Safety Data Sheet

Asphalt

Section 1. Identification

Product identifier:	Asphalt
Other means of identification:	Asphalt Asphaltum Bitumen Petroleum Petroleum Bitumen Road Asphalt Roofing Asphalt Blacktop Patch
Relevant Uses:	Basic component in Commercial Asphalt Paving and Construction.
Manufacturers Name:	CEMEX
Address:	929 Gessner Road, Suite 1900 Houston TX, 77024 T Customer Care 1-800-99-CEMEX
Emergency telephone number:	CHEMTREC: 1-800-424-9300

Section 2. Hazards Identification

OSHA/HCS status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Category Classification(s):	SKIN CORROSION - Category 1 EYE DAMAGE - Category 1 MUTAGENICITY - Category 1B CARCINOGENICITY/INHALATION - Category 1 REPRODUCTIVE TOXICITY - Category 2 SINGLE TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements:

Hazard pictograms:

GHS05 GHS08

Signal word:	Danger
Hazard statements:	Causes severe skin burns and eye damage Causes serious eye damage May cause genetic defects (Inhalation) May cause cancer (Inhalation) Suspected of damaging fertility or the unborn child (Inhalation)
Precautionary Statements:	Obtain special instructions before use Do not handle until all safety precautions have been read and understood

Do not breathe dust, fume, mist
Wash clothing, hands, forearms and face thoroughly after handling
Wear eye protection, protective clothing, protective gloves
If swallowed: rinse mouth. Do NOT induce vomiting
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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If exposed or concerned: Get medical advice/attention
Get medical advice/attention if you feel unwell a n d i mmediately call a POISON CENTER
Specific treatment (see Section 4 on this label)
Take off contaminated clothing and wash it before reuse
Dispose of contents/container to comply with local/regional/national/international regulations

Other Hazards: Not applicable.

Section 3. Composition / Information on Ingredients

Substance/mixture: Asphalt/Aggregate Product

Ingredient Name	% Content	CAS number
Aggregate	93	308075-07-2
Petroleum Asphalt	2 - 3	8052-42-4
Kerosene	1	8008-20-6
Naphtha, Coal Tar	1	8030-30-6
Quartz (crystalline silica)	> 0.1	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First-Aid Measures

Description of necessary first aid measures:

General: Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Eye contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes.

Inhalation: Seek medical help if coughing or other symptoms persist. Seek medical attention and immediately and contact a poison center. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth- to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact: Quickly and gently blot or brush away excess product. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for burns, irritation, dermatitis and prolonged unprotected exposures. Get medical attention if irritation persists.

Ingestion: Seek medical attention and immediately contact a poison center. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of

water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical attention immediately. Maintain an open airway.

Potential symptoms and effects from acute exposures (delayed or immediate):

Eye contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin contact:	Causes severe burns. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician.
Ingestion:	Not expected to be a significant route of entry. May cause burns to mouth, throat and stomach.

Potential symptoms and effects from over-exposures:

Eye contact:	Adverse symptoms may include the following: pain, watering and redness.
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing. Prolonged breathing of vapors can be a central nervous system depressant.
Skin contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur
Ingestion:	Adverse symptoms may include the following: stomach pains

Recommendations for immediate medical attention / treatment:

If large quantities have been Ingested or inhaled:	Seek medical treatment and contact poison treatment specialist immediately.
Notes to physician:	Treat symptomatically.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Fire-fighting Measures

Extinguishing media

Suitable extinguishing media:	Non-flammable. Use an extinguishing agent suitable for the surrounding fire.
Specific hazards arising from the chemical:	No specific fire or explosion hazard as packaged.
Hazardous thermal decomposition	Decomposition products may include the following materials: carbon monoxide, sulfur oxides (hydrogen sulfide), products: paraffins, naphthenes, aromatics and olefins. Hydrogen sulfide is an extremely flammable gas.
Special protective actions for firefighters:	Evacuate area. Fight fire with normal precautions from a reasonable distance. Move containers from fire area if this can be done without risk.
Special protective equipment for fire-fighters:	Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. For personal protective clothing requirements, please see Section 8.

For non-emergency personnel:	Evacuate area, if necessary. Contact emergency personnel, if needed. Do not breathe vapor, mist or dust. Stay upwind.
For emergency responders:	Evacuate surrounding areas if necessary. Keep unnecessary and unprotected personnel from entering. Do not breathe vapor, mist or dust. Provide adequate ventilation.
Environmental precautions:	Avoid release to the environment. Contain the spill to avoid the discharge of spilled material into drains, surface waters and/or groundwater. If the spilled material enters any drainage systems, surface waters and/or groundwater, follow all applicable local, state and federal laws and regulations for additional clean-up and/or reporting requirements.

