

MATERIAL SAFETY DATA SHEET

MSDS Number: TP012997

Revision Date: May 2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: 842 Fire-Rated (FR) Fibered Aluminum Roof Coating

LABEL: TAM-PRO

USE & DESCRIPTION: Roofing coating

CHEMICAL FAMILY: Asphalt/aluminum 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	
Mineral spirits	8052-41-3	<50	100	NE	100	NE	ppm
Petroleum asphalt	8052-42-4	<35	5 fume	NE	.5 fume	NE	mg/m ³
Aluminum Flake	7429-90-5	<5	10 dust	NE	10 dust	NE	mg/m ³
Aromatic solvent	64742-95-6	<5	NE	NE	NE	NE	--
Bromo-chlorinated hydrocarbon	68527-01-5	<10	NE	NE	NE	NE	--
Amorphous silicates**	93763-70-3 13983-17-0	<5	15 total dust 5 resp. dust	NE	10 total dust 5 resp. dust	NE	mg/m ³
Cellulose fibers	65996-61-4	<5	NE	NE	NE	NE	--
Antimony oxide	1309-64-4	<2	0.5	NE	0.5	NE	mg/m ³
**contains: crystalline silica >0.1% quartz	14808-60-7	<0.1	0.1	NE	0.1	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!

COMBUSTIBLE

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

HEATING MAY RELEASE TOXIC HYDROGEN SULFIDE GAS (H₂S) WHICH MAY

ACCUMULATE IN CONFINED SPACES

ASPIRATION HAZARD IF SWALLOWED

ASPHALT MAY CONTAIN COMPONENTS THAT ARE SKIN CANCER HAZARDS

<u>HMIS Rating:</u> Health - 1 Flammability - 2 Reactivity - 0	<u>NFPA Rating:</u> Health - 2 Flammability - 2 Reactivity - 0
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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 (dermatitis), may occur following prolonged and repeated contact. The antimony component may cause skin eruptions around the sweat glands. In addition, prolonged and repeated exposure to asphalt fumes has been reported to cause an acne-like skin condition, skin discoloration and may increase sensitivity to the sun (photo sensitization).

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: In general, asphalt products have low toxicity when swallowed. However, this product may cause irritation of the digestive tract followed by vomiting and central nervous system depression (see "Inhalation" for symptoms). If vomiting occurs, small amounts of material can be aspirated into the lung and cause inflammation or damage with chemical pneumonia.

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, excitation, 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.

NOTE: 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, H₂S is 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 material contains a hydrocarbon solvent. When dissolved in hydrocarbon solvents, asphalt has produced skin tumors in animals following prolonged and repeated contact. Consequently, IARC has determined that there is sufficient evidence that extracts or cutbacks (asphalts dissolved in hydrocarbon solvents) are carcinogenic to experimental animals. This product may contain small amounts of polyaromatic hydrocarbons which are recognized carcinogens in humans and experimental animals.

This material contains a hydrocarbon solvent. Reports have associated prolonged or repeated occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome". Intentional misuse by deliberately inhaling vapors of this product may be harmful or fatal.

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 presence of crystalline silica in this product is not expected to present an inhalation hazard since the material is not a dust and is typically troweled onto a surface and allowed to harden. In addition, the hardened product is not anticipated to present a health hazard unless is subjected to mechanical forces including grinding, drilling, or other demolition work. In such cases, the silica may be liberated in dust form. Prolonged and repeated exposure to respirable silica-containing dust may have serious lung effects, including silicosis, bronchitis, and lung cancer.

This product contains small amounts of aluminum powder. It has been suggested, but not confirmed, that very high levels of aluminum dust may affect the brain and lungs (pneumoconiosis). The physical nature of this product may help limit any inhalation hazard from aluminum powder during installation and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on the hardened product may liberate aluminum dust.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing medical conditions that may be aggravated by exposure include disorders of the heart, skin and respiratory tract including asthma.

This product contains antimony oxide. The International agency for Research on Cancer (IARC) has determined that antimony is a suspect human carcinogen based on animal studies and limited evidence from human studies. Human and animal evidence indicates that antimony may affect the heart and lungs (pneumoconiosis) after long term inhalation exposures. The physical nature of this product may help limit any inhalation hazard from antimony oxide during application and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on the hardened product may liberate antimony oxide dust.

