1 Identification of substance

- **Trade name:** Chromium Hexavalent RGT Powder
- **Product use:** Reagent for water analysis
- **Catalogue number:** RP731-0
- **Manufacturer/Supplier:**
  Orbeco-Hellige, Inc.
  6456 Parkland Drive
  Sarasota, FL 34243
  USA
  phone: (941) 756-6410
  fax: (941) 727-9654
  www.orbeco.com
  Made in Germany
- **Emergency information:** Chemtrec: 800-424-9300

2 Hazards identification

- **Hazard description:**
  Xi Irritant

- **Canadian Hazard Symbols:**

- **WHMIS classification:**
  D2B
  Toxic material causing other toxic effects
  E
  Corrosive material

- **Information pertaining to particular dangers for man and environment:**
  The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
  R 36/38 Irritating to eyes and skin.
  R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

- **Classification system:**
  The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **NFPA ratings (scale 0 - 4)**
  Health = 1
  Fire = 0
  Reactivity = 0

(Contd. on page 2)
**3 Composition / Data on components**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>RTECS</th>
<th>Ingredient</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>5329-14-6</td>
<td>226-218-8</td>
<td>WO 5950000</td>
<td>sulphamidic acid</td>
<td>80-90%</td>
</tr>
<tr>
<td>57-09-0</td>
<td>200-311-3</td>
<td>BQ 7875000</td>
<td>cetrimonium bromide</td>
<td>0.1-1.0%</td>
</tr>
<tr>
<td>9999-99-9</td>
<td></td>
<td></td>
<td>Nonhazardous components</td>
<td>5-15%</td>
</tr>
</tbody>
</table>

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

**4 First aid measures**

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air and to be sure call for a doctor.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes (15 min) under running water.
  - Call a doctor immediately.
- **After swallowing:** Rinse out mouth and then drink plenty of water.
  - Do not induce vomiting; immediately call for medical help.

  **The following symptoms may occur:**
  - after inhalation:
    - coughing
    - breathing difficulty
    - irritations
  - after swallowing:
    - mucous membrane irritation
    - cramps

**5 Fire fighting measures**

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
  - Formation of toxic gases is possible during heating or in case of fire.
  - Nitrogen oxides (NOx)
  - Sulfur oxides (SOx)
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
  - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.
  - Ambient fire may liberate hazardous vapours.

**6 Accidental release measures**

- **Person-related safety precautions:**
  - Wear protective equipment. Keep unprotected persons away.
7 Handling and storage

Handling:

Information for safe handling:
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: The product is not flammable.

Storage:

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility:
store away from water
store away from metals

Further information about storage conditions:
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
Store in dry conditions.
Protect from humidity and water.
Protect from exposure to the light.

Recommended storage temperature: 25°C +/- 5°C (approx. 77°F)

8 Exposure controls and personal protection

Additional information about design of technical systems: No further data; see item 7.

Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.

Breathing equipment: Use respiratory protective device against the effects of fumes/dust/aerosol.

Recommended filter device for short term use: Filter P2

Protection of hands:
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.

Material of gloves
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Value for the permeation: Level ≥ 1 (10 min)
Trade name: Chromium Hexavalent RGT Powder

9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor Threshold</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Form</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>Light beige</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>891°C (1636°F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td></td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Sensitivity to Mechanical Impact</td>
<td>None</td>
</tr>
<tr>
<td>Sensitivity to Static Discharge</td>
<td>None</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Density at 20°C (68°F)</td>
<td>2.22 g/cm³</td>
</tr>
<tr>
<td>Solubility in / Miscibility with</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Coefficient of Water / Oil Distribution</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH-value (29.7 g/l) at 20°C (68°F)</td>
<td>1.1</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Solids content</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided**: To avoid thermal decomposition do not overheat.
- **Materials to be avoided**: alkalis, acids, metals, halogen compounds, nitrates, aluminium, oxidizing agents.
- **Dangerous reactions**: Reacts with water. Corrosive action on metals. Forms hydrogen in aqueous solution with metals.
11 Toxicological information

- **Acute toxicity**: Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification**:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Oral LD50</th>
<th>LC50 (mg/kg) (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5329-14-6 sulphamic acid</td>
<td>&gt; 2000</td>
<td>(Merck OECD 401)</td>
</tr>
<tr>
<td>57-09-0 cetrimonium bromide</td>
<td>430</td>
<td>(rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect**:
  - **on the skin**: Irritant to skin and mucous membranes.
  - **on the eye**: Irritating effect.
  - **Sensitization**: No sensitizing effects known.

