

# SAFETY DATA SHEET

Rieth-Riley Construction Co., Inc.  
 P.O. Box 477, Goshen, IN 46527-0477  
 Phone (574) 875-5183; Fax (574) 875-8405;  
 24-Hour Emergency No. CHEMTREC 1-800-262-8200



Prepared 3/23/2016

SECTION 1	IDENTIFICATION
<b>Product Name:</b>	Recycled Asphalt Shingles (RAS)
<b>CAS No.:</b>	64742-93-4 (asphalt)
<b>Synonyms:</b>	Asphalt shingles and felt roofing product(s) crushed to a fine gradation to be used in Hot Mix Asphalt
<b>Type of Products:</b>	Recycled asphalt shingles used in hot mix asphalt.

SECTION 2	HAZARD(S) IDENTIFICATION
<b>Classifications:</b>	Carcinogenicity – Category 1
	Eye irritation – Category 2B (mild irritant)
	Skin irritation – Category 2 (mild irritant)
<b>Pictograms:</b>	
<b>Signal Word:</b>	DANGER
<b>Hazard Statements:</b>	<ul style="list-style-type: none"> <li>• May cause cancer by inhalation</li> <li>• May cause temporary upper respiratory tract irritation</li> <li>• May cause mild skin irritation</li> <li>• May cause mild eye irritation</li> <li>• May cause harmful effects if swallowed.</li> </ul>
<b>Precautionary Statements:</b>	<p>Do not handle until this safety information contained in this SDS has been read and understood. Breathing dust from crushing asphalt shingles and felt roofing product(s) may cause temporary irritation of the nose and throat, congestion, and slight cough. Getting dust on the skin or in the eyes may cause temporary itching, rash or redness. Ingestion may cause short term mechanical irritation of the stomach and intestines. Vomiting may occur. Can cause silicosis and other permanent lung damage.</p> <p>Do not eat, drink, smoke, apply cosmetics while handling this product. Avoid prolonged contact of the material with skin. Wash skin thoroughly after handling. Dust in eyes: flush eyes with running potable water for at least 15 minutes. Remove contact lenses, if present and easy to do, and continue rinsing. Do not rub eyes. If on skin: wash affected skin with a mild soap and potable water. Take off contaminated clothing and wash it before reuse. If swallowed do not induce vomiting. Seek medical attention. If inhaled (excessive concentrations), remove to fresh air. A properly fitted NIOSH approved respirator should be used when high dust levels (e.g. airborne concentrations of dust which exceed Permissible Exposure Limits) are encountered or if irritation occurs. Respiratory usage should always be used in accordance with the company's Respiratory Protection Program as well as the Occupational Safety and Health standard(s). It is recommended to wear loose fitting, long-sleeved cotton pants and gloves. Wear safety glasses or goggles.</p>

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SECTION 3		COMPOSITION/INFORMATION ON INGREDIENTS	
Component	CAS Registry No.	% by Weight (Approximately)	
Limestone (Calcium Carbonate)	1317-65-3	<50	
Oxidized Asphalt	64742-93-4	<30	
Mineral Granules	None Established	< 40	
Glass Mat Fiber	None Established	<20	
Glass Fibers	65997-17-3	<10	
(1) Urea Formaldehyde Binder	9011-05-6	> 0.1	
(2) Formaldehyde	50-00-0	<0.1	
Backing: Sand	14808-60-7	<10	
Talc	14807-96-6	<10	
Silica, crystalline – Quartz (content typically greater than 1% and can be higher than 20%)	14808-60-7	>0.1	
Felt	None Established	<30	
< Less than > Greater than CAS Chemical Abstract Service			

SECTION 4		FIRST AID MEASURES	
<b>Inhalation:</b>	If excessive inhalation occurs, remove to fresh air. Get prompt medical attention if breathing remains difficult or if irritation persists. Do not attempt to rescue victim(s) from confined spaces unless trained and so authorized by employer.		
<b>Eyes:</b>	Immediately flush eye(s) with plenty of clean potable water for at least 20 minutes while holding eyelids open. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation, pain, or swelling occurs. Do not rub or scratch your eyes.		
<b>Skin:</b>	Clean any exposed skin with warm soapy water if possible. Do not use solvents or thinners to remove material from skin. Wash hands before eating or using restroom.		
<b>Ingestion:</b>	Not expected to be ingested. If material is accidentally swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person.		
<b>Acute &amp; Delayed Symptoms:</b>	Breathing silica-containing dust for prolonged periods can cause permanent lung damage and silicosis (See Section 11).		

