Enflex Seal

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 12/12/2019 Revision date: 09/28/2020 Printed: 09/29/2020 Venrsion: 4.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Enflex Seal

Product ID : None

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Repairing roadways, bridges, airfields and sidewalks.

Use advised against : None identified

1.3. Details of the supplier of the safety data sheet

Manufacturer:
Advantus Materials
186 Seven Farm Drive
Daniel Island, SC 29492

Tel: 1-610-291-2279

1.4. Emergency telephone number

Emergency number : For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night

1-800-424-9300 (USA and Canada)
1-703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Not classified

2.2. Label elements

Labelling

No labelling applicable

2.3. Other hazards

Other hazards which do not result in classification : May be harmful if inhaled. Breathing vapors, fumes, or mists may irritate the nasal and respiratory tract and central nervous system effects. Asphalts may contain sulfur compounds, which may form Hydrogen Sulfide when heating. Exposure to lower concentrations of Hydrogen Sulfide can result in eye irritation, sore throat and cough, nausea, shortness of breath, and fluid in the lungs. Long-term, low-level exposure may result in fatigue, loss of appetite, headaches, irritability, poor memory, and dizziness.

0.02 ppm	:	Odor threshold.
10 ppm	:	8-hour per day exposure limit to Hydrogen Sulfide.
10-20 ppm	:	Borderline concentration for eye irritation.
10-100 ppm	:	Leads to eye damage.
100-150 ppm	:	Olfactory nerve paralyzed after a few minutes, sense of smell disappears, and often awareness of danger.
320-530 ppm	:	Leads to pulmonary edema with the possibility of death.
530-1000 ppm	:	Causes strong stimulation of central nervous system and rapid breathing.
800 ppm	:	Lethal concentration of 50% of humans for a 5-minute exposure (LC50).
>1000 ppm	:	Immediate collapse with loss of breathing, even after inhalation of a single breath.

2.4. Unknown acute toxicity

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	%
Asphalt	(CAS No) 8052-42-4	80 - 90
Proprietary polymer	Trade secrets	< 10
Crumb rubber	Trade secrets	< 10

The specific chemical\ component identities and/or the exact component percentages of this material may be withheld as trade secrets.
This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1).
Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention.

First-aid measures after skin contact : Rinse skin with water. Contimue washing with soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before re-use.

For contact with hot molten material, cool area with water. Do not attempt to remove congealed solid material. Do not use petroleum solvents to remove solid.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for several minutes, while holding the eyelids open. Seek immediate medical attention.

First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Breathing vapors, fumes, or mists may irritate the nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact poison center immediately if large quantities have been ingested. If it is suspected that fumes are still presented, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use fire-extinguishing media appropriate for surrounding materials. Foam. Dry powder. Carbon dioxide. Water spray. Sand. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Isolate hazard area and keep unauthorized personnel from entering. Stop and contain any spills if it is safe to do. If water is applied to control fire, a violent eruption may occur. Material may float on surface. In the case of a major fire, it may be necessary to allow the fire to burn itself out.

Explosion hazard : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Thermal decomposition products may contain carbon monoxide, carbon dioxide and nitrogen oxides and sulfur.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Avoid discharging fire-fighting water into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

Other information : Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Isolate immediate hazard area and keep unauthorized personnel out. Stop leak if safe to do so. Special danger of slipping by leaking/spilling product. Avoid breathing mist and vapors.

6.1.1. For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Avoid breathing mist, vapors, fume or smoke.

6.1.2. For emergency responders

Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in section 8 of suitable and unsuitable materials. Protect spills from entering to the environment by diking, absorbents, and/or absorbent boom. Remove by mechanical means. Authorities should be notified if reportable quantity release occurs.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Small spill: Stop leak if possible without risk. Move containers from spill area. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect all waste in suitable and labelled containers and dispose according to local legislation. Store away from other materials. Ensure all national/local regulations are observed.

Large spill: Stop leak if possible without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, watercourses, basements or confined areas.

