



Recycled Base Rock
R&G SDS Number: 005

SAFETY DATA SHEET

Section 1: Identification of product / manufacturer / utilization

Product form: Mixture
Product name: Recycled Asphalt Product
Synonyms: Recycled base rock, RAP, Recycled Class II aggregate base, Recycled Class III aggregate base, Crushed asphalt

Manufacturer

Reed & Graham, Inc.
690 Sunol Street
San Jose, CA 95126 USA
(408) 287-1400

Emergency telephone number
1-866-401-5424

Section 2: Hazards identification

Classification of mixture:

- Hazardous Substance
- Non-Dangerous Goods



Signal word: *Warning*

Hazard Statements:

- Eye contact: Exposure to crystalline silica dust may cause irritation, redness or pain.
- Skin contact: Not expected to be a significant exposure concern.
- Inhalation: Inhalation of silica dust from being cut, abraded, or crushed some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in). When heated, inhalation of hydrogen sulfide gas can cause upper respiratory tract irritation
- Ingestion: Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea and blockage.

Precautionary Statements:

- Obtain and read product data sheet for instructions of use
- Do not handle material until all the safety data sheet has been obtain, read and understood.
- Inhalation of silica dust may cause respiratory irritation after prolonged exposure

Prevention

- Do not eat, drink or smoke when using this product
- Do not breathe dusts/fume/gas/mist/vapors/spray
- Wear protective gloves/protective clothing/eye protection/face protection
- Contaminated work clothing must not be allowed out of the workplace
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood

Response

- If swallowed: DO NOT induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration Immediately call a poison center/doctor
- If on skin or hair: take off immediately all contaminated clothing. Rinse skin with water/shower.
- If inhaled: Remove person to fresh air and keep comfortable for breathing. If lung irritation persists or later develops, contact a physician.
- If in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Beyond flushing, do not attempt to remove material from the eyes.

GHS pictogram



Storage

- Store away from all ignition sources and open flames in accordance with applicable laws and regulations. Do not store near food and beverages or smoking materials. Respirable crystalline silica dust may be generated when hardened asphalt concrete is subjected to mechanical forces such as demolition work or crushing.

Disposal

- Dispose of contents/container in accordance with local/regional/national regulations

Section 3:	Composition / Information on Ingredients
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Component Listing

Chemical Name	Amount	CAS Number
AGGREGATE (crushed stone, sand, gravel)	60.0 – 90%	Mixture
COMPOSITION VARIES naturally-typically contains quartz (crystalline silica)	>1%	14808-60-7
ASPHALT CEMENT	10-40%	8052-42-4
Reclaimed products may contain Contaminants such as heavy metals, Hydrocarbons and various asphalt additives	-----	-----

Component Information/Information on Non-Hazardous Components**General Information**

Trace Elements: Product is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of naturally occurring, potentially harmful chemical might be detected during chemical analysis.

Section 4:	First Aid Measures
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EYE CONTACT FIRST AID:

Immediately flush eyes with plenty of water for at least 15 minutes, while holding the eyelids open. Occasionally lift the eyelids to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eyes. Contact a physician if irritation persists or later develops.

SKIN CONTACT FIRST AID:

For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat. For hot material exposure, DO NOT try to remove solidified material from the skin. DO NOT try to dissolve with solvents or thinners. Get medical attention immediately.

For exposure to cold material, wash skin with soap and water. Do not attempt to wash with solvent or thinners. Wear protective gloves to minimize skin contamination.

INHALATION FIRST AID:

At elevated temperatures may cause irritation of the eyes and respiratory tract. Although this product is not known to cause respiratory problems, if breathing is difficult, safely remove victim to fresh air and provide oxygen. Get immediate medical attention.

INGESTION FIRST AID:

If swallowed, do not induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting should occur spontaneously, keep airway clear. Contact a physician.

STATEMENT OF PRACTICAL TREATMENT:

Cool exposed area with water to dissipate heat. Get prompt medical attention. No attempt should be made to remove firmly adhering asphaltic material. Only medically approved solvents may be used to remove material from burns, as other solvents could cause further damage.

Section 5: Fire Fighting Measures
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FLAMMABLE PROPERTIES:

Product contains heavy oil (asphalt), will not burn unless preheated.

EXTINGUISHING MEDIA:

The use of Carbon dioxide, dry chemical, halogenated agents, foam, and steam can be used. Avoid the use of straight stream water because of violent reaction with hot asphalt. Use water spray to cool fire exposed containers.

FIRE & EXPLOSION HAZARDS:

Fumes and vapors can explode when concentrated in an enclosed environment and supplied with an ignition source. Never weld or use a cutting torch or open flame on a fully or partially full or empty bin, hopper or other container that holds asphaltic materials unless precautions are taken to prevent explosion. an release vapors that form explosive mixtures at temperatures at or above the flash point.

FIRE FIGHTING INSTRUCTIONS:

As in any fire, firefighters should wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear. Decomposition may produce fumes, smoke, oxides of sulfur, carbon and hydrocarbons, and possible small quantities of hydrogen sulfide.