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SECTION 5	FIRE-FIGHTING MEASURES
<b>Extinguishing Agent:</b>	For fires involving asphalt, agents approved for Class B hazards should be used.
<b>Unusual Fire and Explosion Hazards:</b>	Avoid use of straight-stream water. Adding water to hot asphalt presents an explosion hazard if emitted in an enclosed environment and supplied with an ignition source. Burning product will cause thick black smoke.
<b>Special Fire Fighting Procedures:</b>	Wear a National Institute for Occupational Safety and Health (NIOSH) approved positive pressure Self-Contained Breathing Apparatus (SCBA) and fully protective clothing (such as turnout gear) as necessary.
<b>Hazardous Combustion Products:</b>	Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. Hydrocarbons are mainly derived from burning of the resins and binders of roofing material(s). These combustion products are not expected unless product is heated or burned.

SECTION 6	ACCIDENTAL RELEASE MEASURES
<p>Pick up large pieces. Do not dry sweep spilled material as the spilled dust may contain crystalline quartz silica. Do not use compressed air to remove settled dust. Collect the material using a method that does not produce dust such as a vacuum cleaner equipped with a High-Efficiency Particulate Air (HEPA) filter or thoroughly wet down the dust before cleaning up. Do not burn.</p> <p>Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters (or any other watercourse or sewers entering/leading to surface waters) that cause a sheen must be reported to the National Response Center 800-424-8802.</p>	

SECTION 7	HANDLING AND STORAGE
<p>Do not store near food, beverages, tobacco products, or other personal items. Store away from heat and all ignition sources and open flames. In addition, store product in an area where it will not be disturbed as to generate dust. Product should not be burned or heated using a direct flame device. Respirable dust potentially containing crystalline silica and formaldehyde gas may be generated when asphalt shingles and felt roofing products are ground up.</p>	

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SECTION 8		EXPOSURE CONTROLS/PERSONAL PROTECTION	
Component	OSHA PEL	ACGIH TLV-TWA	
Limestone (calcium carbonate)	Total Dust: 15 mg/m <sup>3</sup> TWA	None Established*	
	Respirable Fraction: 5 mg/m <sup>3</sup> TWA		
Respirable Particulates/Dust Mineral Granules Sand	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	
Particulates (not otherwise regulated) Mineral Granules Sand	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
Crystalline Silica (Quartz)	10 mg/m <sup>3</sup> / % SiO <sub>2</sub> + 2	0.025 mg/m <sup>3</sup>	
Fiberglass (listed as synthetic vitreous fibers, continuous filament glass fibers)	1 fiber/cc (voluntary)	1 fiber/cc	
Formaldehyde	0.75 ppm TWA	0.3 ppm (C)	
	2 ppm STEL		
Talc (containing no asbestos fibers & < 1% quartz))	20 mppcf	2 mg/m <sup>3</sup> TWA	
Crystalline Silica (Quartz)	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> + 2	0.025 mg/m <sup>3</sup> TWA	
Asphalt (as benzene-soluble aerosol)	None Established	0.5 mg/m <sup>3</sup> TWA	
ACGIH American Conference of Governmental Industrial Hygienists C Ceiling cc cubic centimeter of air mg/m <sup>3</sup> milligrams per cubic meter of air volume. mppcf million particles per cubic foot OSHA Occupational Safety and Health Administration PEL Permissible Exposure Limit ppm parts per million STEL Short-Term Exposure Limit TLV Threshold Limit Value TWA Time Weighted Average *None Established due to insufficient data (2007- 2017)			
Due to the form of this product, hazardous exposures from RAS are not expected to occur under normal conditions of use.			
<b>Engineering Controls:</b>	It is recommended to determine and monitor employee's potential exposure to asphalt fumes (as benzene-soluble aerosols), respirable dust, crystalline quartz silica and formaldehyde gas.		
<b>Ventilation:</b>	Use only in well ventilated areas. Natural ventilation generally is adequate to maintain exposures below appropriate exposure limits under anticipated use conditions. If dust is generated indoors and exceeds its PEL, use local exhaust ventilation.		

