SAFETY DATA SHEET

1. Identification

Product identifier **Hot Mix Asphalt**

Other means of identification Bituminous Concrete, Asphalt, Asphaltic Concrete, Tarmac

Recommended use Hot Mix Asphalt is used as a paving material for roads, driveways, parking lots, and other surfaces.

Manufacturer/Importer/Supplier/Distributor information

Company	New Frontier Materials
Manufacturer	New Frontier Materials
Address	2300 Creve Coeur Mill Road, Maryland Heights MO 63043
Telephone	(314) 473-3434
E-mail	contact@newfrontiermaterials.com
Emergency phone number	(314) 473-3617

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin Irritant	Category 2
Eye Irritation	Category 2B
Carcinogenicity	Category 1A
Specific Target Organ Toxicity, Repeated Exposure	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statements

May cause cancer (inhalation).

May cause damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation).

Causes eye irritation.

Causes skin irritation.

May cause respiratory irritation.

Precautionary statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dusts, vapors, fumes, or mists. Use only outdoors in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling.

Product may contain or release hydrogen sulfide, which is highly toxic and is a flammable gas. Due to odor masking/fatigue of the sense of smell, the odor of hydrogen sulfide (rotten eggs) cannot be relied upon as a means of detection. Assessment of storage tanks, transport vessels and other confined spaces should be made to determine potential exposures and appropriate controls.

Response	If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. Material can cause thermal burns when heated. Apply first aid measures for burns. If swallowed: Rinse mouth. Do not induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. If exposed or concerned: Get medical advice/attention if you feel unwell or irritation of the eyes, skin, mouth or throat/nasal passage or other discomfort persist.
Storage	Restrict or control access to silos and truck beds and while paving with hot material.
Disposal	Dispose of in accordance with local/regional/federal/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental Information:	Heated material can cause thermal burns. Fumes from heated asphalt may be irritating to the eye, nose, and throat. This product is a mixture of liquid asphalt and aggregates. Aggregates naturally contain varying quantities of quartz (crystalline silica). When applied as a paving material exposure to silica is unlikely. However, if the material is crushed or ground, trace amounts of respirable crystalline silica could be released. Repeated inhalation of respirable crystalline silica may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Aggregate (crushed stone, sand, gravel)	Varies	> 90
Asphalt	8052-42-4	<10
Crystalline silica (Quartz)	14808-60-7	> 1
Hydrogen sulfide	7783-06-4	> 1
Additives	Mixture	> 1

4. First-aid measures

Inhalation	Move to fresh air and keep at rest in a position comfortable for breathing. In case of breathing difficulties administer oxygen by trained personnel. Contact a physician if irritation or difficulty breathing persist or develops later.
Skin contact	If molten product contacts the skin, quickly remove contaminated clothing and cool immediately by immersing the contacted skin in cool water to limit tissue damage and prevent spread of liquid product. Cooling should continue only until product is hardened and cool. For extensive burns, cover with sterile dressing. Molten product may adhere strongly to skin and attempted removal may cause distress and further tissue damage. Do not use solvents to remove product from skin. Get prompt medical attention. For product that is not hot, wash with plenty of water and soap. Wash contaminated clothing if there is potential for direct skin contact. Do not rub the skin and eyes after direct contact with the product. If skin irritation occurs: Get medical advice/attention.
Eye contact	Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do, and continue rinsing. Do not rub the skin and eyes after direct contact with the product. Exposure of the eyes to hot product produces a direct thermal burn. Obtain medical attention if irritation, pain, blinking, or redness persist.
Ingestion	If swallowed, rinse mouth with water. Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician. Do not induce vomiting.

