1. Identification

Product identifier: H-Quest L 50
Other means of identification
SDS number: 320538-02
Recommended use: Used in cleaning solutions, micro nutrient applications and as an additive in concrete mixtures.
Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information
Manufacturer
Company name: Harcros Chemicals Inc
Address: 5200 Speaker Rd, Kansas City, KS 66106, United States
Main Telephone Number: 1-913-321-3131
Website: www.harcros.com
E-mail: custserv@harcros.com
Emergency #: CHEMTREC (call collect) 1-800-424-9300
Emergency #: CHEMTREC 1-703-527-3887

2. Hazard(s) identification

Physical hazards: Not classified.
Health hazards: Serious eye damage/eye irritation Category 2
Environmental hazards: Not classified.
OSHA defined hazards: Combustible dust, Pyrophoric gas, Simple asphyxiant Not applicable

Label elements
Signal word: Warning
Hazard statement: Causes serious eye irritation.
Precautionary statement:
Prevention: Wash thoroughly after handling. Wear eye/face protection.
Response: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage: Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in accordance with local/regional/national/international regulations.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): None known.
Supplemental information: None.

3. Composition/information on ingredients

Mixtures

Material name: H-Quest L 50
Version #: 02 Revision date: 04-20-2015 Issue date: 03-27-2015
4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Wash off with soap and water. Get medical attention if irritation develops and persists.

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. If eye irritation persists: Get medical advice/attention.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

Most Important symptoms/effects, acute and delayed
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions
Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling
Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities
Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Provide eyewash station. It is recommended that users of this product perform a risk assessment to determine the appropriate PPE.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear chemical goggles. Do not get in eyes. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin protection
Hand protection
Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other
Wear suitable protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
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.

9. Physical and chemical properties

Appearance
Clear.

Physical state
Liquid.

Form
Liquid.

Color
Dark brown.

Odor
Sweet ammonia.

Odor threshold
Not available.

pH
8 - 10 (Neat)

Melting point/freezing point
46 °F (7.78 °C)

Initial boiling point and boiling range
> 212 °F (> 100 °C)

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.

Flammability limit - upper (%)
Not available.

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor pressure
Not available.

Vapor density
Not available.

Relative density
Not available.

Solubility(ies)
Solubility (water)
Soluble.

Partition coefficient (n-octanol/water)
Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.

Other information:
- Flammability class: Non-flammable.
- Flash point class: Non-flammable.
- Percent volatile: 50 %
- Specific gravity: 1.29 @20°C

10. Stability and reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Contact with incompatible materials.
Incompatible materials: Strong oxidizing agents.
Hazardous decomposition products: Carbon oxides.

11. Toxicological information

Information on likely routes of exposure:
- Inhalation: No adverse effects due to inhalation are expected.
- Skin contact: No adverse effects due to skin contact are expected.
- Eye contact: Causes serious eye irritation.

Sodium Glucoheptonate OECD 405
Result: Mild Irritant
Species: Rabbit

Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics:
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects:

Acute toxicity

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-Quest L 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>4000 mg/kg estimated</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>4000 mg/kg estimated</td>
</tr>
<tr>
<td>NOAEC</td>
<td>Rat</td>
<td>2000 mg/kg estimated</td>
</tr>
</tbody>
</table>

Components & Species:
- Sodium Glucoheptonate (CAS 31138-65-5)
<p>| Acute | Species | Test Results |
| Dermal |         |              |
| Liquid |         |              |
| LD50   | Rat     | &gt; 2000 mg/kg |</p>
<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Liquid</td>
<td>Rat</td>
<td>1000 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation**
- Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation**
- Causes serious eye irritation.

**Eye Contact**
- Sodium Glucoheptonate: OECD 405 Result: Mild Irritant Species: Rabbit

**Maximum group mean score**
- Sodium Glucoheptonate: 12.3 OECD 405 Result: Mild Irritant Species: Rabbit

**Respiratory or skin sensitization**
- Respiratory sensitization: Not a respiratory sensitizer.
- Skin sensitization: This product is not expected to cause skin sensitization.

**Local lymph node assay - Lowest concentration producing reaction**
- Sodium Glucoheptonate: OECD 429 Result: Non-sensitizer Species: Mouse

**Germ cell mutagenicity**
- No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Germ cell mutagenicity: Ames test**
- Sodium Glucoheptonate: OECD 471, Salmonella Typhimurium and E Coli Result: Non-mutagenic

**Germ cell mutagenicity: Chromosome abberation**

**Germ cell mutagenicity: Micronucleus**
- Sodium Glucoheptonate: OECD 474 Result: Non-mutagenic Species: Mouse

**Carcinogenicity**
- This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

- Not listed.

**Reproductive toxicity**
- This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**
- Not classified.

**Specific target organ toxicity - repeated exposure**
- Not classified.

**Aspiration hazard**
- Not an aspiration hazard.

**12. Ecological information**
- The product 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.
<table>
<thead>
<tr>
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<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-Quest L 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia 2000 mg/l, 48 hours estimated</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish 2000 mg/l, 96 hours estimated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Glucoheptonate (CAS 31138-65-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>EC50</td>
<td>Activated sludge of a predominantly domestic sewage &gt; 1000 mg/l, 3 hours</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia &gt; 1000 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Rainbow Trout &gt; 1000 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

**Persistence and degradability**
No data is available on the degradability of this product.

**Bioaccumulative potential**
No data available.

**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 component.

### 13. Disposal considerations

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**DOT**
Not regulated as dangerous goods.

**IATA**
Not regulated as dangerous goods.

**IMDG**
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not established.

### 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)**
Sodium Glucoheptonate (CAS 31138-65-5) 1.0 % One-Time Export Notification only.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

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

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations
US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK
Not regulated.

US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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>
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<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>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
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<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
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</table>

Material name: H-Quest L 50
2716  Version #: 02  Revision date: 04-20-2015  Issue date: 03-27-2015  SDS US 7 / 8
<table>
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<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
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<tbody>
<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>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply 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

<table>
<thead>
<tr>
<th>Issue date</th>
<th>03-27-2015</th>
</tr>
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<tbody>
<tr>
<td>Revision date</td>
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</tr>
<tr>
<td>Version #</td>
<td>02</td>
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<tr>
<td>HMIS® ratings</td>
<td>Health: 2</td>
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<tr>
<td></td>
<td>Flammability: 0</td>
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<tr>
<td></td>
<td>Physical hazard: 0</td>
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<tr>
<td>NFPA ratings</td>
<td>Health: 2</td>
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<tr>
<td></td>
<td>Flammability: 0</td>
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<tr>
<td></td>
<td>Instability: 0</td>
</tr>
</tbody>
</table>

Disclaimer

Harcros cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Material Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc., knows of no medical condition, other than those noted on this Material Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

Revision Information

Physical & Chemical Properties: Multiple Properties
Regulatory Information: United States