6.4. Reference to other sections

refer to section 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing mist, vapors and spray. Use only with adequate ventilation to control air contaminants to their exposure limits. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized hot asphalt. Long-sleeved shirts and pants should be worn to minimize thermal burns. Hydrogen Sulfide can be generated and accumulated in storage tanks and bulk transport compartments. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

Hot Material Warning: Hot material (above 212°F) contact with water results in a violent expansion as water turns to steam. This can lead to a dangerous boil-over and a pressurized container or cargo tank, which can cause damage, rupture of the container or cargo tank, and thermal burn injuries. Never load hot asphalt product into cargo tanks with water condensation or emulsion residue from the previous load without servicing the cargo tank. Keep away from incompatible materials.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in dry and well-ventilated area. This material is stored at an elevated temperature in excess of 280 ºF. Keep away from flame, sparks, excessive temperature change and open flames. Keep containers closed when not in use and clearly labeled. Do not enter confined spaces without proper ventilating before entrance. Do not mix with water as a violent eruption may occur, a boil over may occur, and/or material may float on surface creating the possibility of asphalt/oil sheen may occur.

Incompatible materials : Strong Acids and strong oxidizers. (Chlorine, hydrogen peroxide, organic peroxides, nitric acid, oxygen under pressure)

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Asphalt (8052-42-4)*		
ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station. Use only with adequate ventilation. Local exhaust or ventilation or other engineering controls must be provided to keep worker exposure to airborne containment below recommended levels. Emergency eye wash fountains and shower should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.

Hand protection : Use insulated gloves when handling hot product. Use work gloves when handling cooled product.

Eye protection : Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids If additional protection is needed for the entire face, use in combination with a face shield. Safety glasses meeting ANSI Z.87.1 are recommended as minimal protection when working in an industrial location.

Skin and body protection : Wear long-sleeves shirts and work pants preferably 100% cotton. Wear work boots made of leather that cover the ankle.

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect the worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z87.1 should be followed. Check with respiratory protective equipment suppliers.

Other information : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Semi-solid at ambient temperature
Viscous liquid at elevated temperature

Color : Black, Brown, Grey

Odor : Sour tar like, asphalt

Odor threshold : No data available

pH : Not applicable

Relative evaporation rate (butyl acetate=1) : Negligible

Melting point : 135 - 250 °F

Freezing point : No data available

Boiling point : > 752 °F

Flash point : > 450 °F

Auto-ignition temperature : > 800 °F

* Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product. The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m3 as benzene extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not applicable
Vapor pressure	:	Negligible
Relative vapor density at 20 °C	:	Not applicable
Density	:	1.02 -1.06 (water=1)
Solubility	:	Insoluble in water
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity	:	No data available
Explosive properties	:	Not applicable
Oxidising properties	:	No data available
Explosive limits	:	Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not chemically reactive

10.2. Chemical stability

The product is stable at normal handling and storage condition

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Do not mix with water as a violent eruption may occur, a boil over may occur, and/or material may float on surface creating the possibility of asphalt/oil sheen may occur.

10.5. Incompatible materials

Strong Acids and strong oxidizers. (Chlorine, hydrogen peroxide, organic peroxides, nitric acid, oxygen under pressure)

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Thermal decomposition products may contain carbon monoxide, carbon dioxide and nitrogen oxides ans sulfur.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

(Based on available data, the classification criteria are not met)

Asphalt (8052-42-4)	
LD50 dermal rabbit (mg/kg)	> 2000 mg/kg
LD50 oral rat (mg/kg)	> 5000 mg/kg (Exposure time: 1 h)

Skin corrosion/irritation : Not classified

(Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified

(Based on available data, the classification criteria are not met)

Respiratory or skin sensitization : Not classified

(Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified
(Based on available data, the classification criteria are not met)

Carcinogenicity : May cause cancer

Asphalt (8052-42-4)†	
IARC	Group 2B- possibly Carcinogenic to human
NTP	Human epidemiological studies have reported an increased risk of lung cancer among workers exposed to asphalt fumes, and asphalt fumes caused skin tumors in experimental animals. Additionally, known human carcinogens (PAHs) have been found in asphalt fumes.

