CSS-CM  
**Cementitious Matrix**  
SAFETY DATA SHEET

1. **Identification**

**Product Identification**

- **Product Identifier:** CSS-CM
- **Recommended Use:** Shotcrete with a reactive component.
- **Use Restrictions:** For industrial use only. To ensure proper installation, use according to package directions. Complete application instructions can be found in Simpson Strong-Tie catalogs or online at strongtie.com.

**Company Identification**

- **Company:** Simpson Strong-Tie Company Inc.
- **Address:** 5956 W. Las Positas Blvd.
  Pleasanton, CA  94588
- **Phone:** 1-800-999-5099
- **Website:** www.strongtie.com
- **Emergency:** 1-800-535-5053 (US/Canada)  
  1-352-323-3500 (International)

For most current SDS, please visit our website at www.strongtie.com/sds

2. **Hazard Identification**

**General Information**

CSS-CM Cementitious Matrix is shotcrete with a reactive component. It is a single component, solid product. CSS-CM has been assessed according to the Globally Harmonized System (GHS). It can be assumed to carry its hazards until fully set. The final hardened product can be considered non-hazardous. This Safety Data Sheet covers hazards and responses for the safe use and handling of this product.

**GHS Classification**

**Classification according to HazCom2012 (GHS)**

| Physical Hazards: | Not Classified |
| Health Hazards:   | Skin Corrosion/Irritation Category 1 H314: Causes severe skin burns and eye damage |
|                   | Serious Eye Damage/Irritation Category 1 H318: Causes serious eye damage |
|                   | Sensitization, Skin Category 1 H317: May cause an allergic skin reaction |
|                   | Carcinogenicity Category 1A H350: May cause cancer |
|                   | STOT, Single Exposure Category 3 H335: May cause respiratory irritation |

**Environmental Hazards:** Not Classified.

**Main Symptoms:** Damage to the eyes and skin. Symptoms include burns, redness, itching, tearing, swelling, and blurred vision. May cause rash/allergic reaction to the skin. May cause shortness of breath, discomfort in chest, or coughing. Long term exposure may cause chronic effects.

**GHS Label Elements**

- Exclamation Point
- Chronic Health
- Corrosive

**Contains:** Portland Cement, Ground Limestone, Silicon Dioxide

**Signal Word:** DANGER!

**Hazard Statements:**

- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H317: May cause an allergic skin reaction.
- H350: May cause cancer.
- H335: May cause respiratory irritation.

**Precautionary Statements:**

- Prevention:
  - P201: Obtain special instructions before use.
  - P202: Do not handle until all safety precautions have been read and understood.
  - P260: Do not breathe dust, fumes, or vapors.
P264: Wash thoroughly after handling.
P270: Do not eat, drink, or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated clothing should not be allowed out of the workplace.
P280: Wear protective gloves/protection clothing/eye protection/face protection.

Response:
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P311: Call a POISON CENTER/doctor if you feel unwell.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P363: Wash contaminated clothing before reuse.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
P308+P313: IF EXPOSED OR CONCERNED: Get medical advice/attention.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
P308+P313: IF EXPOSED OR CONCERNED: Get medical advice/attention.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.
P308+P313: IF EXPOSED OR CONCERNED: Get medical advice/attention.

Storage:
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.

Disposal:
P501: Dispose of contents/container in accordance with local/regional regulations.

Supplemental Label Information: None known.

Hazards Not Otherwise Classified (HNOC)
OSHA Hazard: Combustible Dust
Hazard Statement: Can form explosive air-dust mixtures, avoid creating dust.
Precautionary Statement: Do not allow dust to build up on surfaces.

3. Composition Information

General Information
This product is a mixture. Hazardous ingredients for each component are listed below. May include other nonhazardous ingredients. May include other trace ingredients, see Section 15.

List of abbreviations and symbols:
Classification: Global Harmonized System Classifications
The full text for H-phrases is displayed in section 16. All concentrations are in percent by weight unless otherwise noted.

Composition – All concentrations are in percent by weight unless otherwise indicated.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight %</th>
<th>CAS Number</th>
<th>EC Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cements</td>
<td>25-50</td>
<td>65997-15-1</td>
<td>238-878-4</td>
</tr>
<tr>
<td>Ground Limestone</td>
<td>25-50</td>
<td>1317-65-3</td>
<td>215-279-6</td>
</tr>
<tr>
<td>Classifications: Skin Irrit. 2: H315, Eye Corr. 1: H318</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silicon Dioxide</td>
<td>25-50</td>
<td>60676-86-0</td>
<td>262-373-8</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

General Information
Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

Routes of Exposure

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. Remove contact lenses if present and easy to do. If you experience redness, burning, blurred vision, or swelling, consult a physician immediately.