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SECTION 8	EXPOSURE CONTROLS/PERSONAL PROTECTION
<b>Respiratory Protection:</b>	It is good practice to conduct personal monitoring to determine a worker's potential exposure airborne concentrations of respirable and/or total dust, respirable crystalline silica, asphalt vapors and formaldehyde during the grinding and/or other recycling tasks of asphalt shingles and roof felt products which generate dust. If concentrations are below applicable exposure limits, respiratory protection is not required. If concentrations exceed the applicable exposure limits and while engineering controls are being implemented, use a NIOSH approved air-purifying respirator equipped with the appropriate filter in accordance with an employer/company-specific Respiratory Protection Program.
<b>Eye &amp; Face Protection:</b>	Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or anticipated. There is a potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses. It is recommended that contact lenses should not be worn when eye contact with product is possible. An eye wash station should be immediately available at the work area.
<b>Skin &amp; Foot Protection:</b>	Wear leather or cotton gloves when handling this product. A loose fitting, long sleeved cotton shirt is recommended to protect exposed skin.
<b>Personal Hygiene:</b>	Wash dust-exposed hands with soap and water before eating, drinking, use of tobacco products, applying cosmetics, or using toilet facilities. Wash work clothes after each use. Clean skin with soap and water. Do not use solvents or thinners (e.g. gasoline, kerosene) or harsh abrasive skin cleaners to remove material from skin. Avoid breathing dust.
<b>Other Control Measures:</b>	A fresh potable water supply for emergency first aid should be readily available. Workers should station themselves upwind of dust emissions, if present, when possible.

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
<b>Appearance:</b>	Black moist powder-like ground asphalt shingles (felt paper mat saturated with asphalt, if present)
<b>Odor and Odor Threshold:</b>	Slight petroleum or characteristic asphalt odor. Odor threshold – varies.
<b>pH:</b>	Not applicable
<b>Melting Point/Freezing Point:</b>	>200° F
<b>Boiling Point:</b>	> 700°F) Varies with particular composition
<b>Flash Point:</b>	Not applicable
<b>Flammability/Explosive Limits:</b>	Not applicable
<b>Auto-ignition Temperature:</b>	>860°F
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density</b>	Not applicable
<b>Relative Density (water = 1):</b>	Variable

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SECTION 10	STABILITY
<b>Stability:</b>	Stable under ambient and anticipated storage and handling conditions.
<b>Incompatibility (Materials to Avoid):</b>	Avoid contact with strong oxidizing agents.
<b>Conditions to Avoid:</b>	Excessive heat, excessive mechanical handling outside the normal usage that would generate dust. Product should not be burned or heated using a direct flame device.
<b>Hazardous Decomposition Products:</b>	Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. Hydrocarbons are mainly derived from burning of the resins and binders of roofing material(s). These combustion products are not expected unless product is heated or burned.
<b>Hazardous Polymerization:</b>	Not known to polymerize.

SECTION 11	TOXICOLOGICAL INFORMATION
The information contained in this section represents an overview of health effects caused by <u>over</u> exposure to one or more components in Recycled Asphalt Shingles and Felt Roofing products, if present.	
<b>Primary Route of Exposure:</b>	Inhalation
<b>Eye Contact:</b>	May cause eye irritation if dust generated
<b>Skin Contact:</b>	May cause skin irritation if dust generated. Prolonged or repeated skin contact may result in dryness and irritation of the skin. Long term skin exposure to asphalt can increase sensitivity to the sun, and may cause discoloration.
<b>Skin Absorption:</b>	Not expected to be a significant route of exposure.
<b>Ingestion:</b>	Not expected to be ingested. If ingestion does occur, it may cause temporary irritation to the digestive tract.
<b>Inhalation:</b>	May cause irritation to the respiratory tract if dust generated. Oxidized asphalt may cause irritation of the respiratory tract. Airborne dust or silica is not expected during normal handling and use of this material. If dust is generated during the grinding of RAS, exposure to respirable dust containing crystalline silica may be possible. Avoid breathing excessive dust. Repeated and prolonged or chronic exposure to respirable dust in excess of allowable exposure limits can result in pneumoconiosis, a lung disease. Repeated and prolonged (chronic) exposure to respirable crystalline silica-containing dust in excess of allowable exposure limits may cause silicosis, a progressive pneumoconiosis, and possibly lung cancer.

