

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : RAG1001 Restor-A-Gel Steel 30ml
Product code : RAG1001

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory chemical

1.3. Supplier

SIRCHIE
100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4. Emergency telephone number

Emergency number : 1.800.424.9300 (USA) +1-703-527-3887 (INTL)
CHEMTREC: 1.800.424.9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

| | | |
|--|------|---|
| Flammable liquids Category 2 | H225 | Highly flammable liquid and vapour |
| Skin corrosion/irritation Category 1A | H314 | Causes severe skin burns and eye damage |

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H225 - Highly flammable liquid and vapour
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep 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.
P310 - Immediately call a poison center or doctor.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in

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accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|----------------------------|---------------------|-------|---|
| hydrochloric acid | (CAS-No.) 7647-01-0 | 42 | Skin Corr. 1A, H314 |
| ethanol | (CAS-No.) 64-17-5 | <= 26 | Flam. Liq. 2, H225 |
| silicon dioxide, amorphous | (CAS-No.) 7631-86-9 | < 2.5 | Not classified |
| copper(II)chloride | (CAS-No.) 7447-39-4 | < 1.6 | Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 |

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

No additional information available

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

No additional information available

5.2. Specific hazards arising from the chemical

Reactivity : Corrosive vapors.

5.3. Special protective equipment and precautions for fire-fighters

No additional information available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

No additional information available

7.2. Conditions for safe storage, including any incompatibilities

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| copper(II)chloride (7447-39-4) | | |
|--|--------------------------------------|------------------------|
| Not applicable | | |
| ethanol (64-17-5) | | |
| ACGIH | ACGIH STEL (ppm) | 1000 ppm |
| silicon dioxide, amorphous (7631-86-9) | | |
| Not applicable | | |
| hydrochloric acid (7647-01-0) | | |
| ACGIH | ACGIH TWA (mg/m ³) | 2.98 mg/m ³ |
| ACGIH | ACGIH TWA (ppm) | 2 ppm |
| OSHA | OSHA PEL (TWA) (mg/m ³) | 7 mg/m ³ |
| OSHA | OSHA PEL (TWA) (ppm) | 5 ppm |
| IDLH | US IDLH (ppm) | 50 ppm |
| NIOSH | NIOSH REL (TWA) (mg/m ³) | 7 mg/m ³ |
| NIOSH | NIOSH REL (TWA) (ppm) | 5 ppm |

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gas mask. Gloves. Safety glasses.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|----------------------------|
| Physical state | : Liquid |
| Appearance | : Liquid. |
| Color | : Green |
| Odor | : Irritating/pungent odour |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Solubility | : Insoluble in water. |

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| | |
|---------------------------|---------------------|
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive vapors.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

metals. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------|------------------|
| Acute toxicity (oral) | : Not classified |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

| copper(II)chloride (7447-39-4) | |
|---------------------------------------|--|
| LD50 oral rat | 584 mg/kg body weight (Rat, Male / female, Experimental value, Oral) |
| LD50 dermal rat | > 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male, Read-across, Dermal) |
| ATE US (oral) | 100 mg/kg body weight |

| ethanol (64-17-5) | |
|----------------------------|--|
| LD50 oral rat | 10470 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rabbit | > 15800 mg/kg body weight (Rabbit, Experimental value, Dermal) |
| LC50 inhalation rat (mg/l) | 125 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s)) |

| silicon dioxide, amorphous (7631-86-9) | |
|---|-------------------------------|
| LD50 oral rat | > 10000 mg/kg (Rat, Oral) |
| LD50 dermal rabbit | > 5000 mg/kg (Rabbit, Dermal) |

| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. |
| Serious eye damage/irritation | : Eye damage, category 1, implicit |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

| ethanol (64-17-5) | |
|--------------------------|--|
| Additional information | Ethyl alcohol (200 Proof) has been shown to cause cancer in Human and Animals when ingested in volume over time. There is no link to cancer in limited exposure scenarios. |

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| | |
|------------------------|---------------------|
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Viscosity, kinematic | : No data available |

SECTION 12: Ecological information

12.1. Toxicity

| copper(II)chloride (7447-39-4) | |
|---|--|
| LC50 fish 1 | 0.39 mg/l (Other, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value) |
| EC50 Daphnia 1 | 0.026 mg/l (Other, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Soft water) |
| LC50 fish 2 | 0.0384 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Fresh water, Read-across) |
| EC50 Daphnia 2 | 0.0926 - 1.213 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect) |
| ethanol (64-17-5) | |
| LC50 fish 1 | 15300 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal) |
| silicon dioxide, amorphous (7631-86-9) | |
| LC50 fish 1 | > 10000 mg/l (96 h, Brachydanio rerio, Literature) |
| EC50 Daphnia 1 | > 10000 mg/l (24 h, Daphnia magna, Literature) |

