

MATERIAL SAFETY DATA SHEET

MSDS Number: T028000

Revision Date: May 2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: Coated Roll Roofing and SBS Modified Products - See Attachment 1 for product names.

LABEL: TAMKO

USE & DESCRIPTION: Rolled Roofing

CHEMICAL FAMILY: Mixture

MANUFACTURED FOR:

EMERGENCY TELEPHONE NUMBERS;

TAMKO Building Products, Inc. General Information: 1-417-624-6644 (8 a.m. - 5 p.m. CST)

P.O. Box 1404

Chemtrec: 1-800-424-9300

Joplin, MO 64802-1404

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Cas No.	% by Wt.	Exposure Limits*				
			OSHA		ACGIH		Unit
			TWA	STEL	TWA	STEL	
Petroleum asphalt	8052-42-4	<40	5 fume	NE	0.5 fume	NE	mg/m ³
Limestone**	1317-65-3	<40	10	NE	10	NE	mg/m ³
Styrene - Butadiene Block Co-Polymer	903-55-8	<15	NE	NE	NE	NE	
Mineral Granules	NE	<40	NE	NE	NE	NE	
MAT		<8					
Fiber Glass	65997-17-3		NE	NE	1 fiber	NE	Cc
Urea Formaldehyde Binder	9011-05-6	<2.4					
Formaldehyde	50-00-0	<0.1	0.75 ppm	2 ppm		0.3ppm	ppm
Polyester	NE		NE	NE	NE	NE	
Felt	NE		NE	NE	NE	NE	
BACKING		<10					
Sand **	14808-60-7			NE		NE	mg/m ³
Talc	4807-96-6			NE		NE	mg/m ³
**contains:							
crystalline silica >5%		>0.1					
quartz	14808-60-7		.05 resp. dust	NE	.05 resp dust	NE	mg/m ³
crystobalite	14464-46-1		.05 resp. dust	NE	.05 resp dust	NE	mg/m ³

NE = Not established

* Note: Due to the form of the product, hazardous exposures are not expected to occur. Exposure limits are provided for information purposes only.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

UNDER NORMAL CONDITIONS OF USE, THE PRODUCT IS NOT EXPECTED TO CREATE ANY EMERGENCY HAZARDS.

INHALATION OF PRODUCT DUST MAY CAUSE TEMPORARY UPPER RESPIRATORY IRRITATION

REMOVE AFFECTED INDIVIDUALS TO FRESH AIR.

SKIN IRRITATION MAY BE TREATED BY WASHING AREA WITH SOAP AND WATER.

EYE IRRITATION MAY BE TREATED BY FLUSHING EYES WITH LARGE AMOUNTS OF WATER.

<u>HMIS Rating:</u> Health - 1 Flammability - 1 Reactivity - 0	<u>NFPA Rating:</u> Health - 1 Flammability - 1 Reactivity - 0
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Potential Health Effects

EYE CONTACT: If particles enter eye, may cause irritation resulting in tearing, stinging, redness or swelling.

SKIN CONTACT: Primary route of exposure is skin contact. Repeated contact may cause skin irritation due to roughness of product. Redness, drying and cracking of the skin (dermatitis) may occur following prolonged and repeated contact. Prolonged or repeated skin contact could result in absorption of hazardous components.

INGESTION: However, this product may cause irritation of the digestive tract followed by vomiting. Avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis.

INHALATION: When product is heated, 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 small amounts of Polycyclic Aromatic Hydrocarbons (PAH's) which are recognized carcinogens in humans and experimental animals.

This product contains small amounts of respirable crystalline silica (quartz and cristobalite). The International Agency for Research on Cancer (IARC) and the National Toxicology Program (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. Prolonged and repeated exposure to respirable silica-containing dust may have serious lung effects including silicosis, bronchitis and lung cancer.

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.

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. Remove contacts if in use. 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 because of danger of aspirating material into lungs resulting in damage and chemical pneumonia. 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: If inhalation occurs, remove person to fresh air. Drink water to clear throat or blow nose to clear. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

NOTES TO PHYSICIAN: This product is a mechanical irritant and is not expected to produce any chronic health effects from exposure. Treatment should be based on removing the source of irritation with treatment of symptoms as necessary.

