SAFETY DATA SHEET

1. Identification

Product identifier **Vacuum Tower Asphalt Extender**

Other means of identification

Product code 520

Synonyms Asphalt Extender ; Asphalt Flux ; Vacuum Tower Bottoms ; REOB

Recommended use Asphalt additive.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Heritage-Crystal Clean, LLC

Address 2175 Point Boulevard Suite 375
Elgin, IL 60123-9211

Telephone Technical questions: 877-938-7948

Website www.crystal-clean.com

E-mail cc_ehs@crystal-clean.com

Emergency telephone CHEMTREC: 800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement Harmful to aquatic life.

Precautionary statement

Prevention Avoid release to the environment.

Response Wash hands after handling.

Storage Store away from incompatible materials.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Hydrogen sulfide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations.
Contact with molten material may cause thermal burns.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Lubricating oils, used, residues	129893-17-0	< 100
Hydrogen sulfide	7783-06-4	< 0.1

Composition comments All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation
If fumes from heated product are inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.

Skin contact
Remove contaminated clothing. Wash with plenty of soap and water. Get medical attention if irritation develops and persists. If hot product contacts skin, cool under running water and get medical attention.

Eye contact
Rinse with water. Get medical attention if irritation develops and persists. If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately.

Ingestion
Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed
Symptoms of exposure to fumes from heated material may include: Irritation of nose and throat. Coughing. Shortness of breath. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Contact with hot material can cause thermal burns which may result in permanent damage.
Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. Hydrogen sulfide impairs olfactory nerve function above 20 ppm, odor warning property (rotten egg smell) lost at higher concentrations.

Indication of immediate medical attention and special treatment needed
Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Provide general supportive measures and treat symptomatically.

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

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire. Caution should be exercised when using water or foam as frothing may occur, especially if directed onto containers of hot or burning material.

Specific hazards arising from the chemical
During fire, hazardous combustion products are released that may include: Carbon oxides. Sulfur oxides. Hydrogen sulfide. Unidentified organic compounds. Hot product is a vapor explosion hazard indoors, outdoors, or in sewers. Vapors or gases may ignite at distant ignition sources and flash back. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Runoff may create fire or explosion hazard. Sealed containers may rupture when heated.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
Will burn if involved in a fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing vapours, mist or gas. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Stop the flow of material, if this is without risk.

Hot product: contain spill as a liquid for possible recovery, or absorb with sand or earth and shovel with a clean, sparkproof tool into a sealable container for disposal.

Cooled product: collect and dispose in proper container. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling This product is normally handled at high temperatures. Vapors from hot material may be explosive. Do not smoke, use open fire or other sources of ignition. Use non-sparking tools and explosion-proof equipment. All equipment used when handling the product must be grounded or bonded to ground. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharges. Do not pressurize, cut, weld, braze, solder, drill, or grind on containers. Keep away from water when loading and unloading. Use dry container to avoid violent eruptions and splattering of hot product.

Avoid contact with hot or molten material. Avoid inhalation of fumes from molten product. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. When petroleum asphalt products are heated, potentally irritating emissions (fumes, mists, and vapors) may be released. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning. Tripping incidences have occured because of asphalt builup on bottoms of shoes and boots; buildup should be removed regularly to prevent such incidences. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store in cool, dry, well ventilated area. Outside or detached storage preferred. Vapors containing hydrogen sulfide may accumulate during storage or transport of asphaltic materials. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm
	TWA	1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3
		10 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Contact lenses are not recommended. Wear a face shield when working with hot material. Wear a full-face respirator, if needed.

Skin protection

Hand protection When handling hot material, use heat resistant gloves.

Skin protection

Other Thermally protective apron and long sleeves are recommended when volume of hot material is significant. Chemical resistant boots.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use NIOSH certified P-, or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air-purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134. Consult a qualified industrial hygienist or Safety Professional for respirator selection guidance.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid or semi-solid.
Form	For hot products: Viscous, semi-solid. For cooled products: Solid.
Color	Black.
Odor	Rotten egg.
Odor threshold	0.1 ppm (Based on Hydrogen sulfide)
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	550 °F (287.8 °C)
Flash point	500.0 - 520.0 °F (260.0 - 271.1 °C) D92 COC
Evaporation rate	Not available.
Flammability (solid, gas)	Will burn if involved in a fire.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	0.2 mmHg (175 °F (79.44 °C))
Vapor density	Not available.
Relative density	0.943 ASTM D4042 (H2O=1)
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	905 °F (485 °C) (based on similar material)
Decomposition temperature	Not available.
Viscosity	80 cSt ASTM D445 (212 °F (100 °C))
Other information	API Gravity 18.6 (60°F(15.6°C)) (ASTM D4042)
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pounds per gallon	7.85 lb/gal

