SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Trade name or designation of the mixture: Hexaethyl Guanidinium Chloride Aqueous Solution
Registration number: -
Synonyms: HEGCL Aqueous Solution
Issue date: 05-July-2017
Version number: 01
Revision date: -
Supersedes date: -

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Chemical intermediate / Industrial chemical.
Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet
Supplier: VanDeMark Chemical B.V.
Address: Schiekade 830, 3032 AL Rotterdam, The Netherlands
e-mail: sales@vdmchemical.com
Manufacturer: VanDeMark Chemical Inc.
Address: 1 North Transit Road, Lockport, NY 14094 USA
Telephone: +1 716-433-6764
e-mail: sales@vdmchemical.com

1.4. Emergency telephone number
Europe: 112
Denmark: Poison Control Hotline (DK): +45 82 12 12 12
France: ORFILA (FR): + 01 45 42 59 5
Germany: Poison Center Berlin (DE): +49 030 30686 790
Italy: Poison Center, Milan (IT): +39 02 6610 1029
Spain: Servicio de Información Toxicológica: +34 91 562 04 20
Switzerland: Poison Center: Tel 145; +41 44 251 51 51

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards
- Acute toxicity, oral: Category 4
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2
- Specific target organ toxicity - single exposure: Category 3 respiratory tract irritation

Environmental hazards
- Hazardous to the aquatic environment, long-term aquatic hazard: Category 3

Hazard summary
Harmful if swallowed. Causes serious eye irritation. Causes skin irritation. May cause irritation to the respiratory system. Dangerous for the environment if discharged into watercourses. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended
Contains: Hexaethyl guanidinium chloride
### Hazard pictograms

**Signal word**

Warning

### Hazard statements

<table>
<thead>
<tr>
<th>H302</th>
<th>Harmful if swallowed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

### Precautionary statements

**Prevention**

- **P261** Avoid breathing dust/fume/gas/mist/vapours/spray.
- **P264** Wash thoroughly after handling.
- **P270** Do not eat, drink or smoke when using this product.
- **P273** Avoid release to the environment.
- **P280** Wear protective gloves.

**Response**

- **P302 + P352** IF ON SKIN: Wash with plenty of water.
- **P362 + P364** Take off contaminated clothing and wash it before reuse.
- **P304 + P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P312** Call a POISON CENTRE/doctor if you feel unwell.

**Storage**

- **P403 + P233** Store in a well-ventilated place. Keep container tightly closed.

### Disposal

Not available.

### Supplemental label information

None.

### 2.3. Other hazards

Not a PBT or vPvB substance or mixture.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

**General information**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>Index No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>50 - 62</td>
<td>7732-18-5</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>231-791-2</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Hexaethyl guanidinium chloride</td>
<td>30 - 40</td>
<td>69082-76-4</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>-</td>
<td>Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335, Aquatic Chronic 3;H412</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>0 - 14</td>
<td>7647-14-5</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>231-598-3</td>
<td></td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Composition comments**
The full text for all H-statements is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### SECTION 4: First aid measures

**General information**

If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

**Skin contact**

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact**

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

**Ingestion**

If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

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

May cause respiratory irritation. Skin irritation. May cause redness and pain. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

This product is not flammable.

5.1. Extinguishing media

Suitable extinguishing media

Foam. Dry powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special fire fighting procedures

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. Wear appropriate personal protective equipment.

For emergency responders

Keep unnecessary personnel away.

6.2. Environmental precautions

Stop leak if possible without any risk. Prevent entry into waterways, sewer, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

For personal protection, see Section 8 of the SDS. For waste disposal, see Section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing mist/vapours/spray. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Chemical intermediate / Industrial chemical.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td>TWA</td>
<td>5 mg/m3</td>
</tr>
</tbody>
</table>

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
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<td>TWA</td>
<td>5 mg/m3</td>
</tr>
</tbody>
</table>

Biological limit values

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

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls
Adequate ventilation should be provided whenever the material is heated or mists are generated. Provide easy access to water supply and eye wash facilities.

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

**General information**
Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection**
Use chemical goggles / face shield. Eye wash station should be located in immediate work area.

**Skin protection**
Chemical resistant protective gloves consistent with Standard EN 374 Suitable materials with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): Neoprene - 0.6 mm coating thickness. Nitrile rubber (NBR) - 0.4 mm coating thickness. Notice: The selection of a specific glove for an application and duration of use in the workplace should also take in to account all relevant workplace factors. These include, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection) potential body reactions to any given glove material, as well as the instructions and specifications provided by the glove manufacturer.

