1. Identification

Product identifier: RC Cutback Asphalt

Other means of identification:

SDS number: 213-GHS

Synonyms: Rapid Cure Asphalt, RC Asphalt, Cutback Asphalt, RC-250, RC-800, RC-3000, Road Asphalt, Bitumen, Road Oil

See section 16 for complete information.

Recommended use: Asphalt products are to be used as road and highway paving applications; waterproofing and sealing applications; coatings; or other engineering applications. Use in other applications may result in higher exposures and require additional engineering controls and personal protective equipment.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier: Valero Marketing & Supply Company and Affiliates

One Valero Way
San Antonio, TX 78269-6000

General Assistance: 210-345-4593

E-Mail: CorpHSE@valero.com

Contact Person: Industrial Hygienist

Emergency Telephone:

24 Hour Emergency: 866-565-5220
1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards: Flammable liquids Category 1

Health hazards:

- Skin corrosion/irritation Category 2
- Germ cell mutagenicity Category 1B
- Carcinogenicity Category 1B
- Reproductive toxicity Category 2
- Specific target organ toxicity, single exposure Category 3 narcotic effects
- Aspiration hazard Category 1

Environmental hazards:

- Hazardous to the aquatic environment, long-term hazard Category 2

OSHA defined hazards: Not classified.

Label elements

Signal word: Danger

Hazard statement: Extremely flammable liquid and vapor. Causes skin irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

Precautionary statement

Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
Response
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash
before reuse. If exposed or concerned: Get medical advice/attention. If inhaled: Remove person
to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If
swallowed: Immediately call a poison center/doctor. Do not induce vomiting.

Storage
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

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

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

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>8052-42-4</td>
<td>70 - 90</td>
</tr>
<tr>
<td>Naphtha (petroleum), heavy straight-run</td>
<td>64741-41-9</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Sulfur</td>
<td>7704-34-9</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>&lt;0.6</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>130498-29-2</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

Composition comments
Dangerous amounts of hydrogen sulfide, a highly toxic gas, may be present, especially in the
headspace of containers.

4. First-aid measures

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get
medical attention.

Skin contact
Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water.
Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy
or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if
present and easy to do. Continue rinsing. Get medical attention.

Ingestion
Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not
give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content
does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is
having convulsions. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Indication of immediate medical attention and special treatment needed
In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the
material(s) involved, and take precautions to protect themselves. Show this safety data sheet
to the doctor in attendance. Wash contaminated clothing before re-use.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical

Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

Precautions for safe handling:
- Wear personal protective equipment. Do not breathe gas/fumes/vapor/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities:
- Flammable liquid storage. Do not handle or store near an open flame or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

Special protective equipment and precautions for firefighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.

Environmental precautions

If facility or operation has an "oil or hazardous substance contingency plan", activate its emergency procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

Methods and materials for containment and cleaning up

Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Cover with plastic sheet to prevent spreading. Collect spillage. Following product recovery, flush area with water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Clean surface thoroughly to remove residual contamination. Wipe up with absorbent material (e.g. cloth, fleece).

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. This material and its container must be disposed of as hazardous waste.

Specific methods

Use water spray to cool unopened containers.
8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>STEL</td>
<td>5 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
</tr>
</tbody>
</table>

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>PEL</td>
<td>50 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>Ceiling</td>
<td>25 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Ceiling</td>
<td>20 ppm</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>Ceiling</td>
<td>300 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

#### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (CAS 8052-42-4)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>STEL</td>
<td>2.5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td></td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>STEL</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>STEL</td>
<td>15 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>TWA</td>
<td>20 ppm</td>
<td></td>
</tr>
</tbody>
</table>

#### US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (CAS 8052-42-4)</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>STEL</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.1 ppm</td>
<td></td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Ceiling</td>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>STEL</td>
<td>75 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>15 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>STEL</td>
<td>560 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>375 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 ppm</td>
<td></td>
</tr>
</tbody>
</table>

### Biological limit values

#### ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>25 µg/g</td>
<td>S-Phenylmercapturic acid</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o-Cresol, with hydrolysis</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>0.3 mg/g</td>
<td>Toluene</td>
<td>Urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>0.03 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RC Cutback Asphalt
914099     Version #: 02   Revison date: 05-May-2014     Print date: 05-May-2014
Prepared by 3E Company
<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>0.02 mg/l</td>
<td>Toluene</td>
<td>Blood</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

**Exposure guidelines**

**US - California OELs: Skin designation**
- Benzene (CAS 71-43-2)
- Toluene (CAS 108-88-3)

**US - Minnesota Haz Subs: Skin designation applies**
- Toluene (CAS 108-88-3)

**US ACGIH Threshold Limit Values: Skin designation**
- Benzene (CAS 71-43-2)
- Naphthalene (CAS 91-20-3)

**Appropriate engineering controls**
- Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
- Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

**Skin protection**
- **Hand protection**
  - Avoid exposure - obtain special instructions before use. Wear protective gloves. Protective gloves.
- **Other**
  - Wear chemical-resistant, impervious gloves. Flame retardant protective clothing is recommended.