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	Contact with water can cause violent eruptions, splatter hot material, or ignite flammable materials.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acids, alkalis, oxidizing agents, reactive halogens, or reactive metals. Water. Avoid volatile solvents because contact may cause vapors from hot products to ignite.

Hazardous decomposition products The product may generate hydrogen sulfide by heating or during storage at elevated temperatures. For hazardous combustion products, see section 5.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful. At elevated temperatures, vapor may cause irritation of respiratory tract. Inhaling hydrogen sulfide released from this product may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, convulsions, suffocation, coma, death or other central nervous system effects.

Skin contact Contact with hot material can cause thermal burns which may result in permanent damage.

Eye contact At elevated temperatures, vapor may cause irritation of eyes. Contact with hot material can cause thermal burns which may result in permanent damage or blindness.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms of exposure to fumes from heated material may include: Irritation of nose and throat. Coughing. Shortness of breath. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Contact with hot material can cause thermal burns which may result in permanent damage.
Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. Hydrogen sulfide impairs olfactory nerve function above 20 ppm, odor warning property (rotten egg smell) lost at higher concentrations.

Information on toxicological effects

Acute toxicity Contains hydrogen sulfide. May rapidly cause irritation, breathing failure, coma, and death without necessarily any warning odor being sensed.

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours

Skin corrosion/irritation Not classified.

Serious eye damage/eye irritation Not classified.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

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

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

12. Ecological information

Ecotoxicity Harmful to aquatic life.

Components		Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
Acute			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available on bioaccumulation.

Mobility in soil The product is insoluble in water and has a low mobility in the environment.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3257

UN proper shipping name Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (Vacuum Tower Asphalt Extender)

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Packing group III

Environmental hazards

Marine pollutant No

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions IB1, T3, TP3, TP29

Packaging exceptions None

Packaging non bulk None

Packaging bulk 247

IATA

UN number UN3257

UN proper shipping name Elevated temperature liquid, n.o.s. at or above 100°C and below its flash point (Vacuum Tower Asphalt Extender)

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Packing group III

Environmental hazards No

ERG Code 9L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3257
UN proper shipping name	ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100°C and below its flashpoint (Vacuum Tower Asphalt Extender)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-P
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hydrogen sulfide (CAS 7783-06-4) Listed.

SARA 304 Emergency release notification

HYDROGEN SULFIDE (CAS 7783-06-4) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

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)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Hydrogen sulfide (CAS 7783-06-4) High priority

US state regulations

US. Massachusetts RTK - Substance List

Hydrogen sulfide (CAS 7783-06-4)

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen sulfide (CAS 7783-06-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrogen sulfide (CAS 7783-06-4)

US. Rhode Island RTK

Hydrogen sulfide (CAS 7783-06-4)

California Proposition 65

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

BENZ[A]ANTHRACENE (CAS 56-55-3)	Listed: July 1, 1987
Benzo[a]pyrene (CAS 50-32-8)	Listed: July 1, 1987
Benzo[b]fluoranthene (CAS 205-99-2)	Listed: July 1, 1987
Benzo[k]fluoranthene (CAS 207-08-9)	Listed: July 1, 1987
Chrysene (CAS 218-01-9)	Listed: January 1, 1990
Dibenz[a,h]anthracene (CAS 53-70-3)	Listed: January 1, 1988
Indeno [1,2,3-cd]pyrene (CAS 193-39-5)	Listed: January 1, 1988
Lead (CAS 7439-92-1)	Listed: October 1, 1992
Nickel (CAS 7440-02-0)	Listed: October 1, 1989

California Proposition 65 - CRT: Listed date/Developmental toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

California Proposition 65 - CRT: Listed date/Female reproductive toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

California Proposition 65 - CRT: Listed date/Male reproductive toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Hydrogen sulfide (CAS 7783-06-4)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date 20-June-2019

Revision date -

Version # 01

NFPA ratings

Disclaimer Heritage-Crystal Clean, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.