**Respiratory protection**
Respiratory protections should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When respiratory protection is required, use an approved cartridge for organic vapors with particulate filtration properties (A2-P2 for concentration up to 5,000 ppm, air powered A3-P3 for concentration up to 10,000 ppm). In higher concentrations or in case of insufficient data on concentration wear a positive-pressure supplied-air respirator.

**Thermal hazards**
When material is heated, wear gloves to protect against thermal burns.

**Hygiene measures**
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. Discard contaminated clothing and footwear that cannot be cleaned.

**Environmental exposure controls**
Environmental manager must be informed of all major spillages.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**
Clear liquid.

**Physical state**
Liquid.

**Form**
Liquid.

**Colour**
Amber.

**Odour**
Slight.

**Odour threshold**
Not available.

**pH**
6 - 9

**Melting point/freezing point**
175 °C (347 °F)

**Initial boiling point and boiling range**
Not available.

**Flash point**
Not available.

**Evaporation rate**
Not available.

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

**Upper/lower flammability or explosive limits**
Not available.

**Flammability limit - lower (%)**
Not available.

**Flammability limit - upper (%)**
Not available.

**Vapour pressure**
Not available.

**Vapour density**
Not available.

**Relative density**
Not available.

**Solubility(ies)**
Soluble in water.

**Partition coefficient (n-octanol/water)**
No data available.

**Auto-ignition temperature**
Not available.

**Decomposition temperature**
Not available.

**Viscosity**
Not available.
Explosive properties
Not explosive.

Oxidising properties
Not oxidising.

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions
Hazardous polymerisation does not occur.

10.4. Conditions to avoid
Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials
Strong acids. Strong bases.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

General information
Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

- Inhalation
  May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

- Skin contact
  Causes skin irritation.

- Eye contact
  Causes serious eye irritation.

- Ingestion
  Harmful if swallowed.

Symptoms
May cause respiratory irritation. Skin irritation. May cause redness and pain. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

11.1. Information on toxicological effects

- Acute toxicity
  Harmful if swallowed.

- Skin corrosion/irritation
  Causes skin irritation.

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

- Respiratory sensitisation
  Due to partial or complete lack of data the classification is not possible.

- Skin sensitisation
  Due to partial or complete lack of data the classification is not possible.

- Germ cell mutagenicity
  Due to partial or complete lack of data the classification is not possible.

- Carcinogenicity
  Due to partial or complete lack of data the classification is not possible.

- Reproductive toxicity
  Due to partial or complete lack of data the classification is not possible.

- Specific target organ toxicity - single exposure
  May cause respiratory irritation.

- Specific target organ toxicity - repeated exposure
  Due to partial or complete lack of data the classification is not possible.

- Aspiration hazard
  Due to partial or complete lack of data the classification is not possible.

- Mixture versus substance information
  No information available.

- Other information
  Not available.

SECTION 12: Ecological information

12.1. Toxicity
Harmful to aquatic life with long lasting effects. Information given is based on data on the components and the ecotoxicology of similar products.

12.2. Persistence and degradability
The product is not biodegradable.

12.3. Bioaccumulative potential
The product is not expected to bioaccumulate.

12.4. Mobility in soil
The product is water soluble and may spread in water systems.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
No data available.
SECTION 13: Disposal considerations

13.1. Waste treatment methods

**Residual waste**
Dispose of in accordance with local regulations. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**Contaminated packaging**
Since emptied containers retain product residue, follow label warnings even after container is emptied.

**EU waste code**
16 05 06*
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information**
Dispose in accordance with applicable federal, state, and local regulations.

SECTION 14: Transport information

**ADR**
14.1. - 14.6.: Not regulated as dangerous goods.

**RID**
14.1. - 14.6.: Not regulated as dangerous goods.

**ADN**
14.1. - 14.6.: Not regulated as dangerous goods.

**IATA**
14.1. - 14.6.: Not regulated as dangerous goods.

**IMDG**
14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk**
Not established.

and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**EU regulations**
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended
  Not listed.
  Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended
  Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended
  Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
  Not listed.
- Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended
  Not listed.
  Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
  Not listed.

**Authorisations**
- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
  Not listed.

**Restrictions on use**
- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
  Not listed.
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.
  Not listed.

**Other EU regulations**
- Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended
  Not listed.
Other regulations
This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended. The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

National regulations
Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
LD50: Lethal Dose, 50%.

References
HSDB® - Hazardous Substances Data Bank
ECHA: European Chemical Agency.

Information on evaluation method leading to the classification of mixture
The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any H-statements not written out in full under Sections 2 to 15
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Training information
Follow training instructions when handling this material.

Disclaimer
This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.