	Direct contact through ingestion of heated material can produce thermal burns on contacted tissues.
Most important symptoms/effects, acute and delayed	Inhalation: Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Inhalation of vapor when product is heated can cause headache, dizziness, drowsiness, nervousness, nausea, and vomiting. Inhalation of hydrogen sulfide gas can cause upper respiratory tract irritation and, if exposure if prolonged at levels above the occupational exposure limits, pulmonary edema and even coma or death. Skin contact: May cause skin irritation. Risk of thermal burns on contact with molten product. Direct skin contact with dust may cause irritation by mechanical abrasion. Eye contact: Fumes can cause serious eye irritation. Risk of thermal burns on contact with molten product. Dusts are chemical irritants. Symptoms include stinging, watering, redness and swelling, burning sensation. Ingestion: Ingestion of heated material can produce thermal burns on contacted tissues. Oral ingestion of cool product is relatively nontoxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Existing abnormal conditions of the skin and/or respiratory system may be aggravated by exposure to asphalt fumes and by petroleum distillates. Exposure to dust from disrupted hardened asphalt concrete may aggravate respiratory diseases or dysfunctions, and skin and eye conditions.

5. Fire-fighting measures

Suitable extinguishing media	Foam, dry chemical, sand, or carbon dioxide.
Unsuitable extinguishing media	Apply aqueous extinguishing media carefully to prevent frothing/steam explosion. Do not use a solid water stream as it may scatter and spread fire or cause explosion.
Specific hazards arising from the chemical	Fire/explosion hazard: Never use welding or cutting torch on or near containers (even empty) because material (even residue) can ignite explosively. Heat may build pressure, rupturing closed containers. Do not heat above flash point. Reactivity: Hydrogen sulfide and other sulfur-containing gases can evolve from this product particularly at elevated temperatures. Carbon monoxide, carbon dioxide, smoke, fumes, unburned hydrocarbons, and oxides of sulfur and/or nitrogen may be formed upon combustion.
Special protective equipment and precautions for firefighters	Do not enter fire area without proper protective, including respiratory protection. Wear a self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, and emergency procedures	Avoid breathing fumes. Wear protective eyewear/clothing to avoid eye or skin contact. Eliminate ignition sources. Ventilate area. Prevent material from entering streams, drainageways, or sewers.
Methods and materials for containment and cleaning up	Dispose in a safe manner in accordance with federal, state, and local regulations. Consult the appropriate authorities about waste disposal.
Environmental precautions	No additional information.

7. Handling and storage

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Contact with hot

product can cause severe burns. Ensure adequate ventilation. Do not breathe dust or fumes. Avoid contact with skin, eyes, and clothing. Wear appropriate personal protective equipment. Keep away from ignition sources. Follow OSHA Confined Space Entry Program requirements if entry into a confined space containing this product is necessary.

Hygiene measures

Do not eat, drink, or smoke when using this product. Use good personal hygiene practices. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and when leaving work.

Conditions for safe storage, including any incompatibilities

Product should be transported from plant to work site in open- bed trucks, such that adequate ventilation reduces fire and explosion hazards and possible overexposure of personnel to fumes and vapors. Store away from heat, sparks, flames, or strong oxidants, in accordance with applicable laws and regulations. Do not store near food and beverages or smoking material.

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

8. Exposure controls/personal protection

Control parameters

Asphalt (8052-42-4)	
ACGIH TLV	0.5 mg/m³ (as benzene-soluble aerosol)
NIOSH REL	Ceiling 5 mg/m^3 (fumes)
Hydrogen Sulfide	
ACGIH TLV	10 ppm, STEL: 15 ppm
NIOSH REL	Ceiling 10 ppm
OSHA PEL	Ceiling 20 ppm
Respirable Crystalline Silica (14808-60-7)	
ACGIH TLV	0.025 mg/m^3
NIOSH REL	0.05 mg/m^3
OSHA PEL	0.05 mg/m^3 PEL, 0.025 mg/m^3 (Action Level)

Appropriate engineering controls

Use only in well-ventilated areas. Workers should station themselves on the upwind side of asphalt emissions when possible. Crushing/grinding of dried/hardened product may generate dust, requiring the use of general ventilation, local exhaust, and/or wet suppression measures to maintain airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields or chemical goggles.