COMBUSTION PRODUCTS:

Avoid breathing vapors from heated material. Combustion may produce CO, NO_x, SO_x and reactive hydrocarbons

Section 6: Accidental Release Measures

Recovery and Neutralization

Eliminate all sources of ignition or flammables that may come into contact with a spill of this material.

Materials and Methods for Clean-up

Personnel involved in cleanup processes should implement controls as identified in section 8 as appropriate. Keep all ignition sources at least 50 feet away. Avoid personal contact with heated material. Collect cold material and dispose waste in accordance with local, state and federal regulations.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Environmental Precautions

Prevent materials from entering streams, drainages or sewers. Spills entering surface waters or any other water courses or sewer entering/leading to surface waters that cause sheen must be reported to the National response center 800-424-8802,. None of the components are subject to the reporting requirement of Title III of SARA, 1986 and 40 CFR372.

Prevention of Secondary Hazards

None.

Section 7: Handling and Storage
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Handling Procedures

When sampling containers use appropriate personal protective equipment such as gloves that are heat resistant, safety glasses, work boots and appropriate clothing. Do not enter storage area unless adequately ventilated. Avoid contact with eyes, skin, and clothing. Breathing hydrogen sulfide must be avoided.

Storage Procedures

Store the product away from all ignition sources and open flames, in accordance with applicable laws and regulations. Storage containers should be ventilated to reduce fire and explosion hazard, and

possible overexposure of personnel to fumes and vapors. Do not store near food and beverages or smoking materials.

Sections 8:	Exposure Controls / Personal Protections
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Legend:			
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists			
Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Asphalt fumes	<i>NE</i>	<i>0.5mg/m3 (as benzene – soluble aerosol)</i>	<i>REL Ceiling 5ppm</i>
Other particulates	<i>15 mg/m3 (total dust) 5 mg/m3 (respirable fraction)</i>	<i>NE</i>	<i>NE</i>
Respirable dust Containing silica	10 mg/m3 ÷ (% silica+2)	Use Respirable Silica TLV	Use Respirable Silica TLV
Total dust containing silica	OSHA: 30 mg/m3 ÷ (% silica+2) MSHA: 30mg/m3 ÷ (% silica+2)	NE	NE
Respirable Crystalline Silica (quartz)	NE – Use respirable dust containing silica PEL	0.025 mgm3	0.05 mg/m3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	½ of OSHA and MSHA respirable dust containing silica PEL	0.025mg/m3	0.05 mg/m3
Ammonia (NH3)	PEL 50 ppm	TLV 25ppm TLV-STEL 35ppm`	REL 25ppm REL Ceiling 35 ppm
Carbon Monoxide (CO)	PEL 50 ppm	25 ppm	REL 35 ppm REL- Ceiling 200 ppm
Hydrogen Sulfide (H2S)	PEL – Ceiling 20 ppm	TLV 10 ppm TLV – STEL 15 ppm	REL – Ceiling 10 ppm
Nitrogen Dioxide (NO2)	PEL – Ceiling 5 ppm	TLV 3 ppm TLV-STEL 5 ppm	RES-STEL 1ppm
Ozone (O3)	PEL 0.1 ppm	0.05 ppm	REL-Ceiling 0.1 ppm
Sulfur Dioxide (SO2)	PEL 5 ppm	TLV 2 ppm TLV-STEL 5 ppm	REL 2 ppm REL-STEL 5 ppm

Engineering measures

Use general ventilations methods to controls exposure within applicable limits

Personal Protective Equipment: Respiratory

Not expected to be necessary under normal use and working conditions. For air contamination which exceed or are likely to exceed applicable exposure limits, use a NIOSH/MSHA approved, contaminate specific air purifying respirator. Respirator and or filter cartridge selections should be based on American National Standards Institute (ANSI) Z88.2 practices of Respiratory Protection. If such conditions are sufficiently high that the air purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, us a positive pressure, self-contain breathing apparatus. Activities that generate dust require the use of the appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8 hour time weighted average (TWA) of 0.5mgm³, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8 hour TWA of 5.0 mg/m³, a positive pressure, full face respirator or equivalent is required. Respirator use must comply with applicable LMSHA (42CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspections, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

Personal Protective Equipment: Skin

Avoid skin contact with material by wearing impervious glove and protective clothing. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber material. When handling hot material, use heat resistant glove. Use insulated, heat resistant clothing as necessary.

Personal Protective Equipment: Eyes

Use a full face shield and chemical safety goggles if handling heated materials. Safety glasses with side shields should be worn as minimum protection at ambient temperature. Contact lens should not be worn when eye contact with product is possible.

Personal Protective Equipment: Skin and Body

Normal work clothing long sleeved shirts and long pants is recommended.

Section 10:	Stability and Reactivity
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Reactivity

Strong oxidizers may react with hydrocarbons. Adding water to hot asphalt presents an explosion hazard

Chemical stability

This is a stable product

Conditions to avoid

Keep away from ignition sources. Avoid extreme temperatures

Hazardous decomposition products

Carbon monoxide, nitrogen oxide, sulfur dioxide, hydrogen sulfide, and various hydrocarbons may be released by thermal decomposition. Hazardous vapors may collect in enclosed vessels or areas of not properly ventilated.