12.2. Persistence and degradability

| copper(II)chloride (7447-39-4) | |
|---|---|
| Persistence and degradability | Biodegradability in soil: not applicable. Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |
| ethanol (64-17-5) | |
| Persistence and degradability | Biodegradable in the soil. Readily biodegradable in water. |
| Biochemical oxygen demand (BOD) | 0.8 - 0.967 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.7 g O ₂ /g substance |
| ThOD | 2.1 g O ₂ /g substance |
| BOD (% of ThOD) | 0.43 |
| silicon dioxide, amorphous (7631-86-9) | |
| Persistence and degradability | Biodegradability in soil: not applicable. Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |
| hydrochloric acid (7647-01-0) | |
| Persistence and degradability | Biodegradability: not applicable. |

12.3. Bioaccumulative potential

| copper(II)chloride (7447-39-4) | |
|---|---|
| Bioaccumulative potential | No bioaccumulation data available. |
| ethanol (64-17-5) | |
| BCF fish 1 | 1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across) |
| Log Pow | -0.31 (Experimental value) |
| Bioaccumulative potential | Not bioaccumulative. |
| silicon dioxide, amorphous (7631-86-9) | |
| Bioaccumulative potential | Not bioaccumulative. |

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| hydrochloric acid (7647-01-0) | |
|-------------------------------|--|
| Bioaccumulative potential | Does not contain bioaccumulative component(s). |

12.4. Mobility in soil

| copper(II)chloride (7447-39-4) | |
|--------------------------------|---|
| Surface tension | 72.7 N/m (21 °C, 1.01 g/l, EU Method A.6: Water solubility) |
| Ecology - soil | Adsorbs into the soil. |

| ethanol (64-17-5) | |
|-------------------|-----------------------------------|
| Surface tension | 22.31 mN/m (20 °C, 100 %) |
| Log Koc | 0.2 (log Koc, Experimental value) |
| Ecology - soil | Highly mobile in soil. |

| silicon dioxide, amorphous (7631-86-9) | |
|--|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| hydrochloric acid (7647-01-0) | |
|-------------------------------|--|
| Ecology - soil | No (test)data on mobility of the components available. May be harmful to plant growth, blooming and fruit formation. |

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

No additional information available

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

| | |
|--------------------------------|---|
| Transport document description | : UN1789 Hydrochloric Acid (CORROSIVE), 8, III |
| UN-No.(DOT) | : UN1789 |
| Proper Shipping Name (DOT) | : Hydrochloric Acid CORROSIVE |
| Class (DOT) | : 8 - Class 8 - Corrosive material 49 CFR 173.136 |
| Packing group (DOT) | : III - Minor Danger |
| Hazard labels (DOT) | : 8 - Corrosive |



Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Air transport

| | |
|---------------------------------------|--|
| Transport document description (IATA) | : UN UN1789 Hydrochloric acid, 8, III, ENVIRONMENTALLY HAZARDOUS |
| UN-No. (IATA) | : UN1789 |
| Proper Shipping Name (IATA) | : Hydrochloric acid |
| Class (IATA) | : 8 - Corrosives |
| Packing group (IATA) | : III - Minor Danger |

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SECTION 15: Regulatory information

15.1. US Federal regulations

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Subject to reporting requirements of United States SARA Section 313
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

RAG1001 Restor-A-Gel Steel 30ml

Listed on ELINCS (European List of Notified Chemical Substances)

National regulations

RAG1001 Restor-A-Gel Steel 30ml

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

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| | |
|---|-----|
| U.S. - California - Proposition 65 - Carcinogens List | Yes |
|---|-----|

| | |
|---|----|
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
|---|----|

| | |
|---|----|
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
|---|----|

| | |
|---|----|
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
|---|----|

SECTION 16: Other information

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Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

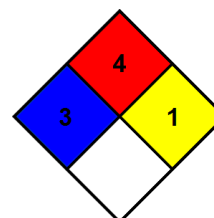
Full text of H-phrases:

| | |
|------|---|
| H225 | Highly flammable liquid and vapour |
| H301 | Toxic if swallowed |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



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Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : G

G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us . However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.