Reproductive toxicity : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure) : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified
(Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified
(Based on available data, the classification criteria are not met)

Other Health Characterization : Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders, and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practice.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

† On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straightrun bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws. Recovered spilled material may be reused or recycling. Dispose only in accordance with federal, state, and/or local regulations. Recovered liquid may be incinerated at an approved facility. Contaminated solid absorbent or diking material(s) may be deposited in an approved landfill.

Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes.

SECTION 14: Transport information

In accordance with DOT

Not regulated for transport in its NON-BULK packaging or when shipped a solid phase and at a temperature below 100 ºC (212 ºF).

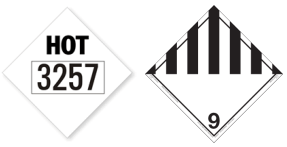
Transport document description (BULK ONLY) : UN3257 Elevated temperature liquid, n.o.s. (Asphalt), 9, III

UN-No.(DOT) : UN3257

Proper Shipping Name (DOT) : Elevated temperature liquid, n.o.s , at or above 100 C and below its flash point (Asphalt)

Transport hazard class(es) (DOT) : 9 - Class 9- Miscellaneous hazardous material, 49 CFR 173.140/ Elevated temperature liquid, 49 CFR 171.8

Hazard labels (DOT) : 9 - Miscellaneous hazardous material



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)
TP3 - The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following: Degree of filling = $95(d_r/d_f)$ Where: d_f and d_r are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Packaging Non Bulk (49 CFR 173.xxx) : None

DOT Packaging Bulk (49 CFR 173.xxx) : 247

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : Forbidden

DOT Vessel Stowage Location : A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

UN-No. (IMDG)	:	3257 (BULK ONLY)
Proper Shipping Name (IMDG)	:	UN3257 Elevated temperature liquid, n.o.s. (Asphalt)
Class (IMDG)	:	9
Packing group (IMDG)	:	III

Air transport

This product is NOT permitted for Air shipment using passenger or Cargo Aircraft

UN-No. (IATA)	:	Not regulated for transport in its NON-BULK packaging or when shipped a solid phase and at a temperature below 100 °C (212 °F).
UN-No. (IATA)	:	3257 (BULK ONLY)
Proper Shipping Name (IATA)	:	UN3257 Elevated temperature liquid, n.o.s. (Asphalt)
Class (IATA)	:	9
Packing group (IATA)	:	III

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. US State regulations

California Proposition 65 - NOTE: This product has NOT evaluated against the latest requirements of the California Proposition 65 to meet the safe harbor warning requirements introduced by The office of Environmental Health Hazards Assessment (OEHHA), during its OSHA hazards classification evaluation.

SECTION 16: Other information

Indication of changes	:	1- Identification of the substance/mixture and of the company/undertaking
Revision date	:	09/28/2020

Abbreviation

ACGIH	:	American Conference of Government Industrial Hygienists
ADR	:	European Agreement concerning the International Carriage of Dangerous Goods by Road
ANSI	:	American Nation Standards Institute
CAS	:	Chemical Abstracts Service
CFR	:	Code of Federal Regulation
DOT	:	Department Of Transportation
IARC	:	International Agency for Research on Cancer
IATA	:	International Air Transport Association
ICAO	:	International Civil Aviation Organization
IMDG	:	International Maritime Dangerous Goods
LC50	:	Lethal Concentration 50
LD50	:	Lethal Dose, 50

NTP	:	National Toxicology Program
OEEHA	:	Office of Environmental Health Hazards Assessment
OSHA	:	Occupational Safety and Health Administration
RCRA	:	Resource Conservation and Recovery Act
STEL	:	Short-term Exposure Limit
TSCA	:	Toxic Substances Control Act
TWA	:	Time-Weighted Average

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product