**Respiratory protection**
- Wear a NIOSH-approved (or equivalent) respirator as needed.

**Thermal hazards**
- Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
- Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

**Appearance**
- Dark brown to black liquid.

**Physical state**
- Liquid.

**Form**
- Viscous liquid at ambient temperatures.

**Color**
- Brown/black.

**Odor**
- Strong petroleum.

**Odor threshold**
- Not available.

**pH**
- Not available.

**Melting point/freezing point**
- > 134.96 °F (> 57.2 °C)

**Initial boiling point and boiling range**
- 700 - 1100.1 °F (371.11 - 593.39 °C)

**Flash point**
- < 55.4 °F (< 13.0 °C) Closed Cup

**Evaporation rate**
- Not available.

**Flammability (solid, gas)**
- Not available.

**Upper/lower flammability or explosive limits**
- **Flammability limit - lower (%)**
  - > 0.9
- **Flammability limit - upper (%)**
  - < 7
- **Explosive limit - lower (%)**
  - Not available.
- **Explosive limit - upper (%)**
  - Not available.

**Vapor pressure**
- Not available.

**Vapor density**
- > 1.6 (Air = 1)

**Relative density**
- 0.93 - 0.97 (Water=1)
Solubility(ies)
Solubility (water) Not available.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature 399.99 - 700 °F (204.44 - 371.11 °C)
Decomposition temperature Not available.
Viscosity Not available.

10. Stability and reactivity
Reactivity Not available.
Chemical stability Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions Hazardous polymerization does not occur.
Conditions to avoid Flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials Strong oxidizing agents.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion May be fatal if swallowed and enters airways.
Inhalation In high concentrations, mists/vapors may irritate throat and respiratory system and cause coughing. May cause drowsiness or dizziness.
Skin contact May cause skin irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye contact May cause eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>930 mg/kg</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Rat</td>
<td>&gt; 0.38 mg/l, 960 Minutes</td>
</tr>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rabbit</td>
<td>&gt; 2 g/kg</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>490 mg/kg</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Rat</td>
<td>8000 mg/l, 4 Hours</td>
</tr>
</tbody>
</table>
Test Results

Components | Species | Test Results
---|---|---
LD50 Oral | Rat | 2.6 g/kg

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Based on available data, the classification criteria are not met.

Respiratory or skin sensitization
Respiratory sensitization
Based on available data, the classification criteria are not met.

Skin sensitization
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
In in-vitro experiments, neither benzene, toluene nor xylene changed the number of sister-chromatid exchanges (SCEs) or the number of chromosomal aberrations in human lymphocytes. However, toluene and xylene caused a significant cell growth inhibition which was not observed with benzene in the same concentrations. In in-vivo experiments, toluene changed the number of sister-chromatid exchanges (SCEs) in human lymphocytes. Toluene may cause heritable genetic damage.

Carcinogenicity
May cause cancer.
Occupational exposure to straight-run asphalts and their emissions during road paving: 2B Possibly carcinogenic to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity
- Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.
- Benzene (CAS 71-43-2) 1 Carcinogenic to humans.
- Naphthalene (CAS 91-20-3) 2B Possibly carcinogenic to humans.
- Toluene (CAS 108-88-3) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens
- Benzene (CAS 71-43-2) Known To Be Human Carcinogen.
- Naphthalene (CAS 91-20-3) Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
- Benzene (CAS 71-43-2) Cancer

Reproductive toxicity
Benzene, xylene and toluene have demonstrated animal effects of reproductive toxicity. Animal studies of benzene have shown testicular effects, alterations in reproductive cycles, chromosomal aberrations and embryo/fetotoxicity. May damage fertility or the unborn child. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Avoid exposure to women during early pregnancy. Avoid contact during pregnancy/while nursing.

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

Aspiration hazard
May be fatal if swallowed and enters airways.

Chronic effects
Contains polycyclic aromatic compounds which have been shown to cause anemia, disorders of the liver, bone marrow and lymphoid tissues in rats following dermal application.

Further information
Symptoms may be delayed.

12. Ecological information
Ecotoxicity
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>Aquatic Crustacea EC50</td>
<td>Water flea (Daphnia magna) 8.76 - 15.6 mg/l, 48 Hours</td>
</tr>
<tr>
<td>Benzene (CAS 71-43-2)</td>
<td>Aquatic Fish LC50</td>
<td>Rainbow trout, donaldson trout (Oncorhynchus mykiss) 5.9 mg/l, 96 hours</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Aquatic Fish LC50</td>
<td>Lake whitefish (Coregonus clupeaformis) 0.002 mg/l, 96 hours</td>
</tr>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>Aquatic Crustacea EC50</td>
<td>Water flea (Daphnia magna) 1.09 - 3.4 mg/l, 48 hours</td>
</tr>
</tbody>
</table>
### Components Test Results

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish LC50</td>
<td>Pink salmon (Oncorhynchus gorbuscha) 0.95 - 1.62 mg/l, 96 hours</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3) Aquatic Crustacea EC50</td>
<td>Water flea (Daphnia magna) 5.46 - 9.83 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Pink salmon (Oncorhynchus gorbuscha) 7.45 - 8.78 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

### Persistence and degradability
Not available.

### Bioaccumulative potential
Not available.

### Partition coefficient n-octanol / water (log Kow)
- Benzene (CAS 71-43-2) 2.13
- Toluene (CAS 108-88-3) 2.73

### Mobility in soil
Not available.

### Other adverse effects
Not available.

### 13. Disposal considerations

#### Disposal instructions
Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controled 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.

