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Revision Date 21-Dec-2010

Revision Number 1

**1. PRODUCT AND COMPANY IDENTIFICATION****Product identifier****Product Name** Hexaethyl Guanidinium Chloride**Synonyms** HeGCl**Pure substance/preparation** Preparation**Relevant identified uses of the substance or mixture and uses advised against****Recommended Use** Chemical intermediate**Uses advised against** No information available**Details of the supplier of the safety data sheet****Company**VanDeMark Chemical Inc.  
1 North Transit Road  
Lockport, NY 14094, USA  
Telephone: 716-433-6764

For further information, please contact

**E-mail Address** sales@vdmchemical.com**Emergency telephone number****Emergency Telephone Number** CHEMTREC: +1-703-527-3887 (INTERNATIONAL)  
1-800-424-9300 (NORTH AMERICA)**Emergency Telephone \$45 - (EC)1272/2008****Europe** 112**2. HAZARDS IDENTIFICATION****Classification of the substance or mixture**

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

**Classification**

For the full text of the R-phrases mentioned in this Section, see Section 16

Xn;R22 Xi;R36/37/38 R52/53

**Most Important Hazards**

Harmful if swallowed

Irritating to eyes, respiratory system and skin

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Label Elements**

Xn

**Indication of danger**

Xn - Harmful

**R-phrase(s)**

R22 - Harmful if swallowed

R36/37/38 - Irritating to eyes, respiratory system and skin

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**S-phrase(s)**

S23 - Do not breathe gas/fumes/vapor/spray

S60 - This material and its container must be disposed of as hazardous waste

S24/25 - Avoid contact with skin and eyes

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Caution - this preparation contains a substance not yet fully tested

**Contains** Hexaethyl guanidinium chloride.**Other information**

Caution - this preparation contains a substance not yet fully tested. May cause adverse effects on health by chronic exposure.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Nature of the Preparation** Aqueous solution of organic and inorganic salts.

Chemical Name	EC-No	CAS-No	Weight %	Classification	EU - GHS Substance Classification	REACH No.
Water	231-791-2	7732-18-5	45-65	-	-	No data available
Hexaethyl guanidinium chloride	Not yet assigned	69082-76-4	30-40	Xn;R22 Xi;R36/37/38 R52/53	STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Chronic 3 (H412)	No data available
Sodium chloride (NaCl)	231-598-3	7647-14-5	5-15	-		No data available

**For the full text of the R-phrases mentioned in this Section, see Section 16****For the full text of the H-Statements mentioned in this Section, see Section 16**

### 4. FIRST AID MEASURES

**Description of first-aid measures****General Advice**

Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

**Eye Contact**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

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<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.
<b>Ingestion</b>	Rinse mouth. Drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician or Poison Control Center immediately.
<b>Inhalation</b>	Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Artificial respiration and/or oxygen may be necessary. If symptoms persist, call a physician.
<b>Protection of First-aiders</b>	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

**Most important symptoms and effects, both acute and delayed****Most Important Symptoms/Effects** No information available.**Indication of immediate medical attention and special treatment needed****Notes to Physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing media****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Special hazards arising from the substance or mixture****Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases**Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Hydrogen chloride gas, nitrogen oxides (NO<sub>x</sub>).**Advice for firefighters****Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures****Personal Precautions**

Use personal protective equipment. Ensure adequate ventilation. Do not touch or walk through spilled material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other Information**

Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions****Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

**Methods and materials for containment and cleaning up****Methods for Cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

Reference to other sections**Other information**

See Section 12 for additional information.

## 7. HANDLING AND STORAGE

Precautions for Safe Handling**Handling**

Wear personal protective equipment. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep away from heat and sources of ignition. Keep away from direct sunlight. Store at room temperature. Shelf life 60 months.

Specific End Use(s)

**Exposure Scenario** No information available.

**Other Guidelines** No information available.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

Exposure controls

**Engineering Measures**  
Showers  
Eyewash stations  
Ventilation systems

**Personal protective equipment**

**Eye Protection** Tightly fitting safety goggles.

**Skin and Body Protection** Long sleeved clothing. Apron. Impervious gloves.

**Hand Protection** Neoprene gloves

**Respiratory Protection** In case of insufficient ventilation wear suitable respiratory equipment. Breathing apparatus with filter

**Hygiene Measures** When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Remove and wash contaminated clothing before re-use. Keep away from food, drink and animal feeding stuffs. Wash hands and face before breaks and immediately after handling the product

**Environmental Exposure Controls** Do not allow material to contaminate ground water system. Prevent product from entering drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<b>Physical State</b>	Liquid	<b>Appearance</b>	Clear, amber colored
<b>Odor</b>	Slight		

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
<b>pH</b>	6-9	None known
<b>Melting Point/Range</b>	175°C / 347°F	None known
<b>Boiling Point/Range</b>	No data available	None known
<b>Flash Point</b>	No data available	None known
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Vapor Pressure</b>	No data available	None known
<b>Vapor Density</b>	No data available	None known
<b>Relative Density</b>	No data available	None known
<b>Specific Gravity</b>	No data available	None known
<b>Water Solubility</b>	Soluble in water.	None known
<b>Solubility in other solvents</b>	No data available	None known
<b>Partition coefficient: n-octanol/water</b>	No data available	None known
<b>Autoignition Temperature</b>	No data available	None known
<b>Decomposition Temperature</b>	No data available	None known
<b>Viscosity</b>	No data available	None known
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<u>Other information</u>		
<b>VOC Content (%)</b>	No information available	

## 10. STABILITY AND REACTIVITY

### Reactivity

#### Stability

Stable under recommended storage conditions.