Methods and materials for containment and cleaning up

Small and large spills:	Wear appropriate personal protective equipment as described in Section 8 for cleaning, containing and removing the spill. Solid Form: Minimize generation of dust. For small spills, clean with a vacuum with a filtration system sufficient to remove and prevent recirculation of dust (a vacuum equipped with a high-efficiency particulate air (HEPA) filter is recommended). For large spills, use control dust measures and carefully scoop or shovel into clean dry container for later reuse or disposal. DO NOT USE COMPRESSED AIR TO CLEAN SPILLS. Liquid Form: Eliminate all ignition sources in the vicinity of the spill. Hydrocarbons such as kerosene or mineral oil can be used to dissolve any remaining material. In turn, these hydrocarbons or oils can be absorbed with clay or diatomaceous earth. Place the material in disposable containers. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures:	Put on appropriate personal protective equipment (see Section 8). Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor, mist or dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. At elevated temperatures, this product will cause thermal burns and may release toxic hydrogen sulfide. Hydrogen sulfide is a fatal and highly flammable gas. Explosion can occur if hydrogen sulfide is allowed to accumulate in the headspace of closed systems in the presence of an ignition source
Advice on general occupational hygiene:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.
Conditions for safe storage:	Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

Section 8. Exposure Controls / Personal Protection

Occupational Exposure Limits

Ingredient name	Exposure limits
Quartz (crystalline silica)	ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m^3 8 hours. Form: Respirable NIOSH REL (United States, 6/2009). TWA: 0.05 mg/m^3 8 hours. Form: Respirable

	OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/m^3 divided by %SiO2 + 2: Respirable TWA: 30mg/m^3 divided by %SiO2 + 2: Total
Asphalt Fumes	ACGIH TLV (United States, 3/2013). TWA: NIOSH REL (United States, 6/2009). TWA: Ceiling 5 mg/m^3 [15-minute] See Appendix A, Appendix C OSHA PEL (United States, 6/2010). TWA: None
Kerosene (as total hydrocarbon vapor)	ACGIH TLV (United States, 3/2012). TWA: 200 mg/m^3 NIOSH REL (United States, 6/2009). TWA: 100 mg/m^3 OSHA PEL (United States, 6/2010). TWA: none
Naphtha, Coal Tar	NIOSH REL (United States, 6/2009). TWA: 100 ppm (400 mg/m^3) OSHA PEL (United States, 6/2010). TWA: 100 ppm (400 mg/m^3)
Particulates Not Otherwise Regulated (Total Dust)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m^3 8 hours. Form: Respirable TWA: 10 mg/m^3 8 hours. Form: Total dust OSHA PEL (United States, 6/2010). TWA: 5mg/m^3 8 hours. Form: Respirable TWA: 15 mg/m^3 8 hours. Form: Total dust

Controls

Appropriate engineering controls:	Use only with adequate ventilation. If user operations generate vapor/dusts, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Hygiene

Wash	Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by Asphalt with a pH neutral soap and clean, uncontaminated water. Remove protective equipment and dusty clothing before entering eating areas.

PPE

Eye/face protection:	In case of vapor, mist or dust production: protective goggles. Wearing contact lenses when working with asphalt is not recommended.
Hand protection:	Wear gloves to prevent contact. Recommended material: Thermally insulated, Rubber (when handling hot asphalt).
Body protection:	Under dusty conditions or when excessive skin contact is likely, wear coveralls or other suitable work clothing.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear and other gear to protect the skin should be approved by a specialist before handling this product.

Respiratory protection:	Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and Chemical Properties

Physical State:	Liquid to Solid [granular]	Lower and upper explosive (flammable) limits:	Not applicable.
Color:	Black.	Vapor pressure:	Not applicable.
Odor:	Oily.	Vapor density:	Not applicable.
Odor threshold:	Not available.	Relative density:	0.95 to 1.1
pH (in water):	12 to 13.	Solubility:	Not applicable.
Melting point:	Not available.	Solubility In water:	0.16
Boiling point:	<243°C (<470°F)	Partition coefficient: n-octanol/water:	Not applicable.
Flash point:	>204°C (>400ºF)	Auto-ignition temperature:	485ºC (905ºF)
Burning time:	Not available.	Decomposition temperature:	Not available.
Burning rate:	Not available.	SADT:	Not available.
Evaporation rate:	Not applicable.	Viscosity:	Not applicable.
Flammability (solid, gas):	Not applicable.		

Section 10. Stability and Reactivity

Reactivity:	Not reactive under normal conditions of storage and use.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	Heat sources.
Incompatible materials:	Reactive or incompatible with the following materials: strong oxidizing agents. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Combustion may produce carbon monoxide and sulfur oxides. paraffins, napthenes, aromatics, and olefins. At elevated temperatures, this product may release toxic hydrogen sulfide, an extremely flammable gas.

Section 11. Toxicological Information

Toxicological Effects

Acute toxicity:	Asphalt /LC50 = Not available
Irritation/Corrosion:	Skin: May cause skin irritation. Eyes: May cause eye irritation. Respiratory: May cause respiratory tract irritation.

Sensitization: Not classified

Mutagenicity: May cause genetic defects.

Ingredient	Category	Route of Exposure
Naphtha	Category 1B	Inhalation

Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Ingredient	Category	Route of Exposure
Naphtha	Category 2	Inhalation

Teratogenicity: Not classified.

