MATERIAL SAFETY DATA SHEET

PRODUCT NAME: **Asphalt Hot Mix**

MSDS NO: JDR001

MSDS REVISION DATE: 9/15/2005

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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT MANUFACTURER / DISTRIBUTOR: **RTI HOT MIX**

ADDRESS: **16409 Bratton Lane, Austin, TX 78728**

EMERGENCY PHONE NUMBERS:
(512) 251-3713 (RTI)

MSDS INFORMATION: (512) 251-3713

PRODUCT SYNONYMS: **Hot Mix**
CHEMICAL FAMILY: **Petroleum Asphalt**
CHEMICAL FORMULA: **Mixture**
PRODUCT CODE: **None**

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2. COMPOSITION / INGREDIENTS

COMPONENTS:	CAS #	Wt. Percent	Exposure Limits
Limestone Aggregate*	1317-65-3	85-100	(see section 11)
Petroleum Asphalt	8052-42-4	< 15.0	0.5 mg/m3 8hr. TWA
*May contain quartz (Crystalline silica)	14808-60-7	< 1.0	0.05 mg/m3 8hr. TWA
SBR Copolymer	9003-55-8	< 1.0	Not Established
Hydrogen Sulfide (trace)	7783-06-4	< 0.01	10.0 ppm 8hr. TW

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3. HAZARDS IDENTIFICATION

Physical State and Appearance: Hot Mix material is a dark brown or black solid material.

Emergency Overview: Vapors or solids may cause Digestive System, Respiratory Tract, Skin and Eye irritation or damage.

The primary hazard associated with Hot Mix Asphalt material is due to thermal burns. These burns can be serious as the temperature of the material usually ranges between 250 and 350 F.

The heated asphalt mix can generate toxic levels of hydrogen sulfide which can accumulate in vapor spaces inside tanks, transport compartments, bins or other enclosed spaces. These vapors can cause eye, skin and respiratory irritation and asphyxiation in higher concentrations.

Potential Acute Health Effects:

EYE:

Hot asphalt mix causes severe burns and vapors may cause irritation..

SKIN:

Hot asphalt mix causes severe burns and frequent or prolonged contact with cold material or vapors may cause dermatitis.

INHALATION:

Vapors can cause respiratory and nasal irritation. Vapors may also cause dizziness, drowsiness, headache, and nausea.

Inhalation of hydrogen sulfide can be extremely hazardous. Headaches, dizziness, fatigue, upper respiratory irritation at low levels may occur. At higher levels possible unconsciousness, respiratory failure, or death may occur. 800ppm for 30 minutes is fatal.

INGESTION:

Pneumonia (if vomited and aspirated into the lungs).

Potential Chronic Health Effects:

CARCINOGEN EFFECTS:

The International Agency for Research on Cancer (IARC) has determined that there is some evidence that certain chemical extracts from bitumen (asphalt) have a carcinogenic potential. However, there is insufficient evidence that bitumen alone is carcinogenic.

Some asphalts used in the production of Hot Mix material contain low levels of polynuclear aromatic hydrocarbons (PAH's) some of which are known to cause cancer in laboratory animals after chronic exposure.

MUTAGENIC EFFECTS:

There is some evidence of tumorigenic activity in animals exposed to certain asphalt volatiles. The types of asphalt used in the production of Hot Mix material generally do not contain these volatiles.

TERATOGENIC EFFECTS:

Unknown

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing skin, eye, and respiratory disorders may be aggravated by exposure to components of the product.

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4. FIRST AID MEASURES

EYE:
For contact with hot molten material, flush with large amounts of tepid water for at least 15 minutes. Immediately call a physician.

For contact with vapors or dust, flush with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, contact a physician.

SKIN:
For contact with hot molten material, immerse or flush skin with cold water for at least 15 minutes. Call a physician. Do not attempt to remove solidified material since removal may cause further tissue injury. Removal of solidified asphalt on the skin should only be performed by a physician. Remove solidified cold asphalt (not associated with a burn) with a citrus based hand cleaner. Do not use solvents or thinners to remove material from the skin.

NOTE TO PHYSICIAN: Solidified cold asphalt associated with a burn maybe slowly dissolved or softened with topical antibiotic ointments such as Neosporin or Bacitracin or mineral oil. If removal is attempted, rub the mineral oil on the skin around the solidified asphalt such that it will tend to seep under the solidified helping to make the asphalt "float" off.

After removal treat the thermal burn. The following treatments may be necessary; intravenous fluid replacement, topical antibiotics and skin grafting.

INHALATION:

Emissions from heated asphalt may cause nausea and irritation of the respiratory system. If affected move the person to fresh air. If breathing is difficult administer oxygen and seek immediate medical assistance.