Section 11: Toxicological Information

Acute Toxicity

Component Analysis – LD50/LC50

Quartz (14808-60-7)

Oral LD50 Rat 500 mg/kg

Potential Health Effects: Skin Corrosion Property / Stimulativeness

Heated material can cause severe thermal burns. Emissions may cause mild irritation. There may be an increased sensitivity to sunburn with the skin is exposed to asphalt fumes.

Potential Health Effects: Eye Critical Damage / Stimulativeness

Heated material can cause severe thermal burns. Asphalt fumes may cause eye irritation. Exposure to hydrogen sulfide at concentration above 4 ppm may cause eye irritation.

Potential Health Effects: Ingestion

Direct contact with heated material can produce thermal burns on contacted tissues. Gastric masses and stomach obstructions have been reported in individuals who have chewed and swallowed asphalt.

Potential Health Effects: Inhalation

Emissions from heated petroleum asphalt may have an unpleasant odor, and may product nausea and irritation of the upper respiratory tract. Naptha component vapors hot asphalt at high concentrations in the enclosed spaces may cause symptom of euphoria, respiratory irritation and edema, headaches, dizziness, drowsiness, concussions, coma cyanosis and general depression. Hydrogen sulfide causes respiratory irritation at concentrations of 4 to 100ppm. At low concentration H2S has a rotten egg odor. At elevated concentrations H2S acts as a systemic poison, causing unconsciousness and death by respiratory paralysis. Chronic inhalation of petroleum asphalt emissions may contribute to respiratory irritation. If hardened asphalt concrete is subjected to mechanical forces which generate dust particles, exposure to respirable crystalline silica dust is possible.

Respiratory Organs Sensitizations/ Skin Sensitization

Chronic exposure to petroleum asphalt has caused skin disorders such as dermatitis, folliculitis, or oil acne.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

Carcinogenicity

May cause cancer

Petroleum asphalt and the asphalt additives, in this product are not listed as a carcinogen by NTP, OSHA or IARC. Crystalline silica, a component of these products, is listed by IRAC but not by OSHA. IRAC has determined that there is sufficient evidence for carcinogenicity to experimental animals exposed to crystalline silica and limited evidence for carcinogenicity to humans. Limited evidence means that a causal relationships is possible, however, other explanations such as chance, bias or

confounding factored cannot adequately be excluded. NTP has listed crystalline silica as reasonably anticipated to be a human carcinogen.

Component Carcinogenicity

Quartz (14808-60-7)

ACGIH: A2 – suspected human carcinogen

NIOSH: potential occupational carcinogen

NTP: Known Human Carcinogen

IARC: Monograph 100C (2012) listed under crystalline silica inhaled in the form of quartz or cristobalite from occupational sources; Monograph 68(1997) Group 1 (carcinogenic to humans)

Reproductive Toxicity

This product may contain components which may cause adverse reproduction and/or development effects.

Specified Target Organ General Toxicity: Single Exposure

Acute overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: liver, kidney, lung, skin, spleen, thymus, blood elements, lymph nodes, testes, bone marrow, and nervous system.

Specified Target Organ General Toxicity: Repeated Exposure

Chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: liver, kidney, lung skin, spleen, thymus, blood elements, lymph nodes, testes, bone marrow, and nervous system.

Aspiration Respiratory Organs Hazard

This product is not reported to have any aspiration hazard effects

Other toxicological Information

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: anemia, pallor, fatigue, loss of appetite, anxiety and melanesia. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intention misuse by deliberately inhaling vapors may be harmful or fatal.

Section 12: Ecological Information

General Product Information

Harmful to aquatic life with long lasting effects. This material may be toxic to fish and other aquatic life and may impede growth of vegetation.

Component Analysis - Eco toxicity Aquatic Toxicity

No Eco toxicity data are available for this product's components.

Persistence/Degradability

No information available for the product

Bioaccumulation

No information available for the product

Mobility in Soil

No information available for the product

Section 13: Disposal Consideration

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14: Transport Information

DOT Information

Shipping Name: Hot mix asphalt
Additional info: If the shipping temperature of a solid equals or exceeds 464F, DOT regulations classify the solid as an “Elevated Temperature Material”, and a “hot” label is required. Transport in accordance with local regulations, where applicable. Consult 49CFR 172.101 for shipping information.

Section 15: Regulatory Information

US Federal Regulation

Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 302.4).

State Regulations

Component Analysis

The following components appear on or more of the following state hazardous substances
Quartz CAS 14808-60-7 California (no)

The following statements are provided under the California Safe Drinking Water and Toxic Enforcements Act of 1986 (Proposition 65)

WARNING! This product contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

Section 16: Other Information

Hazardous Material Information System (HMIS):	Health	2
	Flammability	1
	Physical Hazard	1
	Personal Protection	B

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
 Protective Equipment: Safety glasses, gloves, respirator

Key/Legend

EPA – Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute of Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration.

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