#### Possibility of Hazardous Reactions

##### **Hazardous Polymerization**

No information available.

##### **Hazardous Reactions**

No information available

#### Conditions to Avoid

Extremes of temperature and direct sunlight.

#### Materials to Avoid

Strong acids. Strong bases.

#### Hazardous Decomposition Products

Decomposes in alkaline solution. Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Hazardous Decomposition Products: Tetraethylurea. Diethylamine. Nitrous vapors. Hydrogen chloride.

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Acute Toxicity

<b>Product Information</b>	Product is harmful by ingestion.
<b>Inhalation</b>	There is no data available for this product.
<b>Eye Contact</b>	There is no data available for this product.
<b>Skin Contact</b>	There is no data available for this product.
<b>Ingestion</b>	There is no data available for this product.
<b>LD50 Oral:</b>	1400 mg/kg (rat)
<b>Component Information</b>	Caution - this preparation contains a substance not yet fully tested

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium chloride (NaCl)	3 g/kg ( Rat )	10 g/kg ( Rabbit )	42 g/m <sup>3</sup> ( Rat ) 1 h
Water	90 mL/kg ( Rat )		

**Chronic Toxicity**

<b>Sensitization</b>	No information available.
<b>Target Organ Effects</b>	No information available.
<b>Endocrine Disruptor Information</b>	This product does not contain any known or suspected endocrine disruptors.

## 12. ECOLOGICAL INFORMATION

**Toxicity**

<b>Ecotoxicity Effects</b>	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The environmental impact of this product has not been fully investigated. Evaluation based on data from a similar compound, HeGBr
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Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Sodium chloride (NaCl)	N/A	LC50: 5560-6080 mg/L Lepomis macrochirus 96 h flow-through LC50: 12946 mg/L Lepomis macrochirus 96 h static LC50: 6020-7070 mg/L Pimephales promelas 96 h static LC50: 7050 mg/L Pimephales promelas 96 h semi-static LC50: 6420-6700 mg/L Pimephales promelas 96 h static LC50: 4747-7824 mg/L Oncorhynchus mykiss 96 h flow-through	N/A	EC50: 1000 mg/L Daphnia magna 48 h EC50: 340.7 - 469.2 mg/L Daphnia magna 48 h Static

**Persistence and degradability**

Product is not biodegradable.

**Bioaccumulative potential.**

Product has a low potential to bioconcentrate

**Mobility**

The product is water soluble, and may spread in water systems.

**Results of PBT and vPvB assessment**

Other adverse effects

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods****Waste from Residues/Unused Products**

Waste is classified as hazardous. Should not be released into the environment. Dispose of in accordance with local regulations.

**Contaminated Packaging**

Do not re-use empty containers. Dispose of in accordance with local regulations.

**Other Information**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

### 14. TRANSPORT INFORMATION

**IMDG/IMO**

Not regulated

**RID**

Not regulated

**ADR**

Not regulated

**ICAO**

Not regulated

**IATA**

Not regulated

### 15. REGULATORY INFORMATION

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

Take note of Dir 94/33/EC on the protection of young people at work. Check whether measures in accordance with Directive 94/33/EC for the protection of young people at work must be taken.

**International Inventories**

All of the components in the product are on the following Inventory lists: U.S.A. (TSCA), Canada (DSL/NDSL), China (IECSC), The EEC inventory status for this product has not yet been established, The classification and labelling information in this Safety Data Sheet should be viewed as provisional.

<b>TSCA</b>	Complies
<b>EINECS/ELINCS</b>	Does not comply
<b>DSL/NDSL</b>	Listed on NDSL
<b>PICCS</b>	Does not comply
<b>ENCS</b>	Does not comply
<b>IECSC</b>	Complies
<b>AICS</b>	Does not comply
<b>KECL</b>	Does not comply

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances

**Chemical Safety Assessment**

No information available

**16. OTHER INFORMATION****Full text of R-phrases referred to under Sections 2 and 3**

R22 - Harmful if swallowed  
R36/37/38 - Irritating to eyes, respiratory system and skin  
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Full text of H-Statements referred to under sections 2 and 3**

H335 - May cause respiratory irritation  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H412 - Harmful to aquatic life with long lasting effects

**Issuing Date** 07-Aug-2007  
**Revision Date** 21-Dec-2010  
**Revision Note** Update to Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

**General Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

End of Safety Data Sheet