INGESTION:

Ingestion is not likely. However, if large amounts are ingested immediately call a physician. Do not induce vomiting.

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5. FIRE AND EXPLOSION INFORMATION

Flash Point	Not Determined for product. Petroleum asphalt coating has a cc >400F
LEL	Not Determined
UEL	Not Determined
Auto ignition Temperature	Unknown
Extinguishing Agents	Use dry chemical (ABC), CO2, foam and water fog. Avoid straight stream water jet. Use water to keep fire-exposed containers of product cool.
Special Firefighting Instructions	Petroleum asphalt can explode when concentrated in an enclosed environment and supplied with an ignition source. Never use welding or cutting torch on or near containers (especially empty) because vapors can ignite explosively. Keep extinguishing agent runoff out of sewers and water sources. Fire fighting should only be attempted by those who are properly trained.

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6. ACCIDENTAL RELEASE MEASURES

When responding to accidental releases refer to Section 8 of this MSDS for personal protection information. Prevent material from entering streams, storm sewers and other drainages. If the material gets into a navigable waterway and causes a sheen on the water surface then contact the appropriate local, state and federal agencies.

None of the components of the product are subject to the reporting requirements under Title III of SARA.

Any spilled material can either be reused or disposed of according to local, state or federal laws and regulations.

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7. HANDLING AND STORAGE

HANDLING:

Follow the protective controls outlined in Section 8 of this MSDS. Do not weld heat or drill storage containers. Closed empty containers may contain hazardous material which may ignite explosively if heated sufficiently. Respirable dust may be generated when hardened asphalt products are subject to mechanical forces such as sawing, chiseling, grooving, and crushing during recycling activity. Practice good personal hygiene after handling or working around the hot mix material.

STORAGE:

Keep away from all ignition sources and open flames. Storage container areas should be ventilated to reduce fire and explosion hazard, and possible over-exposure of personnel to vapors. Harmful concentrations of hydrogen sulfide gas can be generated and accumulate in storage tanks and bulk transport compartments.

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8. EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Local or general exhaust is required in enclosed areas or areas with inadequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory Protection:

Not required under normal working conditions and where there is adequate ventilation. When grinding or sawing the cured product a particulate dust mask (N95 or greater) should be worn to avoid inhalation of dust particles.

Use supplied air when in confined spaces or when vapors (asphalt and/or hydrogen sulfide) exceed permissible exposure limits. Otherwise, an organic vapor cartridge respirator with pre-filter for vapors can be used.

For firefighting activities SCBA equipment should be used.

Skin Protection:

Heavy leather gloves or insulated rubber or nitrile gloves should be worn when handling the hot material.

Eye Protection:

Safety glasses should be worn when working around granular hot material.

Other Protective Clothing:

Long pants, work boots and long sleeved shirts should be worn when working around the hot material.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	> 750F
Melting point	Asphalt softens at a range of 100-200F
Specific Gravity (H2O = 1)	>1.0
% Soluble in Water	Negligible
Vapor Density	NA
Vapor Pressure (mmHg at 20C)	Negligible at 77F
Evaporation Rate	NA
PH	NA
% Volatiles	NA
Appearance	Black/Brown solid
Odor	Tar (petroleum)

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10. STABILITY AND REACTIVITY

Stability	Stable
Conditions to Avoid	Avoid contact with incompatible materials (see below)
Hazardous Decomposition Products	Depending on temperature by-products such as carbon monoxide, carbon dioxide, aldehydes, amines, nitrogen dioxide, sulfur dioxide, hydrogen sulfide, and various hydrocarbons maybe released. Hazardous vapors may accumulate in enclosed vessels or other areas that are not properly ventilated.
Incompatible Materials	Strong oxidizers such as chlorates, nitrates, and peroxides may react with hydrocarbons. Contact with fluorine may cause burning or explosion.
Hazardous Polymerization	Not known to occur

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11. TOXICOLOGICAL INFORMATION

Some epidemiological studies conducted on workers exposed to asphalt vapors have shown no increased incidence of cancer while other studies have reported a slightly increased risk of lung, other respiratory tract or gastrointestinal cancers. In those studies in which elevated cancer incidences were reported, concurrent or previous exposure to coal-tar products have been documented. Therefore, it can not be concluded that cancer incidence is related to exposure to asphalt vapors.

Long term inhalation exposures to asphalt aerosols or vapors did not produce evidence of carcinogenicity even though chronic respiratory inflammatory changes similar to those produced by nonspecific respiratory irritants were observed.

Laboratory animals administered subcutaneous or intramuscular injections of asphalt preparations or repeated skin applications of hot (212F) undiluted asphalt occasionally produced a low incidence of skin tumors at the site of application. These findings are of questionable validity since ordinary repeated tissue trauma (and/or burns) at the application site can induce tumor formation.