This product contains small amounts of aluminum powder. It has been suggested, but not confirmed, that very high levels of aluminum dust may affect the brain and lungs (pneumoconiosis). The physical nature of this product may help limit any inhalation hazard from aluminum powder during installation and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on the hardened product may liberate aluminum dust.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the eye lids to ensure thorough rinsing. Get medical attention if irritation persists. Get immediate medical attention if there is direct eye contact with hot material.

SKIN CONTACT: Clean any exposed skin with warm soapy water. Use a waterless hand cleaner to help remove the asphalt. 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 the 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 overexposure to vapors, mists, or fumes occurs, remove person to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

NOTES TO PHYSICIAN: Medical personnel can soften and remove asphalt with petroleum jelly or white mineral oil.

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

5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD): 112 ° F (COC)

FLAMMABLE LIMITS (% VOLUME IN AIR - SOLVENT COMPONENT)

Lower = 0.8

Upper = 7.0

AUTO IGNITION TEMPERATURE: 460 ° F

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

SPECIAL FIRE FIGHTING PROCEDURES: Combustible. 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 mineral spirit component (100 ° 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: Combustible. Handling equipment must be grounded to prevent sparking. Remove ignition sources, ventilate area, and avoid inhalation or skin contact by using appropriate precautions in the MSDS (see Section 8). Stop leak and contain spilled material with absorbent material. Collect absorbed 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 8-800-424-8802.

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). Avoid all ignition sources. Storage areas should be ventilated to reduce fire and explosion hazards, and possible overexposure of personnel to fumes and vapors. Keep containers closed when not in use. 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. For work on tanks, refer to OSHA regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding or other contemplated operations.

To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with NFPA standard for petroleum products.

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.

Additional potentially relevant exposure limits are listed below:

Components	CAS No.	Exposure Limits				
		OSHA		ACGIH		Unit
		TWA	STEL	TWA	STEL	
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

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Silver liquid with Solvent odor.

BOILING POINT: 305 °F

PH: Not applicable

MELTING POINT: Not applicable

SPECIFIC GRAVITY: 1.0

VAPOR PRESSURE: 2 mm @ 70 °F

VAPOR DENSITY (AIR = 1): 5

% VOLATILE, BY VOLUME: <30

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, halogenated hydrocarbons, and selected amines.

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

11. TOXICOLOGICAL INFORMATION: According to NIOSH, research has identified low levels of Polycyclic Aromatic Hydrocarbons (PAHs) in laboratory generated asphalt fumes. Benzo(a)pyrenes, known carcinogens, have been identified in field-generated asphalt fumes. Asphalt roofing fume condensates and fractions have been shown to contain chemicals known as PAC'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.

12. ECOLOGICAL INFORMATION: No specific data on this product. Product may cause mechanical damage to aquatic organisms. The naphtha and mineral spirit components are 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.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: COMBUSTIBLE LIQUID, N.O.S.

DOT HAZARD CLASSIFICATION: Combustible Liquid, non-regulated in non-bulk quantities (less than 119 gallons each). This exception to 49 CFR is cited at 173.150(f).

DOT LABELING REQUIREMENTS: Combustible Liquid

UN/NA NUMBER: NA1993

PLACARDS: Combustible Liquid

IMDG CODE: Hazardous for vessel transport under the IMDG Code

IMDG SHIPPING NAME: Coating Solution

IMDG HAZARD CLASS: 3

UN/ID NUMBER: UN 1139

PACKING GROUP NUMBER: PG III

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 antimony, xylene and cumene. The reportable quantities for antimony, xylene and cumene are 1000 lbs; 1000 lbs.; and 5000 lbs respectively. Any release of this product that results in a release of antimony, 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.)
Aluminum	7429-90-5	<5
Antimony oxide	1309-64-4	<2
1,2,4-Trimethylbenzene	95-63-6	<1
Xylene	1330-20-7	<1
Cumene	98-82-8	<0.2

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: March 15, 1997
- Revised:
 - April 2001
 - August 2004 (DOT transport information and Prop 65 language)
 - August 2005 (Changes in emergency contact information)
 - June 2006 (Company name change)
 - May 2007 (Formatting Issues)
- Replaces: None

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