5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD): Not applicable

FLAMMABLE LIMITS (% VOLUME IN AIR - SOLVENT COMPONENT):

Lower= N/A

Upper = N/A

AUTOIGNITION TEMPERATURE: 460°C / 860°F

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

SPECIAL FIRE FIGHTING PROCEDURES: Combustible. Avoid breathing fumes. Firefighters should not enter confined spaces without wearing NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE OR EXPLOSION HAZARDS: When heated, 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. Burning product will cause thick black smoke.

6. ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED: Pick up large pieces. Do not dry sweep dusts or blow with air in confined area. Do not burn.

WASTE DISPOSAL METHODS: Dispose in accordance with applicable Federal, State, and Local regulations.

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).

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 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 eye contact is possible.

SKIN: Leather or cotton gloves if necessary.

VENTILATION: Use only with adequate ventilation to maintain exposures below appropriate exposure limits.

EXPOSURE GUIDELINES: See section 2 for component materials.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Dark mat. Some products may have granular surface.

BOILING POINT: >700 °F

Ph: Not applicable

MELTING POINT: > 200 °F

SPECIFIC GRAVITY: Variable

VAPOR PRESSURE: Not applicable

VAPOR DENSITY (AIR = 1): Not applicable

% VOLATILE, BY VOLUME: Not applicable

SOLUBILITY IN WATER: Negligible

EVAPORATION RATE (BUTYL ACETAT = 1): < 0.1

OTHER PHYSICAL AND CHEMICAL DATA: None

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Except when application requires heat welding or torch application methods for installation to roof, keep from heat, sparks, open flame, and other sources of ignition. Safety is of major importance when heat welding this product. It is the sole responsibility of the roofing applicator to enforce fire safety precautions and to ensure safety at all times. Torches should be extinguished when not in use and should not be left unattended. There should be a sufficient number of fire extinguishers on the roof to handle any contingency that might develop (min. 1 per torch). The roofing applicators should be trained in the proper use of fire extinguishers. Avoid contact with strong oxidizing agents.

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 Exposure to 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 (oxidized) asphalt to experimental animals has not resulted in skin tumors. The results were weakly positive when the samples were applied in a solvent vehicle.

ACUTE AND CHRONIC TOXICITY

GENERAL PRODUCT INFORMATION

Fibers may cause mechanical irritation to eyes and skin. Ingestion may cause irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. Higher exposures may cause difficulty breathing, congestion and chest tightness.

COMPONENT ANALYSIS - LD50/LC50

Urea, polymer with Formaldehyde (9011-05-6)

Inhalation LC50 Rat : > 167 mg/m³/4H

Oral LD50 Rat: 8394 mg/kg

Oral LD50 Mouse: 6361 mg/kg

Formaldehyde (50-00-0)

Inhalation LC50 Rat: 203 mg/m³

Inhalation LC50 Mouse: 454 mg/m³/4H

Oral LD50 Rat: 100 mg/kg

Oral LD50 Mouse: 42 mg/kg

Dermal LD50 Rabbit: 270 uL/kg

CARCINOGENICITY

A: GENERAL PRODUCT INFORMATION

FIBER GLASS CONTINUOUS FILAMENT - The International Agency for Research on Cancer (IARC) in June 1987 categorized fiber glass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human, as well as animal studies, was evaluated by IARC as insufficient to classify fiber glass continuous filament as a possible, probable or confirmed cancer causing material. The American Conference of Governmental Industrial Hygienists (ACGIH) A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or animals. For respirable continuous filament glass fibers, a TLV-TWA of 1 fiber/cc was adopted to protect workers against mechanical irritation. The TLV- TWA of 5 mg/m³ was adopted for nonrespirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation of the upper respiratory tract.

FORMALDEHYDE: In March 1987 the International Agency for Research on Cancer (IARC) upgraded their overall evaluation of formaldehyde gas, based on evidence of carcinogenicity in humans, from a possible human carcinogen (Group 2B based on inadequate evidence in humans) to a probable human carcinogen (Group 2A based on limited evidence in humans). A number of new epidemiological studies on persons in a variety of occupations with potential exposure to formaldehyde were used in the evaluation. Cancers that occurred in excess in more than one study are: Hodgkin's disease, leukemia and cancers of the buccal cavity and pharynx (particularly nasopharynx), lung, nose, prostate, bladder, brain, colon, skin and kidney.

