidence that asphalt alone is carcinogenic to humans, and that there is inadequate evidence for the carcinogenicity of undiluted air-refined asphalts in experimental animals. The National Institute of Occupational Safety and Health (NIOSH), has concluded that at higher temperatures roofing asphalt fumes are a potential occupational carcinogen. If this product is heated or comes in contact with heated material, avoid breathing fumes. This product may contain Polycyclic Aromatic Hydrocarbons (PAH's) which are recognized carcinogens in humans and experimental animals.

Petroleum asphalt and the additives in this product are not listed as carcinogens by OSHA or NTP. The International Agency for Research on Cancer (IARC) has determined there is inadequate evidence that asphalt alone is carcinogenic to humans, however there is sufficient evidence that extracts (asphalts dissolved in hydrocarbon solvents) are carcinogenic to experimental animals. IARC has also determined that there is limited evidence of carcinogenicity for undiluted steam-refined asphalts in experimental animals and inadequate evidence of carcinogenicity for undiluted air-refined asphalts in experimental animals.

This product contains small amounts of respirable crystalline silica (quartz and cristobolite). IARC and NTP have determined that there is sufficient evidence for the carcinogenicity of respirable crystalline silica in experimental animals and limited evidence for its carcinogenicity in humans.

The physical nature of this product may help limit any inhalation hazard from crystalline silica during application and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on the hardened product may liberate crystalline silica dust. Prolonged and repeated exposure to respirable silica-containing dust may have serious lung effects, including silicosis, bronchitis, and lung cancer.

This material contains petroleum naphtha. Prolonged and repeated inhalation exposure to the solvent (naphtha) component has been reported to cause kidney or liver damage. Reports have also associated repeated and prolonged occupational overexposure to solvents such as petroleum naphtha with permanent brain and nervous system damage (sometimes referred to as "Solvent or Painters Syndrome". Intentional misuse by deliberately inhaling vapors of this product may be harmful or fatal.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Pre-existing medical conditions that may be aggravated by exposure include disorders of the kidney, liver, skin and respiratory tract including asthma.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of cool water for at least 20 minutes, occasionally lifting the eye lids to ensure thorough rinsing. Get medical attention if irritation persists.

SKIN CONTACT: Clean any exposed skin with warm soapy water. Use a waterless hand cleaner without pumice. Do not use solvents or thinners to remove material from skin. Get medical attention if irritation persists or develops.

INGESTION: If swallowed, do not induce vomiting. Avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get immediate medical attention.

INHALATION: Remove person to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. If irritation persists or develops, seek medical attention.

NOTES TO PHYSICIAN: Medical personnel can soften and remove cooled asphalt with petroleum jelly.

In general, emesis induction is unnecessary in high viscosity, low volatility products. Also contains naphtha, that, when aspirated into the lung, may result in chemical pneumonia. If large volumes have been swallowed, gastric lavage should be considered. Inhalation exposure of hydrogen sulfide may result in pulmonary congestion. Patients may be predisposed to pneumonia during convalescence, and should be kept under observation. Contact a Poison Center for additional treatment information.

5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD): 206 ° F (COC)

FLAMMABLE LIMITS (% VOLUME IN AIR): Not available

AUTO IGNITION TEMPERATURE: Not available.

EXTINGUISHING MEDIA: Dry chemical or foam preferred. Avoid use of straight-stream water.

SPECIAL FIRE FIGHTING PROCEDURES: Avoid breathing irritating and potentially toxic fumes, including hydrogen sulfide gas. Firefighters should not enter confined spaces without wearing NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment. Water may be used to cool containers in a fire-exposed area.

UNUSUAL FIRE OR EXPLOSION HAZARDS: When heated above the flash point of the naphtha component (114 °F), fumes may burn if ignition source is provided. Petroleum asphalt fumes can explode if emitted in an enclosed environment and supplied with an ignition source. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture.

6. ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED: Handling equipment must be grounded to prevent sparking. Remove ignition sources, ventilate area, and avoid inhalation or skin contact by using appropriate precautions outlined in this MSDS (see Section 8). Stop leak and contain spilled material with absorbent material. Collect adsorbed product and clean up materials in appropriate container for proper disposal. Move containers from spill area. For larger spills, keep unnecessary people away. Stay upwind of and away from spill. Notify proper authorities. Prevent materials from entering drains, sewers, or waterways. Spills entering surface waters or sewers entering/leading to surface waters that cause a sheen must be reported to the National Response Center 1-800-424-8802.

WASTE DISPOSAL METHODS: Dispose in accordance with applicable Federal, State and Local regulations. Do not burn.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Store away from heat and all ignition sources and open flames in accordance with applicable laws and regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Follow protective controls outlined in this MSDS (see Section 8). Avoid all ignition sources. Storage areas should be ventilated to reduce fire and explosion hazards, and possible overexposure of personnel to fumes and vapors. Do not store near food and beverages or smoking materials.

NOTE: Hydrogen sulfide (H₂S), an extremely toxic gas, may be emitted from heated asphalt and may accumulate in storage tanks and other confined spaces.

