SECTION 1: IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

1.2. Intended Use of the Product
Use of the substance/mixture: Cold Patch

1.3. Name, Address, and Telephone of the Responsible Party
Company
Russell Standard / Hammaker East
285 Kappa Drive
Suite 300
Pittsburgh, PA 15238
T: (800) 323-3053
www.russellstandard.com

1.4. Emergency Telephone Number
Emergency Number: (800) 323-3053 (24 hours)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture
GHS-US classification
Flam. Liq. 3 H226
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Carc. 2 H351
STOT RE 2 H373
Asp. Tox. 1 H304
Aquatic Acute 3 H402
Aquatic Chronic 2 H411
Full text of H-phrases: see section 16

2.2. Label Elements
GHS-US Labeling

Hazard Pictograms (GHS-US):

Signal Word (GHS-US): Danger
Hazard Statements (GHS-US):
H226 - Flammable liquid and vapor.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure.
H402 - Harmful to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US):
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
2.3. Other Hazards
Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. May defat skin and cause contact dermatitis. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Although this product is not flammable, it may create flammable levels of hydrogen sulfide if stored or used improperly. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant. If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas, which can raise and widen this material’s actual flammability limits and significantly lower its auto-ignition temperature. Hydrogen sulfide is a toxic gas that can be fatal. Product may contain low levels of polynuclear aromatic hydrocarbons (PNAs). Evidence from animal studies indicates that prolonged exposure to various PNAs can cause cancer of the lungs, skin and other organs.

2.4. Unknown Acute Toxicity (GHS-US)
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>(CAS No) 8052-42-4</td>
<td>70-90</td>
<td>Carc. 2, H351</td>
</tr>
<tr>
<td>Fuels, diesel, no. 2</td>
<td>(CAS No) 68476-34-6</td>
<td>9.5-30</td>
<td>Flam. Liq. 3, H226</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Inhalation:dust,mist), H332</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carc. 2, H351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT RE 2, H373</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Asp. Tox. 1, H304</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>Proprietary fatty amine derivative</td>
<td>(CAS No) Proprietary</td>
<td>&lt;=2</td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td>(CAS No) 91-20-3</td>
<td>0.002-0.06</td>
<td>Flam. Sol. 2, H228</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4 (Oral), H302</td>
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<td></td>
<td></td>
<td></td>
<td>Carc. 2, H351</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>
**MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10**

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Full text of H-phrases: see section 16

*The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

**SECTION 4: FIRST AID MEASURES**

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: In contact with cold form: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists. In contact with molten form: Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance.

First-aid Measures After Eye Contact: In contact with cold form: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention. In contact with molten form: Protect skin and eyes from contact with molten material. Removal of solidified molten material from the eyes requires medical assistance.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

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

**Symptoms/Injuries:** Causes serious eye irritation. Causes skin irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure (thymus, liver, bone marrow). May be fatal if swallowed and enters airways. Risk of thermal burns on contact with molten product.

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.

**Symptoms/Injuries After Skin Contact:** Causes skin irritation. Redness, pain, swelling, itching, burning, dryness, and dermatitis. Risk of thermal burns on contact with molten product.

**Symptoms/Injuries After Eye Contact:** Causes serious eye irritation. Contact causes severe irritation with redness and swelling of the conjunctiva.

**Symptoms/Injuries After Ingestion:** Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

**Chronic Symptoms:** Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure (thymus, liver, bone marrow).

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If burned by hot product, cool affected area immediately with cool water. Do not attempt to remove solidified material from skin. Seek medical attention immediately. If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

**SECTION 5: FIRE-FIGHTING MEASURES**

5.1. Extinguishing Media

**Suitable Extinguishing Media:** Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical powder. Earth. Sand.

**Unsafe Extinguishing Media:** Do not use water when molten material is involved, contact of hot product with water will result in a violent expansion as the water turns to steam causing explosion with massive force. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Flammable liquid and vapor.

**Explosion Hazard:** May form flammable or explosive vapor-air mixture. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant.

**Reactivity:** Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire. Under fire conditions closed containers may rupture or explode.
MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

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Firefighting Instructions: In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Remove containers from fire area if this can be done without risk. Do not get water inside containers. Do not apply water stream directly at source of leak. Do not breathe fumes from fires or vapors from decomposition.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources. Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools. Contact competent authorities after a spill. Allow liquid material to solidify before cleaning up. If spilled directly onto the ground, remove sufficient soil to ensure material is fully recovered.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. See Section 13, Disposal Considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant.

Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe mist, spray, and vapors. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities


Storage Conditions: Store in a dry, cool and well-ventilated place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep container tightly closed. Keep in fireproof place.


7.3. Specific End Use(s)

Cold Patch

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

<table>
<thead>
<tr>
<th>Substance</th>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (8052-42-4)</td>
<td>ACGIH TWA (mg/m³)</td>
<td>0.5 mg/m³ (fume, inhalable fraction)</td>
</tr>
<tr>
<td>Asphalt (8052-42-4)</td>
<td>ACGIH chemical category</td>
<td>Not Classifiable as a Human Carcinogen fume, coal tar-free</td>
</tr>
<tr>
<td>Asphalt (8052-42-4)</td>
<td>Biological Exposure Indices (BEI)</td>
<td>(Medium: urine - Time: end of shift at end of workweek -</td>
</tr>
</tbody>
</table>
MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

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<table>
<thead>
<tr>
<th>Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA NIOSH</td>
</tr>
</tbody>
</table>

Fuels, diesel, no. 2 (68476-34-6)

<table>
<thead>
<tr>
<th>USA ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
<th>100 mg/m³ (inhalable fraction and vapor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td>ACGIH chemical category</td>
<td>Skin - potential significant contribution to overall exposure by the cutaneous route, Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Naphthalene (91-20-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
</tr>
<tr>
<td>USA ACGIH</td>
</tr>
<tr>
<td>USA ACGIH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USA NIOSH</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
<th>50 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>10 ppm</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>75 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (STEL) (ppm)</td>
<td>15 ppm</td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
<td>250 ppm</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>50 mg/m³</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

8.2. Exposure Controls

Appropriate Engineering Controls
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Gas detectors should be used when flammable gases or vapors may be released. Proper grounding procedures to avoid static electricity should be followed. Storage and handling temperatures should be kept as low as feasible to minimize fume production. Do not enter empty storage tanks until measurements of hydrogen sulfide concentration and available oxygen have been carried out. Ensure all national/local regulations are observed.

Personal Protective Equipment

Materials for Protective Clothing
Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection
Wear protective gloves. If material is hot, wear thermally resistant protective gloves.

Eye Protection
Chemical safety goggles.

Skin and Body Protection
Wear suitable protective clothing.

Respiratory Protection
If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection
When working with hot material, use suitable thermally protective clothing.

Other Information
When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State
Liquid
Appearance
Black
Odor
Asphalt
Odor Threshold
No data available
pH
No data available
MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

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Evaporation Rate : No data available
Melting Point : No data available
Freezing Point : No data available
Boiling Point : No data available
Flash Point : No data available
Auto-ignition Temperature : No data available
 Decomposition Temperature : No data available
Flammability (solid, gas) : No data available
Vapor Pressure : No data available
Relative Vapor Density at 20 °C : No data available
Relative Density : No data available
Specific Gravity : 0.9 - 1.1
Specific gravity / Density : 7.6 - 8.3 lb/gal
Solubility : No data available
Partition Coefficient: N-Octanol/Water : No data available
Viscosity : 250 - 1000 SST
Explosive Properties : Product is not explosive, however, formation of explosive air-vapor mixture is possible.

9.2. Other Information
No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.
10.2. Chemical Stability: Flammable liquid and vapor. May form flammable or explosive vapor-air mixture.
10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
10.4. Conditions to Avoid: Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects
Acute Toxicity: Not classified

<table>
<thead>
<tr>
<th>Asphalt (8052-42-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>LD50 Dermal Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
<td>&gt; 94.4 mg/m³</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Fuels, diesel, no. 2 (68476-34-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
<td>18.7 - 24.9 ml/kg</td>
</tr>
<tr>
<td>LD50 Dermal Rabbit</td>
<td>&gt; 4300 mg/kg</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
<td>3.6 mg/l/4h</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Naphthalene (91-20-3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
<td>533 - 710 mg/kg</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
<td>&gt; 340 mg/m³ (Exposure time: 1 h)</td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation: Causes skin irritation.
Serious Eye Damage/Irritation: Causes serious eye irritation.
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Carcinogenicity: Suspected of causing cancer.

<table>
<thead>
<tr>
<th>Asphalt (8052-42-4)</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>IARC group</td>
<td>2B</td>
</tr>
<tr>
<td>National Toxicology Program (NTP) Status</td>
<td>Twelfth Report - Items under consideration.</td>
</tr>
<tr>
<td>OSHA Hazard Communication Carcinogen List</td>
<td>In OSHA Hazard Communication Carcinogen list.</td>
</tr>
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</table>
**Naphthalene (91-20-3)**

<table>
<thead>
<tr>
<th>IARC group</th>
<th>2B</th>
</tr>
</thead>
</table>

**National Toxicology Program (NTP) Status**

Evidence of Carcinogenicity, Reasonably anticipated to be Human Carcinogen.

**OSHA Hazard Communication Carcinogen List**

In OSHA Hazard Communication Carcinogen list.

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** May cause damage to organs through prolonged or repeated exposure (thymus, liver, bone marrow).

**Aspiration Hazard:** May be fatal if swallowed and enters airways.

**Symptoms/Injuries After Inhalation:** Prolonged exposure may cause irritation. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.