Exposure to formaldehyde at concentrations in excess of 1 ppm may cause significant irritation of the eyes and upper respiratory tract. The irritation threshold appears to be about 0.3 ppm. Pulmonary sensitization, although rare, does occur in humans. Formaldehyde solutions can cause severe eye and moderate skin irritation. Repeated skin exposure to solutions of 2% or more formaldehyde has caused allergic skin reactions. Formaldehyde was found to be weakly active in a number of in vitro genotoxicity tests, but inactive in vivo. Formaldehyde did not cause birth defects in offspring of female mice who were exposed to concentrations up to 10 ppm. Lifetime inhalation of formaldehyde at concentrations above 5 ppm for 6 hours per day, caused nasal tumors in laboratory animals. Many epidemiological studies have failed to link cancer to humans with occupational exposure to formaldehyde.

The American Conference of Governmental Industrial Hygienists (ACGIH) A2 designation, suspected human carcinogen, is based on cancer in experimental animals and conflicting or insufficient epidemiologic studies of workers. The recommended ceiling TLV or 0.3 ppm for workplace air formaldehyde is based on evidence of irritation of occupation exposure to formaldehyde, as well as human formaldehyde exposures in other settings.

B. Component Carcinogenicity

ACGIH, IARC, OSHA, and NTP carcinogen lists have been checked for those components with CAS registry numbers.

Fiber Glass Continuous (non-respirable) (65997-17-3)

ACGIH:	A4- Not Classifiable as a Human Carcinogen (related to Continuous filament glass fibers)
IARC:	Monograph 43, 1988 (related to Glass filaments) (Group 3 (not classifiable))

Formaldehyde (50-00-0)

ACGIH:	A2 - suspected human carcinogen
OSHA:	0.75 ppm TWA PEL; 2 ppm STEL; 0.5 ppm TWA action level; Irritant and Potential cancer hazard (29 CFR 1910.1048)
NTP:	Suspect Carcinogen (Possible Select Carcinogen)
IARC:	Monograph 62, 1995 (Group 2A (probably carcinogenic to humans))

12. ECOLOGICAL INFORMATION: No specific data on this product.

13. DISPOSAL CONSIDERATIONS: This product has not been regulated as a hazardous waste by the USEPA. Dispose in accordance with Federal, State and Local regulations. Do not burn.

14. TRANSPORT INFORMATION: This product is not regulated as a hazardous material for DOT transport under 49 CFR. It is also not regulated for vessel transport under the IMDG Code.

15. REGULATORY INFORMATION

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

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA) - None

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: Lead, PAH, Copper

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: May 2000
- Revised:
 - July 2002
 - October 2002 (Formatting issues)
 - May 2004 for Prop 65 language;
 - August 2004 (Toxicological Information and DOT Transport Information)
 - November 2004 (Changes to Product List)
 - January 2005 (Listed Formaldehyde on Section 2)
 - May 2005 (Changes in emergency contact information)
 - August 2005 (Changes in Product List)
 - June 2006 (Company name change)
 - May 2007 (Formatting Issues)
- Replaces: None

Disclaimer of Liability

The information and recommendations contained herein are to the best of **TAMKO Building Products, Inc.'s** knowledge and belief, accurate and reliable as of the date issued. **TAMKO Building Products, Inc.** does not warrant or guarantee their accuracy or reliability, and **TAMKO Building Products, Inc.** shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

Attachment 1

Coated Roll Roofing and SBS & APP Modified Roofing and Waterproofing products:

Awaplan Heat Welding
Awaplan Versa-Flex
Awaplan Versa-Smooth
Awaflex
Awaplan Premium
Awaplan 170
Base Sheet
Base-N-Ply
Bridgeguard
Master Smooth
Moisture Guard Plus
Nail Fast
Saturated Felt No. 30
Slate Surfaced Roll Roofing
19" Selvedge Edge
4" Selvedge Edge Slate Surfaced
TAM-CAP
TAM-GLASS Premium
TAMKO Vapor-Chan
TAMKO Glass-Base
TAM-PLY IV
TAMKO APP G
TAMKO APP S
TW-60 Sheet Waterproofing Membrane
TW Flash-N-Wrap 25
TW Flash-N- Wrap 40
TWH-1 Protection Course
TW Underlayment
TW Metal and Tile
TW Moisture Wrap
TW Thru Wall Flashing Membrane
Type 43 Coated Base Coat
Versa-Base