Aspiration hazard: Not classified.

Carcinogenicity Classification: The NIOSH "Hazard Review: Health Effects of Occupational Exposure to Asphalt" concludes that the collective data currently available from studies on paving asphalt provide insufficient evidence for an association between lung cancer and exposure to asphalt during paving; however, the collective health and exposure data provide sufficient evidence for NIOSH to conclude that roofing asphalt fumes are a potential occupational carcinogen.

Ingredient	OSHA	IARC	ACGIH	NTP
Quartz (crystalline silica)	–	1	A2	Known to be a human carcinogen.
Naphtha, Coal Tar	--	2B (road paving), 2A (roofing)	A2	Nominated; Status: Review Deferred

Specific target organ toxicity (single exposure): Product not classified

Ingredient	Category	Route of Exposure	Target Organs
Quartz (crystalline silica)	Category 3	Inhalation	Respiratory tract irritation
Kerosene	Category 3	Inhalation	Eyes, skin, respiratory system, central nervous system

Specific target organ toxicity (repeated exposure): Product not classified

Ingredient	Category	Route of Exposure	Target Organs
Quartz (crystalline silica)	Category 2	Inhalation	Respiratory tract and kidneys

Routes of exposure - Dermal contact, Eye contact, Inhalation, and Ingestion.

Potential acute health effects:

Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns.
Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye contact: Adverse symptoms may include the following: pain, watering, redness
Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing
Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur
Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:

Short term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:

General: Repeated or prolonged inhalation of vapor, mist or dust may lead to chronic respiratory irritation and central nervous system depression.

Carcinogenicity: Quartz (crystalline silica) is considered a hazard by inhalation. IARC has classified Quartz (crystalline silica) as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to Quartz (crystalline silica) can cause silicosis, a non-cancerous lung disease.

Mutagenicity: Exposed road workers and roofers exhibited DNA damage in the peripheral lymphocytes, which were assessed as an indication of the potential genotoxicity of bitumen-borne substances.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: May cause a disturbance in ovarian function and menstrual cycle.

Numerical measures of toxicity: There are no data available - acute toxicity estimates.

Section 12. Ecological

Toxicity

Persistence and degradability: There are no data available.

Bioaccumulation potential: There are no data available.

Mobility in soil: Soil/water partition coefficient (Koc): Not available.

Other adverse effects: No known significant effects or critical hazards.

Ecotoxicity: Not classified.

Ingredient	Category	LC50 Fish	LC50 Daphnia	EC50 Algae
Naphtha, Coal Tar	Acute Category 2 Chronic Category 2	9 mg/l	3.7 mg/l	--
Kerosene	Acute Category 2 Chronic Category 2	1 - 10 mg/l	1 - 10 mg/l	1 - 10 mg/l

Section 13. Disposal Considerations

Disposal methods: Salvage spilled asphalt where possible. Uncontaminated asphalt may be reused. Dispose of waste material in accordance with local, state and federal laws and regulations.

Section 14. Transport Information

Special precautions for user: spillage. Ensure that persons transporting the product know what to do in the event of an accident or

Transport in bulk according to Annex II of MARPOL 73/ 78 and the IBC Code: Not Regulated.

Transport Parameters	DOT Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated
UN Proper Shipping Name	-	-	-
Transport Hazard Class	-	-	-
Packing Group	-	-	-
Environmental Hazard	None	None	None
Additional Information	-	-	-

Section 15. Regulatory Information

Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200
This product is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

Status under CERCLA/SUPERFUND 40 CFR 117 and 302
Not listed.

Hazard Category under SARA(Title III), Sections 311 and 312
This product qualifies as a "hazardous substance" with delayed health effects.

Status under SARA (Title III), Section 313
This product does not contain Emergency Planning and Community Right to Know (EPCRA") Section 313 chemicals in excess of the applicable de minimis concentration specified in EPCRA Section 313 Section 372.38(a). Trace amounts of naturally occurring chemicals might be detected during chemical analysis.

Status under TSCA (as of May 1997)
The ingredients of this product are listed on the TSCA inventory or are exempt.

Status under the Federal Hazardous Substances Act
This product is a "hazardous substance" subject to statutes promulgated under the subject act.

Status under California Proposition 65
This product contains up to 0.05 percent of chemicals (trace elements) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

State Right to Know:
Kerosene (8008-20-6)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Quartz (crystalline silica) (14808-60-7)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Washington - Permissible Exposure Limits - TWAs

Section 16. Other Information

Approval or Revision History

Revision: Jun 2015 - Revised Section(s) per HCS-GHS

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of Asphalt as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this

sheet do not address hazards that may be posed by other materials mixed with Asphalt. Users should review other relevant material safety data sheets before working with Asphalt.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY CEMEX, Inc. except that the product shall conform to contracted specifications. The information provided herein was believed by CEMEX to be accurate at the time of preparation or 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 and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with Asphalt. Users should review other relevant safety data sheets before working with Asphalt.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations DOT — Department of Transportation
GHS – Globally Harmonized System Globally Harmonized System
HEPA - High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations