SECTION 1: IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: CQS-1H

1.2. Intended Use of the Product
Use of the substance/mixture: Slurry; Tack coat

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
Skin Irrit. 2 H315
Eye Dam. 1 H318
Carc. 2 H351
Aquatic Acute 3 H402
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):
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H351 - Suspected of causing cancer.
H402 - Harmful to aquatic life.

Precautionary Statements (GHS-US):
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P302+P352 - If on skin: Wash with plenty of water.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P321 - Specific treatment (see section 4 on this SDS).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.
P308+310+313 - If exposed or concerned: Get medical advice/attention.
Immediately call a poison center or doctor.

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. 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>57 - 66</td>
<td>Carc. 2, H351</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>(CAS No) 7647-01-0</td>
<td>1 - 2.5</td>
<td>Met. Corr. 1, H290, Skin Corr. 1B, H314, Eye Dam. 1, H318, STOT SE 3, H335, Aquatic Acute 2, H401</td>
</tr>
</tbody>
</table>

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 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/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: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

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

Symptoms/Injuries: Causes skin irritation. Causes serious eye damage. Suspected of causing cancer. 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: May cause 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 damage. Causes permanent damage to the cornea, iris, or conjunctiva. Risk of thermal burns on contact with molten product.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Suspected of causing cancer.
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
Unsuitable 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: Not considered flammable but will burn at high temperatures.
Explosion Hazard: Product is not explosive. 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: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters
Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions closed containers may rupture or explode.
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 runoff 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 breathe vapor, mist or spray. Do not get in eyes, on skin, or on clothing.
6.1.1. For Non-emergency Personnel
Protective Equipment: Use appropriate personal protection equipment (PPE).
6.1.2. For Emergency Responders
Protective Equipment: Equip cleanup crew with proper protection.
Emergency Procedures: 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.
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. Cool molten material to limit spreading. Allow liquid material to solidify before cleaning up. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal. If spilled directly onto the ground, remove sufficient soil to ensure material is fully recovered. Contact competent authorities after a spill.
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: Risk of thermal burns on contact with molten product. Contains Sulfur, may release small amounts of hydrogen sulfide. Hydrogen sulfide is a highly flammable, explosive gas under certain conditions, is a toxic gas, and may be fatal. Gas can accumulate in the headspace of closed containers, use caution when opening sealed containers. Heating the product or containers can cause thermal decomposition of the product and release hydrogen sulfide.
Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Protect skin and eyes from contact with molten material. Do not get in eyes, on skin, or on clothing. Do NOT breathe vapor. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

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


7.3. Specific End Use(s)

Slurry; Tack coat

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>USA ACGIH</th>
<th>USA NIOSH</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>Hydrochloric acid (7647-01-0)</td>
<td>ACGIH Ceiling (ppm)</td>
<td>2 ppm</td>
</tr>
<tr>
<td>IDLH US IDLH (ppm)</td>
<td>50 ppm</td>
<td>NIOSH REL (ceiling) (ppm)</td>
</tr>
<tr>
<td>OSHA PEL (Ceiling) (mg/m³)</td>
<td>7 mg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA PEL (Ceiling) (ppm)</td>
<td>5 ppm</td>
<td></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. Ensure all national/local regulations are observed. 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.


Materials for Protective Clothing: With molten material wear thermally protective clothing. Chemically resistant materials and fabrics.

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.

Environmental Exposure Controls: Avoid release to the environment.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Black/brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>2 - 5</td>
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<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>212 °F (100 °C)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
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<tr>
<td>Relative Vapor Density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.9 - 1.1</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>7.5 - 9.2 lb/gal</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient: N-Octanol/Water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>20 - 100 SFS</td>
</tr>
</tbody>
</table>

9.2. Other Information
No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

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>Compound</th>
<th>LD50 Oral Rat (mg/kg)</th>
<th>LD50 Dermal Rabbit (mg/kg)</th>
<th>LC50 Inhalation Rat (mg/m³)</th>
<th>LD50 Dermal Rabbit (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (8052-42-4)</td>
<td>&gt; 5000</td>
<td>&gt; 2000</td>
<td>&gt; 94.4</td>
<td>&gt; 5010</td>
</tr>
<tr>
<td>Hydrochloric acid (7647-01-0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation: Causes skin irritation.

pH: 2 - 5

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 2 - 5

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Suspected of causing cancer.