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SECTION 11	TOXICOLOGICAL INFORMATION
<p><b>Medical Conditions Aggravated By Exposure:</b></p>	<p>Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and COPD may also exacerbate the effects of excessive exposure to this material, if dust generated.</p>
	<p><b><u>Oxidized Asphalt</u></b></p> <p>This product contains oxidized asphalt. Occupational exposures to oxidized asphalt and its emissions during grinding activities has been classified by the International Agency for Research on Cancer (IARC) as “probably carcinogenic to humans” (Group 2A). IARC also determined that there was sufficient evidence of carcinogenicity of extracts and condensates of oxidized asphalts in experimental animals.</p> <p><b><u>Crystalline Silica</u></b></p> <p>The IARC concluded that there is “sufficient evidence in humans for the carcinogenicity of crystalline silica in the form of quartz or Cristobalite,” there is “sufficient evidence in experimental animals for the carcinogenicity of quartz dust” and there is “limited evidence in experimental animals for the carcinogenicity of Tridymite dust and Cristobalite dust”. The overall IARC evaluation is that “crystalline silica inhaled in the form of quartz or Cristobalite dust is carcinogenic to humans (Group I)”. The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The NTP has listed respirable crystalline silica as a known human carcinogen. The American Conference of Governmental Industrial Hygienists (ACGIH) has listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2 designation, 2015). The Occupational Safety and Health Administration (OSHA) does not list crystalline silica on the carcinogen list. California Proposition 65 – Crystalline silica was listed in 1996 on the Safe Drinking Water and Toxic Enforcement Act of 1986 as a “chemical known to the state to cause cancer or reproductive toxicity.”</p> <p><b><u>Formaldehyde</u></b></p> <p>This product may contain formaldehyde. IARC and NTP has classified formaldehyde as a human carcinogen based on sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, limited evidence for cancer of the nasal cavity and paranasal sinuses, and “strong but not sufficient evidence” for leukemia.</p>
<p><b>Signs &amp; Symptoms of Overexposure:</b></p>	<p>Symptoms of overexposure include (but may not be limited to): irritation of the nose, throat, eyes, and skin. Other symptoms associated with nausea and dizziness. The signs and symptoms of acute exposures to dust from hardened asphalt may include irritation of the eyes, skin, and respiratory tract. Symptoms of silicosis include (but may not be limited to): shortness of breath, difficulty breathing upon exertion, coughing, diminished chest expansion, reduction in lung volume, right heart enlargement, or failure.</p>



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SECTION 12	ECOLOGICAL INFORMATION
<p>The lack of available information precludes adequate assessment of potential risks to the environment. However recent studies indicate that the very low water solubility and high molecular masses are such that their bioavailability to aquatic organisms is expected to be limited. This product contains formaldehyde which is "inherently toxic to aquatic organisms." Expected to be resistant to biodegradation.</p>	

SECTION 13	DISPOSAL CONSIDERATIONS
<p>Dispose of waste materials only in accordance with applicable federal, state, and local regulations. This information only applies to Rieth-Riley Construction Company product as sold. The product may become contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in each situation.</p>	

SECTION 14	TRANSPORT INFORMATION
<b>U.S. Department of Transportation (USDOT):</b>	Not regulated
<b>Transportation of Dangerous Goods (TDG):</b>	Not regulated

SECTION 15	IDENTIFICATION
<b>CERCLA:</b>	Section 103 and SARA Section 304 (Release to the Environment). THE CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA section 103 reporting requirements. However, other federal reporting requirements, including SARA 304, as well as the Clean Water Act may still apply.
<b>TSCA Status:</b>	Some components on TSCA Inventory
<b>DSL Status:</b>	All components of this product are on the Canadian DSL list.
<b>SARA 311/312 Hazards:</b>	Immediate health; delayed health; fire hazard
<b>SARA 313</b>	This material contains Formaldehyde (CAS No. 50-00-0).
<b>Penn. RTK:</b>	Some components in the U.S. Pennsylvania Worker and Community Right-to-Know Law (34 PA Code Chap. 301-323)
<b>Mass. RTK:</b>	Some components in U.S. Massachusetts Commonwealth's Right-To-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000).
<b>NJ RTK:</b>	Some components in U.S. New Jersey Worker and Community Right-To-Know Act (New Jersey Statute Annotated Section 34: 5A-5).
<b>California Prop 65:</b>	Warning! This product contains a chemical known to the State of California to cause cancer.



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SECTION 16	OTHER INFORMATION
<b>Label requirements:</b>	
<b>Disclaimer:</b>	The information contained herein is furnished without warranty of any kind. Employers should use this Information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. The data in this SDS was prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws, standards, and regulations applicable to the safe handling and use of these products and to determine the suitability of the product for its intended use.