- **Additional toxicological information**:
  - The product shows the following dangers according to internally approved calculation methods for preparations:
    - Irritant
    - The aerosol is corrosive to the eyes, the skin and the respiratory tract. Inhalation of sulfamic acid aerosols may cause lung oedema.

- **Carcinogenicity**: NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15
- **Teratogenicity**: Not found.
- **Mutagenicity**: Not found.
- **Reproductive Toxicity**: Not found.
- **Synergistic Products**: None

12 Ecological information

- **Information about elimination (persistence and degradability)**:

- **Other information**: Quantitative data on the ecological effect of this preparation are not available.

- **Behavior in environmental systems**:

<table>
<thead>
<tr>
<th>Compound</th>
<th>log P(o/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5329-14-6 sulphamic acid</td>
<td>0.10</td>
</tr>
</tbody>
</table>

- **Ecotoxic effects**:

<table>
<thead>
<tr>
<th>Compound</th>
<th>LC50 (mg/l/96h) (Pimephales promelas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5329-14-6 sulphamic acid</td>
<td>70.3</td>
</tr>
</tbody>
</table>

- **Remark**:
  - Harmful to aquatic organisms
  - Toxic for fish:
    - sulfates > 7 g/l

- **Bacterial toxicity**:
  - CAS-No.: 5329-14-6: Pseudomonas putida EC10 > 1000 mg/l/16h (IUCLID)
  - sulfates toxic > 2.5 g/l

- **General notes**:
  - Water hazard class 2 (Self-assessment): hazardous for water
  - Do not allow product to reach ground water, water course or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms.

13 Disposal considerations

- **Product:**
  - **Recommendation:**
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
    Hand over to hazardous waste disposers.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **DOT regulations:**
  - **Hazard class:** 8
  - **Identification number:** UN2967
  - **Packing group:** III
  - **Proper shipping name (technical name):** SULPHAMIC ACID, mixture
  - **Label:** 8

- **Land transport ADR/RID (cross-border):**
  - **ADR/RID class:** 8 (C2) Corrosive substances
  - **Danger code (Kemler):** 80
  - **UN-Number:** 2967
  - **Packaging group:** III
  - **Description of goods:** 2967 SULPHAMIC ACID, mixture

- **Maritime transport IMDG:**
  - **IMDG Class:** 8
  - **UN Number:** 2967
  - **Label:** 8
  - **Packaging group:** III
  - **EMS Number:** F-A,S-B
  - **Marine pollutant:** No
  - **Proper shipping name:** SULPHAMIC ACID, mixture
Trade name: Chromium Hexavalent RGT Powder

- Air transport ICAO-TI and IATA-DGR:
  - ICAO/IATA Class: 8
  - UN/ID Number: 2967
  - Label: 8
  - Packaging group: III
  - Proper shipping name: SULPHAMIC ACID, mixture
  - Canadian TDG Class: 8

### 15 Regulations

- Sara
  - Section 355 (Extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    None of the ingredients is listed.

- TSCA (Toxic Substances Control Act): All ingredients are listed.

- Proposition 65
  - Chemicals known to cause cancer:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.

- Canadian Ingredient Disclosure List
  - Limit 0,1%
    None of the ingredients is listed.
  - Limit 1%
    5329-14-6 sulphamidic acid

- Canadian Domestic Substances List (DSL) All ingredients are listed.

- EPA (Environmental Protection Agency)
  None of the ingredients is listed.

- IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.

- NTP (National Toxicology Program)
  None of the ingredients is listed.

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)
  None of the ingredients is listed.
Trade name: Chromium Hexavalent RGT Powder

· ENCS List (MITI):
  5329-14-6 sulphamidic acid 1-402
  57-09-0 cetrimonium bromide 9-795

· Product related hazard informations:
  The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:
  Xi Irritant

· Risk phrases:
  36/38 Irritating to eyes and skin.
  52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· Safety phrases:
  26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  37 Wear suitable gloves.
  60 This material and its container must be disposed of as hazardous waste.
  61 Avoid release to the environment. Refer to special instructions/Safety data sheets

· Information about limitation of use: Employment restrictions concerning young persons must be observed.

· Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.

· CPR Classification:
  Class E
  Class D, Division 2B

· This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

· Relevant R-phrases
  22 Harmful if swallowed.
  36/38 Irritating to eyes and skin.
  50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
  52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· Recommended restriction of use: professional/industrial use only

· Contact: Orbeco-Hellige, Inc., Quality Assurance Dept., Phone: 941-756-6410

· Sources
  International Chemical Safety Cards (ICSCs)
  IUCLID (International Uniform Chemical Information Database)
  Data arise from manufacturers' data sheets, reference works and literature.

* Data compared to the previous version altered.

* Other information
  This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.