Skin protection

Hand protection

If material is hot, wear thermally resistant protective gloves.

Other

Wear long-sleeved protective clothing and trousers.

Respiratory protection

When performing work with product that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Thermal hazards

Wear appropriate thermal protective clothing and thermally resistant protective gloves, when necessary.

9. Physical and chemical properties

Appearance	
Physical state	Viscous, semi-solid.
Form	Semi-solid tar-like material with dispersed aggregate (angular dark gray to black particles ranging in size from powder to small stones)
Color	Black. Multi-colored.
Odor	Petroleum-like.
Odor threshold	Not applicable.
Melting point/freezing point	~ 200 ^{o}F.
Initial boiling point and boiling range	~ 878 ^{o}F.
Flash point	> 450 ^{o}F.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not applicable.
Flammability limit – upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Specific gravity	2.4 – 2.7
pH	Not applicable.
Solubility	
Solubility (water)	Negligible.
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage, and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Do not expose to open flames/ignition sources.
Incompatible materials	Strong oxidizers may react with hydrocarbons. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an explosion hazard.

11. Toxicological information

Likely routes of exposure Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation Fumes, mists or vapors may cause respiratory irritation. Hydrogen sulfide fumes and vapors may be harmful or fatal.

Skin contact Direct contact with hot material can cause severe thermal burns.

Eye contact Direct contact with hot material can cause severe thermal burns. Eye irritation from fumes, vapors, or mist.

Ingestion Direct contact with heated material can cause severe thermal burns. Chewing and swallowing asphalt may cause gastrointestinal effects. Gastric masses and stomach obstructions have been reported in individuals who have chewed and swallowed asphalt.

Acute toxicity Not classified.
Quartz (14808-60-7) LD50 oral rat > 5000 mg/kg
Asphalt (8052-42-4) LD50 oral rat > 5000 mg/kg, LD50 dermal rabbit > 2000 mg/kg

Skin corrosion/irritation Not classified.

Serious eye damage/eye irritation Not classified.

Respiratory or skin sensitization

Respiratory sensitization Not classified.

Skin sensitization Not classified.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Asphalt has been categorized by IARC as possibly carcinogenic to humans. Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen and classified by ACGIH as a suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline Silica (Quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.

Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Crystalline Silica (Quartz) (CAS 14808-60-7) Known to be human carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed.

Reproductive toxicity Not reported/no data available.

Specific target organ toxicity – single exposure Not classified.

Specific target organ toxicity – repeated exposure Respirable crystalline silica: May cause damage to organs (lung) through prolonged or repeated exposure.

Asphalt: May cause damage to organs (lung) through prolonged or repeated exposure.

Aspiration hazard Not applicable.

12. Ecological information

Ecotoxicity No specific data on this product. Large spills may cause damage to shoreline.

Persistence and degradability Expected to be resistant to biodegradation.

Bioaccumulative potential Not applicable.

Mobility in soil Not determined.

Other adverse effects Not determined.

13. Disposal considerations

Disposal instructions Dispose of contents in accordance with local/regional/federal/international regulations.

14. Transport information

DOT Not regulated as dangerous goods.

IATA Not regulated as dangerous goods.

IMDG Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

OSHA Hazard Communication Standard (29 CFR 1910.1200)
This product is defined as a "Hazardous Chemical".

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes.

SARA 313 (TRI reporting)
Not listed.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Crystalline Silica (Quartz) (CAS 14808-60-7)
Asphalt (CAS 8052-42-4)
Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2)

16. Other information, including date of preparation or last revision

Revision date November 17, 2021

SDS US (GHS HazCom 2012)

To the best of our knowledge the information contained herein is correct. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these will not require responsibility on behalf of the user. Users of any chemical should satisfy themselves that the conditions and method of use assure that the chemical is used safely. No representation or warranties, either express or implied, of merchantability, fitness for a particular purpose or any other nature are made herein or the chemical to which the information refers.