#### Hazardous waste code
D001: Waste Flammable material with a flash point <140 °F

#### US RCRA Hazardous Waste U List: Reference
- Benzene (CAS 71-43-2) U019
- Hydrogen sulfide (CAS 7783-06-4) U135
- Naphthalene (CAS 91-20-3) U165
- Toluene (CAS 108-88-3) U220

### 14. Transport information

#### DOT
- UN number: UN1999
- UN proper shipping name: Asphalt, cutback
- Transport hazard class(es):
  - Class: 3
  - Subsidiary risk: -
  - Packing group: III
  - Environmental hazards: Yes
  - Marine pollutant: Yes
- Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
- Special provisions: 149, B13, IB2, T3, TP3, TP29
- Packaging exceptions: 173, 150
- Packaging non bulk: 173, 202
- Packaging bulk: 176, 242

#### IATA
- UN number: UN1999
- UN proper shipping name: Asphalt, cutback
- Transport hazard class(es):
  - Class: 3
  - Subsidiary risk: -
  - Label(s): 3
  - Packing group: III
  - Environmental hazards: Yes
  - ERG Code: 3L
- Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

#### IMDG
- UN number: UN1999
UN proper shipping name: ASPHALT, CUTBACK

Transport hazard class(es):
- Class: 3
- Subsidiary risk: -
- Label(s): 3
- Packing group: III
- Environmental hazards:
  - Marine pollutant: Yes
- EmS: F-E, S-E

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 applicable.

15. Regulatory information

US federal regulations:
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

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

- Benzene (CAS 71-43-2)
  - Cancer
  - Central nervous system
  - Blood
  - Aspiration
  - Skin
  - Eye
  - Respiratory tract irritation
  - Flammability

CERCLA Hazardous Substance List (40 CFR 302.4):
- Asphalt (CAS 8052-42-4) LISTED
- Benzene (CAS 71-43-2) LISTED
- Hydrogen sulfide (CAS 7783-06-4) LISTED
- Naphthalene (CAS 91-20-3) LISTED
- Toluene (CAS 108-88-3) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA):
- Hazard categories:
  - Immediate Hazard - Yes
  - Delayed Hazard - Yes
  - Fire Hazard - Yes
  - Pressure Hazard - No
  - Reactivity Hazard - No

SARA 302 Extremely hazardous substance:
- Chemical name: Hydrogen sulfide
  - CAS number: 7783-06-4
  - Reportable quantity: 100
  - Threshold planning quantity: 500 lbs

SARA 311/312 Hazardous chemical:
Yes

SARA 313 (TRI reporting):
- Chemical name: Naphthalene
  - CAS number: 91-20-3
  - % by wt.: <0.5
- Chemical name: Benzene
  - CAS number: 71-43-2
  - % by wt.: <0.2

Other federal regulations:
- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List:
  - Benzene (CAS 71-43-2)
  - Naphthalene (CAS 91-20-3)
  - Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2)
  - Toluene (CAS 108-88-3)
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)
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number
Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Toluene (CAS 108-88-3) 35 % weight/volume

DEA Exempt Chemical Mixtures Code Number
Toluene (CAS 108-88-3) 594

US state regulations
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List
Asphalt (CAS 8052-42-4)
Benzene (CAS 71-43-2)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act
Asphalt (CAS 8052-42-4)
Benzene (CAS 71-43-2)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law
Asphalt (CAS 8052-42-4)
Benzene (CAS 71-43-2)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)

US. Rhode Island RTK
Benzene (CAS 71-43-2)
Hydrogen sulfide (CAS 7783-06-4)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Asphalt (CAS 8052-42-4)
Benzene (CAS 71-43-2)
Naphthalene (CAS 91-20-3)
Toluene (CAS 108-88-3)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
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<tr>
<td>----------------------------</td>
<td>-----------------------------------------------</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
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</tbody>
</table>

"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**: 27-June-2013
- **Revision date**: 05-May-2014
- **Version #**: 02

### NFPA Ratings

- **1**: Health
- **2**: Flammability
- **4**: Reactivity
- **0**: Toxicity

### References

- ACGIH
- EPA: AQUIRE database
- NLM: Hazardous Substances Data Base
- US. IARC Monographs on Occupational Exposures to Chemical Agents
- IARC Monographs. Overall Evaluation of Carcinogenicity
- HSDB® - Hazardous Substances Data Bank
- National Toxicology Program (NTP) Report on Carcinogens
- ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

### Disclaimer

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