SECTION 1: PRODUCT AND COMPANY IDENTIFICATION
PRODUCT NAME: Cool Renewal®
SYNONYMS: Refrigerant
PRODUCT USE: Cryosurgical Refrigerant
MANUFACTURER: Cool Renewal, LLC
ADDRESS: 2515 Eugenia Ave, Ste 103, Nashville, TN 37211
EMERGENCY PHONE: 615.844.0132
CHEMTREC PHONE: 1.800.424.9300
FAX PHONE: 615.544.1411

SECTION 2: HAZARDS IDENTIFICATION
Emergency Overview
Misuse or intentional inhalation abuse may lead to death without warning.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Rapid evaporation of the liquid may cause frostbite.

Potential Health Effects
Skin: Contact with liquid or refrigerated gas can cause cold burns and frostbite.
May cause skin irritation.
May cause: Discomfort, itching, redness, or swelling.

Eye: Contact with liquid or refrigerated gas can cause cold burns and frostbite.
May cause eye irritation.
May cause: tearing, Redness, Discomfort.

Inhalation: Misuse or intentional inhalation abuse may cause death without warning symptoms,
due to cardiac effects.
Other symptoms potentially related to misuse or inhalation abuse are: Anaesthetic effects, light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
Ingredients:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,2-tetrafluoroethane</td>
<td>811-97-2</td>
<td>4</td>
</tr>
<tr>
<td>Pentfluoroethane</td>
<td>354-33-6</td>
<td>44</td>
</tr>
<tr>
<td>1,1,1-trifluoroethane</td>
<td>420-46-2</td>
<td>52</td>
</tr>
</tbody>
</table>

Common Name: Liquefied Gas, N.O.S > Non Flammable (R-404A)

SECTION 4: FIRST AID MEASURES
Skin contact: Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Inhalation: Remove from exposure, lie down. Artificial respiration and/or oxygen may be necessary. Call a physician.

Ingestion: Is not considered a potential route of exposure.

General advice: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

Notes to physician: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5: FIRE-FIGHTING MEASURES

Flammable Properties
Flash point: does not flash

Lower explosion limit: Method: None per ASTM E681

Upper explosion limit: Method: None per ASTM E681

SECTION 7: HANDLING AND STORAGE
Handling (Personnel): Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing.
Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8. Handle in accordance with good industrial hygiene and safety practice.

Storage: Valve protection caps and valve outlet threaded plugs must remain in place while container is secured with valve outlet piped to use point. Do notdrag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (>3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.

SECTION 8: EXPOSURE CONTROLS/PERSOAL PROTECTION
Engineering controls: Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

Personal protective equipment
Respiratory protection: Under normal manufacturing conditions, no respiratory protection is required when using this product.

Hand protection: Material: Impervious gloves

Eye protection: Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures: Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values

<table>
<thead>
<tr>
<th>Compound</th>
<th>AEL*</th>
<th>8 &amp; 12 hr. TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1-Trifluoroethane</td>
<td>1,000 ppm</td>
<td>8 &amp; 12 hr. TWA</td>
</tr>
<tr>
<td>Pentfluoroethane</td>
<td>1,000 ppm</td>
<td>8 &amp; 12 hr. TWA</td>
</tr>
<tr>
<td>1,1,1,2-Tetrafluoroethane</td>
<td>1,000 ppm</td>
<td>8 &amp; 12 hr. TWA</td>
</tr>
</tbody>
</table>

* AEL is DuPont’s Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits are more stringent than the AEL, they are in effect, and these US limits shall take precedence.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquefied gas
Color: Colourless
Odor: Slight, ether-like
Melting point: Not available for this mixture.
Boiling point: -46.2°C (-51.2°F)
% Volatile: 100%
Vapour Pressure: 12,546 hPa at 25°C (77°F)
Specific gravity: 1.05 at 25°C (77°F)
Water solubility: indeterminate
Vapour density: 3.4 at 25°C (77°F) and 1013 hPa (Air=1.0)
Evaporation rate: > 1, (CLC=1.0)

SECTION 5: FIRE-FIGHTING MEASURES (CONT.)

Fire and Explosion Hazard: Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.

Suitable extinguishing media: As appropriate for combustibles in area. Extinguishment for other burning material in area is sufficient to stop burning.

Firefighting Instructions: Use water spray or fog to protect the fire fighters and to cool container. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

SECTION 6: ACCIDENTAL RELEASE MEASURES
NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with cleanup. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel): Ventilate area, especially low or enclosed places where heavy vapours might collect.
Accidental Release Measures: Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquefied gas
Color: Colourless
Odor: Slight, ether-like
Melting point: Not available for this mixture.
Boiling point: -46.2°C (-51.2°F)
% Volatile: 100%
Vapour Pressure: 12,546 hPa at 25°C (77°F)
Specific gravity: 1.05 at 25°C (77°F)
Water solubility: indeterminate
Vapour density: 3.4 at 25°C (77°F) and 1013 hPa (Air=1.0)
Evaporation rate: > 1, (CLC=1.0)
SECTION 10: STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Conditions to avoid: Avoid open flames and high temperatures.

Incompatibility: Alkalies, alkaline earth metals, powdered metals, powdered metal salts.

Hazardous decomposition products: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.), forming hydrofluoric acid and possibly carbonyl fluoride. These materials are toxic and irritating. Avoid contact with decomposition products.

Hazardous reactions: Polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

1,1,1-Trifluoroethane (HFC-134a)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Analysis of effects Cardiac sensitization

Inhalation 4 h LC50: 591000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1-Trifluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 800000 ppm, rat
Inhalation Low Observed: 100000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: No skin sensitization, Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

Pentafluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: No skin sensitization, Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1,2-Tetrafluoroethane (HFC-134a)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Analysis of effects Cardiac sensitization

Inhalation 4 h LC50: 591000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1,2-Tetrafluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 800000 ppm, rat
Inhalation Low Observed: 100000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: No skin sensitization, Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

Pentafluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: No skin sensitization, Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1-Trifluoroethane (HFC-134a)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Analysis of effects Cardiac sensitization

Inhalation 4 h LC50: 591000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

Pentafluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1-Trifluoroethane (HFC-134a)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Analysis of effects Cardiac sensitization

Inhalation 4 h LC50: 591000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

Pentafluoroethane (HFC-125)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.

1,1,1-Trifluoroethane (HFC-134a)
Dermal: not applicable
Oral: not applicable
Inhalation 4 h LC50: > 540000 ppm, rat
Analysis of effects Cardiac sensitization

Inhalation 4 h LC50: 591000 ppm, rat
Inhalation Low Observed: 300000 ppm, dog
Adverse Effect Concentration (LOAEC)
Skin irritation: No skin irritation, Not tested on animals.
Skin sensitization: Not tested on animals.
Eye irritation: No eye irritation, Not tested on animals.