Empty containers retain residue (liquid and/or vapor) and can be dangerous. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.** Do not attempt to clean since residue is difficult to remove.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: Normally not needed in well-ventilated areas. If applicable standards are exceeded or are likely to be exceeded, use a NIOSH/MSHA approved, contaminant-specific, air-purifying respirator. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

EYE PROTECTION: Chemical safety goggles or face shield needed if spraying or eye contact is possible.

SKIN: Chemical resistant gloves, apron, or other protective clothing needed to prevent skin contact.

VENTILATION: Use only with adequate ventilation to maintain exposures below appropriate exposure limits. Local exhaust ventilation and/or enclosure of the process may be required. All equipment must be explosion proof.

EXPOSURE GUIDELINES: See section 2 for component materials.

Other Information:

Avoid prolonged or repeated skin contact. Remove contaminated clothing; launder or dry clean before reuse. Workers should wash their hands before breaks, meals, smoking and using toilet facilities. Product is readily removed from skin by waterless hand cleaners followed by washing with soap and water. Do not use solvents or thinners to remove material from skin.

A fresh water supply, including an eyewash station for emergency first aid, and washing facilities should be readily available. An oil-dissolving skin cleaner should be available.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Black, viscous liquid with petroleum odor.

BOILING POINT: 269 °F

PH: Not applicable

MELTING POINT: Not applicable.

SPECIFIC GRAVITY: Approximately 1

VAPOR PRESSURE: Not available.

VAPOR DENSITY (AIR = 1): Not available

% VOLATILE, BY VOLUME: Not available

SOLUBILITY IN WATER: Negligible.

EVAPORATION RATE (BUTYL ACETATE = 1): <0.1

OTHER PHYSICAL AND CHEMICAL DATA: None

10. STABILITY AND REACTIVITY

STABILITY: Stable.

CONDITIONS TO AVOID: Keep from heat, sparks, open flame, and other sources of ignition. Avoid contact with strong oxidizing agents. Prevent vapor accumulation.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong acids or bases, oxidizing agents and selected amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons.

11. TOXICOLOGICAL INFORMATION: According to a December, 2000 NIOSH report (No. 2001-110) titled "Hazard Review - Health Effects of Occupational Asphalt," research has identified low levels of Polycyclic Aromatic Hydrocarbons (PAH's) in laboratory generated asphalt fumes. Benzo(a)pyrene, a PAH and known carcinogen, has been identified in field-generated asphalt fumes. Asphalt roofing fume condensates and fractions have been shown to contain chemicals known as PAH's, which have a chemical structure similar to known carcinogens and genotoxins. Laboratory-generated asphalt fumes have been shown to be genotoxic. Laboratory-derived roofing asphalt fume condensates have been shown to be mutagenic, clastogenic, and inhibit intracellular communication in mammalian cells.

Laboratory studies have shown chemical extracts of asphalt fumes to be carcinogenic to the skin of experimental animals following lifetime exposures, and to show positive mutagenicity in screening bioassays. The relevance of these studies to human exposures is not known at this time. Inhalation studies have not been conclusive regarding asphalt's carcinogenic potential; however, adverse lung effects were seen in several species of laboratory animals. Skin application of undiluted air-refined (oxidizer asphalt to experimental animals has not resulted in skin tumors. The results were weakly positive when the samples were applied in a solvent vehicle.

12. ECOLOGICAL INFORMATION: No specific data on this product. Product may cause mechanical damage to aquatic organisms. The naphtha component is expected to volatilize in the environment and to be moderately toxic to both freshwater and marine organisms. The bioaccumulation potential is unknown.

13. DISPOSAL CONSIDERATIONS: Dispose in accordance with Federal, State and Local regulations. Prevent materials from entering drains, sewers or waterways. Do not dump on the ground. Do not burn.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: None

DOT HAZARD CLASSIFICATION: None, not hazardous for DOT transport under 49 CFR or for vessel transport under the IMDG Code.

DOT LABELING REQUIREMENTS: None

UN/NA NUMBER: None

PLACARDS: None

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA): The components in this product are listed on the TSCA Inventory.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA): The material contains xylene and cumene. The reportable quantities for xylene and cumene are 1000 lbs. and 5000 lbs. respectively. Any release of this product that results in a release of xylene or cumene equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 117,302.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: NONE

SECTION 311/312 HAZARD CATEGORIES:

Immediate Health
Delayed Health
Fire Hazard

SECTION 313 REPORTABLE INGREDIENTS:

Chemical Name	CAS Number	Concentration (% by Wt.)
1,2,4 – Trimethylbenzene	95-63-6	2 - 4
Cumene	98-82-8	0.1 – 0.45
Xylene	1330-20-7	0.2 – 0.55

CALIFORNIA PROPOSITION 65:

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

16. OTHER INFORMATION

- Preparation Date: January 31, 1996
- Revised:
 - July 2002
 - October 2002 (Formatting issues)
 - August 2004 (DOT Transport Information and Prop 65 Language)
 - August 2005 (Changes in Emergency Contact Information)
 - March 2006 (Name change)
 - June 2006 (Company name change)
 - May 2007 (Formatting Issues)
- Replaces: NONE

Disclaimer of Liability

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