**Symptoms/Injuries After Skin Contact:** Causes skin irritation. Redness, pain, swelling, itching, burning, dryness, and dermatitis. Risk of thermal burns on contact with molten product.

**Symptoms/Injuries After Eye Contact:** Causes serious eye irritation. Contact causes severe irritation with redness and swelling of the conjunctiva.

**Symptoms/Injuries After Ingestion:** Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury. Chronic Symptoms: Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure (thymus, liver, bone marrow).

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

**Ecology - General:** Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

**Fuels, diesel, no. 2 (68476-34-6)**

<table>
<thead>
<tr>
<th>LC50 Fish 1</th>
<th>57 mg/l [Exposure time: 96 h - Species: Pimephales promelas [flow-through]]</th>
</tr>
</thead>
</table>

**Naphthalene (91-20-3)**

<table>
<thead>
<tr>
<th>LC50 Fish 1</th>
<th>5.74 - 6.44 mg/l [Exposure time: 96 h - Species: Pimephales promelas [flow-through]]</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>2.16 mg/l [Exposure time: 48 h - Species: Daphnia magna]</td>
</tr>
<tr>
<td>LC 50 Fish 2</td>
<td>1.6 mg/l [Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through]]</td>
</tr>
<tr>
<td>EC50 Daphnia 2</td>
<td>1.96 mg/l [Exposure time: 48 h - Species: Daphnia magna [Flow through]]</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and Degradability

**MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10**

Persistence and Degradability: May cause long-term adverse effects in the environment.

#### 12.3. Bioaccumulative Potential

**MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10**

Bioaccumulative Potential: Not established.

**Asphalt (8052-42-4)**

<table>
<thead>
<tr>
<th>BCF fish 1</th>
<th>(no bioaccumulation expected)</th>
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</thead>
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<td>Log Pow</td>
<td>6</td>
</tr>
</tbody>
</table>

**Naphthalene (91-20-3)**

<table>
<thead>
<tr>
<th>BCF fish 1</th>
<th>30 - 430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>3.3 (at 20 °C)</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in Soil

No additional information available

#### 12.5. Other Adverse Effects

**Other Information:** Avoid release to the environment.

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, and international regulations.

**Additional Information:** Handle empty containers with care because residual vapors are flammable.

**Ecology – Waste Materials:** Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.
MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

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SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT
Proper Shipping Name: TARS, LIQUID including road oils and cutback bitumens
Hazard Class: 3
Identification Number: UN1999
Label Codes: 3
Packing Group: III
Marine Pollutant: Marine pollutant
ERG Number: 130

14.2. In Accordance with IMDG
Proper Shipping Name: TARS, LIQUID including road oils and cutback bitumens
Hazard Class: 3
Identification Number: UN1999
Packing Group: III
Label Codes: 3
EmS-No. (Fire): F-E
EmS-No. (Spillage): S-E
Marine Pollutant: Marine pollutant

14.3. In Accordance with IATA
Proper Shipping Name: TARS, LIQUID including road oils and cutback bitumens
Packing Group: III
Identification Number: UN1999
Label Codes: 3
ERG Code (IATA): 3L

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

SARA Section 311/312 Hazard Classes
Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Asphalt (8052-42-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes
Delayed (chronic) health hazard

Fuels, diesel, no. 2 (68476-34-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Naphthalene (91-20-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag
T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

RQ (Reportable quantity, section 304 of EPA's List of Lists)
100 lb

SARA Section 313 - Emission Reporting
0.1 %

15.2 US State Regulations

Naphthalene (91-20-3)
U.S. - California - Proposition 65 - Carcinogens List
WARNING: This product contains chemicals known to the State of California to cause cancer.

Asphalt (8052-42-4)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Naphthalene (91-20-3)
U.S. - Massachusetts - Right To Know List
MC-250 + additive; MC-450 + additive; Jasa HP-5; Jasa HP-10

Safety Data Sheet
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| U.S. - New Jersey - Right to Know Hazardous Substance List |
| U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |
| U.S. - Pennsylvania - RTK (Right to Know) List |

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

| Revision Date | : | 10/29/2015 |
| Other Information | : | This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200. |

### GHS Full Text Phrases:

<table>
<thead>
<tr>
<th>GHS Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Inhalation:dust,mist)</td>
<td>Acute toxicity (inhalation:dust,mist) Category 4</td>
</tr>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 1</td>
</tr>
<tr>
<td>Aquatic Acute 3</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 3</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard Category 1</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity Category 2</td>
</tr>
<tr>
<td>Comb. Dust</td>
<td>Combustible Dust</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids Category 3</td>
</tr>
<tr>
<td>Flam. Sol. 2</td>
<td>Flammable solids Category 2</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity (repeated exposure) Category 2</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H228</td>
<td>Flammable solid</td>
</tr>
<tr>
<td>H232</td>
<td>May form combustible dust concentrations in air</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H322</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

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 therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)