Solvent dilutions of different types of asphalts have been tested in chronic skin painting studies. Some of these studies have reported a low incidence of skin tumors. The use of diluents may in fact enhance the bioavailability or metabolic activation of chemicals in the mixture in a fashion not representative of occupational exposure.

Skin painting studies in mice have been conducted using condensates from vapors generated at temperatures exceeding 450F diluted in solvent. The condensate preparations have produced skin tumors. Experimental conditions (temperature and dose) were grossly exaggerated over that likely to occur in humans. Normal asphalt paving temperatures rarely exceed 350F.

Extracts of whole asphalts tested in a modified Ames Assay gave negative or slightly positive findings (mutagenicity index (MI) <1.5). Vapor condensates derived from heating asphalts to high temperatures (>450F) were moderately active (MI 4-9). Vapors generated from coal tar pitch were >1000 times more active. Asphalt vapor samples collected under actual field conditions did not show any significant mutagenic activity.

Hydrogen sulfide gas is toxic by inhalation. Prolonged breathing of 50-100 ppm hydrogen sulfide vapors can produce eye and respiratory tract irritation. Higher concentrations (250-600 ppm) for 15-30 minutes can produce headache, dizziness, nervousness, nausea and pulmonary edema or bronchial pneumonia. Concentrations greater than 1000 ppm will cause immediate unconsciousness and death through respiratory paralysis.

Dust particulates* generated during sawing and grinding activities may contain trace amounts of crystalline silica. Chronic exposure to this substance in excess of the permissible exposure limits (NIOSH and ACGIH TWA = 0.05 mg/m3) has caused silicosis which is a progressive form of pneumoconiosis (lung disease).

Not all people with silicosis will exhibit signs of the disease. However, silicosis is progressive, and symptoms can appear at any time, even years after exposures have ceased. Symptoms of silicosis may include (but are not limited to): shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung capacity; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

*OSHA has set permissible exposure limits for respirable dust at 5 mg/m3 and permissible exposure limits for total dust at 15 mg/m3.

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12. ECOLOGICAL INFORMATION

Based on current information there is no potential for bioaccumulation. Other ecological effects are unknown.

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13. DISPOSAL CONSIDERATIONS

This product as supplied, and by itself, when discarded or disposed of, does not meet the definitions of RCRA hazardous waste. The material could become hazardous if mixed with other RCRA designated hazardous materials. If that happens then local, state and federal rules apply to its disposition.

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14. TRANSPORTATION INFORMATION

Hazard Classification: Not Regulated

Placard Required: None

Label Required: Generally no labeling is required. However, it is advisable to check with state and local laws prior to shipping.

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15. REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200):
This product has been determined to be a hazardous material (as defined by the OSHA Hazard Communication Standard) when heated.

EPA TOXIC SUBSTANCES CONTROL ACT (40 CFR PART 710):
This product and/or its components are listed on the TSCA Chemical Inventory.

EPA SARA TITLE III SUPERFUND AMENDMENTS & REAUTHORIZATION ACT - EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986. (40 CFR PART 355):

This product does not contain any chemicals that are on the Appendix A and B of the Extremely Hazardous Substances list at a concentration of greater than 1% or greater than 0.1% if a carcinogen.

SPILL/RELEASE REPORTING

This product contains the following component(s) identified either as an Extremely Hazardous Substance (40 CFR Part 355) or a CERCLA Hazardous Substance (40 CFR 302) which in case of a spill or release may be subject to emergency release reporting requirements:

- Hydrogen Sulfide (Reportable Quantity = 100 LBS)

TOXIC CHEMICAL RELEASE REPORTING (40 CFR PART 372):

This product does not contain any materials at the appropriate concentrations that would trigger reporting for the Toxic Release Inventory (Form R).

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16. OTHER INFORMATION

NFPA Hazard Ratings:

Health: 1
Fire: 1
Reactivity: 0

HMIS Hazard Rating:

Health: 1
Fire: 1
Reactivity: 1
Other: Personal Protection*

* See Section 8 for guidance in the selection of personal protective equipment.

The pronounced and easily recognized rotten egg odor of hydrogen sulfide gas can be detected at concentrations as low as 0.003 – 0.13 ppm. Since higher concentrations (100 -200 ppm) cause olfactory fatigue and other hydrocarbon odors can “mask” the hydrogen sulfide odor, the sense of smell cannot be used as a reliable indicator of hydrogen sulfide exposure.

DISCLAIMER

This information only relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of Ramming Paving Ltd's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

INFORMATION SUPPLIED BY:
SAFETY DIRECTOR
DATE: 4/20/2005