Skin Contact: Remove contaminated clothing and product, immediately wash affected area with soap and water. Do not apply greases or ointments. If rash or irritation occurs, consult a physician.
Ingestion: Rinse mouth immediately. Do not induce vomiting. Consult a physician.

Inhalation: Remove patient to fresh air. Give oxygen or artificial respiration if needed. If patient continues to experience difficulty breathing, consult a physician.

Most Important Symptoms

Damage to the eyes and skin. Symptoms include burns, redness, itching, tearing, swelling, and blurred vision; shortness of breath, discomfort in chest, or coughing. Rash/dermatitis. Permanent eye damage, including blindness could result.

5. Fire-Fighting Measures


Additional Information: Can form explosive air-dust mixtures, avoid creating dust.

Hazard during Fire-Fighting: During a fire, gases hazardous to health may be formed. Do not allow run-off from fire-fighting to enter drains or water courses.

Fire-Fighting Procedures: Use standard fire-fighting procedures and consider the hazards of other involved materials. In case of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn. Move containers from fire area if you can do so without risk. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental Release Measures

Personal Precautions

Non-emergency personnel: Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

Emergency personnel: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protection.

Clean-Up Methods

Small spills: Avoid dry sweeping. Do not use compressed air to clean spilled silica sand. Use damp towel to wipe up small spills. Dispose of in closed containers.

Large spills: Avoid dry sweeping. Do not use compressed air to clean spilled silica sand. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system. Dispose of in closed containers.

Set Material: Chip or grind off surface. If you are grinding or cutting cured product, ensure good work practice and use of personal protective equipment as needed to control exposure to respirable dust.

Environmental Precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so.

7. Handling and Storage

Handling

Avoid generating dust. Mechanical ventilation or local exhaust ventilation is recommended. Use all available work practices to control dust exposure, such as water sprays. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Avoid contact with eyes, skin, and clothing. Do not breathe dust. Wear a respirator if dust concentrations exceed permissible exposure limits. Do not permit dust to collect and build up on work surfaces, use good housekeeping. Avoid contact with unhardened cement products. Observe good industrial hygiene practices.

Storage

Use dust collection to trap dust produced during loading and unloading. Store in a closed container away from incompatible materials (See Section 10 of the SDS). Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Protect against physical damage.

8. Exposure Controls / Personal Protection

Personal Protective Equipment

Protective Measure: Wear appropriate personal protective equipment.

Eye Protection: Wear chemical splash goggles or safety glasses with side shield.

Hand Protection: Wear chemical-resistant gloves such as: Nitrile, neoprene, butyl.
Skin and Body Protection: Wear long sleeve shirt/long pants and other clothing as required to minimize contact. In case of dust production, dust-proof clothing. Avoid contact with unhardened cement products, if contact occurs wash immediately with soap and water.

Respirator Protection: Use a NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits.

General Hygiene: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Engineering Controls**

Mechanical ventilation or local exhaust ventilation is recommended. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and emergency shower.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA (PEL)</th>
<th>ACGIH (TLV)</th>
<th>NIOSH Pocket Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cements (CAS 65997-15-1)</td>
<td>5 mg/m³ (respirable) 15 mg/m³ (total dust)</td>
<td>1 mg/m³ (respirable)</td>
<td>5 mg/m³ (respirable) 15 mg/m³ (total dust)</td>
</tr>
<tr>
<td>Ground Limestone (CAS 1317-65-3)</td>
<td>15 mg/m³</td>
<td>2 mg/m³</td>
<td>N/E</td>
</tr>
<tr>
<td>Silicon Dioxide (CAS 60676-86-0)</td>
<td>80 mg/m³ (TWA)</td>
<td>N/E</td>
<td>6 mg/m³ (TWA)</td>
</tr>
</tbody>
</table>

**9. Physical and Chemical Properties**

| Physical State: | Solid     | Freezing/Melting Point: | N/A       |
| Form:           | Powder    | Boiling Point:          | N/A       |
| Color:          | Gray      | Flash Point:            | N/A       |
| Odor:           | None      | Evaporation Rate:       | N/A       |
| Odor Threshold: | N/A       | Bulk Density:           | 1400-1600 kg/m³ |
| pH:             | N/A       | VOC:                    | 0 g/L     |
| Flammability:   | N/A       | U/L Flammability:       | N/A       |
| Vapor Pressure: | N/A       | Vapor Density:          | N/A       |
| Solubility:     | Slight    | Kow:                    | N/A       |
| Decomposition:  | N/A       | Viscosity:              | N/A       |

**10. Stability and Reactivity**

Reactivity: Strong bases are formed with the addition of water.