Asphalt (8052-42-4) IARC group 2B
## National Toxicology Program (NTP) Status
- Twelfth Report - Items under consideration.

## OSHA Hazard Communication Carcinogen List
- In OSHA Hazard Communication Carcinogen list.

## Hydrochloric acid (7647-01-0)

### IARC group
- 3

### Reproductive Toxicity
- Not classified

### Specific Target Organ Toxicity (Single Exposure)
- Not classified

### Specific Target Organ Toxicity (Repeated Exposure)
- Not classified

### Aspiration Hazard
- Not classified

### 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
- May cause 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 damage. Causes permanent damage to the cornea, iris, or conjunctiva. Risk of thermal burns on contact with molten product.

### Symptoms/Injuries After Ingestion
- Ingestion is likely to be harmful or have adverse effects.

### Chronic Symptoms
- Suspected of causing cancer.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity
- Ecology - General: Harmful to aquatic life.

### Hydrochloric acid (7647-01-0)
- LC50 Fish 1: 3.25 - 3.5 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
- EC50 Daphnia 1: 4.92 mg/l (Exposure time: 48 h - Species: Daphnia magna)

### 12.2. Persistence and Degradability
- CQS-1H
- Persistence and Degradability: May cause long-term adverse effects in the environment.

### 12.3. Bioaccumulative Potential
- CQS-1H
- Bioaccumulative Potential: Not established.

### Asphalt (8052-42-4)
- BCF fish 1: (no bioaccumulation expected)
- Log Pow: > 6

### 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: Container may remain hazardous when empty. Continue to observe all precautions.
- Ecology – Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

## SECTION 14: TRANSPORT INFORMATION

### 14.1. In Accordance with DOT
- Not regulated for transport

### 14.2. In Accordance with IMDG
- Not regulated for transport

### 14.3. In Accordance with IATA
- Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1. US Federal Regulations
- CQS-1H
- SARA Section 311/312 Hazard Classes
  - Immediate (acute) health hazard
  - Delayed (chronic) health hazard

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11/06/2015   EN (English US)   6/7
CQS-1H
Safety Data Sheet
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Asphalt (8052-42-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
</tr>
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<td>Hydrochloric acid (7647-01-0)</td>
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<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
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<tr>
<td>Listed on the United States SARA Section 302</td>
</tr>
<tr>
<td>SARA Section 302 Threshold Planning Quantity (TPQ)</td>
</tr>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
</tr>
</tbody>
</table>

**15.2 US State Regulations**

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

Hydrochloric acid (7647-01-0)
- U.S. - Massachusetts - Right To Know List
- 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: 11/06/2015
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:**
- Aquatic Acute 2: Hazardous to the aquatic environment - Acute Hazard Category 2
- Aquatic Acute 3: Hazardous to the aquatic environment - Acute Hazard Category 3
- Carc. 2: Carcinogenicity Category 2
- Eye Dam. 1: Serious eye damage/eye irritation Category 1
- Met. Corr. 1: Corrosive to metals Category 1
- Skin Corr. 1B: Skin corrosion/irritation Category 1B
- Skin Irrit. 2: Skin corrosion/irritation Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) Category 3
- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage
- H315: Causes skin irritation
- H318: Causes serious eye damage
- H335: May cause respiratory irritation
- H351: Suspected of causing cancer
- H401: Toxic to aquatic life
- H402: Harmful to aquatic life

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.

SDS US (GHS HazCom)