Chemical Stability: Stable and non-reactive under normal conditions of use and storage.

Condition to Avoid: Conditions which generate dust. Avoid unintentional contact with water.


Hazardous Reactions: The product is stable if stored and handled as prescribed/indicated. Strong bases are formed with the addition of water.

Decomposition Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, other organic compounds.

**11. Toxicological Information**

**Likely Routes of Exposure**

Ingestion: Expected to be a low ingestion hazard.

Inhalation: Irritation to the respiratory tract.

Skin contact: Causes skin burns. May cause sensitization by skin contact.

Eye contact: Causes serious eye damage. Particles can cause corneal abrasion.

Symptoms: Burns, redness, itching, tearing, swelling, and blurred vision; shortness of breath, discomfort in chest, or coughing. Rash/dermatitis.

**Information on Toxicological Effects**

**Acute Effects**

Toxicity: Not expected to be acutely toxic.
Component | Estimate |
--- | --- |
**CSS-CM Toxicity Estimate** |  |
Acute, Oral, LD50 | > 10000 |

<table>
<thead>
<tr>
<th>Component</th>
<th>Species</th>
<th>Test Result</th>
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</thead>
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<tr>
<td>Ground Limestone (CAS 1317-65-3)</td>
<td>Acute, Oral, LD50</td>
<td>Rat</td>
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<tr>
<td>Silicon Dioxide (CAS 60676-86-0)</td>
<td>Acute, Oral, LD50</td>
<td>Rat</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation:** Causes skin burns.
**Eye damage/eye irritation:** Causes serious eye damage.
**Respiratory sensitization:** Not a respiratory sensitizer.
**Skin sensitization:** May cause sensitization by skin contact.
**Aspiration hazard:** No data available.
**Specific target organ toxicity:** Single exposure: May cause respiratory irritation.

**Skin sensitization:** May cause sensitization by skin contact.
**Aspiration hazard:** No data available.

**Chronic Effects**
**Germ cell mutagenicity:** No data available.
**Carcinogenicity:** May cause cancer. CS-CM contains chemicals which are considered carcinogenic in their respirable form. Ensure good work practice and use of personal protective equipment as needed to control exposure to dust.
**Reproductive toxicity:** No data available.
**Specific target organ toxicity:** Repeated exposure: No data available.

**Carcinogen / Reproductive Toxin / Mutagen Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>% In Blend (approx.)</th>
<th>IARC Monographs</th>
<th>NTP</th>
<th>ACGIH</th>
<th>Other</th>
</tr>
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<tr>
<td>Portland Cement (CAS 65997-15-1)</td>
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<td>---</td>
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<td>Silicon Dioxide (CAS 60676-86-0)</td>
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<td>3</td>
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</tr>
</tbody>
</table>

| IARC: 1 – Carcinogenic 2 – Possibly carcinogenic 3 – Not classifiable as to carcinogenicity 4 – Probably not carcinogenic |
| NTP: Kown to be human carcinogen or Reasonably anticipated to be a human carcinogen |
| ACGIH – A1 – Confirmed carcinogen A2 – Suspected carcinogen A3 – Animal carcinogen A4 – Not classified A5 – Not suspected |
| CA65 – California Prop 65 |

**Further Information**
Toxicological, ecotoxicological, physical, and chemical properties may not have been fully investigated. Hazard data above is estimated based on best available information. Some workers with certain pre-existing medical conditions such as: asthma, allergies, or impaired pulmonary and/or liver functions, or who may be particularly susceptible to this material, may be affected by exposure to this material.

**12. Ecological Information**
**General Information**
Information given is based on data on the components and the ecotoxicology of similar products. This material is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Supporting Data**
**Persistence and degradability:** Not readily biodegradable.
**Bioaccumulative potential:** Not expected to bioaccumulate.
**Mobility in soil:** No data available.

**Other Adverse Effects**
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.
13. Disposal Considerations

Waste Disposal of Substance: Do not allow material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Container Disposal: Empty containers or liners may retain some product residues; follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Disposal of Set Product: Chip or grind off. Solid material does not need special disposal consideration.

14. Transportation Information

DOT: CSS-CM is not regulated for transport.

IMDG/IATA: CSS-CM is not regulated for transport.

Additional Information

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.

This information does not cover all specific regulatory or operational requirements of this product. The classifications for transportation may vary by container volume or different regional or national regulations.

15. Regulatory Information

United States

Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.


Superfund Amendments and Reauthorization Act of 1986 (SARA):

<table>
<thead>
<tr>
<th>Hazard Categories:</th>
<th>Immediate</th>
<th>Delayed</th>
<th>Fire</th>
<th>Pressure</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SARA 302 Extremely hazardous substance: No
SARA 311/312 Hazardous chemical: Yes
SARA 313 (TRI reporting): Not regulated.

This product does not contain any chemicals known to the State of California to cause cancer or reproductive harm as per California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986).

US State Right-To-Know Lists

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Massachusetts RTK</th>
<th>New Jersey Work and Community RTK Act</th>
<th>Pennsylvania Worker and Community RTK Law</th>
<th>Maine CHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cement (CAS 65997-15-1)</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
</tr>
<tr>
<td>Ground Limestone (CAS 1317-65-3)</td>
<td>Listed</td>
<td>Listed</td>
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<tr>
<td>Silicon Dioxide (CAS 60676-86-0)</td>
<td>Listed</td>
<td>Listed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Canada

This product has been classified according to the hazard criteria of the HPR and the SDS contains all of the information required by the HPR.
International

The product is classified and labeled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work.

This product is not subject to or not applicable for any of the following International Regulations: Stockholm Convention, Rotterdam Convention, Kyoto Protocol, Montreal Protocol, Basel Convention.

### International Inventories

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>All components of this product are listed on the Australian Inventory of Chemical Substances (AICS).</td>
</tr>
<tr>
<td>Canada</td>
<td>All components of this product are included on the Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).</td>
</tr>
<tr>
<td>China</td>
<td>All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).</td>
</tr>
<tr>
<td>Europe</td>
<td>All components of this product are not included on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.</td>
</tr>
<tr>
<td>Japan</td>
<td>One or more components in this product are not listed on the Inventory of Existing and New Chemical Substances (ENCS).</td>
</tr>
<tr>
<td>Korea</td>
<td>All components of this product are included on the Existing Chemicals List (ECL).</td>
</tr>
<tr>
<td>New Zealand</td>
<td>All components of this product are included on the New Zealand Inventory.</td>
</tr>
<tr>
<td>Philippines</td>
<td>One or more components in this product are not listed in the Philippine Inventory of Chemicals and Chemical Substances (PICCS).</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>All components of this product are listed on the Toxic Substances Control Act (TSCA) Inventory or are not required to be listed.</td>
</tr>
</tbody>
</table>

16. Other Information

<table>
<thead>
<tr>
<th>Date Prepared or Revised:</th>
<th>August 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supersedes:</td>
<td>July 2014</td>
</tr>
</tbody>
</table>

Contact Simpson Strong-Tie Environmental Health and Safety at [EHS@strongtie.com](mailto:EHS@strongtie.com).

Additional Classifications

### NFPA Ratings

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>PHYSICAL</th>
<th>FLAMMABILITY</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>E</td>
</tr>
</tbody>
</table>

### Abbreviations

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS No.: Chemical Abstract Service Registry Number
- CERCLA: Comprehensive Environmental Response, Compensation and Liability Act (U.S. EPA)
- HPR: Hazardous Product Regulations (Canada)
- EPA: Environmental Protection Agency (U.S.)
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- HMIS: Hazardous Materials Identification System
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- IMDG: International Maritime Dangerous Goods code
- NIOSH: National Institute of Occupational Safety and Health (U.S.)
- NFPA: National Fire Protection Association (US)
Full text of H-Phrases Under Section 3
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes severe eye damage.
H335: May cause respiratory irritation.
H350: May cause cancer.

Disclaimer
Safety Data Sheet (SDS) is prepared by Simpson Strong-Tie Co. in compliance with the requirements of OSHA 29 CFR Part 1910.1200. The information it contains is offered in good faith as accurate as of the date of this SDS. This SDS is provided solely for the purpose of conveying health, safety, and environmental information. No warranty, expressed or implied, is given. Health and Safety precautions may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

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